

**INDIANA UTILITY
REGULATORY
COMMISSION**

INDIANA UTILITY GUIDE

2019 EDITION



ABOUT THIS GUIDE

The Indiana Utility Regulatory Commission (IURC or Commission) is an administrative agency that hears evidence in cases filed before it and makes decisions based on the evidence presented in those cases. The Commission is required by state statute to be impartial and make decisions in the public interest to ensure the utilities provide safe and reliable service at just and reasonable rates. The Commission also serves as a resource to the legislature, the executive branch, state agencies, and the public by providing information regarding Indiana's utilities and the regulatory process. In addition, Commission members and staff are actively involved with regional, national, and federal organizations regarding utility issues affecting Indiana.

As part of its role, the Commission strives to be open and transparent in providing all stakeholders information about the agency and those topics that affect the agency and the related industries.

The Commission's *Indiana Utility Guide* is intended to serve as a foundational resource that contains more detailed historical and background information, trending data, guidance on the Indiana regulatory processes and procedures, and more. The intention is that the Indiana Utility Guide will be updated every few years. The first Indiana Utility Guide was issued in 2016. This is the 2019 edition.

It is important to note that the *Indiana Utility Guide* serves as a starting point in understanding the complex world of utilities. There are a variety of other helpful resources, workshops, courses, and more to better understand the ever-changing world of

utilities. This guide addresses a number of utility topics from the Commission's point of view, but the Commission encourages those interested to seek out the many resources available to be as informed as possible.

The *Indiana Utility Guide* can be read in its entirety for a comprehensive understanding of Indiana's utility sector and the Commission's role in it. For those readers who are interested in a particular topic, we have divided the guide into the following sections:

- 1** WHAT IS THE INDIANA UTILITY REGULATORY COMMISSION?
- 2** ADMINISTRATIVE LAW PROCESS
- 3** BASICS OF RATEMAKING
- 4** ELECTRICITY
- 5** NATURAL GAS
- 6** WATER AND WASTEWATER
- 7** COMMUNICATIONS
- 8** PIPELINE SAFETY

GLOSSARY SECTION: We also have included a Glossary at the end of the guide. Each term included in the Glossary appears in *blue italic text* the first time it is used in the text of the guide. This way, readers will know that when they see a word or phrase in *blue italic text*, they can turn to the Glossary for a more detailed definition.

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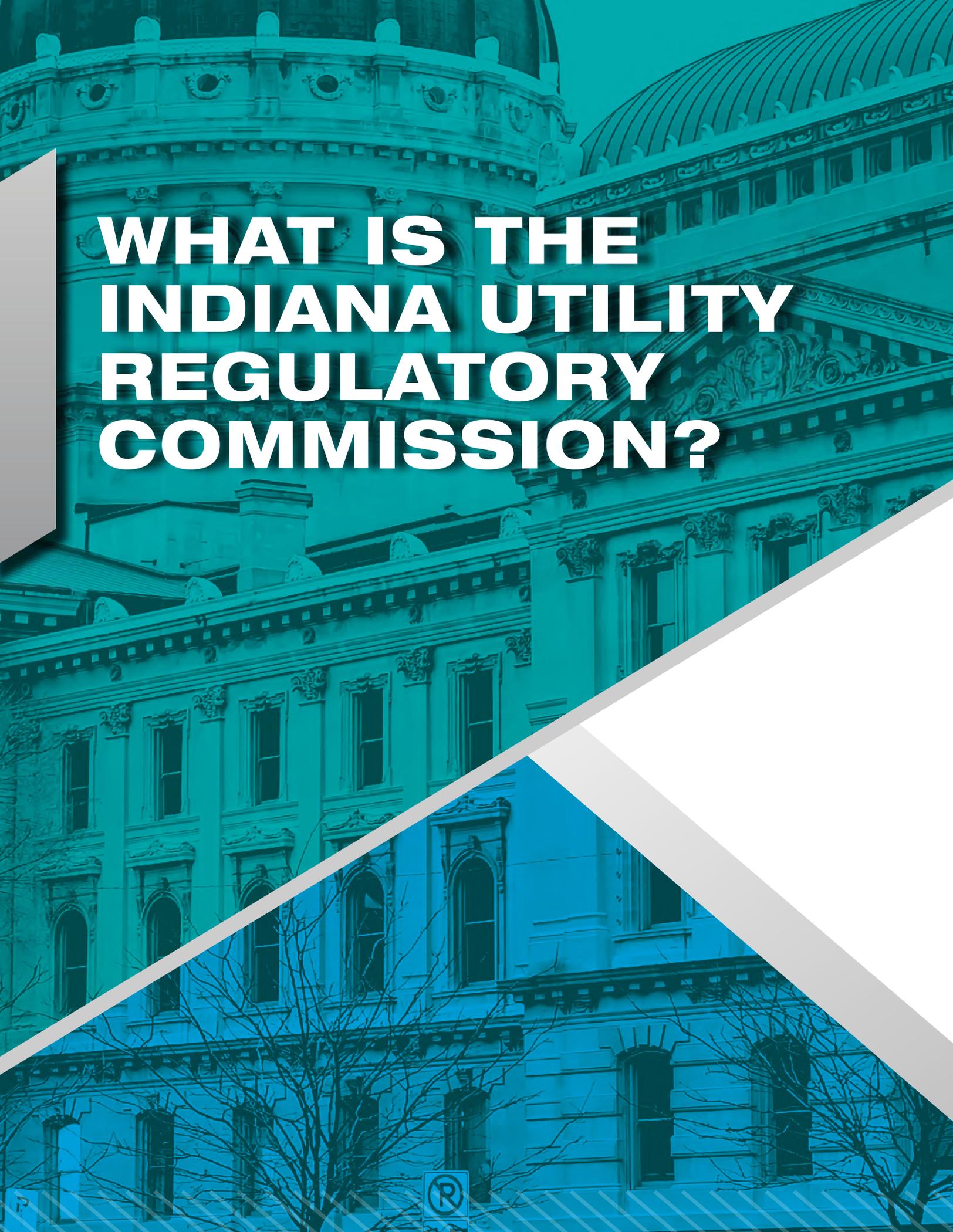
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INDIANA UTILITY GUIDE



WHAT IS THE INDIANA UTILITY REGULATORY COMMISSION?



WHAT IS THE INDIANA UTILITY REGULATORY COMMISSION?

As previously stated, the Commission is an administrative agency that hears evidence in cases filed before it and makes decisions based on the evidence presented in those cases. The Commission is required by state statute to be impartial and make decisions in the public interest to ensure the utilities provide safe and reliable service at just and reasonable rates.

The Commission also serves as a resource to the legislature, executive branch, state agencies, and the public by providing information regarding Indiana's utilities and the regulatory process. In addition, Commission members and staff are actively involved with regional, national, and federal organizations regarding utility issues affecting Indiana.

The agency is comprised of five commissioners with no more than three being of the same party as the Governor, who is the appointing authority.

HISTORY AND AUTHORITY

Originally established as the Railroad Commission in the late 1800s to regulate railroad activity, the Commission has undergone great change since its inception. In 1913, the agency was given regulatory responsibility over natural gas, water, private sewer, electric, and telephone services, and it was renamed the Public Service Commission. In 1987, the Indiana General Assembly changed the name of the agency once again, this time to the Indiana Utility Regulatory Commission.

In its current role, the Commission no longer regulates vehicular transportation but does oversee many of the more than 600 utilities that operate in Indiana. The Commission regulates electric, natural gas, steam, water, and sewer utilities—and to a lesser degree telecommunications. Generally, regulated entities are investor-owned, municipal, nonprofit, or cooperative utilities.

The Commission receives the majority of its authority from Indiana Code Title



8, which regulates various aspects of utilities' business, including rates, financing, bonding, environmental compliance plans, and service territories. The Commission also has regulatory oversight concerning construction projects and the acquisition of additional plants and equipment. Additionally, the Commission has authority to initiate investigations of utilities' rates and practices.

COMMISSION MEMBERS AND EMPLOYEES

Including its five commissioners, the Commission has a total professional staff of about 80 people, the majority of whom are attorneys, engineers, accountants, and economists who analyze evidence and legal issues and provide advice to the Commission chair and the commissioners. The agency also has a Consumer Affairs Division that serves as a liaison between utility ratepayers and the utilities.

COMMISSIONERS

Commissioners serve terms of four years and may be reappointed by the Governor. No more than three of the commissioners may be of the same political party. Commissioners are considered decision-makers under Indiana law (Indiana Code § 4-2-6-11(b)) and, as such, are prohibited from lobbying the executive branch or being employed by a utility regulated by the Commission until the elapse of at least one year from the date the commissioner ceases to be a state employee.

The commissioners often are members of the National Association of Regulatory Utility Commissioners and attend or present on various topics at seminars and conferences both national and international.

For information about the current commissioners, please visit the Commission's website at <http://www.in.gov/iurc/2378.htm>.

Commissioners' Roles and Duties

Commissioners are assigned as presiding officers over cases that are brought before the Commission. As presiding officers, commissioners are required to evaluate all of the evidence in the case before them. Commission orders are based on evidence and law. A quorum, which is a majority of commissioners (at least three out of five), is required for an order to be approved.

As required by Indiana statute, the chair of the Commission must annually present a report prepared by the Commission on specific items of interest laid out by statute to the Indiana General Assembly's appropriate interim study committee on utility regulation. That report, generally referred to as the Commission's Annual Report, is prepared and presented to the Indiana General Assembly between the months of August and October.

The Chief of Staff for the Commission works with the Chairman and Commissioners to oversee the general operations of the Commission, including personnel and strategic planning.

ADMINISTRATIVE LAW STAFF

The Commission maintains a staff of six administrative law judges (ALJs), one of which serves as the chief administrative law judge who supervises the other five judges. Each ALJ is required to be an Indiana-licensed attorney. The primary responsibility of the ALJs is to preside over docketed proceedings with the commissioners and provide legal support in the drafting of orders. The Commission's ALJs are specifically exempted from the Office of Administrative Law Proceedings, due to the highly technical nature of Commission proceedings and the fact that the Commission's ALJs do not issue separate decisions. The Commission also employs two court reporters who are responsible for reporting and, when necessary, transcribing hearings, as well as two paralegals for the ALJs.

OFFICE OF GENERAL COUNSEL

The general counsel is the Commission's lead attorney in non-docketed legal matters and the Commission's ethics officer, helping to assure compliance with the state ethics laws and regulations, as well as the Commission's internal policies. In addition to the general counsel, the staff of the Office of General Counsel includes three assistant general counsels and a legal assistant/paralegal.

The Office of General Counsel provides legal research, analysis, and statutory interpretation regarding utility-related laws, regulations, and cases to the commissioners, technical staff, External Affairs Division, and the Consumer Affairs Division, as requested. The Office of General Counsel negotiates

and drafts all contracts on behalf of the Commission and oversees rulemakings. Attorneys within the office serve as legal counsel to the Underground Plant Protection Advisory Committee and to designated testimonial staff. The Office of General Counsel also works with the Indiana Office of Attorney General on appeals of Commission orders and other civil litigation matters. Based on information provided by the Consumer Affairs Division and other technical staff, the General Counsel may refer cases to the full Commission and request Commission investigations. In addition, the team tracks and provides timely responses to public records requests and works with technical staff to file comments to federal agencies.

As a neutral resource to the Indiana General Assembly, the attorneys assist the External Affairs Division with legal review of pending or proposed legislation affecting the utility industry. Attorneys also assist in providing guidance to legislators when they receive constituent inquiries relating to utility matters.

EXTERNAL AFFAIRS DIVISION

The External Affairs Division leads the Commission's public relations and communication efforts, which include responding to media inquiries, special initiatives and projects, open forums with all stakeholders, and other public events. With the assistance of technical staff and the Office of General Counsel, the division also serves as an independent, neutral resource for state—and, on occasion, federal—legislative-related matters. The External Affairs Division also includes the Consumer Affairs Division, which serves as a liaison between the utilities and consumers.

In addition, the External Affairs Division oversees the Commission's role in the State of Indiana's Department of Homeland Security Emergency Operations Center.

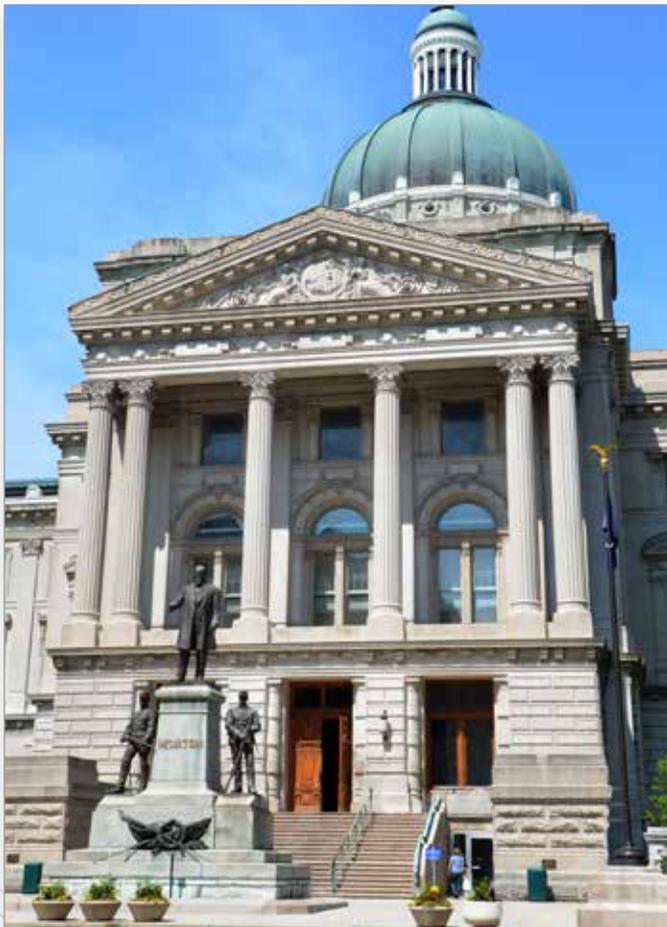
The External Affairs Division maintains and operates the Underground Plant Protection Account (UPPA) fund, which is the accumulation of civil penalties that were levied and collected due to violations of Indiana's Damage to Underground Facilities law—also known as the Indiana 811 law. Paid penalties are then reinvested into public awareness, training and education, and incentive programs related to underground utility safety and damage prevention efforts. At the present time, the UPPA fund accrues and invests approximately \$1 million in civil penalties each year.

Consumer Affairs Division

The Consumer Affairs Division (CAD) provides dispute resolution services between regulated utilities and their customers. Importantly, CAD does not advocate on behalf of the customer or the utility. CAD investigates utilities' compliance with the applicable provisions of Indiana Code, Indiana Administrative Code, and the utility's Commission-approved tariff. Indiana Code § 8-1-2-34.5(b) establishes the existence of CAD and outlines the customer and utility rights and responsibilities, whereas the Indiana Administrative Code details the rules for utility service quality and both parties' rights and responsibilities. A utility's tariff includes its schedule of rates and charges, general terms and conditions, and regulations that may be unique to that utility. The Indiana Administrative Code sets service guidelines for all public utilities under the authority of the Commission, so CAD may apply the rules consistently across all

complaints. CAD continuously strives to issue determinations that are fair and reasonable to all parties involved. To ensure such rules and regulations remain current, the division participates in the review and revision of the Rules and Regulations and Standards of Service for Indiana utilities.

In its dispute resolution role, CAD staff are often the first to realize potential problems with utility operations. The division utilizes information gathered during its complaint-handling process to alert the Commission of concerning trends with the hope of minimizing the issue for all affected parties. In the event a situation does escalate to a formal investigation, CAD provides consumer complaint data that may be entered into evidence in an investigation proceeding. Some investigations that have been prompted by CAD have resulted in the parties agreeing on a settlement to resolve the matter.



TECHNICAL DIVISIONS

The Commission's technical staff is made up primarily of accountants, engineers, and economists. Their main duty is to analyze the evidence in cases and make recommendations on cases that are pending. The technical divisions are as follows:

- Energy Division
- Research, Policy, and Planning Division
- Water and Wastewater Division
- Communications Division
- Pipeline Safety Division

These divisions monitor and evaluate regulatory, legislative, and policy initiatives that affect the electric, natural gas, water, wastewater, telecommunications, and video industries and their customers. The divisions also perform research, analyze testimony in docketed proceedings, and address utility issues outside of docketed proceedings.

Energy Division

The Energy Division assists the Commission in regulating the rates and charges of electricity utilities, natural gas local distribution companies (LDCs), and *intrastate pipelines*. The Energy Division monitors and evaluates regulatory and policy initiatives affecting the state's electric and natural gas industries. It also reviews and advises the Commission on regulatory proceedings initiated by Indiana electric and natural gas utilities involving increases in rates, environmental compliance plans, cost recovery to build or purchase power generation plants, energy-efficiency programs, reliability, service quality, fuel cost adjustments, gas cost adjustments, service territories, Commission-initiated

investigations, pipeline safety violation appeals, alternative regulatory proposals, special contract approvals, industry-related rulemakings, and many other issues.

The Energy Division also works with the Commission's Pipeline Safety Division and Research, Policy, and Planning Division. The Pipeline Safety Division regulates the infrastructure that transports natural gas throughout the state, and the Commission's Research, Policy, and Planning Division monitors regional *transmission* organizations, *integrated resource planning*, and *demand-side management* initiatives.

Research, Policy, and Planning Division

The Research, Policy, and Planning Division was established to provide the Commission with analysis of the ramifications of the dynamic interrelationships and changes within the electric industry. The division provides advice and education on a wide variety of topics to the Commission. Integrated resource planning, because it is related to all aspects of the electric industry, is one of the primary ongoing efforts of this division.

The division's work includes the following:

- Reviewing integrated resource plans
- Federal and regional oversight
- Evaluating changes in federal and state legislation
- Studying the evolution in regulation
- Reviewing the economics of the energy industry and the implications for Indiana

Water and Wastewater Division

The Water and Wastewater Division monitors and evaluates regulatory and policy issues affecting the water and wastewater industries. The majority of the division's time is spent reviewing evidence in regulatory proceedings and advising the Commission on cases before it. The types of regulatory proceedings include rate increases, acquisitions, financing requests, service territory matters, infrastructure and revenue trackers, and other matters. Division staff also provide assistance with Commission rulemakings and complaints submitted to the Consumer Affairs Division. The division assists in Commission investigations, both formal and informal, that frequently involve the resolution of problems related to at-risk water or wastewater utilities.

Communications Division

The Communications Division manages Indiana-specific issues related to telecommunications and video services. The division provides advice on telecommunications issues, such as numbering and area code issues, slamming and cramming, telecommunications providers of last resort, and disputes between carriers. The division also provides advice on video issues as the Commission is both the sole video franchise authority and the direct marketing authority for video service providers in Indiana.



The division advises the Commission on the certification of communications service providers and issuance of video service franchises. It assists the Commission in overseeing the Indiana Universal Service Fund, which provides additional revenue support to small rural local exchange carriers. In addition, the division monitors the federal Lifeline Program in Indiana, which provides essential phone service to low-income Hoosiers.

Pipeline Safety Division

The Pipeline Safety Division's primary focus is to ensure compliance with federal and state pipeline safety standards that apply to all intrastate natural gas and hazardous liquid pipeline operators, regardless of whether they are under the Commission's

regulatory authority for rates and charges. Pipeline safety engineers enforce the safety standards established by the U.S. Department of Transportation (U.S. DOT) as they apply to the design, installation, inspection, testing, construction, extension, operation, replacement, and maintenance of pipeline facilities. The division also enforces the U.S. DOT's anti-drug program for gas operators within Indiana, as well as U.S. DOT's integrity management, operator qualification, and damage prevention regulations. In addition, the division is responsible for investigating possible violations of the Indiana 811 law (Ind. Code chapter 8-1-26).

The background of the slide features a teal-tinted image of a pair of scales of justice and several law books. The scales are positioned in the upper half, with one pan hanging lower than the other. Below the scales, the spines of several law books are visible, with the word 'ANNOTATED' embossed on them. A large, light gray diagonal shape cuts across the bottom right corner of the image.

ADMINISTRATIVE LAW PROCESS

18
L. Ed. 2d

U.S. 386 (pp. 313–end), 387, 388

19
L. Ed. 2d

U.S. 389, U.S. 390 (pp. 1–419)

COURT RULES

20
L. Ed. 2d

U.S. 390 (pp. 414–end)

U.S. 391, 392



ADMINISTRATIVE LAW PROCESS

The administrative law process is governed by Title 170 of the Indiana Administrative Code, which sets forth the procedures for cases that come before the Commission.

REGULATIONS AND GUIDANCE

The agency promulgates rules and regulations regarding practice and procedures before the Commission and regarding utility standards of service. Before the Commission may add rules or make changes to its existing rules, it must follow the formal rulemaking process. In addition to the formal process dictated by statute, it is the practice of the Commission to hold informal workshops and discussions with stakeholders prior to initiating a formal rulemaking. This ensures the opportunity for public comment and allows the issues at hand to be fully vetted by all stakeholders in a transparent way. The Office of General Counsel oversees this process and serves as the point of contact for interested parties. Although the informal rule development process can extend the time the rule is discussed, it helps achieve common ground among stakeholders before the formal process begins. For more information or to access documents and public comments related to these rulemakings, please visit www.in.gov/iurc/2658.htm.

The Commission provides additional guidance to regulated utilities regarding policies and procedures through its general administrative orders (GAOs). These GAOs include policies governing interest rates for gas customer deposits, case procedures, and time parameters for general rate cases. GAOs also contain procedures for matters such as safety valve requests and certificates of territorial authority for communication service providers. The Office of General Counsel drafts and verifies the legal support for the GAOs. To view the Commission's GAOs, go to <http://www.in.gov/iurc/2447.htm>.

HOW CASES ARE INITIATED

Cases may be initiated with the Commission in several ways, including:

- A petition filed by a regulated utility seeking specific relief or approval;
- A complaint filed against a utility;
- An investigation initiated by the Commission concerning a specific utility or matters involving utility operations; or
- An appeal or a referral of a Consumer Affairs Division determination or complaint

When a case is filed with the Commission, it is formally docketed and given a cause number. Each case is typically assigned to an administrative law judge (ALJ) and a commissioner, who preside over hearings and prepare the order in the case. When presented with more complex cases, multiple commissioners are often assigned.

The Indiana Office of Utility Consumer Counselor (OUCC) represents the public in all cases before the Commission. Any individual, organization, or company with a substantial

interest in the case may request to intervene and, upon approval by the presiding officers, become a party to that case.

CASE PROCEDURE

Except for certain expedited proceedings, cases filed with or initiated by the Commission typically are set for a prehearing conference and preliminary hearing. At the prehearing conference, a procedural schedule is determined with the parties to establish the following:

- Deadlines for the pre-filing of testimony and exhibits;
- The date of the evidentiary hearing; and
- Other procedural requirements, such as deadlines for responding to discovery

The Commission is required by Indiana Code § 8-1-1-8 to provide public notice of all hearings held by the Commission in at least one newspaper of general circulation in the utility's service area 10 days before the hearing.

FIELD HEARINGS

The Commission also may hold field hearings in the area in which a utility provides service. These public hearings give consumers a more convenient opportunity to speak in favor of or against cases pending before the Commission. Field hearings are required by law when the utility is seeking an increase of



more than \$2.5 million. In cases where a field hearing is not required by law, a field hearing may be requested and held at the discretion of the Commission.

EVIDENTIARY HEARING

At the evidentiary hearing, the prefiled testimony and exhibits are offered to the Commission as evidence by the utility, the OUC, and any other intervening party. At this public hearing, the petitioner, the OUC, and any intervenors may cross-examine witnesses who prefiled testimony or exhibits.

SETTLEMENTS

Some cases are settled before they get through the complete administrative process. When the parties reach a settlement, a hearing is held at which the various parties to the case present the terms of a negotiated settlement agreement to the Commission for consideration. The Commission can opt to accept the settlement, deny the settlement, or accept it only in part. To be approved, settlements must be supported by the evidence in the record, be in the public interest, and not be contrary to the law or public policy. Settlements generally must be reached before the last evidentiary hearing has occurred.

EXECUTIVE SESSION

After all the evidence has been submitted and the record is closed, commissioners may hold an executive session in accordance with Indiana's Open Door Law (Ind. Code §§ 5-14-1.5-6.1(b) and 8-1-1-5(f)). Under this statute, the Commission is given authority to hold an executive session to deliberate on a proposed order if all evidence has

been received by the Commission and the deliberations are preparatory to taking final action on an order subject to judicial review. Only commissioners and Commission staff who are formally assigned to advise or assist in preparing the order are allowed to participate in the executive sessions.

ORDERS

The next step in the process is for the presiding commissioner to instruct the ALJ to prepare the order based on the evidence received at the hearing. Upon approval of the presiding commissioner, a draft order is circulated for review by the five commissioners for their consideration before a weekly conference meeting in which the commissioners vote on the order. Each commissioner may vote to approve the order in its entirety, dissent from the entire order, approve part of the order and dissent from other parts, approve all of the order but offer a separate opinion, or abstain from voting on the order. For an order to take effect, it must be approved by at least three of the commissioners.

The Commission's orders are legally binding. A party that disagrees with an order may petition the Commission for rehearing or reconsideration, or the order may be directly appealed to the Indiana Court of Appeals.

Although the Commission attempts to be consistent in its decisions, the Commission's orders do not set precedent. The Commission is an impartial agency that is required by state law to evaluate each individual case based on the evidence provided by the parties in that case. Each case is unique due to the differing evidence provided.



APPEALS

All Commission orders may be appealed by any person or entity adversely affected by the decision. Commission orders are appealed directly to the Indiana Court of Appeals. The Office of General Counsel provides legal research and counsel to defend the Commission's orders and decisions on appeal. The Indiana Office of Attorney General (Attorney General's Office) represents the Commission by statute (Ind. Code § 8-1-2-2). The Office of General Counsel works with the Attorney General's Office in drafting briefs and arguments in appeals. The Court may affirm, remand, or reverse—or any combination of the three—the Commission's orders; and parties to the appeal may petition to transfer the Court of Appeals' decision to the Indiana Supreme Court.

TYPES OF CASES

The most common types of cases filed with the Commission are those dealing with the following:

- Utility's base rates;
- Financing authority;
- Rate adjustment mechanisms;
- Service area; and
- Certificates of need.

A base rate case begins when a utility files a petition with the Commission to modify its rates and charges. A public utility must inform its customers of the pending case within 45 days of the filing date. In a base rate case, the Commission considers the evidence presented and approves or denies in whole or in part a utility's rates and charges for the utility service being provided. By Indiana law, a utility's rates must be just and reasonable (Ind. Code § 8-1-2-4).

Certain regulated utilities are also required to obtain financing approval from the Commission prior to issuing stocks, bonds, or other indebtedness for periods of greater than one year. In such cases, the Commission considers the amount, type, and use of the requested financing to determine whether the request is reasonable.

Rate adjustment mechanism (or tracker) proceedings involve the review and approval of certain utility costs (such as fuel, operation expenses, and costs related to previously approved programs or projects) on a periodic basis.

Service area and certificate of need cases involve Commission approval concerning a utility's provision of service in a particular area or the construction of certain facilities used in the provision of utility service.

ADMINISTRATIVE LEGAL REVIEW

The Office of General Counsel reviews several types of legal documents for the Commission:

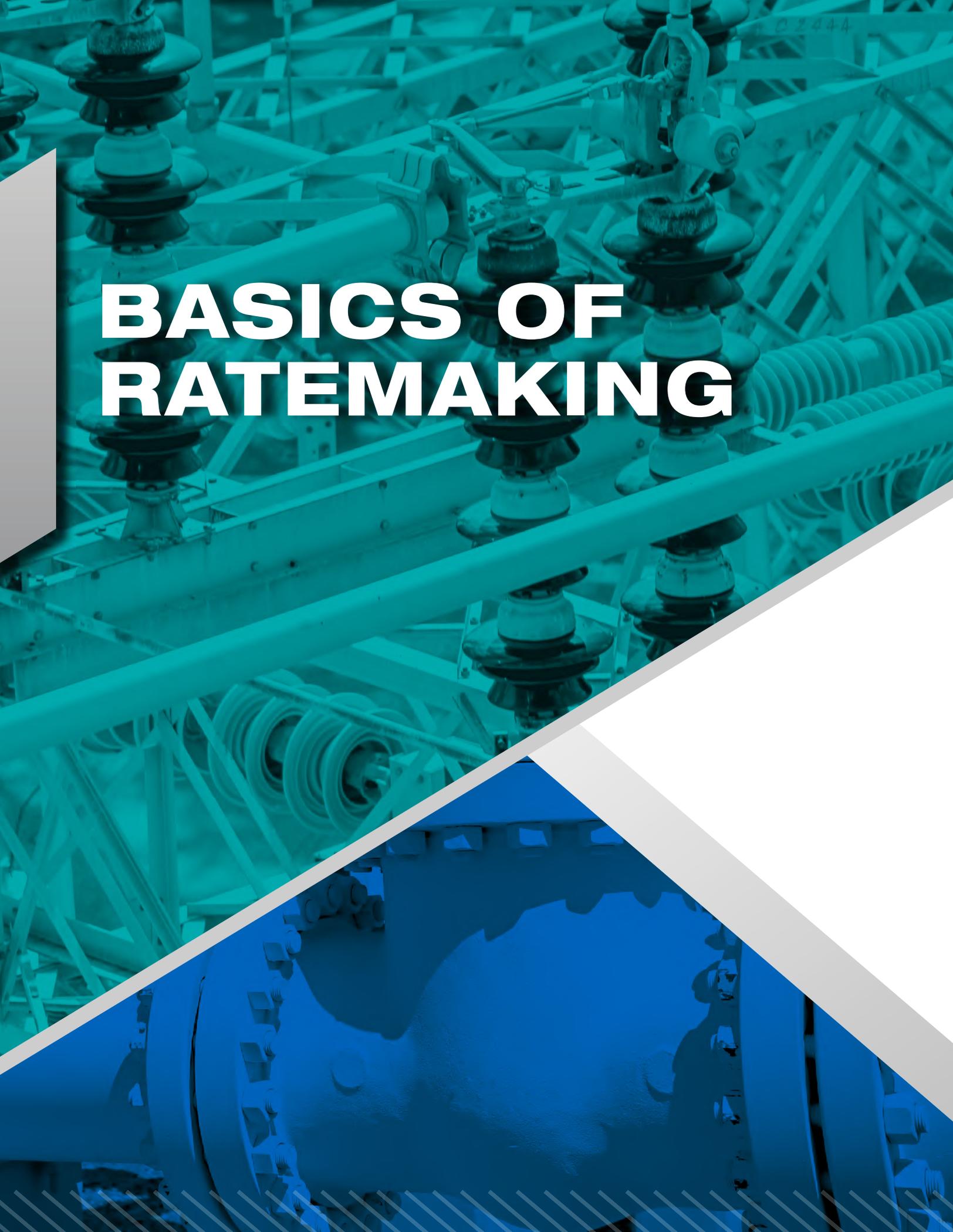
- 30-Day filing requirements**—The Office reviews administrative filings submitted by utilities to the Commission under 170 IAC 1-6 (30-day filing rule) to review whether notification and other requirements have been met. One of these requirements is a published notice that must include a brief description of the filing, the expected filing date, the date of expected Commission approval, and contact information.
- Affiliate contracts**—The Office reviews contracts between regulated utilities and their affiliates. When utilities submit these affiliate contracts, they are circulated to technical staff to review the subject matter, duties, and costs associated with the contract. Staff reviews the contract to ensure it is in the public interest. The Office reviews the contract for legal sufficiency, such as specific contractor duties, clear consideration (payment terms), and a reasonable timeframe for the contract.
- Withdrawals from Commission jurisdiction**—Indiana statutes allow municipal utilities, nonprofit corporations, and cooperative telephone and electric companies to remove themselves from some or all of the Commission's authority by ordinance of the local governing body or a majority vote of the people, customers, or members in the municipality, nonprofit, or cooperative. Those utilities that are

allowed by statute to withdraw from Commission authority are required to notify their customers and the Commission of their intent to withdraw at least 30 days in advance of holding a public vote. After the utility's vote is held, if the vote is to withdraw from Commission authority, the utility is required to send to the Commission a copy of the adopted ordinance signed by all board members. Upon receipt of the voting results and after the applicable waiting period, the Office sends a letter to the utility acknowledging the withdrawal.

ACCESSING CASE INFORMATION ON THE COMMISSION'S WEBSITE

To access information pertaining to a docketed case, please visit the Commission's Online Services Portal at <https://iurc.portal.in.gov/>. Here, anyone can search for a case by entering the docket number, industry, petition date, petition type, party, or order date and then clicking Search. To watch hearings that are live streamed, please visit www.in.gov/iurc/2624.htm.





BASICS OF RATEMAKING



BASICS OF RATEMAKING

WHY RATES ARE REGULATED

Providing utility services to homes and businesses requires very large capital investments in the necessary infrastructure, including generation or treatment plants; transmission and *distribution lines* or *mains*; and the systems to control the utility service, such as *pumps, substations, and transformers*. To avoid the high costs of unnecessary duplication of infrastructure, utilities in Indiana have generally been granted specific retail service territories or monopolies, pursuant to state law. In exchange for the utilities receiving exclusive service territories, they are obligated to serve the public safely and reliably without discrimination. To prevent a monopoly from overcharging customers, the state—through the Commission—regulates rates in a manner that provides sufficient funding for utilities to provide safe and reliable service to their customers at just and reasonable rates. Additionally, an *investor-owned utility (IOU)* is granted an opportunity (but not a guarantee) for a reasonable return on investment. The obligation of the utilities to provide safe and reliable service to customers in exchange for regulated rates is often described as the *regulatory compact*.

RATEMAKING PRINCIPLES

Public utility regulation attempts to compound the benefits achieved from competition where it exists and the efficiencies of operating a natural monopoly. Although the Commission has many powers and duties, its primary regulatory function is the setting of rates. The basic principles of rate regulation are fairness, equity, and reasonableness. Ratemaking determines the total allowable revenues for a utility and establishes rates or rate schedules for each customer classification. These rates are based on the cost of the service provided.

RATES

As part of the utility ratemaking process, the Commission must determine both the total amount of revenues generated from operations that is required for the company to meet its objectives and needs, and the amount required to meet the needs and objectives of its customers. To achieve this balance, the Commission primarily relies on the cost of service, which determines the revenue requirements. When a utility is regulated by the Commission, the revenue requirement is dependent on the type of utility: investor-owned, municipal, or nonprofit.

For IOUs, the revenue requirement is equal to the total operating expenses, depreciation, taxes, and return on a utility's investment in rate base. Three basic elements are used in the determination of IOU rates:

- **Rate base**—A utility's rate base is the amount of money the utility has invested in the facilities that serve customers, minus accumulated depreciation, but including working capital and materials and supplies required to keep the company operating.
- **Operating expenses**—A utility's operating expenses are the costs incurred in a specific period that includes wages and benefits for employees, maintenance, educational advertising, customer services, material and supplies, *energy*, and administration costs, as well as taxes and depreciation.
- **Allowed return**—The allowed return is the money required to pay interest costs on borrowed money plus the additional amount paid to the shareholders for the use of their money. The facilities and working capital represented in the rate base have been obtained from money the utility has raised from its shareholders, retained from its earnings, or borrowed. The required return is calculated by multiplying the utility's rate base by its cost of capital—that is, what it costs the utility to obtain capital from lenders and from shareholders.

Operating expenses and allowed return, both expressed in dollars, are added together to determine the utility's total revenue requirement, or its cost of service. Total revenue requirement represents the dollars the utility will have to collect from anticipated sales to cover expenses and earn its allowed

rate of return. When expressed as an equation, the revenue requirement is

$$\text{Total Revenue Requirement} = \text{Operating Expenses} + (\text{Rate Base} \times \text{Rate of Return})$$

The following items are included in the revenue requirement for each general type of utility under the Commission’s authority.

**Investor Owned Utilities—
Indiana Code § 8-1-2-4:**

- Operation and maintenance expenses;
- Depreciation;
- Income taxes and income tax credits (ITCs);
- Taxes other than income; and
- Return on investment (weighted cost of capital x rate base).

**Municipal Utilities—
Ind. Code § 8-1.5-3-8:**

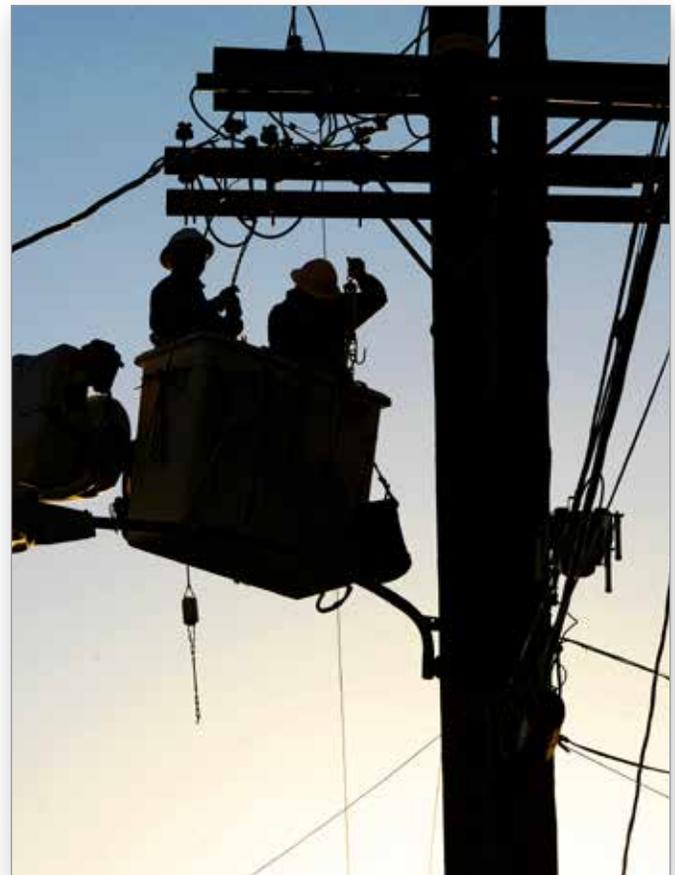
- Operation and maintenance expenses;
- Extensions and replacements or depreciation;
- Debt service;
- Debt service reserve;
- Working capital;
- Taxes other than income taxes ;
- Payment in lieu of taxes; and
- Return on investment.

**Nonprofit Utilities—
Ind. Code § 8-1-2-125:**

- Operation and maintenance expenses;
- Extensions and replacements;
- Debt service;
- Debt service reserve;
- Working capital; and
- Taxes other than income taxes.

For large utilities, the components are:

RATE BASE	CAPITAL STRUCTURE
<i>Add:</i>	Long-term Debt
Utility Plant in Service	Common Equity
Allowance for Funds Used During Construction (AFUDC)	Preferred Stock
Materials and Supplies (13-month avg.)	Post-retirement Benefits, net
Deferred Depreciation, if approved	Deferred Income Taxes
Post-in-Service AFUDC, if approved	Job Development ITC-Post 1970
Acquisition Adjustments (net), if approved	Deferred ITC-Pre 1971
	Customer Deposits
<i>Less:</i>	
Accumulated Depreciation	
Contributions in Aid of Construction	
Customer Advances for Construction	



RATE DESIGN

After the revenue requirement is determined, a utility allocates these revenues to different customer classes (for example, residential, commercial, industrial, or wholesale) and creates a rate design. The rate design may include fixed charges, volumetric charges, or surcharges. Indiana statutes do not mandate a specific rate design, but rates and charges must be “just and reasonable.” Specifically, Ind. Code § 8-1-2-4 states:

“The charge made by any public utility for any service rendered or to be rendered either directly or in connection therewith shall be reasonable and just, and every unjust or unreasonable charge for such service is prohibited and declared unlawful.”

In designing a *rate structure*, a utility should determine how its rate structure can support its general goals and objectives, which may include the following:

- Producing total annual revenues in a stable and predictable manner;
- Promoting fairness and equity and avoiding discrimination between customers;
- Promoting conservation and discouraging wasteful use;
- Maintaining simplicity and administrative feasibility; and
- Complying with all applicable rules and regulations.

When general goals and objectives are well understood and evaluated, a utility has the opportunity to design a rate structure that not only recovers the utility’s cost, but also effectively communicates its objectives to customers.

GENERAL FACTORS AFFECTING RATES

Customers frequently ask why their rates are increasing. The following are some general factors that affect rates.

CHANGES IN CUSTOMERS AND THEIR USE OF UTILITY SERVICE

The amount of utility service used per customer is a factor in rates. For example, although the United States uses more water per customer than any other country, the amount of water consumed per customer has been declining. Customer usage of electricity has remained relatively flat in recent years. This can be attributed to the following factors:

- Increased use of efficient appliances;
- Low-water-use landscaping;
- Utility efficiency programs;
- Rate structures discouraging higher consumption; and
- General increase in rates.

Because utility service is characterized by high fixed costs, when per capita consumption declines, without a corresponding increase in the number of customers, rates need to be increased to make up that revenue shortfall. For smaller utilities that might serve a large industrial or commercial customer, the loss of that customer would shift the fixed costs used to serve that customer to the remaining customers and cause an increase in rates for the remaining customers.

NEED TO REPLACE INFRASTRUCTURE

In terms of the revenue requirement, an IOU can earn a return on a plant it constructed and a municipal or nonprofit utility can include debt service, extensions, and replacements. Generically, this is considered utility infrastructure. Aging infrastructure is one of the most critical issues in the utility industry today because it is costly to replace infrastructure, particularly if most of that infrastructure is underground.

FEDERAL REGULATION

Federal government regulations continue to evolve for various types of utilities, including enhancing the security of critical infrastructure and the safety of pipelines. The federal regulations affecting each utility type are mentioned in those sections of this guide. The costs of complying with federal regulation, including capital investments and related operation and maintenance expenses, are allowed under state law to be recovered through the utility's rates.





ELECTRICITY



ELECTRICITY

OVERVIEW OF REGULATION

The electric power industry is regulated at both the federal and state levels. At the federal level, the Federal Energy Regulatory Commission (FERC) regulates high-voltage transmission facilities and wholesale sales of electricity. It also reviews certain mergers, acquisitions, and corporate transactions by electric companies. Additionally, FERC protects the reliability of the high-voltage interstate transmission system through mandatory reliability standards developed by the North American Electric Reliability Corporation (NERC). Other federal agencies involved in the electric energy industry include:

- Nuclear Regulatory Commission
- United States Environmental Protection Agency
- United States Department of Energy
- Securities and Exchange Commission
- Federal Trade Commission

The Commission oversees generation and lower voltage transmission and distribution facilities and has jurisdiction over retail electric service. In Indiana, electric utilities function as retail service monopolies due to the high costs associated with the duplication of infrastructure.

TYPES OF REGULATED ELECTRIC UTILITIES

Three types of electric utilities exist in Indiana. *Investor-owned utilities (IOUs)* are private businesses with shareholders, whereas municipal utilities are owned and managed by cities and towns. *Rural electric membership cooperatives (REMCs)* are organizations in which each customer is a member and an owner of the business, with voting authority within the organization.

Investor-owned Utilities

In exchange for the IOUs receiving exclusive retail service territories, the Commission regulates their rates and charges, as well as their terms and conditions of service. This regulation includes an opportunity (but not a guarantee) for the utility to earn a reasonable return on investment, with the utilities being obligated to provide safe and reliable service to customers. These obligations often are described as the regulatory compact. The following are the five electric IOUs in Indiana:

- Duke Energy Indiana, LLC (Duke Energy)
- Indiana Michigan Power Company (I&M)
- Indianapolis Power & Light Company (IPL)
- Northern Indiana Public Service Company, LLC (NIPSCO)
- Southern Indiana Gas and Electric Company (SIGECO), also referred to as Vectren South, a CenterPoint Energy Company

Municipal Utilities

In 1980, a group of municipalities created the Indiana Municipal Power Agency (IMPA) to jointly finance and operate electric generation and transmission facilities. IMPA's purpose is also to purchase wholesale power and meet members' needs through a combination of member-owned generating facilities, member-dedicated generation, and purchased power. However, not all municipalities in the state are members of IMPA.

State law allows municipalities to remove themselves or withdraw from parts of the Commission's authority. The majority of the municipalities in Indiana have withdrawn from the Commission's authority over rate regulation. In some cases, the Commission can review the financing for individual municipalities outside the normal rate setting procedures in rate cases.

Rural Electric Membership Cooperatives

Rural electric membership cooperatives (REMCs) are customer-owned utilities, all of which are members of either the Hoosier Energy Rural Electric Cooperative, Inc. (Hoosier Energy) or the Wabash Valley Power Alliance (WVPA). Hoosier Energy is generally located in the southern part of the state, whereas WVPA is located in the northern part of the state. The Commission's regulation of Hoosier Energy and WVPA is primarily limited to resource planning and decisions to purchase, build, or lease generation facilities as well as retail service territories. In addition, the Commission retains authority over WVPA's long-term financing. REMCs, like municipalities, have the ability to remove themselves or withdraw from the Commission's authority over their rates. No REMCs remain under Commission jurisdiction for rate regulation.

List of Currently Regulated Electric Utilities

Investor-Owned Utilities Under the Commission’s Jurisdiction

- Duke Energy Indiana, LLC (Duke Energy)
- Indiana Michigan Power (I&M)
- Indianapolis Power & Light Co. (IPL)
- Northern Indiana Public Service Company, LLC (NIPSCO)
- Southern Indiana Gas & Electric Co. (SIGECO) (aka Vectren South), a CenterPoint Energy company

Municipal Utilities Under the Commission’s Jurisdiction

- Anderson
- Auburn
- Crawfordsville
- Frankfort
- Kingsford Heights
- Lebanon
- Richmond
- Tipton

The following map shows the investor-owned electric utilities’ service territories. The maps are simplified versions that show the overall extent of the IOUs’ territories (the white areas on the maps denote areas not in the IOUs’ service territories). In addition to these maps, the Commission maintains the official electric service territory map in a GIS format that outlines the territories of all electricity providers in the state. The map can be viewed at the IndianaMAP website at <http://maps.indiana.edu/>. Once the map is visible, click the *Add Content* button near

the upper-left corner of the screen. Click *Infrastructure*, scroll down to *Energy Electric Service Territories*, and select the box next to it. Scroll back to the top of the list to close it. Other layers can be added from the list if desired. Clicking an area of the map will provide the name of the electricity provider.

Investor-Owned Electric Service Territories



Service Territories

- I&M
- NIPSCO
- Duke Energy
- IPL
- Vectren

Power Generation Facilities*



* Power generation stations may be located outside a utility’s service area.

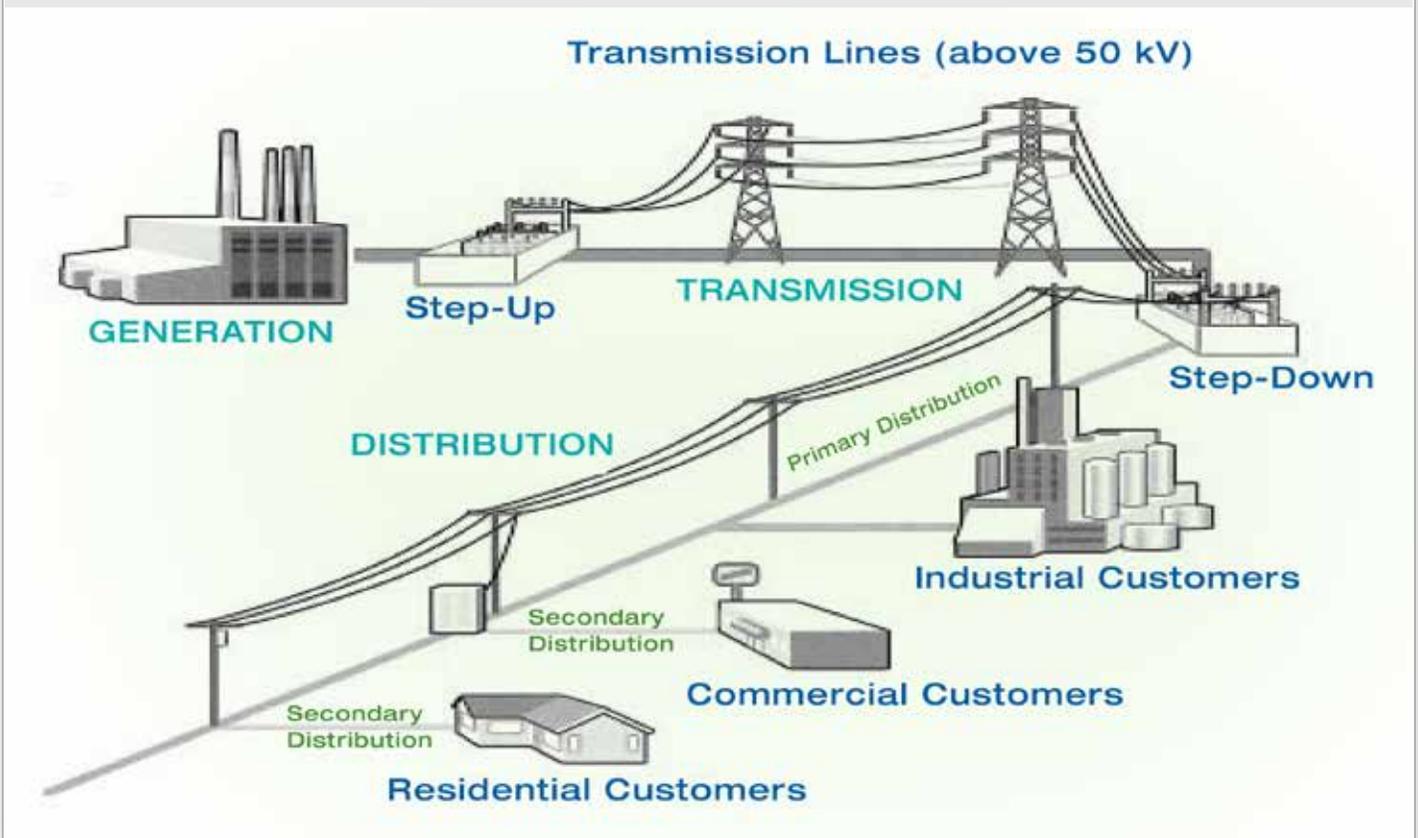
HOW IT WORKS

Indiana's electric power generation takes place at large power plants and smaller facilities, such as solar or wind farms, scattered across the state. The power produced is injected into an interconnected power *grid* of high-voltage (138kV and above) *transmission lines* and low-voltage (below 138kV) distribution lines. It does not matter whether the power enters the grid at a power plant or wind farm (high-voltage transmission) or at a solar farm or gas generator at a landfill (low-voltage distribution); the grid must constantly adjust to the power flows and maintain the typical 120 volts, 60 cycles/second electric service that consumers expect to receive and that is necessary to run most appliances and equipment.

PRICING AND ECONOMICS FOR ELECTRICITY

Among the major forces influencing the price of electricity are *demand*, changing market forces, and compliance with environmental regulations. This section discusses these as well as trends we will likely see in the coming years. It also examines customer bills and what those bills include.

Electric Generation, Transmission, and Distribution Diagram



FORCES INFLUENCING PRICING

Prices are expected to increase with demand over the next 20 years. The costs associated with constructing new generating facilities and extending the useful life of existing facilities will contribute to higher electricity prices. Many aging coal-fired generation units are facing retirement or shutdown earlier than planned due to restrictive environmental regulations and changing market dynamics. Construction retrofits needed to comply with environmental rules such as the U.S. Environmental Protection Agency's (U.S. EPA) Mercury and Air Toxics Standards (MATS) and updates to the Cross-State Air Pollution Rule (CSAPR) put significant upward pressure on electricity prices. Moreover, lower natural gas and renewable energy costs have made those resources more cost competitive with traditional coal-fired generation.

LONG-TERM TRENDS

Indiana has historically maintained competitive average total customer retail rates for electricity. However, variability in retail rates occurs because of a variety of factors, such as timing of rate cases both in and out of state, fluctuations in the cost of fuel, and investment costs in response to environmental mandates. A general upward trend in coal prices and a downward trend in natural gas and renewable energy prices have occurred. These trends have reduced Indiana's relative price advantage because the state has relied mostly on coal for electricity generation in the past. Changing generation resource market dynamics and aging infrastructure could reduce Indiana's relative price advantage further.

Over the next two decades, the state's electricity demand is forecasted to increase slowly. However, the number of new generating facilities is likely to be greater than the capacity added in the last two decades due to the anticipated retirement of several older coal-fired units and the replacement of the capacity with natural gas-fired generating units and renewable resources.

The State Utility Forecasting Group (SUFG) at Purdue University, established by statute to provide an independent forecast of Indiana's electricity needs, projects slow growth in both electricity sales and *peak demand*. Electricity usage is projected to grow at an annual rate of 0.88 percent over the next 20 years, and peak electricity demand is expected to grow at an average rate of 0.83 percent annually, or 190 megawatts (MW) of increased peak demand per year. These projections are lower than those in previous forecasts, primarily due to significantly lower growth in the industrial sector, which offsets minimally higher growth in the residential and commercial customer sectors. Despite slower growth in electricity sales and peak demand, the SUFG's forecast predicts Indiana electricity prices will continue to rise in real (inflation-adjusted) terms through 2021 and then slowly decrease afterwards.

CUSTOMER BILL COMPOSITION

An electric customer's bill consists of four main components:

- Base rates
- Expense adjustments (which are adjustable rate mechanisms)
- A service charge
- Capital adjustments (which are adjustable rate mechanisms)

The base rate and service charge together account for more than 70 percent of the bill. The remaining bill components include expense-related trackers, which range from 13 percent to 25 percent of the bill, and capital trackers that account for less than 5 percent of the bill.

ADJUSTABLE RATE MECHANISMS

In addition to traditional ratemaking (refer to the “Basics of Ratemaking” section), Indiana’s regulatory statutes allow for adjustable rate mechanisms (that is, trackers) for specific expenses and capital investments. Tracking mechanisms provide timely flow-through of specifically defined costs to retail rates, compared to adjustments that would occur as the result of a rate case. All requests for cost recovery require Commission approval. As a part of the review process, the Indiana Office of Utility Counselor (OUCC) and other stakeholders examine the underlying support for the requested rate adjustment and may provide evidence supporting or contesting the request in proceedings. The Commission also reviews the tracked costs before rendering a decision.

In addition to ongoing project progress and cost recovery oversight in the tracker proceedings, capital investment plans go through a preapproval process. In the statutorily required preapproval process, in which stakeholders, including consumers, are involved, the Commission must make findings regarding the estimated cost and reasonableness of the project while considering alternative solutions.

Expense Trackers

An expense tracker enables retail rates to be adjusted outside the context of a base rate case to reflect changes in operating expenses. These adjustments do not include the recovery of any financing cost, but merely allow the utility to recover what it has spent on a dollar-for-dollar basis. The pass-through of unpredictable revenues and expenses to ratepayers reduces volatility in the utility’s earnings and strengthens the utility’s credit rating. The intended goal of such trackers is recovery of expenses that are characterized as largely outside the utility’s control, volatile in nature, and materially significant.

Capital Investment Trackers

By comparison, a *capital investment tracker* enables a utility to recover statutorily defined capital investments it makes in its system—such as clean coal technology or transmission and distribution improvements—in its rates outside of a traditional base rate case. This allows the utility to timely match its investment and the compensation for that investment. These investments are subject to preapproval to ensure they offer cost-effective solutions for meeting the needs of customers. Because capital investment generally leads to related operating expenses when the project is placed into service, these trackers often combine the capital and expense aspects into a mechanism.

Credit rating agencies typically view such trackers favorably. The benefits to ratepayers from such trackers include the mitigation of rate shock and a reduction in financing costs (i.e., lower interest rates) over the life of the investment.

The following is a list of statutorily allowed trackers that have been approved by the Commission.

- Fuel Adjustment Charge
- Demand-side Management
- Regional Transmission Operator Expenses
- Opportunity Sales Sharing
- Reliability Assurance or Capacity Cost
- Emissions Allowance Costs
- Clean Coal Technology Investment and Operating Cost
- Integrated Gasification Combined Cycle
- Nuclear Life-Cycle Management Cost
- Federally Mandated *Cyber Security* Cost
- Federally Mandated Environmental Cost
- Settled Adjustments to Base Rates
- Renewable Energy Project Investment and Operation
- Transmission, Distribution, and Storage System Improvement Charge

SPECIAL CUSTOMER CONTRACTS

A customer may enter into a *special rate contract* with a utility. Typically, such special rate contracts encourage large-volume users to expand operations or locate within the service territory. They also can be used to help retain a customer. Such a contract might be necessary if the utility's rate structure does not provide a rate class that adequately meets the customer's unique needs.

A Commission-approved special contract rate is between a customer and the utility and is allowed under Indiana Code §§ 8-1-2-24 and 8-1-2-25. The utility and customer negotiate the pricing structure and provide the information to the Commission in a docketed proceeding. The evidence is reviewed by the OUCC, intervening parties,

and the Commission. The Commission must determine whether the contract is just and reasonable, practicable and advantageous to the parties, and consistent with Indiana Code chapter 8-1-2.

ALTERNATIVE REGULATORY PLANS

An alternative regulatory plan (ARP) enables a utility to adopt alternative regulatory practices, procedures, and mechanisms and establish rates and charges outside of a formal rate case. Ind. Code chapter 8-1-2.5 allows the Commission to issue orders and formulate and adopt rules and policies, including declining to exercise the Commission's authority to flexibly regulate and control the provision of energy services to the public in an increasingly competitive environment, with consideration of the interest of consumers and the public and the continued availability of safe, adequate, efficient, and economical energy service.

CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY

To bring new electric generation online, state law (Ind. Code chapter 8-1-8.5) requires all electric utilities to receive approval from the Commission through the certificate of need process. This process provides the Commission and interested parties with an opportunity to evaluate the merits of a project before it is undertaken. If the Commission approves the project, the utility is granted a certificate of public convenience and necessity (CPCN); only utilities that intend to construct, purchase, or lease a generation facility must seek a CPCN.

INVESTMENT IN UTILITY INFRASTRUCTURE AND EFFICIENCY

Indiana Code chapter 8-1-39, enacted in 2013, provided new incentives for utility companies and businesses to replace aging infrastructure and modernize their transmission and distribution systems. To encourage utility infrastructure investment, the legislature created a new tracker called the transmission, distribution, and storage system improvement charge (TDSIC). It includes projects related to the following:

- Safety
- Reliability
- System modernization
- Economic development

Previously, these costs would have been included in rates for recovery in a base rate case. Now utilities can petition for recovery on a more frequent basis. Both electric and natural gas utilities within Indiana have active TDSIC trackers.



DISTRIBUTED ENERGY RESOURCES

Utility programs are available to enable residential and commercial customers who generate their own electricity by installing renewable energy facilities, such as wind turbines or solar panels, to feed electricity they do not use back into the grid, while also relying on the electric utility as a backup provider. Indiana Code chapter 8-1-40 created two compensation structures for the excess energy these customer-generators produce: the net metering tariff, which is scheduled to phase-out over time, and the distributed generation tariff, which will succeed the net metering tariff after the phase-outs occur.

Net metering enables qualified customers to receive the full retail rate for any net excess generation over a standard monthly billing cycle, while the *distributed generation* tariff enables qualified participating customers to receive 25% above the wholesale rate for any net excess generation. If the amount of electricity the customer receives from the utility is greater than the amount delivered to the utility, the difference is charged to the customer. If the amount of electricity the customer received from the utility is less than the amount delivered to the utility, the customer receives a credit on their next bill.

Net metering is available to all customer classes and energy production facilities having a maximum capacity of 1 MW or less, until net metering reaches the threshold level or phase-out date described in Indiana Code chapter 8-1-40. The distributed generation tariff will then continue to provide opportunity for all customers to contribute toward meeting their own electricity needs while remaining connected and sending excess generation back to the public utility's system.

FEED-IN TARIFFS

Small-scale renewable energy technologies that use solar, wind, and/or *biomass* to produce energy often initially require subsidies to compete with traditional generation resources that burn coal or gas. Therefore, many utilities, with the support of their regulators, encourage the development of renewable technologies by offering to buy energy generated by customer-owned facilities at prices that make the projects economically viable. Unlike a traditional utility tariff, which specifies the price at which a ratepayer can purchase energy, a feed-in tariff specifies the price at which a utility will purchase energy generated by qualified, customer-owned facilities. Feed-in rates align costs and attributes between technologies and unit size in an effort to avoid encouraging any one renewable technology to the detriment of another. The cost of the energy purchased under a feed-in tariff is recovered from the utility's ratepayers in a manner similar to that through which fuel expenses are recovered. A balance can be struck between the desire for renewables and cost increases to customers by setting an appropriate purchase price for feed-in technologies.

IPL and NIPSCO both have been granted the ability to offer feed-in tariffs by the Commission. Both companies' programs specify a minimum individual project size (capacity), a maximum aggregate capacity available under the tariffs, and a maximum contract term of 15 years. IPL's feed-in tariff offer for new projects expired on March 30, 2013. NIPSCO's initial offer expired on Dec. 31, 2013, but the company petitioned to continue to offer feed-in tariffs. In March 2015, the Commission approved a settlement agreement that includes extension of and modifications to NIPSCO's feed-in tariff, known as Phase II. Electric utilities' tariffs can be found online at <https://www.in.gov/iurc/2974.htm>.

ELECTRIC VEHICLE DEVELOPMENT

Electricity is impacting our nation's transportation sector through its increasing use as a transportation fuel. Plug-in electric vehicles (PEVs) provide customers with an economical alternative to gasoline-fueled vehicles. Like hybrid vehicles, PEVs use battery power in addition to an internal combustion engine. Unlike traditional hybrids, however, PEVs do not depend on gasoline to recharge their batteries. PEVs instead plug into the existing electricity system using a standard electrical outlet or electric charging station to recharge the car batteries. If the battery is recharged overnight, owners can potentially take advantage of lower-cost, *off-peak* electricity prices. The number of electric vehicle charging stations continues to expand. Charging station location information is maintained on the U.S. Department of Energy's Alternative Fuels and Advanced Data Center's website at <http://www.afdc.energy.gov/locator/stations/>.

Both IPL and NIPSCO have taken steps to promote the adoption of electric vehicles (EVs). Their programs not only accommodate EV use on Indiana's roadways, but also help each utility gain insight into the potential impact of EV charging on its distribution system. IPL has installed EV charging stations in both public and private locations and provides the electricity to numerous EV charging stations in Indianapolis. NIPSCO's pilot IN-Charge Electric Vehicle Program was designed to accelerate the adoption of electric cars by reducing the cost and complexity associated with charging. The program offered free residential charging between the hours of 10 p.m. and 6 a.m. as well as incentives for businesses and organizations to install public charging stations.

ENERGY-EFFICIENCY PROGRAMS

The goal of *energy efficiency* is to reduce energy use. Reduced energy use results in direct, immediate savings for customers. In the long term, it helps utilities avoid costly capital projects that would be needed to support greater energy demand. Some common energy-efficiency strategies are as follows:

- Insulating a home, which leads to less heating and cooling energy to achieve and maintain a comfortable temperature
- Installing LED lights, or natural skylights to reduce the amount of energy required to retain the same level of illumination compared with using traditional incandescent light bulbs
- Using energy-efficient appliances

Traditionally, one of the most effective and easily installed products was compact fluorescent light bulbs. LED, or light emitting diodes, are now the most efficient form of lighting for the majority of uses. Newer lighting technologies use about 70-90 percent less energy than traditional incandescent bulbs and can last at least 15 times longer before needing to be replaced.



The choice of which space heating or cooling technology to use can have a significant impact on energy use and efficiency.

Replacing an older furnace with a new 95 percent efficient model will dramatically reduce energy use, carbon emissions, and natural gas bills. Ground source heat pumps also are an efficient and cost-effective choice. One of the easiest ways consumers can identify energy-efficient measures applicable to their specific home or business is to inquire about an energy assessment from their utility. During an assessment, an energy advisor visits the home or business to assess its energy efficiency and install energy-saving measures such as LEDs, efficient showerheads, and faucet aerators. Following the assessment, the advisor creates a report for the resident or business owner that list steps that can be taken to improve energy efficiency.

Businesses also can benefit from energy-efficiency programs by adopting a more efficient technology or production process. As it relates to buildings, a balanced approach to energy efficiency should be comprehensive to maximize savings. Issues such as the quality of the indoor environment and efficiency of space use should be considered. Building design can include energy-efficient windows, well-sealed doors, and additional thermal insulation of walls, basement slabs, and foundations to significantly reduce the loss of heated or cooled air. Advanced electronic heating and cooling systems can moderate energy consumption and improve the comfort of people in the building.

Indiana's large, investor-owned electric utilities provide energy-efficiency programs to residential, industrial, and commercial customers. Some Indiana electric utilities have been offering energy-efficiency

programs in one form or another since the 1990s. Programs became increasingly standardized across electric utilities following the 2009 Commission Order under Cause No. 42693, and legislation passed in 2014 allows electric utilities more flexibility in program offerings.

Additional legislation in 2015 required Indiana electric IOUs to seek commission approval at least once every three years of an energy efficiency plan that includes: (1) energy efficiency goals; (2) programs to achieve those goals; (3) program budgets and costs; and (4) independent evaluation, measurement, and verification of program performance. The energy efficiency goals are to be: (1) reasonably achievable; (2) consistent with the utility's integrated resource plan; and (3) designed to achieve an optimal balance of energy resources. These plans have been approved and are in place for all five IOUs. More information on available energy-efficiency programs can be found on each utility's website.

DEMAND RESPONSE PROGRAMS

Demand response programs have a long history in the electric industry, and the types of programs available have expanded in recent years. The U.S. Department of Energy defines demand response, in part, as "changes in electric usage by end-use customers from their normal consumption patterns in response to changes in the price of electricity over time." Traditionally, Indiana utilities have relied on interruptible load contracts with large industrial customers to reduce the need for utility-owned generation capacity. In other words, if a customer agrees to reduce its demand during peak use times, it will get a better overall rate.

This arrangement is often called demand response. Utilities also have increasingly deployed residential appliance demand response programs, with an emphasis on the control of air conditioners during times of highest electricity usage.

Demand response programs emphasize the relationship between customer consumption patterns during peak periods in response to high wholesale market prices or when system reliability is at risk. Indiana is among many states working to increase cost-effective customer participation in demand response programs. Demand response programs are an increasingly valuable resource whose capabilities and potential impacts are expanded by grid modernization efforts. Sensors can perceive peak load problems and utilize automatic switching to divert or reduce power in strategic places, removing the chance of overload and the resulting power failure. Advanced metering infrastructure expands the range of time-based rate programs that can be offered to customers. Smart customer systems such as in-home displays or home area networks can make it easier for consumers to change their in-home behavior and reduce peak demand, which can help reduce the need for the construction of new power plants and the use of power delivery systems reserved for peak demand use.

Duke Energy, I&M, IPL, NIPSCO, and Vectren South electric utilities all have demand response programs. To track the effectiveness of these programs, each utility must file a report with the Commission describing its experience, the costs and expenses associated with the tariffs, and the administrative charges being collected.

ELECTRIC GENERATION OVERVIEW

Before a public utility can begin building, buying, or leasing a new generation plant, it must get a certificate of public convenience and necessity (CPCN) from the Commission. Part of many resource planning efforts involves plans for new generation plants, but the need to receive a certificate of need also applies to the implementation of environmental compliance investments. Electric utilities in Indiana must create integrated resource plans (IRPs), which are long-range resource plans, to ensure that adequate supply will be available to cost-effectively and reliably meet their customers' future needs while taking into consideration technological changes affecting utility and customer resources. One important resource the Commission uses when analyzing utilities' resource planning is the SUFG at Purdue University.

STATE UTILITY FORECASTING GROUP

The SUFG was created in 1985 when the Indiana legislature mandated (as a part of the certificate of need statute) that a group be formed to develop and keep current a state-of-the-art methodology for forecasting the probable future growth of electricity usage within Indiana. SUFG produced its first set of projections in 1987 and has updated these projections at least every two years since then.

Through the years, the SUFG has provided analytical support to the Commission on various issues. The SUFG's role includes helping the Commission determine whether the requests the electric utilities make to

the Commission to construct new capacity are justified. More recently, SUFG's forecast modeling system has been used to measure the impact of proposed federal clean air legislation and several of the U.S. EPA's rules on electricity costs in Indiana relative to the rest of the nation. SUFG also has provided predictions regarding the likely impact of electricity utility-sponsored conservation programs (so-called demand-side management programs) on the need for new capacity.



The SUFG continues to forecast electricity consumption, prices, the potential for renewable energy, and future capacity needs in addition to examining the potential impacts of competition on the electricity industry.

One of the findings the Commission must make under the certificate of need statute, before a CPCN can be granted, is that construction, purchase, or lease of a generation facility is consistent with the Commission's analysis of the expansion of electric generating capacity or that the construction, purchase, or lease will be consistent with a utility-specific proposal as to the future needs for electricity to serve the people of the state or the area served by the utility. In the past, the Commission has in several CPCN proceedings adopted the SUFG's forecast as the Commission's plan for the expansion of electric generating capacity. More information about the

SUFG can be found on its website at <https://www.purdue.edu/discoverypark/sufg/>. However, following a statutory change, the Commission, through its Research, Policy, and Planning Division, has issued a statewide analysis of future electricity needs. That report can be found on the Commission's website at <https://www.in.gov/iurc/3011.htm>.

CERTIFICATE OF NEED STATUTE

A public utility may not begin construction, purchase, or lease of any facility greater than 80 MW for the generation of electricity without first obtaining a CPCN from the Commission. When determining whether a CPCN should be issued, the Commission is directed to take into account the following:

- The utility's current and potential arrangement with other utilities for the interchange of power
- The pooling of facilities
- The purchase of power
- Joint ownership of facilities
- Other methods for providing reliable, efficient, and economical electric service, including the refurbishment of existing facilities, conservation, load management, and renewable energy sources

An application for a CPCN can be granted only after a hearing and if the Commission has:

- (1)** approved the estimated construction, purchase, or lease costs;
- (2)** made a finding that either such construction, purchase, or lease will be consistent with the Commission's plan for expansion of electric generation capacity or that the construction, purchase, or lease will be consistent with a utility-specific proposal

as to the future needs for electricity to serve the people of the state or the area served by the utility; and

- (3)** made a finding that the public interest requires or will require the construction, purchase, or lease of the facility.

Essentially, the CPCN hearing process provides the Commission and interested parties with an opportunity to evaluate the merits of a project before it is undertaken.

The Commission has indicated in CPCN cases that "least-cost planning is an essential component of our Certificate of Need law". The Commission has defined "least-cost planning" as a "planning approach which will find the set of options most likely to provide utility services at the lowest cost once appropriate service and reliability levels are determined."

INTEGRATED RESOURCE PLANNING

Indiana's electric utilities are required to supply power at the lowest reasonable cost while providing safe and reliable service. To do so, utilities must engage in integrated resource planning, in which they plan on both a short-term and long-term basis by evaluating available resource alternatives to meet a utility's future electricity requirements. Each utility is required to file an IRP with the Commission. The utilities who file IRPs include:

- Duke Energy
- I&M
- IPL
- NIPSCO
- Vectren South
- IMPA
- Hoosier Energy
- WVPA

Because many changes have occurred in the electric industry since the initial IRP rule was adopted in 1995, the Commission investigated the need to update the rule and ordered that the rule be amended. Starting in 2010, an extensive rule development process was initiated, with meetings and technical conferences to solicit input from stakeholders, including consumer groups, the Indiana Office of Utility Consumer Counselor (OUCC), and the utilities. Several rounds of written comments also were requested and received, through which a Draft Proposed Rule was developed in October 2012. However, before the Draft Proposed Rule could be adopted, the rulemaking was put on hold due to Executive Order 13-03, which placed a moratorium on most rulemakings in the state. Recognizing the many improvements of the 2012 Draft Proposed Rule, the utilities voluntarily agreed to follow its requirements. Following a statutory amendment that required the utilities to submit IRPs and additional stakeholder feedback, the Draft Proposed Rule was revised and fully promulgated. The final rule became effective in 2018 and includes the following key improvements:

- A public advisory process to educate and seek input from customers and other interested stakeholders;
- Contemporary Issues Technical Conferences sponsored by Commission staff
- Using information reported to and from the relevant regional transmission organizations;
- Upgrades to modeling risk and uncertainty; and
- A report on each utility's IRP by the director designated by the Commission (currently the director of the Research, Policy, and Planning Division).

The updated IRP rule can be found at <http://iac.iga.in.gov/iac/T01700/A00040.PDF>.

Annual Director's Report on Integrated Resource Planning

Following a utility's submittal of its IRP, stakeholders are invited to provide input and raise questions or concerns. The Director's Report reviews the utility's IRP as well as stakeholder input. The Director's Report addresses the utility and stakeholder comments, concerns, and responses with the objective of encouraging continual improvements in the IRP methodologies, analytical tools, databases, and processes as required by the IRP rules.

Because the IRPs are not docketed cases, there are no ex-parte concerns that limit the opportunity for Commission staff, stakeholders, and utilities to engage in collaborative conversations that potentially can enhance the quality of the IRPs. Parties generally recognize that the IRPs provide the best opportunity to ensure the most cost-effective resource mix while achieving the required levels of reliability in a rapidly changing industry. The Director's Reports can be found on the Commission's website at <http://www.in.gov/iurc/2630.htm>.

The Integrated Resource Planning Stakeholder Process

Consistent with the IRP rules, utilities are obliged to encourage broad participation in the formulation of their IRPs. From the initial step of IRP preparation to the review of the plans, the stakeholder process is intended to provide greater understanding and, ideally, a narrowing of the differences that may arise in certificate of need, demand-side management (DSM), or other causes where the IRP is a key part of the evaluation process. In sum, the stakeholder process

should benefit the regulatory process for all involved. The IRP public participation process applies to Duke Energy, I&M, IPL, NIPSCO, and Vectren South.

To this end and consistent with the IRP rule for continual improvements, utilities have demonstrated considerable ingenuity and made significant efforts to enhance the stakeholder process. The utilities generally have held three or more public advisory sessions when an IRP is being developed; often these are supplemented by one-on-one meetings between the utility and individual stakeholder groups. Commission staff participates in all IRP public advisory meetings and meets with utilities and other stakeholders in one-on-one meetings to better understand and communicate various ideas involving IRP methodologies and the stakeholder process.

Annual Integrated Resource Planning Contemporary Issues Technical Conference

The development of an IRP is a difficult analytical challenge that requires a wide range of subject matter experts, state-of-the-art analytical tools, and databases to support the cutting-edge tools. The Contemporary Issues Technical Conference is an opportunity to invite experts to provide in-depth discussions of these difficult topics.

One of the more vexing challenges is how to account for energy efficiency, demand response, renewable energy, and customer-owned generation on as comparable a basis as possible to traditional generating resources in a concerted effort to develop the most robustly reliable and economic plan. With the expected dramatic changes in the resource mix for individual utilities, the state, the region, and the nation, it is

critical that utilities consider the broad range of potential risks such as the projected low cost of natural gas compared to coal, stringent environmental regulations, dramatic decreases in the price trajectory of renewable energy, and a paradigm change in the use of electricity that results in low—or even declining—electric use. Increasingly, Indiana utilities have recognized that they can no longer plan as if they were isolated systems (islands) and realize the necessity of coordinated planning with their RTO(s) for mutual benefit.

The development of agendas for the Contemporary Issues Technical Conferences is the responsibility of Commission staff. Staff publicly requests input from the utilities, the stakeholders, and the general public as to topics and potential speakers for each conference. The agenda, presentations, and videos of each year's Contemporary Issues Conference can be found at <https://www.in.gov/iurc/3044.htm>.

CHANGING ELECTRIC GENERATION LANDSCAPE AND IMPLICATIONS FOR INDIANA

Based on a long history of technological developments, it is reasonable to expect continual improvements in energy-efficiency technology, lower-cost renewable resources that have improved performance, enhancements in technologies that make customer-owned generation more attractive, and the potential for increased electrification of the transportation sector. All these technological innovations will have to be integrated into each utility's long-term IRP.

The primary dynamics of change at work in the energy industry lie at both the micro and macro levels: the desire by customers to actively participate in the supply/demand balance fostered by improved technology and communication capabilities and the changing economics of utility-scale generation resources. These dynamics create both opportunities and challenges.

TECHNOLOGICAL INNOVATION

The pace of technological change at an increasing number of touch points with the energy system requires a deliberate advancement in the ability of utilities to develop and communicate accurate price signals to customers. Initiatives that cost-effectively support progression to a smarter grid to facilitate enhanced communication and control are likely to be the focus of future regulatory efforts. Rate designs, which are reflective of the network industry nature of the energy distribution system, will likely be the focus of initiatives intended to provide accurate price signals so that customers can make appropriate household and business decisions. In addition, initiatives empowering customers should ensure that consideration is given to energy economics and supply assurances from both the participants and non-participants. Informed and active customers, coupled with stable and thriving investment-grade utilities, will create an optimal environment that provides the public with affordable and reliable energy services.

Customers create the demand for the energy system and in the case of electricity also might provide supply to the system. Improved metering, system manager-to-customer communication, generation capabilities, and economics foster increased customer participation in an individual's

demand/supply balance. When aggregated, such participation impacts the entire system. Improvements within the home or business that increase energy efficiency have long been available as a means for customers to reduce both their bill and the demand they place on the system. Additionally, the pace of appliance; lighting; and heating, ventilation, and air conditioning (HVAC) efficiency improvements has quickened. Further, with improvements in communication technology, utilities now can take action remotely or even automatically and provide timely price signals to customers. This allows for a dynamic pricing environment, which can serve to reduce bills and add a valuable resource to the utility in the management of the overall system. Such activity is often referred to as *demand response*.



As customer-sited electricity generation facilities continue to see improved investment and economic feasibility, the interest of customers in such assets also increases. These facilities are similar to energy efficiency and demand response in that they can remove system demand or shift it, while also injecting supply into the system at certain times. The primary effect of increased active customer participation—from a system management perspective—is that the increased number of control points

distributed throughout the delivery system adds complexity. The reliability of the system moves from a simple command-and-control type system to one in which customers acting in self-interest play a significant role. Encouraging customer action to support system goals requires the ability to communicate timely and with accurate price signals.

THE CHANGING COMPOSITION OF THE ELECTRIC GENERATION FLEET

Utility-scale generation resources also are being impacted by changing investment and operational cost economics. The abundance of natural gas supply as a result of the *fracking* revolution has led to lower and

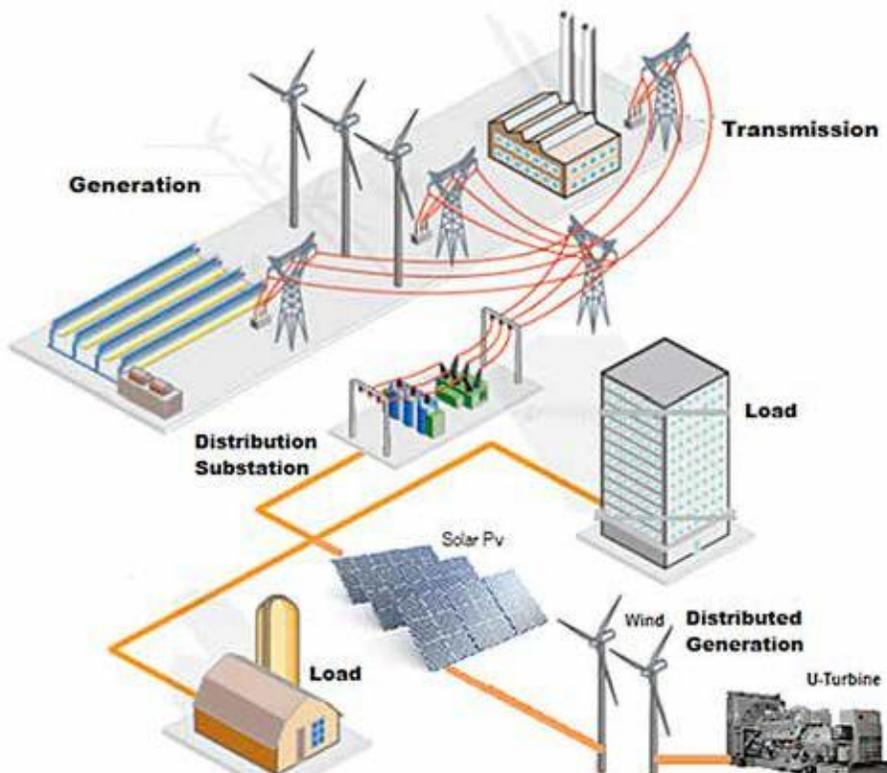
more stable natural gas prices, while mining challenges have increased coal prices over time. These fuel price changes have served to reduce the historical price advantage of large, centralized coal-fired power plants. The smaller investment footprint of a new, highly efficient natural gas combined-cycle power plant, coupled with lower natural gas prices, compares favorably with the large investment footprint of coal or nuclear-fueled power plants. The renewable generation options of wind and solar are competitive options because of the following attributes:

- Scalability
- Sizing the investment footprint into manageable packets
- Advantageous operational costs
- Favorable tax treatment they receive

The ability to scale the facilities in a way that does not sacrifice production efficiency

makes these resources—renewable, combined heat, and power natural gas-fired power plants—attractive to both large utility customers and small, independent power producers. Similar to smaller customer-owned generation, the additional required control points in the system and the fact that they are more or less outside of the system managers' direct control add complexity to the energy system.

Electric Fleet Generation Diagram Composition



FEDERAL AND REGIONAL OVERSIGHT

Indiana's electric utility lines do not stop at our borders; they cross over into all of Indiana's neighboring states. This interconnectedness allows utilities to share generation and voltage stability resources. However, connecting power systems together also means that a single significant disturbance in one system could collapse all the other systems connected to it, resulting in large multistate *blackouts*. Such was the case with the Northeastern Blackout in August 2003 that began with a tree making contact with a transmission line in Ohio.

In the 1930s, the federal government began to see the need for federal oversight and amended the Federal Power Act to create the Federal Energy Regulatory Commission (FERC). In 1968, the North American Electric Reliability Corporation (NERC) was founded to provide oversight of bulk power lines that stretch across the United States and into Canada and Mexico in response to the New York City Blackout in 1965.

FEDERAL POWER ACT

The Federal Power Act was passed in 1920 originally to regulate hydroelectricity projects and ensure they did not adversely affect commerce and transportation on America's waterways. A 1935 amendment to the act based on the idea of cooperation broadened the act's scope to include electricity and natural gas. This amendment requires the federal government and individual states to act in concert to resolve common problems facing the energy industry.

This amendment also created FERC, which regulates the transmission and wholesale of electricity and natural gas in interstate commerce and regulates the transportation of oil by pipeline in interstate commerce.

The Federal Power Act attempts to draw a clear line between federal and state authority by granting the right to regulate retail rates to the individual states. However, this line has blurred as energy markets and infrastructure have become increasingly interconnected.

To preserve state authority and protect Indiana ratepayers from unjust costs, the Commission monitors proceedings at FERC and, when necessary, intervenes with comments representative of Indiana's interests. These interests include the following:

- Retaining state jurisdictional authority over resource adequacy
- Encouraging effective transmission planning and construction along the Midcontinent Independent System Operator (MISO) and PJM Interconnection, LLC (PJM) seams
- Ensuring just and appropriate cost allocation to Indiana ratepayers for region-wide, transmission-related projects

FEDERAL ENERGY REGULATORY COMMISSION

FERC is the federal agency with authority over interstate electricity sales, wholesale electric rates, hydroelectric licensing, and natural gas and oil pipeline transportation rates. FERC also reviews and authorizes the building of liquefied natural gas (LNG) terminals, interstate natural gas pipelines, and non-federal hydropower projects.

FERC also does the following:

- Regulates the transmission and wholesale sales of electricity in interstate commerce.
- Reviews certain mergers and acquisitions and corporate transactions by electricity and natural gas companies.
- Regulates the transmission and sale of natural gas for resale in interstate commerce.
- Regulates the transportation of oil by pipeline in interstate commerce.
- Approves the siting and abandonment of interstate natural gas pipelines and storage facilities.
- Reviews the siting application for electric transmission projects under limited circumstances.
- Ensures the safe operation and reliability of proposed and operating LNG terminals.
- Licenses and inspects private, municipal, and state hydroelectric projects.
- Protects the reliability of the high-voltage interstate transmission system through mandatory reliability standards.
- Monitors and investigates wholesale energy markets.
- Enforces FERC regulatory requirements through the imposition of civil penalties and other means.
- Oversees environmental matters related to natural gas and hydroelectricity projects and other matters.
- Administers accounting and financial reporting regulations and conduct of regulated companies.

NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

U.S. utility lines also cross over into Canada and Mexico. Because of this, in 1968, NERC was established as a nonprofit international regulatory authority whose mission is to ensure the reliability of the bulk power system in North America. NERC accomplishes this by doing the following:

- Developing and enforcing reliability standards
- Annually assessing seasonal and long term reliability
- Monitoring the bulk power system through system awareness
- Educating, training, and certifying industry personnel

NERC's area of responsibility spans the continental United States; Canada; and the northern portion of Baja California, Mexico. NERC is subject to oversight by FERC and governmental authorities in Canada.

REGIONAL TRANSMISSION ORGANIZATIONS

RTOs also are known as independent system operators (ISOs) and are independent organizations that were formed to improve the economics and reliability of the transmission system and the wholesale electric markets. Prior to RTOs, individual utilities acted on their own, with very limited coordination, as if they were islands rather than part of a vast interconnected power system. The RTOs' functions of planning and controlling the high voltage transmission system improving the economics and reliability of the wholesale electric markets, in turn, provide substantial benefits to retail customers.

RTOs accomplish these functions by doing the following:

- Economically dispatching all power resources in broad regions to ensure the lowest cost combination of resources are utilized. This efficient dispatch provides transparent and appropriate wholesale and retail price signals to promote greater economic efficiency while ensuring reliable service.
- Coordinating the transmission of electric power over vast regions to reduce the occurrence of blackouts and other disruptions that plagued the industry for much of its history.
- Facilitating coordination of planning transmission and other future resources that satisfy reliability requirements that also are economically optimal. Regional planning aids the long-term resource planning by Indiana and other states. That is, resource decisions by Indiana's utilities are improved by a regional perspective.
- Integrating vast amounts of renewable resources that would have been beyond the capability of individual utilities.
- Fostering the development of new technologies.
- Facilitating the implementation of increasingly stringent environmental policies to ensure continued reliability and economic efficiency.
- Reducing the potential for market abuse by monitoring the conduct of market participants.

The RTOs have significant stakeholder-driven processes with substantial input from state commissions. States encouraged the use of independent market monitors and insisted that RTOs provide an objective analysis of their benefits and costs.

Regulated by FERC, RTOs are independent entities that monitor and control electric

reliability by coordinating the transmission of electricity and dispatching generating resources in the most economical manner possible over an entire region. Prior to the RTOs, individual utilities planned and built transmission and generating resources to meet their unique needs with little regard to the transmission and resource requirements of neighboring utilities. Similarly, the dispatching of a utility's generating resources was done with limited coordination among utilities. Inter-utility transactions were primarily for reliability, with few transactions being for mutual economic benefits.

In many instances, inter-utility transactions over significant distances were not consummated because the cost of paying transmission fees to all the intervening utilities prevented the transactions from being cost-effective. Frequently, especially during peak demand summer months, inter-utility transactions were subject to curtailment.

Following the massive blackout of the Northeastern United States in 2003 that began with a tree making contact with a transmission line in Ohio, reliability requirements became mandatory. Previously, each utility would establish its own reliability requirements consistent with its understanding of the suggested reliability standards. In all too many instances, this led to expensive excess generation capacity.

After the RTOs became fully functional, Indiana utilities told the Commission that their fear of a significant reliability problem was sharply reduced due to the RTOs. With the RTOs' broad regional oversight and control, Indiana utilities now can plan and operate their systems more reliably and economically. RTOs eliminated the "pancaking" of transmission rates and anticompetitive behavior that previously prevented long-distance transactions; this greatly enhanced inter-utility coordination for improved reliability and economics.

RTOs incorporated economic price signals at very discrete locations to reduce transmission bottlenecks (also called congestion). This approach to relieving transmission constraints was in sharp contrast to the historical reliance on the broad use of regional curtailment of transactions by edict.

RTOs take advantage of regional resource and load diversity, which has resulted in Indiana utilities having lower reserve margin requirements (that is, the amount of capacity greater than expected peak to meet unexpected contingencies). This continues to provide utilities and their customers with substantial savings. Especially for Indiana utilities that have large customers with highly variable use, such as the steel industry, the RTOs provide services that compensate for the rapid swings in load, which, previously, had been a source of reliability concerns. The mandatory reliability requirements could have resulted in significant and ongoing fines but for the routine operations of the RTO to mitigate the problems resulting from rapid fluctuations in electrical use.

RTOs, in coordination with utilities, are essential for planning the future electric system. There is a high probability that the composition of the generating fleet in Indiana, the region, and the nation will change dramatically over the next 20 years due to the following factors:

- Variations in environmental regulations
- The aging of existing generating resources
- Dramatic decreases in the cost of renewable energy options
- Increasing cost-effectiveness of energy efficiency and demand response
- Increasing development of customer-owned generation
- Projected relatively low cost of natural gas compared to other fossil fuels

RTOs also are likely to facilitate compliance with new environmental regulations. Adverse cost ramifications associated with new regulations

might be mitigated by being able to transmit additional renewable resources from regions that have abundant resources to regions that have a scarcity of renewable resources. Establishing markets that foster efficient trading, while being vigilant about maintaining or enhancing reliability, will be essential.

With increasing concerns about *cybersecurity*, the RTOs have the broad system awareness, operational control, and expertise to assist Indiana's utilities in preventing cyber breaches and mitigating effects of any attack.

There are two RTOs that operate in the state of Indiana – MISO and PJM.

Midcontinent Independent System Operator

MISO was formed by transmission owners in 1996 and is based in Carmel, Indiana. MISO's main responsibilities are to ensure the safe and reliable transfer of power in the Midwest and south central United States and fair access to the transmission system. In December 2013, MISO added several new members in the southern United States. MISO's footprint stretches from Michigan to Montana, and from Manitoba, Canada, to Louisiana and eastern Texas. MISO manages a combined footprint of 65,280 miles of transmission with total electric generation capacity throughout of approximately 196,000 MW, making it one of the largest power grid operators in the world. Indiana electric utility members of MISO are as follows:

- Duke Energy
- Hoosier Energy
- IMPA
- IPL
- NIPSCO
- Vectren South
- WVPA

PJM Interconnection, LLC

PJM Interconnection, LLC (PJM) is an RTO that coordinates the movement of wholesale electricity in all or parts of the following:

- Delaware
- Illinois
- Indiana
- Kentucky
- Maryland
- Michigan
- New Jersey
- North Carolina
- Ohio
- Pennsylvania
- Tennessee
- Virginia
- West Virginia
- The District of Columbia

Acting as a neutral, independent party, PJM operates a competitive wholesale electricity market and manages the high-voltage electricity grid to ensure reliability for more than 61 million people. I&M, WVPA, and IMPA are Indiana members of PJM. Similar to MISO, PJM also operates the transmission system and efficiently maintains reliability through a variety of market products as well as the procurement of other services.

Regional State Committees

The Commission participates in the two regional state committees that follow MISO and PJM. The Organization of MISO States (OMS) consists of 15 member states and the City of New Orleans (which has its own utility regulatory authority within Louisiana). The Organization of PJM States (OPSI) consists of 14 member states and the District of Columbia. Commissioners serve as representatives on the OMS or OPSI board of directors, and Commission staff participates in OMS and OPSI activities. Each group closely follows events at MISO and PJM; discusses issues; and develops positions that are presented in the RTO stakeholder process, filed at FERC, or sent directly to the RTO's board of directors. Commission staff regularly engages with our RTO member utilities in learning about and developing positions on relevant RTO issues.

Commissioners, attorneys from the Office of General Counsel, and staff from the Research, Policy, and Planning Division and the Energy Division are part of the Commission's RTO/FERC Team. The team represents the Commission at the relevant regional transmission organizations, specifically, MISO and PJM. It also represents the Commission in electricity-related issues and proceedings at FERC. The team is responsible for monitoring actions by RTOs and FERC that might affect Indiana's electric utilities and ratepayers. When the team determines that the Commission should intervene in a proceeding before FERC, it makes an appropriate filing to best represent Indiana's interests. These interests include retaining state jurisdictional authority over resource adequacy, encouraging effective transmission planning and construction along the MISO-PJM seams, and ensuring just and appropriate cost allocation to Indiana ratepayers for regional and interregional transmission projects.

EVALUATING CHANGES IN FEDERAL AND STATE LEGISLATION

The most significant change in the last few years has been federal environmental policies. Existing environmental regulations have caused the retirement of several older and smaller coal- and oil-fired generating units because the cost of environmental compliance upgrades have proven to be prohibitive. The status of potential carbon regulations is uncertain. However, the Commission will continue to work with state policymakers, state agencies, the SUFG, Indiana's utilities, and the RTOs to assist

state policymakers in formulating compliance strategies as environmental regulations evolve.

As do the other technical divisions, the Research, Policy, and Planning Division assists the Commission's External Affairs Division with reviewing and analyzing potential effects of legislative changes on the Commission and public policy. Over the last few sessions, the Indiana General Assembly enacted new laws affecting the following:

- Integration of demand-side management into the IRPs of utilities
- Allowing large customers to opt out of utility DSM programs
- Allowing utilities to recover costs associated with upgrading their distribution and transmission systems through trackers

REGULATORY INITIATIVES FOR ELECTRICITY

Regulation during a dynamic period of change can differ greatly from that which is reasonably applied during relatively static or more predictable periods. The change in telecommunication regulation in the past couple of decades is an example of regulatory oversight and initiatives that sought to keep pace with seemingly unending technological advancements in services to customers. The operational environment of the energy production and delivery industries has entered a period in which the pace of technological change and the resulting economics have heightened the interest in ensuring Indiana is operating under a reasonably optimal regulatory framework.

Regulation that is in the public interest fosters reliable service at an affordable price. A key feature of regulation that accomplishes these public interests is the ability to provide reasonable investor security for large investments with advantageous *economies of scale*. In effect, extending the secure recovery period of large economic investments reduces the annual installment payments from customers, in the form of rates, for the use of the investments. The more secure the future stream of returns to the investor(s), the better the credit terms they can attain. The strength of the regulators' assurance is directly related to the investors' security. The quickening pace of technological change and the constant reinvention of our economic structure that often accompanies it are difficult to reconcile with the utility industry's extended investment recovery periods. Eliminating an investment's usefulness before recovering its cost creates *stranded costs* that must be borne by either investors or customers. The regulator, bound by its legislatively granted authority, must balance the assurance needed to produce and protect the investment while not encumbering future customers with unproductive liabilities.

The image shows an industrial facility, likely a natural gas processing plant, with various pipes, valves, and large cylindrical tanks. The scene is overlaid with a teal-to-blue gradient. A large white triangle is positioned on the right side, pointing towards the center. The text 'NATURAL GAS' is prominently displayed in the upper left quadrant.

NATURAL GAS



NATURAL GAS

OVERVIEW OF REGULATION

The natural gas industry consists of three systems:

- Producers (the gathering system)
- Interstate and intrastate pipelines (the transmission system)
- Local distribution companies (LDCs) (the distribution system)

Interstate pipelines, regulated by the Federal Energy Regulatory Commission (FERC), carry natural gas across state boundaries. Intrastate pipelines, regulated by state commissions, carry natural gas within state boundaries. States, including Indiana, that have certified pipeline safety programs are delegated federal authority by the U.S. Department of Transportation to conduct inspections, investigate incidents, and enforce state and federal safety regulations. Other federal industries involved in the natural gas industry include:

- Federal Trade Commission
- U.S. Department of Energy
- U.S. Environmental Protection Agency
- U.S. Securities and Exchange Commission

In Indiana, the Commission regulates the rates, charges, and terms of service for intrastate pipelines and LDCs. Through its Pipeline Safety Division, the Commission enforces state and federal regulations for all intrastate natural gas facilities. Additionally, the

Commission reviews gas cost adjustments (GCAs), financial arrangements, and service territory requests and conducts investigatory proceedings. It also analyzes various forms of alternative regulatory proposals, such as rate *decoupling*, rate adjustment mechanisms (otherwise known as trackers), and customer choice initiatives.

TYPES OF REGULATED NATURAL GAS UTILITIES

The Commission has regulatory authority over 16 natural gas distribution utilities in Indiana, with each of the utilities falling under one of the following three utility types.

Investor-owned utilities (IOUs) are private businesses funded by their shareholders through debt (bonds) and equity (stocks). Each IOU is granted a specific service territory and operates within their service territory. Therefore, to ensure safe, affordable, and reliable service for customers, the Commission regulates the rates and charges of each of the IOUs. This regulation includes an opportunity (but not a guarantee) for the utility to earn a reasonable return on investment. The Commission currently regulates 14 natural gas IOUs.

Municipal utilities are owned and managed by the cities and towns where they operate. They rely on the rates they collect to fund the operation of the utility (operations and maintenance expenses and debt service) and do not have access to equity capital like IOUs. Although all of Indiana's natural gas municipal utilities have withdrawn from the Commission's rate and charges authority, Citizens Gas is treated as a municipal utility for regulatory purposes due to its public charitable trust classification. All municipal utilities remain under the jurisdiction of the Commission's

Pipeline Safety Division regardless of its withdrawal status from the Commission's jurisdiction for rates and charges.

Nonprofit utilities are businesses that provide a benefit to the public by offering utility service in areas where utility service is needed. Much like the municipals, nonprofit utilities rely on the rates they collect to fund their operations, they do not have access to equity capital, and are subject to the jurisdiction of the Commission's Pipeline Safety Division. The state of Indiana currently has one nonprofit natural gas utility, Valley Rural Utility Company, which serves customers in the Hidden Valley Lake area in southeastern Indiana.

Currently Regulated Natural Gas Utilities

Boonville Natural Gas Corporation

Boonville Natural Gas Corporation is an IOU that provides natural gas service to approximately 4,900 customers in rural and municipal areas of Warrick County in Indiana. Its sole interstate supplier of natural gas is Texas Gas Transmission, LLC. Boonville files semiannual GCAs under Cause No. 37369.

Community Natural Gas Company, Inc.

Community Natural Gas is an IOU that provides natural gas service to approximately 7,400 customers in Dubois, Gibson, Greene, Monroe, Posey, Owen, Spencer, Sullivan, and Warrick Counties in Indiana. It files quarterly GCAs under Cause No. 37488.

Citizens Gas & Coke Utility

Citizens Gas ownership structure is unique in that it is a public charitable trust. Citizens Gas is one of the four biggest natural gas utilities in Indiana, providing natural gas service to approximately 276,000 customers in central and north central portions of Indiana. It files quarterly GCAs under Cause No. 37399.

Fountaintown Gas Company, Inc.

Fountaintown Gas is an IOU that provides natural gas service to approximately 3,600 customers in Decatur, Hancock, Henry, Rush, and Shelby Counties in Indiana. It files quarterly GCAs under Cause No. 37913.

Indiana Gas Company, Inc. (Vectren North)

Indiana Gas is one of two natural gas IOUs in Indiana owned by Vectren, a CenterPoint Energy Company. Indiana Gas is one of the four biggest natural gas utilities in Indiana, providing natural gas service to approximately 608,000 customers in central and north central portions of Indiana. It files quarterly GCAs under Cause No. 37394.

Indiana Natural Gas Corporation

Indiana Natural Gas is an IOU that provides natural gas service to approximately 7,900 customers throughout southern Indiana including Brown, Bartholomew, Crawford, Dubois, Harrison, Lawrence, and Orange Counties. It files quarterly GCAs under Cause No. 37418.

Indiana Utilities Corporation

Indiana Utilities is an IOU that provides natural gas service to approximately 3,300 customers in Floyd and Harrison Counties in southern Indiana. It files semi-annual GCAs under Cause No. 37357.

Midwest Natural Gas Corporation

Midwest Natural Gas is an IOU that provides natural gas service to approximately 14,200 customers in Clark, Daviess, Greene, Jackson, Jennings, Orange, Scott, and Washington Counties in southern Indiana. It files quarterly GCAs under Cause No. 37440.

Northern Indiana Public Service Company LLC (NIPSCO)

NIPSCO is an IOU that provides natural gas service to approximately 821,000 customers

across the northern third of the state in over 30 counties. NIPSCO is the largest natural gas distribution company in the state. It files quarterly GCAs under Cause No. 43269.

Ohio Valley Gas Corporation & Ohio Valley Gas, Inc.

Ohio Valley Gas is an IOU that provides natural gas service to approximately 28,500 customers in Clay, Dearborn, Dubois, Fayette, Franklin, Greene, Jay, Perry, Pike, Randolph, Ripley, Rush, Spencer, Sullivan, Union, Vigo, Warrick, and Wayne Counties in Indiana. It files quarterly GCAs under Cause No. 44147.

South Eastern Indiana Natural Gas Company, Inc.

South Eastern Indiana Natural Gas is an IOU that provides natural gas service to approximately 2,000 customers in Dearborn and Ripley Counties in southeastern Indiana. It files quarterly GCAs under Cause No. 37785.

Southern Indiana Gas & Electric Company (Vectren South or SIGECO)

SIGECO is one of two natural gas IOUs in Indiana owned by Vectren, a CenterPoint Energy Company. It provides natural gas service to approximately 112,800 customers in Daviess, Gibson, Knox, Martin, Pike, Posey, Spencer, Vanderburgh, and Warrick Counties in Indiana. It files quarterly GCAs under Cause No. 37366.

Switzerland County Natural Gas Company, Inc.

Switzerland County is an IOU that provides natural gas service to approximately 700 customers in Jefferson and Switzerland Counties in southeastern Indiana. It files semiannual GCAs under Cause No. 37791.

Sycamore Gas Company

Sycamore Gas is an IOU that provides natural gas service to approximately 6,400 customers in Dearborn, Franklin, and Ohio Counties in Indiana. It is the wholesale provider of gas for Aurora Municipal Gas. It files quarterly GCAs under Cause No. 37368.

Service Territories

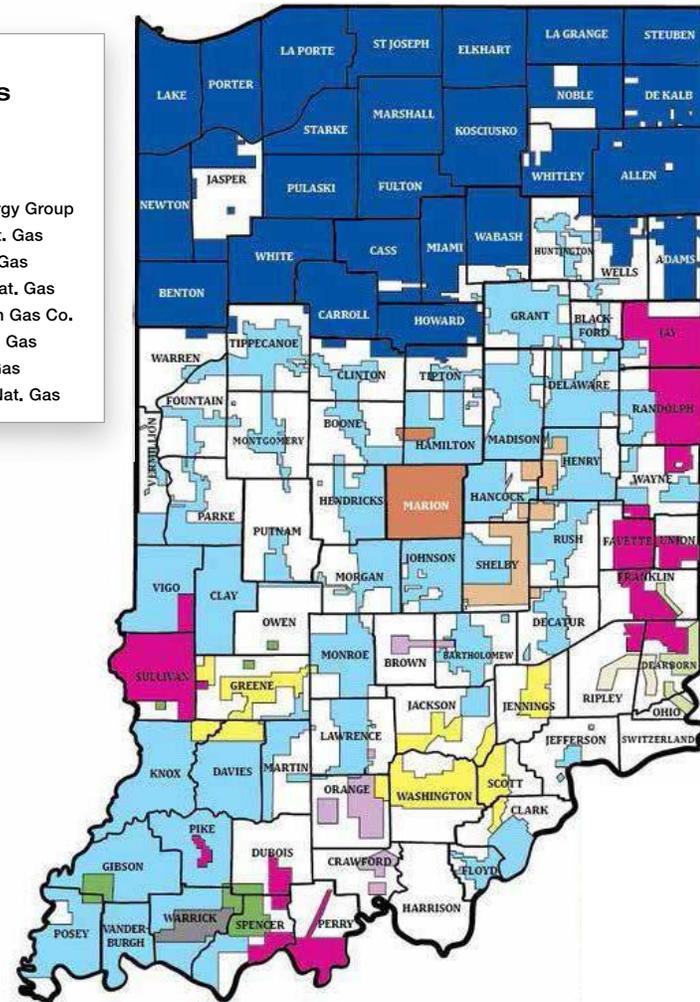
- NIPSCO
- Vectren
- Sycamore
- Citizens Energy Group
- Boonville Nat. Gas
- Indiana Nat. Gas
- SE Indiana Nat. Gas
- Fountaintown Gas Co.
- Midwest Nat. Gas
- Ohio Valley Gas
- Community Nat. Gas

Valley Rural Utility Company

Valley Rural provides natural gas service to approximately 600 residential customers in Dearborn County, Indiana. Valley Rural operates under an alternative regulatory plan. Valley Rural has a Management Agreement with Utility Pipeline, Ltd., who assists with all of its natural gas operations. It files annual GCAs under Cause No. 42115.

**Westfield Gas, LLC
(Citizens Gas of Westfield)**

Westfield Gas is an IOU that provides natural gas service to approximately 5,000 customers in Boone and Hamilton Counties in Indiana. It files quarterly GCAs under Cause No. 37389.



HOW IT WORKS

Three main systems are involved in getting natural gas from the ground to customers' homes. First is the production system in which the natural gas is turned into a form that customers can use. Next is the transmission system, which includes interstate and intrastate pipelines. Last is the distribution system that delivers the gas to customers.

PRODUCTION SYSTEM

The production of natural gas begins with raw natural gas extracted at the wellhead, where initial purification occurs before the gas enters the low-pressure, small-diameter pipelines of the gathering system. The natural gas is then re-purified at a processing plant. Purified natural gas consists of approximately 90 percent methane, compared to raw natural gas that is generally 70 percent methane combined with a variety of other compounds. Natural gas is required to meet certain standards for quality and safety reasons before it is released into the pipeline system.

TRANSMISSION SYSTEM

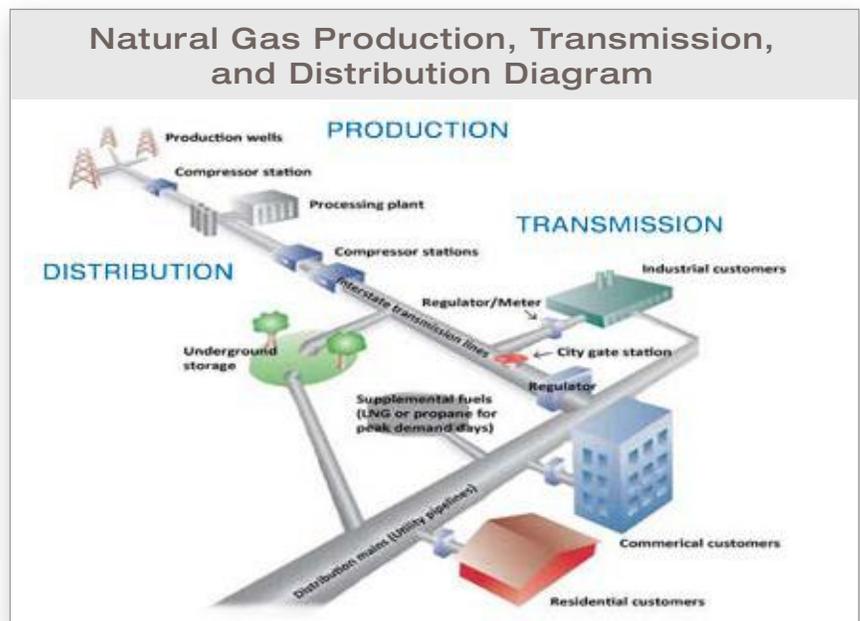
The transmission system includes interstate and intrastate pipelines that carry natural gas from producing regions throughout the United States to LDCs, industrial customers, and electric generation customers. The vast majority of natural gas consumed in Indiana is produced out of state. Because only a small portion is produced in Indiana, the state is very dependent on the gas transmission system to carry natural gas from producing regions of the country into the state.

There are two intrastate pipelines currently under the Commission's jurisdiction:

- Ohio Valley Hub Pipeline (OVH), which is a 9.2-mile pipeline located in Knox County, Indiana that connects two interstate pipelines (Texas Gas Transmission and MGT) to the Monroe City Gas Storage Field owned by CenterPoint Energy Company. The Commission has jurisdiction over OVH's pipeline operations, services, and rates.
- Citizens Gas Pipeline Assets, LLC (Citizens Gas Pipeline), which is a 25-mile pipeline running west to east that connects the Midwestern Gas Transmission (MGT) interstate pipeline in Sullivan, Indiana, to Citizens Gas's underground storage facility in Greene County, Indiana. The Citizens Gas Pipeline was previously owned and operated by Heartland Gas Pipeline, LLC. However, in Cause No. 45081, the Commission approved the transfer of the Heartland Gas Pipeline to Citizens Gas, who operates the Citizens Gas Pipeline for its exclusive use and other requests related to the transfer.

DISTRIBUTION SYSTEM

Gas moves through the transmission system and enters the distribution system, where LDCs deliver gas to their customers on either a bundled basis (that is, commodity and transportation) or unbundled basis (that is, the customer buys gas from a producer or marketer and pays the LDC to transport the gas from the *city gate* to the customer's facilities). Note that the city gate is the delivery point where the natural gas is transferred from a transmission pipeline to an LDC. Customers include the residential, commercial, and industrial classes.



PRICING AND ECONOMICS FOR NATURAL GAS

The major demand forces influencing the price of natural gas are oil prices, economic growth, and weather; the major supply forces influencing the price of natural gas are variations in natural gas production levels, net imports, and storage levels.

FORCES INFLUENCING PRICING

The supply of and demand for natural gas impacts pricing for the commodity. Oil prices, economic growth, and weather are the primary factors driving demand for natural gas. When demand is high and supply is low, prices tend to rise. Conversely, when demand is low and supply is high, prices tend to decline.

Because natural gas is a cleaner burning fuel than coal, it often is used as an alternative fuel source for electricity generation, especially considering current low gas prices and environmental regulations. New technology and lower extraction costs have led to increased drilling for nonconventional gas supplies (e.g., coal bed methane, shale gas, and tight sands). The recovery of sources of gas previously considered unrecoverable has contributed significantly to supply and has leveled swings in prices. The main factors influencing natural gas supply include variations in natural gas production levels, net imports, and storage levels. Currently, the supply for natural gas is plentiful, which puts downward pressure on prices.

LONG-TERM TRENDS

Indiana has consistently performed well in comparison to other states for residential and commercial delivered (bundled) natural gas prices. In recent years, the supply has outweighed any upticks in demand. Consumption in the residential sector has been decreasing despite economic growth, as overall demand is reduced by population shifts, improvements in appliance efficiency, and increased use of electricity for home heating.

CUSTOMER BILLS

A natural gas customer's bill includes the following:

- Commodity costs
- Distribution costs
- A service charge
- Adjustable rate mechanisms (otherwise known as trackers)

Typically, during the winter months, the majority of a customer's bill is the commodity cost (i.e., natural gas); it usually accounts for more than 65 percent of the bill. During the summer months when customers consume less natural gas, a customer's bill has a higher percentage of distribution costs. Trackers constitute a small portion of a customer's bill (approximately 5 percent).

ADJUSTABLE RATE MECHANISMS

In addition to traditional ratemaking (see the "Basics of Ratemaking" section), Indiana's regulatory statutes allow for rate adjustment mechanisms for specific expenses and capital investments. Rate adjustment mechanisms provide timely flow-through of specifically defined costs to retail rates, compared to adjustments that would occur as the result of a rate case. All requests for cost recovery require Commission approval. As a part of the review process, the Indiana Office of Utility Consumer Counselor (OUCC) and other stakeholders examine the underlying support for the requested rate adjustment and may provide evidence supporting or contesting the request in proceedings. The Commission also reviews the tracked costs before rendering a decision.

In addition to ongoing project progress and cost recovery oversight in the tracker



proceedings, capital investment plans go through a preapproval process. In the statutorily required preapproval process, in which stakeholders, including consumers, are involved, the Commission must make findings regarding the estimated cost and reasonableness of the project while considering alternative solutions.

Expense Adjustable Rate Mechanisms

An expense tracker enables retail rates to be adjusted outside the context of a base rate case to reflect changes in operating expenses. These adjustments do not include the recovery of any financing cost, but merely allow the utility to recover what it has spent on a dollar-for-dollar basis. The pass-through of unpredictable revenues and expenses to ratepayers reduces volatility in the utility's earnings and strengthens the utility's credit rating. The intended goal of such trackers is recovery of expenses that are characterized as largely outside the utility's control, volatile in nature, and materially significant.

Capital Investment Rate Adjustment Mechanisms

By comparison, a capital investment tracker enables a utility to recover statutorily defined capital investment it makes in its system—such as clean coal and energy generation or transmission and distribution improvements—in its rates outside of a traditional base rate case. This allows the utility to timely match its investment and the compensation for that investment. These investments are subject to preapproval to ensure they offer cost-effective solutions for meeting the needs of customers. Because capital investment generally leads to related operating

expenses when the project is placed into service, these trackers often combine the capital and expense aspects into a single rate adjustment mechanism.

Credit rating agencies typically view such trackers favorably. The benefits to ratepayers from such trackers include the mitigation of rate shock and a reduction in financing costs (i.e., lower interest rates) over the life of the investment.

The following is a list of statutorily allowed trackers that have been approved by the Commission.

- Gas Cost Adjustment
- Transmission, Distribution, and Storage System Improvement Charge
- Normal Temperature Adjustment
- Energy Efficiency Funding Component
- Sales Reconciliation Component
- Pipeline Safety Adjustment
- Universal Service Fund
- Customer Benefit Distribution Charge

SPECIAL CUSTOMER CONTRACTS

A customer may enter into a special rate contract with a utility. Typically, such special rate contracts encourage large-volume users to expand operations or locate within the service territory. They also can be used to help retain a customer. Such a contract might be necessary if the utility's rate structure does not provide a rate class that adequately meets the customer's unique needs.

A Commission-approved special contract rate is between a customer and the

utility and is allowed under Indiana Code §§ 8-1-2-24 and 8-1-2-25. The utility and customer negotiate the pricing structure and provide the information to the Commission in a docketed proceeding. The evidence is reviewed by the OUCC, intervening parties, and the Commission. The Commission must determine whether the contract is just and reasonable, practicable and advantageous to the parties, and consistent with Ind. Code chapter 8-1-2. Additionally, if the utility has already established a rate class for special contracts, the Commission must verify the proposal meets all of the conditions of the special contract tariff.

ALTERNATIVE REGULATORY PLANS

An *alternative regulatory plan (ARP)* enables a utility to adopt alternative regulatory practices, procedures, and mechanisms and establish rates and charges outside of a formal rate case. Ind. Code chapter 8-1-2.5 allows the Commission to issue orders and formulate and adopt rules and policies, including declining to exercise the Commission's authority to flexibly regulate and control the provision of energy services to the public in an increasingly competitive environment, with consideration of the interest of consumers and the public and the continued availability of safe, adequate, efficient, and economical energy service.

CERTIFICATE OF TERRITORIAL AUTHORITY

The customer base for natural gas utilities is determined through Commission-authorized service territories. The service areas that

natural gas utilities serve do not encompass the whole state because alternatives to natural gas (e.g., propane) exist in rural areas. If a natural gas utility wants to expand its service area, it must petition the Commission to serve a particular area. The utility must prove it meets all the statutory requirements to obtain a Certificate of Territorial Authority (CTA).

Unlike the electric service areas that are exclusive to the utility providing the service, natural gas service territories are not exclusive, which can result in more than one utility potentially providing service in the same area. When a natural gas utility wants to provide service in an area already being served by another natural gas utility, the utility requesting to provide service, the utility currently providing service, and the Commission must come to an agreement regarding who will provide service. Ultimately, having one natural gas utility serve a particular area avoids costly duplicate infrastructure and service provider confusion for customers. Utilities may also petition the Commission to modify their service territories.

INVESTMENT IN UTILITY INFRASTRUCTURE AND EFFICIENCY

Indiana Code chapter 8-1-39, provides incentives for utility companies and businesses to replace aging infrastructure and modernize their transmission and distribution systems. To encourage utility infrastructure investment, the legislature created a rate adjustment mechanism called the transmission, distribution, and storage

system improvement charge (TDSIC). It includes projects related to the following:

- Safety
- Reliability
- System modernization
- Economic development

Previously, these costs would have been included in rates for recovery in a base rate case. Now utilities can petition for recovery on a more frequent basis. Both electric and natural gas utilities within Indiana have active TDSIC trackers.

ENERGY EFFICIENCY

With regard to natural gas utilities, Citizens Gas, Citizens Gas of Westfield, NIPSCO, Vectren North, and Vectren South have offered energy-efficiency programs in Indiana since the mid- to late 2000s. Indiana natural gas and electric utilities have been working together via an energy-efficiency program administrator to provide joint program offerings to Hoosier ratepayers. These programs typically offer energy-saving opportunities to residential and small business natural gas customers in the form of these:

- Appliance rebates
- School education programs
- Weatherization activities
- Builder incentives for energy-efficient new construction
- Custom programs for businesses
- Online tools to perform energy audits and bill analysis

Citizens Gas suspended its energy-efficiency programs as of June 30, 2016.

REGULATORY INITIATIVES FOR NATURAL GAS

Regulation during a dynamic period of change can differ greatly from that which is reasonably applied during relatively static or more predictable periods. The operational environment of the energy production and delivery industries has entered a period in which the pace of technological change and the resulting economics have heightened the interest in ensuring Indiana is operating under a reasonably optimal regulatory framework.

Regulation that is in the public interest fosters reliable service at an affordable price. A key feature of regulation that accomplishes these public interests is the ability to provide reasonable investor security for large investments with advantageous economies of scale. In effect, extending the secure recovery period of large economic investments reduces the annual installment payments from customers, in the form of rates, for the use of the investments. The more secure the future stream of returns to the investor(s), the better the credit terms they can attain. The strength of the regulators' assurance is directly related to the investors' security. The quickening pace of technological change and the constant reinvention of our economic structure that often accompanies it are difficult to reconcile with the utility industry's extended investment recovery periods. Eliminating an investment's usefulness before recovering its cost creates stranded costs that must be borne by either investors or customers. The regulator, bound by its legislatively granted authority, must balance the assurance needed to produce and protect the investment while not encumbering future customers with unproductive liabilities.



WATER AND WASTEWATER DIVISION



WATER AND WASTEWATER DIVISION

OVERVIEW OF REGULATION

The Commission's primary responsibility regarding water and wastewater utilities is to regulate rates and charges and the quality of service for the utilities under its authority. The Commission regulates the following:

- Rates and terms and conditions of investor-owned water and wastewater utilities
- Rates of municipal water utilities
- Rates and charges of conservancy districts that make an election to provide water service under Indiana Code § 14-33-20 in their district plans
- Rates and terms and conditions for not-for-profit water and wastewater utilities

The types of items addressed in terms and conditions include these:

- Meter accuracy and testing
- Customer service relationships, including bill requirements and adjustments
- Creditworthiness and deposits
- Disconnection of service
- Rules defining the amount customers are required to pay to extend mains

TYPES OF REGULATED WATER AND WASTEWATER UTILITIES

A new water or wastewater utility that forms as an investor-owned, not-for-profit, or municipal water utility is required to come before the Commission, which will determine the following:

- Whether its formation is in the public interest
- Whether the entity will have the financial, managerial, and technical expertise to operate the utility
- How the utility's initial rates and charges will be established

The sizes of water and wastewater utilities vary greatly, from more than 300,000 customers for Citizens Water (a water utility serving Indianapolis) and CWA Authority, Inc. (a wastewater utility serving Indianapolis) to fewer than 100 customers, like Wells Homeowners Association, which has 34 water customers.

The Commission has territorial authority over investor-owned and not-for-profit wastewater utilities. In addition to the necessary determinations listed previously, these utilities are required to obtain a Certificate of Territorial Authority (CTA) to be authorized to provide utility service in a defined area.

For conservancy districts, the Commission has authority over the rates and charges of wastewater utility conservancy districts (set by the board of directors) for customers the district might serve outside its designated boundaries. The Commission has authority over a district's water rates if the district has made an election in its district plan to provide service under Ind. Code § 14-33-20-4.

The Commission has statutory authority to resolve territorial disputes between municipal water and wastewater utilities regardless of whether the utility is otherwise regulated by the Commission (Ind. Code chapter 8-1.5-6).

As mentioned earlier, the Commission's authority to regulate a water or wastewater utility depends on the type of utility and whether that utility has withdrawn from, or "opted out" of, all or part of the Commission's authority:

- Indiana statutes allow municipal water utilities to withdraw from Commission authority over rates and charges and financing. Considering the Commission has statutory authority over municipal water utilities only for rates and charges and financing, withdrawal of these utilities results in the Commission having limited authority over them.
- Water conservancy districts with fewer than 2,000 customers also can withdraw from the Commission's authority.
- Indiana statutes further allow not-for-profit water and wastewater utilities to withdraw from Commission authority over their rates and charges, financing, rules (terms and conditions), and annual reporting requirements. However, not-for-profit utilities organized after June 30, 2018, cannot opt out until 10 years have passed from the organization date.
- Investor-owned water and wastewater utilities with fewer than 300 customers are able to withdraw from the Commission's jurisdiction. If organized after June 30, 2018, the utility cannot opt out until 10 years have passed from its organization date.
- Certain utilities, such as municipal wastewater utilities, have never been under the Commission's ratemaking authority; however, the Commission has limited authority regarding disputes between municipal wastewater utilities.

- If a municipal water or wastewater utility charges higher rates (15-50% higher) to customers located outside the municipal boundaries, those customers or the municipality may petition the Commission for review and/or approval of those rates, according to Ind. Code § 8-1.5-3-8.3.

The number of water and wastewater utilities under Commission authority or jurisdiction is relatively small. The Commission's website (<http://www.in.gov/iurc/2338.htm>) contains lists of water and wastewater utilities under Commission jurisdiction, as well as lists of those that have withdrawn.

Although the Commission regulates only a fraction of the water utilities, these entities serve approximately 45 percent of Indiana's water residential customers. This is because the water systems no longer under the Commission's authority serve just a small number of customers, while the largest regulated water utilities primarily provide service to more densely populated urban areas.

For wastewater, the Commission regulates utilities that serve only about 15 percent of the state's wastewater residential customers. This is because the bulk of Hoosier customers are served by municipal wastewater utilities, over which the Commission has limited authority.

Conservancy Districts

A conservancy district is created when landowners, through a circuit court process, organize a special taxing district (a local unit of government) to solve a variety of specific local issues including providing water and wastewater service. It has a board of directors that oversees the utility.

Investor-owned Utilities

An investor-owned utility is owned by shareholders and is operated for a profit.

It can be a private company where only a selection of people can invest, a publicly traded company where anyone can be a shareholder, or a subsidiary of a larger private or public company.

Municipal Utilities

A municipal utility is any city or town that acquires, owns, or operates its water or wastewater utility. The operations are usually under a department of public works, which is overseen by a legislative body (common council or town council) and executive (mayor or president of town council).

Not-for-profit Utilities

A not-for-profit utility is a public water or wastewater utility that does not have shareholders and does not engage in any activity for the profit of its trustees, directors, incorporators, or members. It has a board of directors that oversees the utility.

Regional Districts

Regional water and wastewater districts are a form of local government that provide drinking water or wastewater service within an established service area. Decisions about forming new regional districts are initiated at the local level and are approved by IDEM. Regional districts have a board of trustees that oversees the utility.

Water Authorities

A water authority, which is a political subdivision of the state, is created when a not-for-profit water utility adopts a resolution by its board of directors that reconstitutes the not-for-profit utility as a water authority.

INDIANA'S STRUCTURE AND REGULATION

Although all water and wastewater utilities are overseen by the United States Environmental Protection Agency (U.S. EPA), there is not one state agency that regulates all water and wastewater utilities. Indiana's water and wastewater utilities are regulated by four state agencies: the Commission, Indiana Department of Environmental Management (IDEM), Indiana State Department of Health (ISDH), and Department of Natural Resources (DNR). The Commission mainly regulates the economic aspects of a utility, ensuring that its rates are reasonable. IDEM and

ISDH oversee water quality, and DNR has oversight on water well construction and monitors Indiana's groundwater levels. While the Indiana Finance Authority (IFA) is not generally viewed as a regulator, the IFA's role in the water industry has greatly expanded in recent years from primarily a financing agency to one that leads studies and conducts planning for the water industry statewide.

The following table shows each type of water and wastewater utility, the specific governmental agency that regulates it, and the authority over that type of utility. This section provides more details on IDEM, IFA, ISDH, and DNR, and their roles regarding water and wastewater utilities.



State Agency Authority over Water and Wastewater Utilities

Type of Utility	IDEM					IURC							DNR			ISDH
	NPDES Permitting ¹	Construction Permits	Operator Certification	Monthly Report of Operation	Oversee Entity Start-up	Rates and Charges	Rules and Regulations	Territory Authority (CTA)	Annual Report	Ability to Withdraw from Jurisdiction	No Jurisdiction	Oversee Entity Start-up	Significant Water Withdrawal Reporting	Dam/Levee Permitting (if applicable)	Oversee Entity Start-up	Permitting On-site Sewage Systems (if applicable)
Investor-Owned Water		✓	✓	✓		✓	✓		✓	✓ ²		✓	✓	✓		
Investor-Owned Wastewater	✓	✓	✓	✓		✓	✓	✓	✓	✓ ²		✓				✓
Not-for-Profit Water		✓	✓	✓		✓	✓		✓	✓ ³		✓	✓	✓		
Not-for-Profit Wastewater	✓	✓	✓	✓		✓	✓	✓	✓	✓ ³		✓				✓
Water Authority		✓	✓	✓		✓	✓		✓	✓			✓	✓		
Municipal Water		✓	✓	✓		✓			✓	✓		✓	✓	✓		
Municipal Wastewater	✓	✓	✓	✓							✓					✓
Regional Water District		✓	✓	✓	✓						✓		✓	✓		
Regional Sewer District	✓	✓	✓	✓	✓						✓ ⁴					✓
Conservancy Water District		✓	✓	✓		✓ ⁵			✓ ⁵	✓			✓	✓	✓	
Conservancy Sewer District	✓	✓	✓	✓							✓				✓	✓

¹ A majority of wastewater utilities utilize a treatment system where effluent is discharged into an open stream and an NPDES permit is required. A small number of wastewater utilities use an onsite treatment system permitted by ISDH.

² Investor-owned utilities with 300 or fewer customers can opt out of the IURC's jurisdiction, per I.C. § 8-1-2.7-1.3. If organized after June 30, 2018, the utility cannot opt out until 10 years have passed from its organization date.

³ Not-for-profit utilities organized after June 30, 2018 cannot opt out until 10 years have passed from the organization date.

⁴ Campgrounds served by regional sewer districts have the ability to appeal to the Commission's Consumer Affairs Division for an informal review of a disputed matter, per I. C. § 13-26-11-2.1.

⁵ IURC has jurisdiction over water conservancy districts that make an election to provide water service under I. C. § 14-33-20 in its District Plan. Water conservancy districts with fewer than 2,000 customers can opt out of the IURC's jurisdiction, per I. C. § 8-1-2.7-1.3. The IURC has jurisdiction over wastewater conservancy district's rates for customers outside the District's boundaries.

Note: This table provides an overview of state agency authority over water and wastewater utilities to offer a concise presentation. Thus, limitations exist. For instance, many wastewater utilities send their effluent to another utility for treatment and are not required to obtain an NPDES permit. Similarly, many water utilities purchase their entire water supply and would not be required to report significant water withdraws to DNR. Also, the table does not identify every aspect of each agency's authority.

IDEM'S ROLE IN REGULATING WATER QUALITY

Utilities that provide drinking water and treat wastewater are subject to federal regulations under the U.S. EPA. Drinking water quality regulation falls under the Safe Drinking Water Act (SDWA), passed in 1974 and amended in 1986 and 1996. In addition to protecting drinking water and its sources—rivers, lakes, reservoirs, springs, and ground water wells—it also gives the U.S. EPA authority to set national health-based standards for drinking water. The SDWA originally was focused on treatment and looked primarily at what was delivered to the customer's tap, but has grown in scope over the years. In fact, the 1996 amendments greatly enhanced the existing law by recognizing source water protection, operator training, funding for water system improvements, and public information as important components of safe drinking water. New lead and copper rules and the revised total coliform rules put emphasis on the distribution system for both water mains and service connections.

Wastewater regulation falls under the Federal Water Pollution Control Act, or Clean Water Act (CWA), most recently amended in 1987. In 1948, Congress passed the Water Pollution Control Act, which later became known as the CWA. It authorized the Surgeon General of the Public Health Service to develop programs aimed at eliminating or reducing the pollution of interstate waters and tributaries and improving the sanitary condition of surface and underground waters. Similar to the SDWA, the CWA has been amended multiple times, most notably in 1972, which is when permitting became standard. For an entity to discharge any pollutant into a waterway, it first must obtain

a permit through the U.S. EPA's National Pollutant Discharge Elimination System (NPDES) permit program.

IDEM's Office of Water Quality (OWQ) is delegated by the U.S. EPA to carry out the requirements of the SDWA and the CWA. The OWQ is divided into several branches, including, but not limited to:

- Drinking Water Branch
- Wastewater Permitting Branch
- Wastewater Compliance Branch
- Surface Water, Operations and Enforcement Branch

The Drinking Water Branch

IDEM's Drinking Water Branch includes two primary program areas: the Public Water Supply Supervision Program and the Ground Water Protection Program. The Public Water Supply Program focuses on ensuring the quality of water provided for drinking purposes through public water supply systems, while the Ground Water Protection Program focuses on protecting the resource—that is, groundwater—from which a large percentage of drinking water is derived. The Drinking Water Branch includes a group of inspectors who conduct onsite reviews of water utilities, a compliance section that tracks drinking water quality and requires corrective actions if contaminants are detected, a capacity development and operator certification section that provides technical assistance and oversees the operator and backflow tester certification programs, and a permit section that issues construction permits for the construction of drinking water facilities including water mains, wells, pumps, chemical additions, storage facilities, and water treatment plants.

The Permits Branch

IDEM's Permits Branch is dedicated to wastewater and implements the federal NPDES Permit Program including the Combined Sewer Overflow (CSO) program. An NPDES permit is required for any point source discharge of pollutants into surface water. The NPDES permit establishes limits on pollutants that can be discharged and defines monitoring, reporting, and management requirements. In addition to the NPDES permit program, the Permits Branch operates a state program that issues construction permits for the construction of wastewater treatment facilities including wastewater main extensions, lift stations, wastewater treatment plants, and pretreatment plants.



The Compliance Branch

The Compliance Branch of OWQ also is dedicated to wastewater and includes inspectors who conduct onsite reviews of wastewater utilities. This branch also collects, enters, and evaluates compliance data submitted by permit holders and manages the state's Pretreatment Program and Sewer Connection Ban Program. The Compliance Branch also is responsible for certifying wastewater operators that operate wastewater utility facilities. This responsibility includes testing and continuing education.

Surface Water, Operations and Enforcement Branch

The Surface Water, Operations and Enforcement Branch manages budgeting and purchasing for OWQ as well as the Stormwater and Wetlands program and the Enforcement Section. Stormwater and wetlands staff administer the programs overseeing construction and industrial stormwater runoff, construction in wetlands and the Municipal Separate Storm Sewer System (MS4) program. The Enforcement Section conducts administrative enforcement actions for violations identified and documented by the Drinking Water Branch, Compliance Branch, and Stormwater and wetlands staff.

For more information on these branches, go to <http://in.gov/idem/cleanwater/>.

Water Utilities

Water utilities are required to test their water, operate and maintain their systems, and (in most cases) file monthly reports of operations (MROs) to demonstrate compliance showing daily production and testing of water. Wastewater utilities have many similar requirements for proper operation and maintenance, periodic sampling of effluent, and reporting to IDEM, which are prescribed by their NPDES permits. When compliance issues develop, IDEM typically tries to work with regulated utilities to solve compliance matters, but IDEM will use its enforcement authority if necessary to achieve compliance and protect public health and the environment.

IDEM also plays a role when an area is in danger of having a water shortage. In this situation, IDEM issues a water shortage warning to advise public water supply systems in the affected area. IDEM then routinely surveys water supply systems in the affected area to determine the status

of water supply availability and demand. IDEM also advises public water systems to immediately develop and update water shortage contingency plans for their respective systems, if such plans are not already available for implementation.

Regional Water and Wastewater Districts

Another IDEM task is to oversee the establishment of regional water and wastewater districts. These districts are a form of local government that provide drinking water, wastewater service, and solid waste management (trash removal) for homes and businesses within an established service area. Decisions about forming new districts are initiated at the local level, and IDEM's role is to ensure these utilities are formed according to the legal and technical requirements specified by statute. The formation process begins when IDEM receives a formal petition that includes the territory to be served. Once formed, the district's rates and charges are set by its board of directors. However, the Commission does have limited jurisdiction to review campground customer wastewater rates. A map of the regional water and wastewater districts in Indiana can be found online at <http://in.gov/idem/cleanwater/2421.htm>.

In addition to its oversight of new regional water and wastewater districts, all new community and non-transient non-community water utilities must submit a Water System Management Plan to IDEM showing that the proposed utility will have the technical, managerial, and financial capability to provide clean, safe drinking water before it is given a permit to construct the facility.

With respect to IDEM, it is particularly useful to note that the agency regulates many more drinking water and wastewater treatment facilities than the ones described in this guide. These entities include the following:

- Campgrounds
- Churches
- Gas stations
- Industries
- Mobile home parks
- Office buildings
- Property owner associations
- Schools

IDEM drinking water and wastewater programs operate primarily under state statutes codified in Title 13 of the Indiana Code and Title 327 of the Indiana Administrative Code.

ISDH'S ROLE IN REGULATING WATER QUALITY

The Environmental Public Health Division of the ISDH oversees wastewater utilities that use an onsite or decentralized wastewater treatment system. An onsite wastewater treatment system is not connected to a centralized wastewater treatment plant and does not discharge effluent into an open stream. Onsite treatment systems include individual onsite septic systems, cluster systems, alternative wastewater treatment technologies such as constructed wetlands, recirculating sand filters, and pump assisted systems that discharge wastewater beneath the soil. ISDH's Onsite Sewage Disposal Program sets minimum state-wide standards for residential and commercial onsite wastewater disposal systems. The staff also conducts workshops and seminars on soil analysis and residential wastewater disposal and provides consultation and technical assistance to local health departments on the operation of their wastewater disposal programs. The program also reviews and approves plans and specifications for commercial onsite wastewater disposal systems.

The portions of state statute under which ISDH operates relating to onsite wastewater treatment systems are in Title 16 and 410 of the Indiana Administrative Code. For more information about ISDH's Onsite Sewage Disposal Program, go to <http://in.gov/isdh/23283.htm>.

DNR'S ROLE IN REGULATING WATER RESOURCES

The DNR has very limited jurisdiction over wastewater utilities. A significant area of water utility regulation is the statewide registration and annual water use reporting for significant water withdrawal facilities (SWWFs), including surface water (intake) and groundwater (well). The DNR's Division of Water carries out this responsibility. Also, if work (e.g., well installation, etc.) is being done in the floodway of a regulated stream by a water or wastewater utility, DNR has oversight pursuant to the Flood Control Act.

Although DNR does not generally require a permit to install a high-capacity water well (except for new facilities located within the Great Lakes Basin that exceed established withdrawal thresholds), it might be necessary to register the well as an SWWF. An SWWF includes any combination of wells, surface water intakes, and pumping apparatus that supply—or can supply—at least 100,000 gallons of water per day to a common collection or distribution point. A utility (or non-utility) that owns such a combination must register those facilities as an SWWF with DNR's Division of Water within three months after it is completed. Additionally, reporting of annual water use is required by March 31 of each following year.

DNR's Division of Water is responsible for enforcing Indiana's standards for well

construction; however, wells constructed by water utilities are primarily subject to IDEM's jurisdiction.

In addition to SWWF reporting, DNR touches on many aspects of water resources that affect drinking water utilities, including the following:

- Maintains a water well record database using data required to be provided by well drillers. This is available online at <http://www.in.gov/dnr/water/3595.htm>.
- Responsible for licensing and continuing education of well drillers and pump installers.
- Implements the Emergency Groundwater Rights Act, which provides assistance to non-SWWFs whose water supply is disrupted by an SWWF. (Resolution of these conflicts usually involves the SWWF reimbursing the impacted well owner for expenses associated with restoring the water supply or the impacted well owner connecting to a nearby water system.)
- Oversees the sale of water from state-financed reservoirs.
- Assists Indiana's implementation of the Great Lakes Compact. The Great Lakes Compact and information about it can be found at <http://www.in.gov/dnr/water/5216.htm>.
- Assists with the coordination and implementation of Indiana's Water Shortage Plan (the Water Shortage Task Force was abolished by the 2011 Indiana Legislature under House Enrolled Act 1002). Indiana's Water Shortage Plan can be found at <http://www.in.gov/dnr/water/3124.htm>.
- Regulates approximately 1,100 dams under state jurisdiction, reviews dam and levee construction plans, and provides safety improvement recommendations to dam owners to reduce the risk of dam incidents and dam failure flooding.

The Natural Resources Commission

Another DNR task is to participate in the establishment of water and wastewater utility conservancy districts. After a circuit court in the county with the most land in the proposed district determines a petition is complete, the court refers the petition to the Natural Resources Commission (NRC). The NRC (<http://www.in.gov/nrc/>) conducts a public hearing, gathers input, and prepares a report to the court. When the circuit court receives the fact-finding report from the NRC, the court schedules a hearing regarding the establishment of the utility. One of the first responsibilities is to develop a district plan consisting of an engineering report that sets forth the general, comprehensive plan to accomplish the district's purpose. The NRC is required to review and approve the district plan but has delegated this role to the director of the DNR's Division of Water. Final approval of a district plan comes from the County Circuit Court. As a special taxing district, a conservancy district can assess taxes on all real property included in the district. A district's boundaries are based on identification of properties expected to benefit from the district. For more information about water and wastewater utility conservancy districts, go to <http://www.in.gov/dnr/water/2459.htm>.

DNR operates primarily under state statutes codified in Title 14 of the Indiana Code and Title 312 of the Indiana Administrative Code.

IFA'S ROLE IN THE WATER INDUSTRY

Financing

The IFA administers the State Revolving Fund (SRF) loan programs, which protect both the environment and public health. The SRF provides low-interest rate loans to Indiana communities for projects that improve wastewater and drinking water infrastructure. In 2019, the IFA received \$436 million of funding of applying for funding from the Water Infrastructure Finance and Innovation (WIFIA) Act of 2014. WIFIA is a federal credit program administered by U.S. EPA for eligible water and wastewater infrastructure projects.

Research and Planning

The IFA, with assistance from IDEM, developed a Lead Sampling Program for public schools to help schools assess if there is a presence of lead in drinking water within their facilities. In recent years, the Indiana General Assembly tasked the IFA with conducting a number of studies including the Evaluation of Water Utility Planning in Indiana (Oct. 2015), Evaluation of Indiana's Water Utilities (Nov. 2016) including a non-revenue water audit, Southeastern Indiana Regional Water Supply (Jan. 2018), and Financial Needs for Stormwater Infrastructure (Aug. 2018). The IFA is conducting a Central Indiana Water Study with an estimated completion date of year-end 2020. In 2019, the IFA's role was expanded further with the passage of Senate Enrolled Act (SEA) 4 which requires the IFA to:

- Assist drinking water utilities complete a biennial validated water loss audit, which includes submitting a summary report to the legislature.
- Facilitate regional water utility meetings for the purpose of promoting

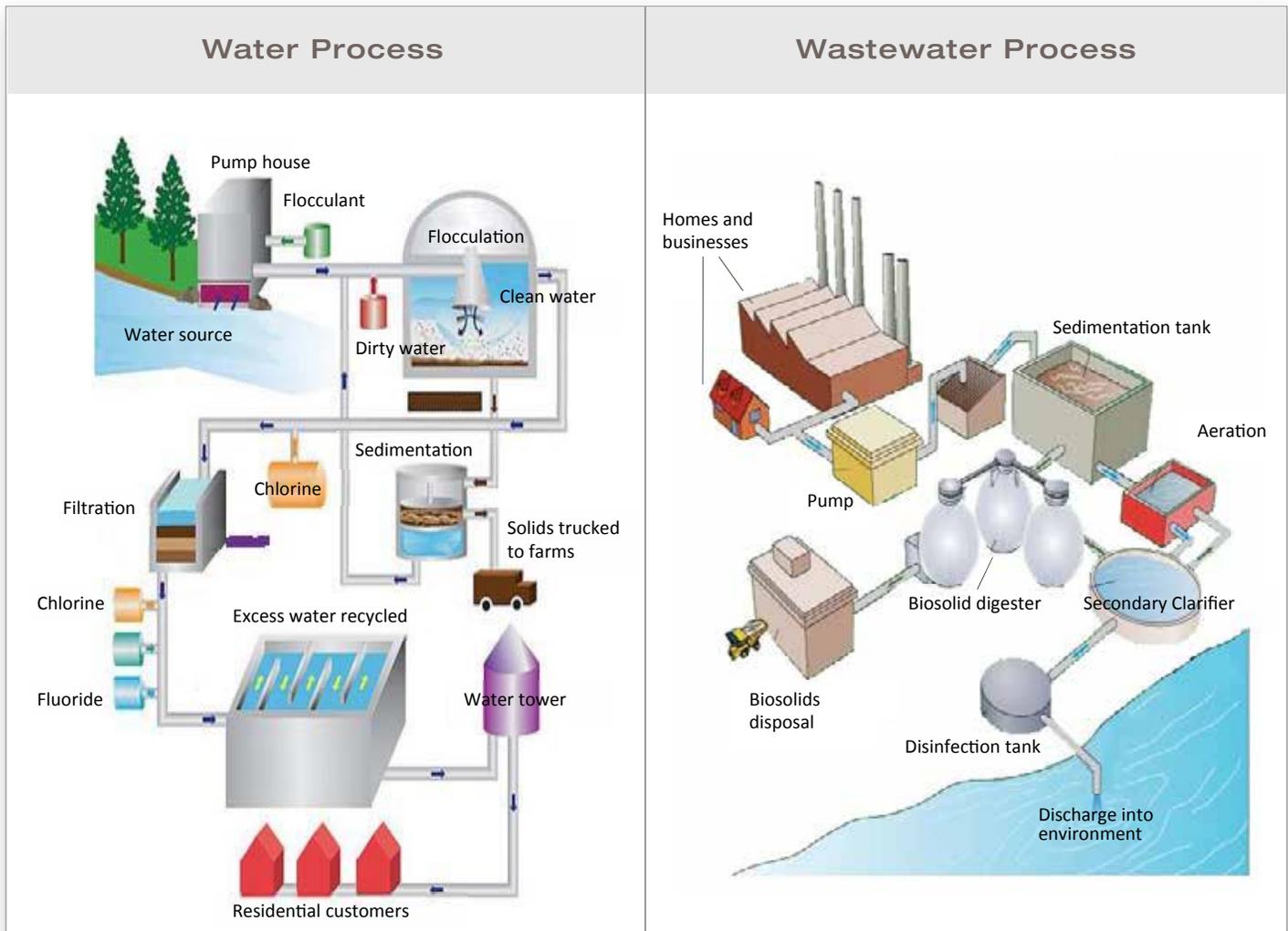
cooperation and identifying regional priorities.

- Coordinate the executive branch activities related to the state's water programs, including the following duties:
 - *Serve as the executive branch coordinator of water related programs and activities of the state.*
 - *Advise state agencies and political subdivisions, and coordinate their activities, regarding best practices concerning the best use of funding streams and incentives in the manner most likely to achieve comprehensive water related data collection and regional collaboration in water and wastewater service.*

- *Promote and coordinate the collection and sharing of information throughout Indiana concerning water and wastewater service.*
- *Provide leadership regarding investment, affordability, supply and economic development related to water and wastewater service.*

HOW IT WORKS

Water utilities must treat water before it can be distributed to customers. Similarly, wastewater utilities must collect the wastewater and treat it before it can be disposed of or released back into the environment.



DRINKING WATER TREATMENT AND DISTRIBUTION

The level of water treatment required depends on the source (ground water versus surface water) and quality of the source water. Treatment of surface water (as shown in the figure) is much more intensive and often includes some sort of flocculation process to remove magnetically suspended particles from the water, sedimentation, and filtration. A disinfectant (such as chlorine, chloramines, or ozone) is added to kill microorganisms, and fluoride may be added to reduce tooth decay. Additional processes can be added to address specific water conditions. Solids are a product of the flocculation process and typically are disposed of offsite.

In Indiana, the primary source of potable water is from groundwater. Because groundwater contains fewer suspended solids than surface water, treatment may be minimal. Groundwater from shallow aquifers or river beds more resembles the surface water treatment process as the groundwater is directly under the influence of surface water.

The widespread use of drinking water treatment is recognized as one of the most important public health achievements in modern history. In recent years, however, concerns about chlorine as a disinfection agent have surfaced. Although chlorine disinfects, it also reacts with traces of other materials or particles (e.g., urban farm run off) in water and forms trace amounts of substances known as *disinfection byproducts*. The most common of these are trihalomethanes (THMs), which have been linked to increasing cancer risks and birth defects. Chlorine also is dangerous to handle. The gaseous form is poisonous,

and any facility using chlorine gas must comply with many Occupational Safety and Health Administration (OSHA) requirements. Furthermore, since 9/11, the federal government has raised security concerns regarding chlorine. Common disinfection alternatives to chlorine include chloramines and ozone.

Another alternative to chlorination is the use of *ultraviolet (UV) light*, which is a light source enclosed in a transparent protective sleeve. The protective sleeve is mounted so that water can pass through a flow chamber, and UV rays are emitted and absorbed into the stream of water. When UV energy is absorbed by the reproductive mechanisms of bacteria and viruses, the genetic material (DNA/RNA) is rearranged so that they can no longer reproduce. At this stage, they are considered incapacitated and the risk of disease is eliminated. A disinfection agent must still be added to the water to insure bacterial growth is inhibited within the distribution system.



After the water is treated, it is sent to the *distribution system*, which consists of piping, storage tanks/towers, and booster pumps. Water towers and booster pumps are commonly used to maintain system pressure and required storage capacity.

WASTEWATER COLLECTION AND TREATMENT

Wastewater is collected from homes and businesses, moving through a series of gravity and/or pressure piping to the wastewater treatment plant. Specific treatment plant configurations vary greatly and occupy vastly different footprints depending on the capacity and type of facility. However, most share the same basic treatment steps:

- Sedimentation
- Aeration (biological treatment)
- Disinfection

The wastewater process shown previously in the figure would be more typical of a mid-size to larger community. After the wastewater arrives at the plant, screens, macerators, or grit removal systems often are used to remove debris that could damage the facility's equipment. The screened wastewater moves into sedimentation tanks to help separate the heavier components of wastewater. Aeration facilitates a biological treatment process which cultivates specific bacteria that consume the organic waste products in the water. This process, at any scale, must eventually dispose of these bacteria. Depending on the facility's sophistication, these bacteria are concentrated and cannibalized via the digestion process and often are dewatered to facilitate easy handling. The resulting product is commonly referred to as *biosolids*. The biosolids typically are trucked offsite and applied as fertilizers. Prior to discharge, wastewater is disinfected to disable the reproductive ability of any remaining bacteria.

Wastewater treatment plants are expensive to build, and the locations of these plants

must meet proper siting requirements while simultaneously being close to an acceptable discharge point. In traditional wastewater treatment plants, wastewater is treated via biological processes that require tank and piping systems. Several technological innovations have emerged over the past 10 years that, while costly, can greatly decrease the footprint of a wastewater treatment and may help offset costly expansion or replacement costs.

FORCES INFLUENCING PRICING

Several major factors affect the rates of water and wastewater utilities, including water sources, environmental regulations, aging infrastructure, and how infrastructure is funded. Other factors include geology, geography, customer density, weather, land availability, permitting challenges, and the local economic environment.

FACTORS AFFECTING SOURCE OF WATER SUPPLY

All utilities have operation and maintenance expenses, which include the cost to treat water according to the specific site conditions. When water sources become contaminated, additional treatment may be necessary before the water is fit for human consumption. In some cases, the cost of rehabilitating the water source may be greater than obtaining a new source and an alternate source of water is required. In some cases, contaminated water can no longer be used for certain purposes, such as for irrigation or drinking.

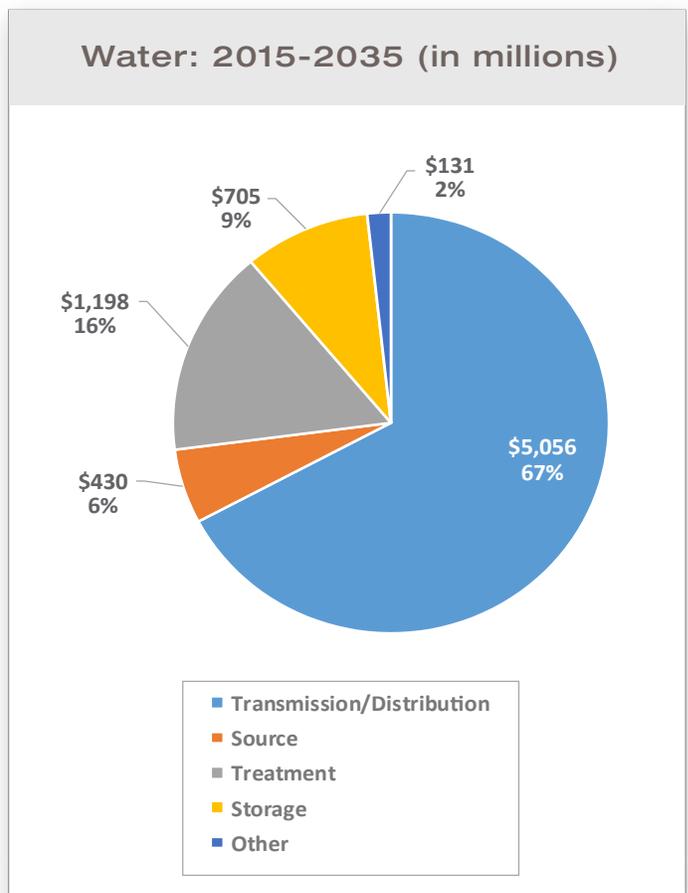
The United States Geological Survey’s National Water-Quality Assessment program examines the water chemistry of groundwater from the Glacial Aquifer System and has identified the extent of impairments that might limit groundwater use in Indiana. IDEM monitors water quality conditions throughout the state. It has a network of 153 public water supply wells and 160 residential wells from which it collects untreated groundwater samples. It submits a water quality assessment report and a list of impaired water to the U.S. EPA every two years. IDEM collects water samples from rivers and streams to assess the aquatic life and the recreational and fishable uses of the river. It also collects samples from rivers that serve as a public water supply.

U.S. EPA WATER AND WASTEWATER STANDARDS

Increasing costs for water and wastewater utilities are partly driven by compliance with U.S. EPA standards. Many expenses that utilities incur are tied to maintaining federal drinking water and wastewater effluent requirements. The SDWA and its amendments, which are enforced by IDEM, require compliance with increasingly stringent standards on a large number of contaminants in drinking water. The CWA also includes requirements on wastewater effluent. These regulations require significant investments in new technology and result in increased costs.

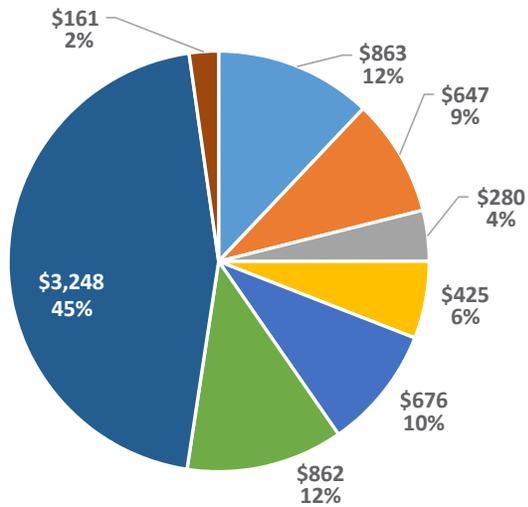
NEED TO REPLACE INFRASTRUCTURE

Aging infrastructure is one of the most critical issues in the water and wastewater industry today because it is costly to replace infrastructure that is largely underground. As discussed in the section “How It Works,” water systems are comprised of wells (for groundwater), treatment facilities, water tanks, and distribution systems. Distribution systems are composed of pipes, valves, and pumps that move water from the treatment plant or water tanks to end users. Finally, wastewater systems are comprised of pipes, pumps, and treatment facilities.



Source: U.S. EPA

Wastewater: 2012-2032 (in millions)



- Secondary Wastewater Treatment
- Advanced Wastewater Treatment
- Infiltration/Inflow Correction
- Sewer Replacement/Rehabilitation
- New Collector Sewers and Appurtenances
- New Interceptor Sewers and Appurtenances
- Combined Sewer Overflow Correction
- Stormwater Management

Source: U.S. EPA

According to the U.S. EPA's 2012 wastewater report and 2018 water report, Indiana's water and wastewater infrastructure needs a total investment of more than \$14.6 billion over the next 20 years. In terms of wastewater repair and replacement needs, Indiana reported an overall decrease from about \$8 billion in 2008 to just over \$7 billion in 2012. Indiana ranks 8th out of all 50 states for the highest reported need for CSO remediation, at \$3.25 billion (down from a reported \$5 billion in 2008). Nonetheless, CSO remediation still accounts for over 40% of Indiana's wastewater infrastructure needs.

Although the Commission regulates Indiana's largest combined system (CWA Authority, Inc.), the vast number of remaining combined systems are municipals (such as Evansville, Jeffersonville, Fort Wayne, Kokomo, and Lafayette), which are regulated by their elected local governments. These combined systems are engaged in a variety of CSO control projects ranging from storage tunnels to other forms of offline storage and satellite treatment—the most complex and expensive being the Deep Rock Tunnel Connector constructed as part of the DigIndy program, which is being built by CWA Authority, Inc.

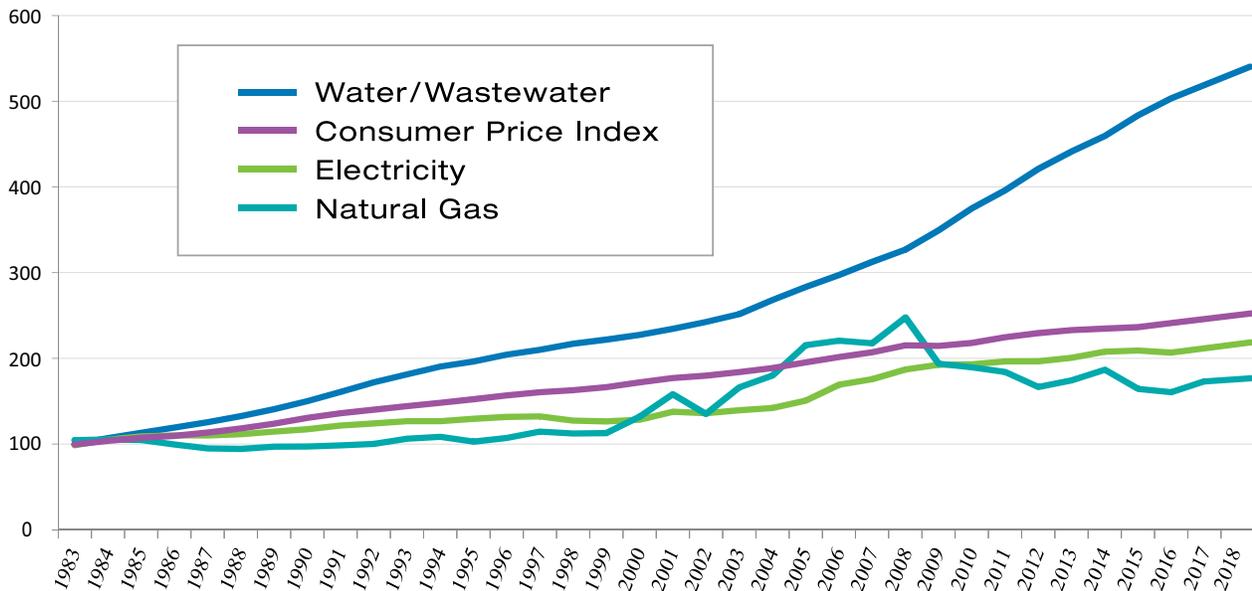
For drinking water infrastructure, Indiana's projected needs have more than tripled since 1995, from \$2.4 billion to \$7.5 billion in 2015. Although the need leveled off from 2007 through 2011, total capital need increased by more than 17% from the last reporting period in 2011. A majority of this need, 67%, can be attributed to transmission and distribution projects.

LONG-TERM TRENDS IN PRICING

Nationally, water and wastewater rates are outpacing inflation. Indiana is similar to other states in that water and wastewater utilities are experiencing cost increases for several reasons:

- Replacement of aging infrastructure
- Compliance with U.S. EPA standards (for example, water quality and wastewater effluent)
- Increases in expenses (such as labor, chemical, and power)
- Maintenance projects to uphold the quality of service
- Relocation of facilities

Comparison of Utility Prices From 1983 – 2018
Index is Set to 100 for 1982 – 1984



Source: U.S. Bureau of Labor Statistics

Rates are rising more rapidly than electricity or natural gas rates and much faster than the overall consumer price index (CPI). For example, from 2009 to 2018, water and wastewater rates rose 5.15 percent per year while the CPI rose at just 1.56 percent per year.

CUSTOMER BILLS

Generally, water customers are classified in one of these groups:

- Residential
- Multifamily
- Commercial
- Industrial
- Wholesale

Wastewater customers are grouped in the same categories but have additional customers such as grease haulers, septic

haulers, and commercial fats, oils, and grease customers.

There are five basic types of water rate structures:

- **Uniform**—A single charge per unit of consumption. The charge remains constant for all metered consumption of water on a year-round basis. As a customer uses more water, the bill increases at a steady rate per unit of consumption.
- **Declining block**—A rate structure in which the unit price of each succeeding block of usage is charged at a lower unit rate than the previous blocks.
- **Inclining block**—A rate structure in which a customer’s consumption is divided into usage blocks and the rate within each block increases with subsequent blocks.

- **Seasonal**—A rate structure that sets the price a customer pays for consumption based on the time of year. A utility charges more per unit of consumption during the peak-demand season and less during the low-demand season. Generally, a uniform block consumption charge is used for each season. This type of rate structure has not been implemented in Indiana.
- **Flat**—A periodic fixed charge for water service that is unrelated to the amount of water consumed. All customers are charged the same amount for service regardless of usage levels. No metering is required, and fees may be collected according to any desired schedule.

Because wastewater usage is not typically metered, the predominant form of billing for Commission-regulated systems is the flat rate. The other form of billing, which many municipalities use, is based on water usage. Some wastewater utilities who bill based on water usage also have some form of balanced billing, which is a mechanism that provides a credit to customers for lawn watering and other outdoor uses during the summer.

Some water utilities have the following charges:

- **Fire protection surcharge**—The fire protection charge is designed to recover the costs a utility incurs to provide fire protection services. The fire protection charge can be divided into *public fire protection* and *private fire protection*. Public fire protection is provided to all customers through public fire hydrants located throughout the water system. Private fire protection is provided to individual customers that receive additional fire protection service through private hydrants, standpipes, or sprinkler connections. Prior to the implementation of Ind. Code § 8-1-2-103(d), many public

utilities levied the cost of fire protection directly on municipalities, which, in turn, recovered the costs through assessment of taxes on their citizens. With the passage of Ind. Code § 8-1-2-103(d), many municipalities have passed ordinances to transfer those fire protection costs to customers through surcharges that appear on customer bills on a revenue-neutral basis. As municipalities face reduced tax revenues and increasing costs, this trend is likely to continue.

- **Service charge**—The service charge, sometimes called a *customer charge*, is a monthly fixed fee that is the same for all equivalent customers per billing period. The charge typically recovers costs such as meter reading, billing costs, and other costs the utility incurs equally per customer or per account regardless of consumption level.
- **Minimum bill**—A minimum bill or base charge is determined based on the minimum amount of consumption for which a customer is billed regardless of whether the water is used. The minimum consumption is generally set at a low level based on the assumption that most customers use that amount of water. Some utilities view this charge as a means to recover costs associated with investments to which all customers should contribute, regardless of whether they consumed water during that billing period.

Some wastewater utilities have a strength charge, which uses biochemical oxygen demand measurements to measure of the organic strength of wastes in water. NH₃-N denotes ammonia nitrogen. TSS denotes total suspended solids that either float on the surface or are in suspension in water, sewage, or other liquids and that are removable by laboratory filtering.

Non-recurring Charges

Many nonrecurring services are provided by water and wastewater utilities that are recovered based on the actual costs of providing these services. These include nonsufficient funds fees, reconnection fees, tap fees, and so on.

ADJUSTABLE RATE MECHANISMS

Water and wastewater utilities have the following adjustable rate mechanisms:

- **Infrastructure improvement charge**—A water utility can petition the Commission to establish a surcharge to recover costs for the replacement of the distribution system. Similarly, a wastewater utility can recover costs for the replacement of the collection system.
- **System integrity charge**—A water or wastewater utility can petition the Commission to establish a surcharge that recovers or rebates revenues it has collected that are under or over the authorized revenue requirement.
- **Wholesale tracker**—For water utilities that purchase water from another utility, a surcharge may be included that tracks the cost of wholesale water rates. For wastewater utilities that use treatment facilities from another utility, a surcharge is included that tracks the cost of wholesale treatment rates.
- **Surcharges & Credits**—These are charges the Commission has approved to achieve goals deemed to be in the public interest. Examples include affordability surcharges that fund programs to assist low-income ratepayers, and tax refund credits that return over-collected funds to ratepayers as a result of the federal Tax Cuts and Jobs Act of 2017.

System Development Charge

As utilities search for new ways to finance infrastructure investments and minimize the effects on existing customers, a number of utilities have filed petitions with the Commission to establish system development charges (SDCs). An SDC is assessed to property owners who connect their premises to the utility's system for the first time. SDCs are designed primarily to recover a utility's cost to provide new customers with source of supply, treatment, and storage facilities. The use of SDCs supports the notion that growth should pay for growth and reduces the likelihood that existing customers will pay for new facilities constructed to serve growth.

ACQUISITIONS

The number of utilities under Commission authority has been decreasing as acquisitions and consolidations have occurred. Acquisitions can take many forms. For water and wastewater utilities, the most common types of acquisitions are as follows:

- Investor-owned utilities (IOUs) buying smaller IOUs
- IOUs buying municipal systems (called *privatization*)
- Municipalities buying investor-owned systems (called *municipalization*)

The trend of acquisitions has increased in recent years thanks to recent legislation that provides favorable mechanisms for IOUs to acquire smaller utilities by allowing the following:

- Full recovery of the purchase price from ratepayers so long as the acquiring utility follows Ind. Code § 8-1-30.3.
- Includes the ability of the acquiring utility to include the value paid for contributed property in its rate base.

- Changing the requirements regarding a municipality seeking to sell its utility, such as the process for the appraisal of utility property and the process to approve a municipal ordinance for the acquisition.

In the right conditions, acquisitions can create efficiencies, lower costs, and reduce the number of poor performing water and wastewater utilities. In other situations, however, utility acquisitions can lead to higher costs per customer as existing customers share a portion of the costs to acquire other systems, leading to potentially offsetting the benefits provided by consolidation. Policymakers should carefully consider opportunities to ensure consolidation and acquisitions continue to benefit the state.

TROUBLED UTILITIES IN INDIANA

Small water and wastewater utilities are prevalent in Indiana. Because of their size, they often lack the expertise to manage and operate effectively. In some instances, the Commission classifies water and wastewater utilities as “troubled.” These typically are small utilities (fewer than 300 customers) that were constructed by a developer as part of a housing development.

To determine whether a utility is troubled, the Commission may examine several key factors, including the following:

- Technical, financial, and managerial capacity
- The physical condition and capacity of the plant
- The utility’s compliance with state and federal law and/or the Commission’s orders
- Provision of service to customers (Ind. Code § 8-1-30-3)

If the utility has continued compliance violations, even after the Commission orders it to remedy the deficiencies, the Commission can order the acquisition of the utility by a new owner or appoint a receiver to operate the utility and work to find a new owner (Ind. Code § 8-1-30-5). On a practical basis, neither is an ideal option.

The Commission’s primary goal, however, is to prevent utilities from becoming troubled in the first place. One way is to ensure utilities can provide reliable service prior to serving customers. Both the Commission and IDEM have rules regarding the operational abilities of water and wastewater utilities.

INVESTMENT IN INFRASTRUCTURE

Because water and wastewater infrastructure is in place for many years, it can be funded by equity or debt. Large corporations issue equity—or in the case of water and wastewater utilities that are subsidiaries of larger corporations, the utility might obtain equity from the parent company. For small utilities, the equity usually comes from the owner. When equity is included in the capital structure, as shown in the section “Basics of Ratemaking,” a utility can earn a return on that equity. The allowed return on equity is generally based on the amount of risk a utility incurs. Risk can be measured by using financial models such as the Discounted Cash Flow Model, Capital Asset Pricing Model, and Risk Premium Model or by looking at returns of similarly situated companies.

Besides equity, utilities can issue debt or obtain grants. If a utility issues debt in the open market, the cost of debt is determined by the market interest rate, given a utility’s credit rating. Like all debt, the better

the credit rating, the lower the cost of debt. Water and wastewater utilities have numerous federal and state funding options to fund infrastructure investment at a cost of debt lower than the market rate. These programs include the following:

- State Revolving Loan Fund (SRF)
- U.S. Department of Agriculture Rural Development Loans and Grants
- Private activity bonds
- WIFIA loans
- Community Focus Fund
- Water Infrastructure Assistance Fund

Grants from the U.S. EPA are leveraged in bond markets to generate SRF proceeds. The IFA then administers these funds through low-interest loans with up to 35-year terms.

U.S. Department of Agriculture Rural Development Loans and Grants are available to assist systems serving rural areas and towns with populations under 10,000. Extended 40-year terms are available at or below market interest rates, depending on each respective community's demographics.

Although the amount of SRF funding to investor-owned and nonprofit utilities is limited, other options are available. For example, private activity bonds (PABs) are low-interest rate loans, which are municipal bonds issued to finance facilities for investor-owned or nonprofit water utilities. The proceeds derived from reduced financing costs go directly to utility customers, rather than to the shareholders, owners, or parent companies. The federal government sets the overall loan volume cap for each state and then allocates that amount based on a formula.

To increase the financing of water and wastewater infrastructure, the federal Water Resources Reform and Development Act (WRRRA) was enacted on June 10, 2014. The

WRRRA establishes a WIFIA program to help water and wastewater utilities finance large-scale projects. In 2019, Indiana received \$436 million from the U.S. EPA through the WIFIA program, which was one of twelve requests that the EPA granted through its first round of financing through the program. Some of those funds will be used to clean up lead contamination in northwest Indiana.

Grants for planning and up to 90 percent of eligible project costs are another option. These planning and construction grants are available to non-entitlement communities, such as cities, towns, or counties, through the Community Focus Fund. This fund is administered through the Indiana Office of Community and Rural Affairs.

In 2019, Indiana allocated \$20 million to create a Water Infrastructure Assistance Fund. The IFA will make loans, grants, or other financial assistance from this fund to utilities if they meet certain criteria such as having an asset management program and completing a non-revenue water audit. Forty percent of the money is targeted for utilities serving less than 3,200 customers.

EXAMPLES OF WATER AND WASTEWATER INFRASTRUCTURE

Three examples of recent developments in water and wastewater infrastructure are explained below: water meters, water pumps, and trenchless technology.

Meter Reading and Billing

Modern meter technology is eliminating the need for meter readers and has led to the ability to provide real-time pricing. Several cities in Indiana are using

automatic meter reading (AMR) technology. Here, a small computer is attached to the water meter in the pit. With this addition, meter readings can be collected by a person driving through a neighborhood, or if a high-speed connection can be created, meters can be read from the office. Automating this process reduces costs as well as the likelihood of errors. Furthermore, utilities can use AMR technology for leak detection by tracking consumption day-by-day or even hour-to-hour. With advanced meters and computers on certain home appliances, time-of-use metered rates are possible.

Water Pumps

At a weight of 8.34 pounds per gallon, transporting water can be an energy-intensive and costly task. The most cost-efficient means of transporting water is via gravity. Unfortunately, residences and commerce rarely develop in patterns that accommodate pure gravity flow. Gravity installations are typically cost effective at depths up to 30 feet before pumping is required. Almost all waterworks applications require pumping in order to maintain service pressure and to provide adequate fire flow requirements.

For a pump to work effectively in a specific application, it must be able to provide the desired flow and pressure while overcoming head losses (such as friction, and elevation differentials). In the case of a traditional constant speed pump, if the pump is not a perfect selection for the operating conditions, either excess pressure must be throttled or excess flow must be dumped, both of which waste energy. Recently, the development of variable speed pumps or variable frequency drive (VFD) pumps has reduced the energy required to transport water and wastewater. A variable frequency

drive motor enables the pump to run at exactly the required revolutions per minute so that the desired flow and pressure can be achieved simultaneously without the need to waste energy by mechanically regulating or dumping excess flow. As the performance of the pump can be manipulated to match a specific flow, VFDs also save energy by eliminating the need for frequent stopping/starting of the pump.

Trenchless Technologies

Replacing aging or failing piped infrastructure using the traditional open-cut method of pipe replacement can be expensive. These costs include maintenance of traffic, surface restoration, worker safety and protection of other utility infrastructure. Trenchless methods of pipeline rehabilitation/replacement include cured-in-place-pipe (CIPP), sliplining, and pipebursting. These three trenchless methods essentially build a new pipe within an existing pipe, minimizing required excavations to typically an entry pit, exit pit, and points of lateral reinstatement.

CIPP and sliplining applications have been predominately focused on wastewater applications as they are most conducive to gravity piping. Where water lines are adequately looped and valved, applications for CIPP and sliplining are becoming more affordable in waterworks applications as well for the most difficult of installations. Pipe bursting is a long-standing, destructive pipeline installation method that is more conducive to waterworks applications than wastewater due to the need for precise elevation control of gravity pipelines. Although these technologies can be quite expensive, it can produce significant cost savings, especially in urban or environmentally sensitive settings.

Efficiency

Water efficiency programs are being developed by individual utilities to help manage customer usage. The two largest water utilities in the state, Indiana American Water and Citizens Water, have filed water efficiency plans with the Commission. At the state level, Indiana has developed water conservation and efficiency goals and objectives as required by the Great Lakes Compact. At the national level, the U.S. EPA has developed the WaterSense program to encourage water-efficient products, services, and practices.

Water audits are another tool utilities can use to help quantify water that is lost (through system leaks, unmetered use or underperforming meters). Unaccounted-for water is defined as the difference between the quantity of water pumped at the source or purchased from a wholesaler and the quantity actually sold (metered sales). By mitigating water losses, utilities can reduce the need to develop new sources of supply and capacity to accommodate system peaks. Some water loss, however, is necessary for activities such as main flushings, maintenance of the treatment plant, and fire suppression.

Ind. Code chapter 8-1-30.8 requires all water utilities to submit to the IFA an annual water audit in accordance with accepted industry standards.

REGULATORY INITIATIVES

Each year, legislation is passed at the federal and state levels that affects Indiana's water and wastewater utilities. Legislation at the state level has reflected growing concerns over the need to update aging infrastructure, eliminate lead in the distribution system,

ensure that Indiana's water supply remains at viable levels, and provide incentives for small water and wastewater utilities to be acquired. The Indiana General Assembly also recently passed legislation aimed at ensuring that water and wastewater utilities that begin to provide service remain under the Commission's jurisdiction for 10 years.

FEDERAL REGULATION OF DRINKING WATER

Water quality standards are twofold: (1) health-related (focusing on inorganic and organic chemicals and microorganisms); and (2) aesthetic (focusing on taste, odor, and appearance). These standards are developed by setting a maximum contaminant level and a maximum contaminant level goal, both of which are periodically updated. For example, based on the U.S. EPA's Groundwater Rule, IDEM now requires increased monitoring to detect bacterial contamination in groundwater sources of drinking water. In recent years, Indiana utilities have incurred costs associated with maintaining and improving their systems, and these costs are expected to increase as new rules are approved. For instance, to comply with the U.S. EPA's Long Term 2 Enhanced Surface Water Treatment Rule, several utilities have installed UV disinfection systems at their treatment plants and have sought cost recovery for those investments.

Lead and copper are present in plumbing materials and water distribution system components throughout the United States. The U.S. EPA's goal for the Lead and Copper Rule Long-Term Revisions (LCR-LTR) is to improve the effectiveness of corrosion control treatment in reducing exposure to lead and copper and to trigger additional actions that equitably reduce the public's exposure to lead and copper when corrosion

control treatment alone is not effective. The LCR is a treatment technique rule. Instead of setting a maximum contaminant level (MCL) for lead or copper, the rule requires public water systems to take certain actions to minimize lead and copper in drinking water, as a way to reduce water corrosivity and prevent the leaching of these metals from the premise plumbing and drinking water distribution system components. When that isn't enough, the rule requires the removal of lead service lines.

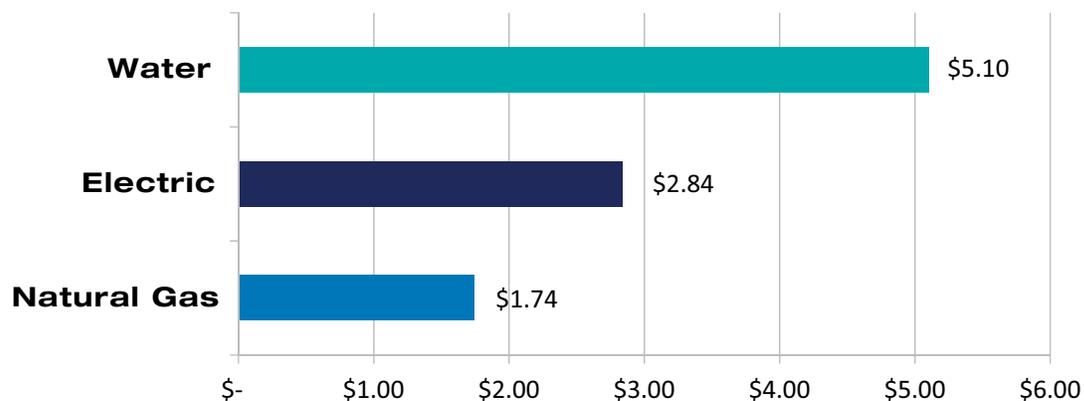
FEDERAL REGULATION OF DISCHARGE OF WASTEWATER INTO BODIES OF WATER

Several regulated wastewater utilities have been required to invest in their systems by consent decrees stemming from violations of the CWA. Because infrastructure improvements may be required, customer rates could be impacted. However, before the costs can be passed on to consumers, projects are subject to review by the OUCC and must be approved by the Commission.

INDIANA'S WATER INFRASTRUCTURE

Much of the nation's water infrastructure has aged and will need full-scale replacement over the next few decades. This is problematic because the water industry remains extremely capital intensive, typically investing more capital per dollar of revenue generated than the natural gas or electric industry. This figure is high due to the need for large investments and relatively low revenues. Consequently, water utilities typically have been seeking to increase general rates to replace necessary infrastructure. However, water utilities in Indiana can seek to recover costs for the replacement of the distribution system through an infrastructure improvement charge of up to 10% of the utility's revenue in its most recent general rate case. Moreover, if a utility has an SIA, the adjustment revenues will be used for eligible infrastructure improvements as defined in Ind. Code § 8-1-31-5.

Capital Investment per Dollar of Revenue in 2017
Amount of utility investment in utility facilities relative to each dollar earned





COMMUNICATIONS DIVISION





COMMUNICATIONS DIVISION

OVERVIEW OF REGULATION

The Communications Division assists the Commission in the implementation of universal service programs and provides recommendations on matters such as applications for Certificates of Territorial Authority (CTAs) for communications service providers (CSPs) and franchises for video service providers (VSPs). In addition, the Commission's Communications Division monitors regulatory proceedings and policy initiatives at the federal level to determine the impact of those policies on Indiana utilities and customers, and with the assistance from the Office of General Counsel, recommends whether comments should be filed in those proceedings, to help ensure the state's interests and rights are protected.

All CSPs must have a valid CTA to offer service in Indiana. Providers must receive authorization to offer any of the following services:

- Telecommunications service
- Information service
- Video service
- Broadband service
- Advanced services
- Internet Protocol enabled services

Providers of video service also must hold a video service franchise from the Commission, the sole video franchise authority in Indiana. Additionally, the Commission designates all eligible telecommunications carriers (ETCs) in the state, which enables the carriers to obtain support from the federal Universal Service Fund (USF). The Commission has no authority over the approval of the rates and charges of CSPs, with the exception of intrastate access rates.

The Commission also is involved in areas of the communications industry where competition alone may not provide solutions. For example, the Commission does the following:

- Resolves carrier-to-carrier disputes.
- Manages policies regarding telephone numbering resources (pursuant to federal and state law).
- Protects consumers from unauthorized changes to their service (cramming) or service providers (slamming).
- Implements universal service programs

COMMUNICATIONS ACT OF 1934

The Communications Act of 1934 set forth the standard that all people should have access to interstate and international wire and radio communication “without discrimination on the basis of race, color, religion, national origin, or sex”, with adequate facilities at reasonable charges. To ensure such policies would be honored, Congress then established the Federal Communications Commission (FCC), which is dedicated to overseeing the telecommunications industry.

The FCC operates as an independent U.S. government agency overseen by Congress. The FCC oversees broader communications

policies and regulates interstate and international communications by radio, television, wire, satellite, and cable in all 50 states, the District of Columbia, and U.S. territories. Although the FCC’s jurisdiction is interstate and international, FCC rules profoundly impact the communications service market at the state and local levels. To help it craft sound policies, Congress directed the FCC to work with the National Association of Regulatory Utility Commissioners (NARUC) to form Federal-State Joint Boards. These boards are influential in shaping policy and facilitating discussions among leaders from all levels of government.

TELECOMMUNICATIONS ACT OF 1996

More than six decades after the Communications Act of 1934, Congress overhauled the nation’s telecommunications law. Its intent was “to promote competition and reduce regulation in order to secure lower prices and higher quality services for American telecommunications consumers and encourage the rapid deployment of new telecommunications technologies.”

This marked the shift from telecommunications services being seen as a natural monopoly (such as natural gas, electric, or water services) to those that could thrive in a competitive market. Some of the more notable sections include Section 251 (interconnections), Section 254 (universal service), and Section 706 (advanced telecommunications incentives).

Essentially, Section 251 required all telecommunications carriers “to interconnect directly or indirectly with the facilities and equipment of other telecommunications carriers.” Local exchange carriers (LECs),

and particularly incumbent local exchange carriers (ILECs), were given additional pro-competitive obligations. Requiring interconnection, allowed additional competitors to enter the market for local and long-distance services. Section 254 then established the Federal-State Joint Board to advise the FCC on universal service mechanisms meant to provide access to high-cost areas of the states. Lastly, Section 706 required the FCC and state commissions to “encourage the deployment on a reasonable and timely basis of advanced telecommunications capability to all Americans” through “measures that promote competition in the local telecommunications market, or other regulating methods that remove barriers to infrastructure investment.”

HOUSE ENROLLED ACT 1279

In 2006, the Indiana General Assembly moved Indiana away from traditional regulation of telecommunications passing House Enrolled Act (HEA) 1279. This reform legislation was passed with bipartisan support and became the legislative template for more than 20 other states. Notable provisions of the reform included deregulating rates and charges for most telecommunications services and giving the Commission authority for the statewide franchising of VSPs.

The Commission has worked to modify processes and policies and to eliminate those no longer required under the new regulatory structure. At the same time, the Commission implemented procedures to address new statutory responsibilities related to video franchises and the certification of CSPs — including providers of information

services, broadband, interconnected Voice over Internet Protocol (VoIP), and other advanced services. In that regard, the Commission has granted 92 Certificates of Franchise Authority (CFAs) to provide video service, pursuant to Indiana Code chapter 8-1-34. More broadly, approximately 1,276 CSPs currently hold a CTA to provide telecommunications, information, and/or video services in Indiana, as required under Ind. Code chapter 8-1-32.5.



Since the move toward deregulation in 2006, the Indiana General Assembly has made additional changes to the statutes related to telecommunications and video in a number of areas, including these:

- Reporting requirements
- Interconnection
- Providers of last resort
- 911 surcharges
- Eligible telecommunications providers
- Video direct marketing authority
- Small cells and wireless support structures.

Although the role of the Commission has changed, the agency continues to serve as a monitor of the new market environment and plays a significant role in protecting Indiana’s interests in federal matters. As federal policies are implemented through the FCC’s

rulemakings and orders, the Commission must pay close attention to ensure that Indiana's interests and concerns, as well as those of customers and providers, are addressed.

CURRENT COMMISSION AUTHORITY

The rules and policies currently in place ensure that the Commission can fulfill its responsibilities as outlined in state and federal law. These include, but are not limited to, the following:

- Issuing and maintaining records of CTAs for all CSPs, pursuant to Ind. Code chapter 8-1-32.5.
- Fulfilling the Commission's responsibilities under Ind. Code § 8-1-29.5 to adopt and enforce rules to prevent unauthorized switching of telecommunications providers or assessment of unauthorized charges on customers' bills (that is, slamming or cramming).
- Performing duties outlined in Ind. Code chapter 8-1-2.8 concerning the provision of dual-party relay services to deaf, hard-of-hearing, and speech-impaired persons in Indiana.
- Implementing the authority granted by state or federal law on issues such as numbering administration, area code relief, and federal truth-in-billing requirements for common carriers.
- Mediating the disconnection of one local exchange carrier (LEC) by another LEC to protect end-user customers from losing their telephone service with insufficient advance notice to choose an alternative carrier.
- Approving interconnection agreements and arbitrating/resolving interconnection

disputes between telecommunications carriers, pursuant to Section 252 of the federal Telecommunications Act of 1996 (TA-96).

- Approving intrastate switched and special access tariffs, consistent with applicable federal and state requirements.
- Fulfilling the Commission's obligations under TA-96 and Ind. Code chapter 20-20-16 concerning universal service and access to telecommunications services and equipment, including designation of ETCs under 47 U.S.C. § 214.
- Overseeing the Indiana Universal Service Fund (IUSF), which was implemented in 2007 in an effort to replace lost revenue for a number of rural local exchange carriers in high-cost areas in Indiana. In developing and implementing the regulatory and policy framework for the IUSF, the Commission has remained mindful of applicable federal requirements.
- Issuing CFAs to multichannel video programming distributors offering video service.
- Enforcing video service standards, as the sole franchise authority, including general customer service standards for video service providers, pursuant to FCC rules set forth in 47 CFR 76.309 and requirements for public, educational, and governmental channels, pursuant to authority granted under 47 U.S.C. 531.
- Preparing and submitting communications-related reports or sections of reports required or requested by the General Assembly on various communications related topics (e.g., *2018 Report on IUSF and Broadband Deployment*).

In addition to carrying out these specific responsibilities and exercising these specific grants of authority, the Commission also responds to inquiries from legislators

and other government officials, media, consumers, individual communications service providers and utilities, attorneys and consultants, associations, and others.

FEDERAL REFORMS

The FCC has made several changes to the telecommunications industry. It has made sweeping changes to *intercarrier compensation* as well as the federal USF, beginning with the release of the Universal Service/Intercarrier Compensation (USF/ICC) Transformation Act in November, 2011, and is considering further changes in both areas. It also launched programs, such as Connect America Fund II (CAF II) and A-CAM, to expand broadband service in rural America. The FCC recently concluded its “CAF II Reverse Auction”, in which many new types of carriers, including rural electric membership cooperatives and fixed wireless providers, were allowed to bid for the right to receive federal universal service (CAF Phase II) support for offering both voice telephony and broadband services, in return for accepting certain speed and latency obligations for their broadband offerings. In addition, the FCC has implemented reforms in the Lifeline program and worked to address the issue of net neutrality. Additionally, the USDA’s Rural Utility Service provides funding for the development of rural utilities’ infrastructure, including programs aimed at expanding broadband in rural areas.

Several of the major FCC initiatives of the last few years have been challenged in federal court – including, but not limited to, the 2015 Open Internet Order (i.e., the “Net Neutrality Order”) and the 2018 Restoring Internet Freedom Order (“RIF Order”). Both of those court proceedings will be discussed

later. Further details on selected major federal reforms also appear elsewhere in this Report.

INTERCARRIER COMPENSATION TRANSFORMATION

In 2011, the FCC dramatically altered the method by which carriers charge each other for switching, transporting and terminating, and/or originating long distance calls, as well as some mobile wireless and VoIP calls. The FCC’s reform of intercarrier compensation (ICC) included abandoning the calling-party-pays model for long distance calls and phasing in a national “bill-and-keep” framework. That phase-in is still underway; the amount of progress that has been made differs based upon several factors, such as: (1) the regulatory framework under which a particular local exchange carrier (LEC) operates (e.g., “price cap” regulation vs. rate-of-return regulation); and (2) the specific network functionalities one carrier is providing and billing to another carrier (e.g., end office switching, originating, transporting, terminating, and/or tandem switching.) In adopting the new framework, the FCC rejected the notion that only the calling party benefits from a long distance call and therefore deemed that both the calling party and the party being called should pay for the cost of originating, transporting, and terminating a call.

UNIVERSAL SERVICE FUND REFORMS

The FCC has taken a number of steps since 2011 to reform the federal USF program. Prior to the 2011 USF/ICC Transformation Order, federal high-cost (USF) support

went primarily to ILECs providing traditional local voice telephone service in rural areas, particularly those rural areas for which the cost of providing the local voice service was above the national average (hence, “high-cost” areas). The FCC did not provide USF support explicitly or solely for the carriers offering broadband services, although many of the *loops*—the copper wires that connect a residential customer to the public switched telephone network (PSTN)—could be used to provide both local voice service and broadband digital subscriber line (DSL) Internet access.

Under the 2011 order and subsequent FCC orders, the FCC made two important changes in the high-cost program. First, the FCC simplified the way it described the various services eligible for support that it “historically [had] defined in functional terms (for example, voice grade access to the PSTN, access to emergency services) into a single service it designated as ‘voice telephony service.’” Second, in acknowledging the significance of broadband in the twenty-first century, the FCC added broadband as a supported universal service and shifted the focus of the federal USF from the deployment and adoption of voice services to the deployment of broadband across the country. More information is available on the FCC’s website at <https://www.fcc.gov/general/universal-service-fund>.

LIFELINE REFORM

On March 31, 2016, The FCC adopted an order to transition Lifeline support away from voice-only to broadband support. Formerly, the federal Lifeline program provided support to ETCs of \$9.25 per month for each eligible household served with discounted voice telephony services. The new order phases

in mobile broadband over five years. The FCC anticipates technological advances in the convergence of mobile voice and data, phasing in broadband requirements as support for standalone voice decreases. Beginning Dec. 1, 2019, Lifeline support decreases to \$7.25 per month, per eligible customer. It will be \$5.25 by December 2020, and no Lifeline support will be available for voice-only subscribers by December 2021 (except in areas where there is only one Lifeline provider). In addition, the order provides a streamlined, nationwide entry for a new category of providers called Lifeline broadband providers. It also establishes a third-party national verifier of eligible customers, taking the Lifeline provider out of the business of determining eligibility for its own customers. The National Verifier was launched in Indiana on March 12, 2019.

OPEN INTERNET ORDER

On March 12, 2015, the FCC released its Open Internet Order, more popularly known as the “Net Neutrality” Order. This was in response to a 2014 decision by the U.S. Circuit Court of Appeals for the D.C. Circuit (D.C. Circuit) that struck down the FCC’s 2010 conduct rules against blocking and unreasonable discrimination by broadband providers. In the Open Internet Order, the FCC found, among other things, that broadband Internet access service (BIAS), which the FCC defines as a mass-market service that can be offered using either fixed or mobile technologies, is a telecommunications service subject to so-called “Title II regulation”. However, the FCC indicated it would refrain from enforcing many of the specific laws and rules that apply to other telecommunications carriers and services.

As a result, the FCC established requirements in the following four areas:

- No blocking
- No throttling
- No paid prioritization
- Enhanced transparency requirements

The FCC also established a broad Internet general conduct rule that addressed behavior by ISPs that the FCC believed, in 2015, would be harmful to consumers or edge providers, even if it did not strictly meet the definition of one of the other prohibited behaviors listed above.

Various legal challenges to this 2015 order were filed at the D.C. Circuit. The court issued a decision on June 14, 2016, upholding the FCC's Open Internet Order.

On January 4, 2018, the FCC adopted the Restoring Internet Freedom Order ("RIF Order"). The RIF Order undoes much of the 2015 Open Internet Order and repealed most of the federal rule changes that were made as part of the 2015 Order. For example, the RIF Order eliminated the no blocking, no throttling, and no paid prioritization rules and narrowed the enhanced transparency requirements. It also reclassified BIAS as a Title I information service, instead of a Title II telecommunications service (regardless of whether the BIAS is offered using fixed or mobile technologies) and reclassified mobile broadband Internet access service as a private mobile service, instead of as a commercial mobile service (e.g., cellular).

On October 1, 2019, the DC Circuit Court issued a decision upholding the FCC's reclassification of Broadband Internet Access Service (BIAS) as a Title I information service and mobile broadband as a private mobile service, with two main exceptions. First, the Court vacated those portions of the RIF Order that preempted states from issuing

state-specific broadband rules that deviated from the RIF Order. Second, the Court also remanded the Order back to the FCC to further analyze the impact of its decision on three discrete areas: public safety, pole attachments, and Lifeline. This Commission will evaluate the court's decision, as well as future FCC rule changes made in response to the court decision, to determine what impact there will be (if any) on the Commission, and/or on Indiana consumers and communications service providers.

UNIVERSAL SERVICE

The federal USF is paid for by a surcharge on all telecommunications customers' bills. This fund supports four programs:

- High Cost, which is also called the Connect America Fund (CAF)
- Lifeline
- Rural health care
- Schools and libraries

A CSP must be designated as an ETC to receive support from the High Cost and Lifeline programs. Because Indiana customers help pay for these programs, the Commission takes its ETC designation responsibility seriously to ensure the public funds are used "only for the provision, maintenance, and upgrading of facilities and services for which the support is intended" as required by federal rules (47 C.F.R. 54.7).

The CAF program supports widespread and affordable telephone service in rural areas, and broadband service was added in recent years. This program contains multiple funding mechanisms designed to encourage the deployment and maintenance of broadband-capable networks in territories that are not economical to serve, such as the territories

of small rural carriers, and more recently, in the underserved territories on the outskirts of large and medium ILEC territories. More information about the CAF program can be found at <https://www.fcc.gov/general/connect-america-fund-caf>.

The rural health care program makes subsidies available to health care providers for telehealth and telemedicine services. These usually include a combination of high-speed Internet access and videoconferencing infrastructure. The goal of this program is to give doctors and patients in rural hospitals the ability to access specialists in distant locations and to do so at affordable rates.

The USF also provides subsidies to enable low-income and rural schools and libraries to obtain Internet access and general telecommunications services at affordable costs. The subsidies generally range from 20 percent to 90 percent of the costs.

LIFELINE

The Lifeline program, which is a federally funded program that provides a discount on voice or broadband Internet access services, must be offered to eligible customers by all ETCs. Consumers are eligible if they either have a total household income that does not exceed 135 percent of the federal poverty guidelines or participate in one of the following programs:

- Medicaid
- Supplemental Nutrition Assistance Program, formerly known as food stamps
- Supplemental Security Income
- Federal Public Housing Assistance (Section 8)
- Veterans and Survivors Pension Benefit
- Tribal Programs (must live on federally-recognized Tribal lands; however, currently there are no such areas in Indiana)

In recent years, the Commission has had many wireless carriers seeking ETC designation only for the purpose of receiving Lifeline support. These carriers specialize in providing Lifeline services to low-income customers via cellphone devices provided at no cost to their customers. For more information, please see the FCC's website at <https://www.fcc.gov/general/lifeline-program-low-income-consumers>.

ETC OBLIGATIONS

ETC obligations are uniform regardless of the type of technology used by the carrier that demonstrates they can meet the obligations, unless the FCC granted a forbearance from specific requirements. All ETCs are required to provide voice telephony services and BIAS using their own facilities and to serve their entire designated service area. Voice telephony service means "voice grade access to the public switched network or its functional equivalent; minutes of use for local service provided at no additional charge to end users; access to the emergency services provided by local government or other public safety organizations, such as 911 and enhanced 911... and toll limitation services to qualifying low-income consumers" (47 C.F.R. 54.101 (a)(1)). Eligible broadband Internet access services must provide the capability to transmit data to and receive data by wire or radio from all or substantially all Internet endpoints, including any capabilities that are incidental to and enable the operation of the communications service, but excluding dial-up service (47 C.F.R. 54.101(a)(2)).

All ETCs also are required to meet basic service quality and emergency backup standards and certify compliance annually. As mentioned previously, all ETCs must offer the Lifeline discount to eligible low-income customers. However, in the 2016 Lifeline Reform Order, the FCC granted ETCs that receive high-cost

support forbearance from their obligation to offer and advertise Lifeline voice service in counties where the following conditions are met: 51 percent of Lifeline subscribers in the county are obtaining broadband Internet access service; there are at least three other providers of Lifeline broadband Internet access service that each serve at least five percent of the Lifeline broadband subscribers in that county, and; the ETC does not actually receive federal high-cost universal service support. The FCC performs an analysis each year to determine in which counties the forbearance from voice Lifeline applies. In 2018, the FCC determined 81 Indiana counties met the conditions for forbearance from Lifeline.

The Commission designated all ILECs as ETCs in 1998 due to policies set forth in TA-96. The ILEC territories reflect the legacy monopoly telephone system, but they also serve the important function of ensuring that every square mile in Indiana has a carrier that is required to provide voice telephony service upon reasonable request. Although competition in the local exchange market has provided most Indiana households with a choice of multiple service providers, some areas of the state remain underserved. Currently, three large ILECs and 39 small, rural ILEC ETCs serve Indiana. However, in 2017, AT&T relinquished its ETC designation for census blocks within its service area that are not eligible for federal high-cost support. Therefore, there are areas throughout the state that only have access to mobile wireless, Lifeline-only ETCs, which are not facilities-based.

Some competitive local exchange carriers (CLECs) have sought and been granted ETC designation to receive High Cost support to deploy and maintain facilities-based voice telephony services for certain territories in Indiana. Some of the CLEC ETCs are affiliates of small, rural ILECs, but the ILEC and CLEC territories do not overlap. There

are four established CLEC ETCs. However, in 2019, six new ETCs completed an auction process with the FCC, known as the CAF II reverse auction. These ETCs have specific broadband deployment obligations as well as obligations to provide voice telephony and the Lifeline discount. Many of these ETCs are building new networks in different areas of the state that the FCC considers underserved. These new ETCs bring the total CLEC ETCs to 10.

Currently, all mobile wireless ETCs receive federal support only for Lifeline services and do not receive High Cost support. The FCC does not require this type of ETC to provide services using its own facilities because the ETC is receiving public funds only to provide discounted services to eligible customers, not to deploy and maintain networks. Most wireless ETCs resell the services of one or more of the major, facilities-based mobile wireless carriers serving the state. Eleven prepaid mobile wireless ETCs serve Indiana today.

INDIANA UNIVERSAL SERVICE FUND

The IUSF provides cost recovery so that companies in high-cost areas can continue to offer services at rates that are “just, reasonable, and affordable” as required by TA-96. In 2007, the IUSF was implemented to ensure that communications networks are built and maintained in areas of the state that are not economical to serve due to challenging terrain or extremely low-density development. When the Commission established the fund, it was determined that the fund should be reviewed every three years to ensure the operations of the IUSF are meeting the Commission’s objectives of preserving and advancing universal service within the state and to ensure that the processes, funding levels, size, and operation and administration

of the IUSF remain adequate and sufficient, among other considerations. The Commission also conducts a qualifications test every three years for companies that receive IUSF support to ensure continued need for the support.

The most recent triennial review was completed in 2018. At that time, the FCC was continuing to implement new policies or orders on reconsideration stemming from the USF/ICC Transformation Order. This order resulted in sweeping changes to federal universal service rules and policies. Consensus was reached by industry stakeholders testifying during the triennial review that the status quo should be maintained because it was too soon to determine the long-term effects of the FCC's new rules and policies regarding universal service. The Commission concluded its review and implemented no changes to the fund. With the uncertainty of the impact of recent changes and possibility of further FCC review and reforms, the Commission will continue monitoring the balance of the fund and changes at the federal level. If necessary, the Commission may consider changes to the IUSF before the next triennial review, scheduled to begin in 2021. The last qualifications test was concluded in 2016 and 32 companies demonstrated a continued need for IUSF support. A new qualifications test was opened in 2019.

EXPANSION OF BROADBAND ACCESS

Programs are in place at both the state and federal level to offer providers financial assistance to deploy broadband to unserved areas of Indiana. Information about broadband and the efforts to increase its availability are discussed below.

BROADBAND SPEEDS

Broadband speeds are characterized by both download and upload speeds. Broadband download and upload speeds are commonly expressed in a fractional form. For instance, 10 Megabits per second (Mbps) download and 1 Mbps upload is expressed as “10/1 Mbps” and 25 Mbps download and 3 Mbps upload is expressed as “25/3 Mbps.” The FCC's speed benchmark for evaluating the availability of broadband is currently 25/3 Mbps. In Indiana, Ind. Code § 4-4-38-6 defines broadband service as a connection to the Internet that provides capacity for transmission at an actual speed of at least 10/1 Mbps, regardless of the technology or medium used to provide the connection. Although there may be different target speeds, most of the discussions at the state and federal level have centered around 10/1 Mbps or 25/3 Mbps for wired broadband Internet access. However, in the Connect America Fund, Phase II (CAF II) Reverse Auction, the FCC awarded federal universal support to some providers for providing broadband at higher speeds – including for actual speeds as high as 1 Gigabit per second (Gbps)/500 Mbps.

Both the federal and state governments have put in place incentives to expand broadband availability. A few examples of these activities are described below.

FEDERAL PROGRAMS

FCC – CAF Phase II (Model-based support)

The FCC launched the CAF II on December 18, 2014, (CAF II model-based support). Approximately \$1.5 billion was allocated for unserved areas in large ILECs' territories to deploy broadband with speeds of at least 10/1 Mbps. In Indiana, AT&T, Frontier, and

CenturyLink accepted CAF II funds totaling \$51.1 million annually. In addition to these three companies, Cincinnati Bell Telephone Company, which primarily serves Ohio, but also serves the Peoria and West Harrison exchanges in southeast Indiana, also received CAF II support. Deployment obligations for the large ILECs accepting CAF II model-based support require 40% completion (build out of at least 10/1 Mbps) by the end of 2017, 60% completion by the end of 2018, 80% by the end of 2019, and 100% completion by the end of 2020. Census blocks in these large carriers' territory for which the large carriers either were not offered, or did not accept, federal CAF II support were included in the areas eligible for bidding in the CAF II Reverse Auction.

FCC – CAF II Reverse Auctions

The purpose of the CAF II Auction was to address census blocks that the FCC had determined were high-cost to serve, were not being served at the threshold levels by the price cap ILEC or an unsubsidized

competitor, and the ILEC serving the area declined CAF II funding to provide the supported services.

The bidding for this auction started on July 24, 2018, and concluded on August 21 after 18 rounds of bidding, spread out over 19 business days. There were 21 qualified bidders for Indiana at the start of the auction; six (6) were selected by the FCC as winning bidders to provide both broadband and voice services, assuming they meet final FCC requirements including documentation of financial qualifications. At the end of the auction, the FCC had assigned 24,530 Indiana locations to those six companies out of 33,847 total eligible locations, leaving 9,317 unassigned locations remaining in Indiana at the conclusion of the auction.

It is important to note that none of the six winning bidders in Indiana were assigned any locations in the “Baseline” performance tier. That means that all of the winning bids in the state were for speeds of 25/3 Mbps or higher.

Table 9: CAF II Reverse Auction: Winning Bidders and Support

	Winning Bidder	Total Assigned Support, over 10 Years	Annual Support Amount	# Locations Assigned to Winning Bidders	Total Assigned Support per Location
1	Benton Ridge Telephone Company	\$14,833,684.70	\$1,488,368.47	11,537	\$1,290.08
2	Mercury Wireless	\$1,400,844.80	\$140,084.48	7,371	\$190.05
3	Orange County REMC	\$10,020,496.30	\$1,002,004.96	4,046	\$2,476.64
4	Perry-Spencer Rural Telephone Cooperative, Inc.	\$1,182,425.70	\$118,242.57	359	\$3,293.66
5	RTC Communications Corp.	\$1,326,394.00	\$132,639.40	1,203	\$1,102.57
6	Wisper ISP, Inc.	\$123,648.00	\$12,364.80	14	\$8,832.00
TOTALS		\$29,117,493.50	\$2,911,749.35	24,530	N/A

STATE PROGRAMS

Broadband Ready Communities

In 2015, the Indiana General Assembly established the Broadband Ready Communities Development Center (Center) within the Indiana Economic Development Corporation. The Center was created to encourage broadband development throughout Indiana by certifying local communities as being broadband ready. When the Center certifies a community as an official broadband ready community, it is intended to send a signal to communications service providers that a community has taken steps to reduce barriers to broadband infrastructure investment. Although investment in broadband infrastructure is not guaranteed to follow once a community obtains the certification, the reduction of regulatory hurdles can show that a community may be ready for broadband investment. A local unit of government will be certified as a Broadband Ready Community if it:

- (1)** Establishes a broadband infrastructure permit procedure that complies with the statutory requirements;
- (2)** Establishes a procedure to promote broadband adoption after certification of the unit as a broadband ready community; and
- (3)** Complies with any other applicable requirements established by the IEDC.

OCRA Grants

Indiana Code chapter 4-4-38 created a grant program to be administered by the Office of Community and Rural Affairs (OCRA) for qualified broadband projects. The statute authorizes OCRA to award grants to qualified providers to deploy broadband services in unserved areas of Indiana using the rural economic development fund. When awarding grants, OCRA must follow the priorities laid out in statute:

- 1.** Extending Internet to areas that have no Internet connections or have average speeds of less than 10 Mbps.
- 2.** Deploying Internet where the only available Internet connection speeds are between 10 and 25 Mbps.

In early 2019 Governor Holcomb announced the Next Level Connections infrastructure program, which is an investment of \$100 million for the deployment of broadband. The Next Level Connections program builds on infrastructure investments made through industry funds as well as prior and ongoing grant programs. The Next Level Connections Broadband Grant Program was designed to promote access to broadband service to all areas of the state which is necessary for a highly functioning 21st century economy. The program provides up to \$100 million to foster broadband infrastructure investment and will be conducted in two phases. The initial phase will allocate funds to providers with approved applications to deploy infrastructure and service in unserved areas. Phase One awards were announced on Thursday, August 8. Governor Eric Holcomb awarded \$22.1 million in funding for 11 broadband projects, which were submitted by seven different communications service providers and electric utility cooperatives. Those companies contributed a combined \$14 million in matching funds, for a total broadband investment of \$36.1 million.

It is anticipated that the second phase will be to improve service in underserved areas with any remaining funds.

Separate from the Next Level Connections program, a Microsoft initiative (the Microsoft Airband Initiative) is also moving forward in Indiana. Microsoft will be working with Ohio-based Watch Communications to deploy broadband in 50 Indiana counties. Watch Communications currently operates in Indiana as W.A.T.C.H. TV, which was designated as an ETC in Cause No. 41052-ETC-78, for purposes of receiving federal universal service support from the CAF II Reverse Auction. Watch Communications is a subsidiary of Benton Ridge Telephone Company, which was designated by the FCC as one of the six winning bidders in Indiana in the CAF II Reverse Auction.

AREA CODE RELIEF

The Commission has jurisdiction over matters involving the introduction of new area codes in Indiana. A government agency called the North American Numbering Plan Administrator (NANPA) monitors the status of all area codes serving the United States. NANPA performs an analysis of projected exhaust dates for area codes twice per year, called a Numbering Resource Utilization Report (NRUF). *Exhaust* means that an area code is running out of blocks of 10-digit telephone numbers available for communications providers to assign to new customers.

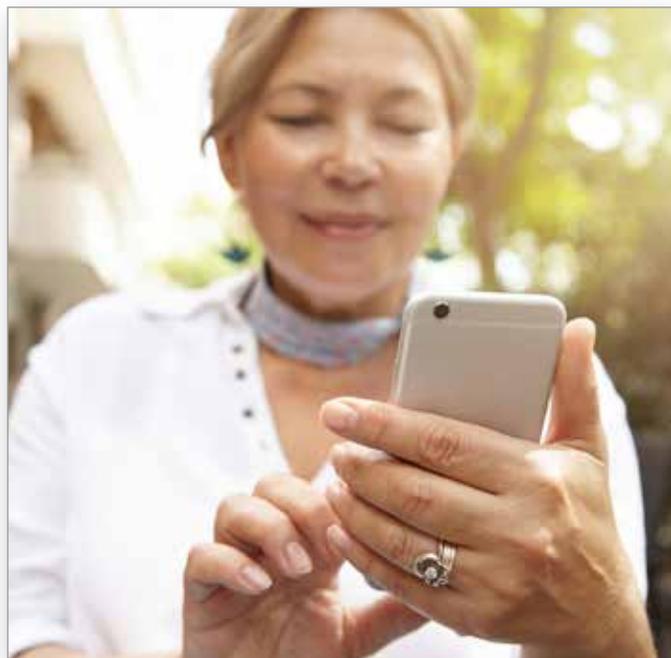
When an area code in Indiana is three years from exhaust, NANPA and representatives from the Indiana telecommunications industry meet to discuss the urgency for relief and the appropriate relief methods. NANPA then files a petition for area code relief with the

Commission along with a recommended method of relief. Three methods of relief can be used:

- Geographic split
- Area code overlay
- Boundary realignment

Ultimately, the Commission makes the final decision on which type of relief method is the most suitable. The Commission also is responsible for establishing new area code boundaries, establishing necessary dates for the implementation of area code relief plans, and directing public education efforts regarding area code changes.

In 2014 and 2015, two area code relief efforts were implemented in Indiana's 812 and 317 territories. In both cases, the Commission issued all services distributed overlays using area code 930 in the 812 region and 463 in the 317 region. This enabled consumers and businesses to keep their existing telephone numbers. After the changes went into effect, all parties must dial 10 digits (3-digit area code + 7-digit telephone number) instead of seven digits for local calls.



The next area code in Indiana that will need relief is not expected to exhaust until 2044. See the Commission’s website for more about the 812 and 317 area code relief (<http://www.in.gov/iurc/2808.htm>).

The following table shows the results of NANPA exhaust forecasts released in April 2019.

Area Code	Projected Exhaust Date
219	Beyond 30 years
260	Beyond 30 years
317/463	Beyond 30 years
574	Beyond 30 years
765	2044 2Q
812/930	Beyond 30 years



VIDEO

Legislation, the rise of video streaming, and ongoing technological advancements have all brought big changes to the video market.

LEGISLATION CHANGES

In 2006, legislation changed the way new VSPs receive authority to do business in Indiana. The Commission was given sole authority over the issuance of all franchise agreements made after July 1, 2006. Originally, VSPs exclusively held local franchises that they negotiated with the local government. Many VSPs still operate under local franchising agreements that were made prior to July 1, 2006. However, since 2006, the number of VSPs holding local franchises has decreased and the number of providers holding state-issued franchises has increased. This trend is the result of local franchises expiring and new providers entering the market for the first time, both of which require new state-issued video franchises to be issued. The number of providers by county varies, with some locations being more competitive than others. The industry also has seen some consolidation over the last few years, and this trend is expected to continue as current and future mergers are approved.

APPLICATION FOR CERTIFICATE OF FRANCHISE AUTHORITY

Per Ind. Code § 8-1-34-16, a company seeking to provide video service in Indiana must file an application for a Certificate of Franchise Authority. The application and instructions can be found on the Commission's website at <https://www.in.gov/iurc/3035.htm>. VSPs are required to provide only that information which is statutorily required, including a description and map of the designated service areas (DSAs) in which the VSP expects to provide video service. Any contiguous areas may be considered a single DSA, and additional DSAs will be labeled sequentially. The CFA application is filed as a docketed case, and an application fee of \$832 is required. The Commission has 15 days to review the application for completeness and accuracy, during which time the Commission can contact the company directly to ask additional questions or request missing information. An administrative law judge then issues an order granting the company a CFA to provide video service in those DSAs.

VIDEO COMPLIANCE FILINGS

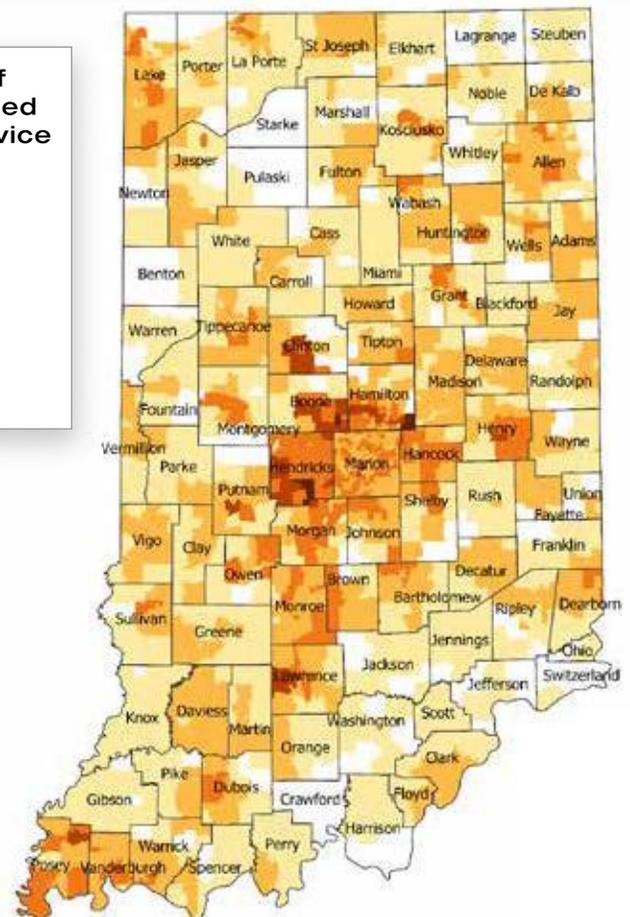
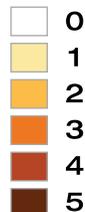
Upon receipt of a CFA, a VSP must comply with certain requirements, including notifying the Commission of any changes to its existing CFA. A VSP must file a Verified Notice of Change Petition, which can be found on the Commission's website, if it wants to increase or decrease its DSAs for reasons such as expired local franchises, sale of assets, or expansion purposes. The

Notice of Change Petition is a non-docketed filing and must be used for changes to a legal or assumed business name, principal business address, contact person, and other changes.

Any changes in the video programming or other programming service must be accomplished by the filing of an annual report due to the Commission on March 1 of each year, reflecting changes made during the previous year. Additionally, a biennial report must be submitted by March 1 of each odd-numbered year to provide an updated map for each authorized DSA, showing the portion of the authorized DSA(s) at the census block group level and a list of those census

Number of Providers Per Census Block Group as of Dec. 31, 2018

Number of State-Issued Video Service Providers



blocked groups in which the provider is actually offering service as of the prior year. This requirement is to comply with Ind. Code § 8-1-34-16; further guidelines are outlined in GAO 2019-4 found on the Commission's website at www.in.gov/iurc/2447.htm. The most recent biennial report was collected in 2019 for information as of December 31, 2018. The map below is a compilation of all the data submitted by video providers and shows the number of providers that reported offering video service in a specific census block group.

A VSP operating under a state-issued franchise must follow certain requirements. It must offer a basic service tier that includes all local programming such as public, educational, and governmental channels. It is required to report annually to the Commission on which channels are being offered. Although the Commission does not have authority over rates and charges, it does enforce FCC customer service standards. These include such things as the following:

- Customer service phone line
- Convenient bill payment locations
- Guidelines for service and installation time limits
- Notice to the customer regarding changes in rates or service

The Commission is required to track any cable and video complaints regarding VSPs operating under a state-issued franchise. Complaints made to the Commission are handled by the Consumer Affairs Division. This information is then reported to the Indiana General Assembly every year.

COMPETITION AND TECHNOLOGICAL CHANGES

The video market has undergone major changes due to the growing use of video streaming. In addition to the traditional cable or satellite TV offerings, consumers can now receive video service over the Internet with services like Internet Protocol Television (IPTV) and Over-the-top (OTT) Streaming. IPTV is TV from providers like AT&T (U-Verse) and CenturyLink (Prism TV). It is delivered over the Internet via a privately-managed network accessible typically using devices (e.g. receivers) issued by the operator to deliver the content to the consumer's television. OTT streaming is TV from third-party services like Netflix, Hulu, and YouTube, delivered over the open Internet and can be used with any device that can access the Internet, such as phones, tablets, and smart TVs with a broadband connection.

Although traditional cable and satellite TV subscribership has declined, digital video subscribership has increased causing new companies across multiple industries to enter the video market. The traditional cable video providers are now competing with telephone, broadband, and wireless companies for video customers. Consumers can choose from cable modem, digital subscriber line (DSL), and wireless broadband connections and can access shows through thousands of platforms and devices such as computers, smart TVs, smartphones, tablets, and gaming devices. Video providers trying to keep up with the market have begun providing more than just television service, but also video entertainment, Internet connectivity, and digital telephone services.



DIRECT MARKETING

The Commission's role of granting direct marketing authority to VSPs was established in 2013, pursuant to Ind. Code § 8-1-34-30. Direct marketing authority permits companies to conduct activities such as door-to-door sales only to residential properties in Indiana. In 2018, the statute was amended to allow direct marketing to businesses. Rather than requiring VSPs to obtain a permit in multiple municipalities where they plan to conduct sales activities, the Indiana General Assembly granted the Commission authority to certify companies at the state level. Companies can choose whether to seek state authority or local permission to solicit. VSPs applying for state direct marketing authority must certify that all requirements have been met for their employees and contractors. For example, companies must conduct a criminal background check on

prospective employees and must show proof of financial responsibility. They also have to file a list of employees certified to conduct direct marketing. The complete requirements for those seeking to provide direct marketing are outlined in Ind. Code § 8-1-34-30.

Commission orders granting direct marketing authority are posted on the Commission's website at <http://in.gov/iurc/2760.htm>. Additionally, the page includes a roster of all current and former employees who are certified by the company to conduct direct marketing under the requirements of the law. This enables local governments to verify that those individuals who are soliciting have in fact undergone review. Companies seeking to offer direct marketing authority in Indiana must follow the guidelines outlined in the Commission's GAO 2013-4, which can be found on the Commission's website at <https://www.in.gov/iurc/2447.htm>.



PIPELINE SAFETY DIVISION



PIPELINE SAFETY DIVISION

OVERVIEW OF REGULATION

The Pipeline Safety Act of 1968 established the federal pipeline safety program. This program establishes a framework and organizational structure for a federal/state partnership regarding pipeline safety. This framework promotes pipeline safety through exclusive federal authority for the regulation of interstate pipeline facilities, and federal delegation to the states for intrastate pipeline facilities. The federal/state partnership is the cornerstone for ensuring uniform implementation of the pipeline safety program nationwide. It also authorizes federal grants to help cover the costs of state agency personnel, equipment, and activities. Annual grant amounts are determined by the following:

- The amounts authorized and appropriated by Congress;
- The total amount of reimbursement requests made by other states; and
- The scores received for the state's pipeline safety program from annual federal evaluations of the program.

Grant amounts are primarily determined through annual evaluations of the state's program by federal auditors as well as annual reporting. Indiana's Pipeline Safety Program, as established by statute, has historically received high marks from the annual federal evaluations.

The Pipeline Safety Division is responsible for enforcing state and federal safety regulations for Indiana's intrastate natural gas and hazardous liquid pipeline facilities as established under Indiana Code chapter 8-1-22.5. The division operates in partnership with the U.S. Department of Transportation's Pipeline and Hazardous Materials Safety Administration (PHMSA) under a certification agreement.

The division's mission is to ensure the safe and reliable operation of Indiana's intrastate pipeline transportation system. This is accomplished largely through inspections, as well as the following:

- Training;
- Outreach programs;
- Enforcement through compliance actions, injunctions, and monetary sanctions; and
- Investigations of pipeline incidents.

The division also monitors and evaluates regulatory and policy initiatives, and advises the Commission on the potential impact of these changes on Indiana's pipeline operators.

PROPERTIES OF NATURAL GAS

Natural gas is odorless, colorless, and tasteless in its natural state. While it is not inherently dangerous in its natural state, if it is released within an enclosed area, it can displace oxygen and act as a simple asphyxiant. When mixed with the proper amount of air, natural gas is flammable and explosive. It is a naturally occurring resource formed millions of years ago as a result of heat and pressure acting on decayed organic material, and it is extracted from wells sunk into the earth. The main ingredient in natural gas is methane (94 percent).

Natural gas is widely used as a fuel for residential, commercial, and industrial purposes. At ambient temperatures, it remains in gaseous form; however, it can be compressed under high pressure to make it convenient for use in other applications or liquefied under extremely cold temperatures (-260°F) to facilitate efficient transportation of the gas. Liquefied natural gas (LNG) takes up only 1/600th of the space that natural gas would in its gaseous state and thus can be stored and transported more efficiently. LNG can be loaded onto specially built tankers (large ships with several domed and thermally insulated tanks) and moved across the oceans to deliver gas to other countries. When it reaches its recipient, it is warmed and changed back to its gaseous state; it can then be injected into natural gas transmission pipelines for further transportation. More uses for LNG as fuel are also being developed, such as truck fleets and seasonal drying operations for farming.

INSPECTIONS

Historically, the division conducts around 900 inspections of approximately 82 jurisdictional natural gas pipeline operators each year. Inspection types include audits of records, procedures, field inspections, and site visits on construction projects. Operator types include the following:

- Distribution;
- Gathering lines;
- Hazardous liquid;
- Master meter; and
- Transmission.

Probable violations identified during inspections lead to enforcement actions such as violation letters, orders of corrective action, and possible monetary fines. According to Ind. Code chapter 8-1-22.5, the Commission can assess a \$25,000 penalty per violation for each day that the violation persists, up to \$1 million for each related series of violations.

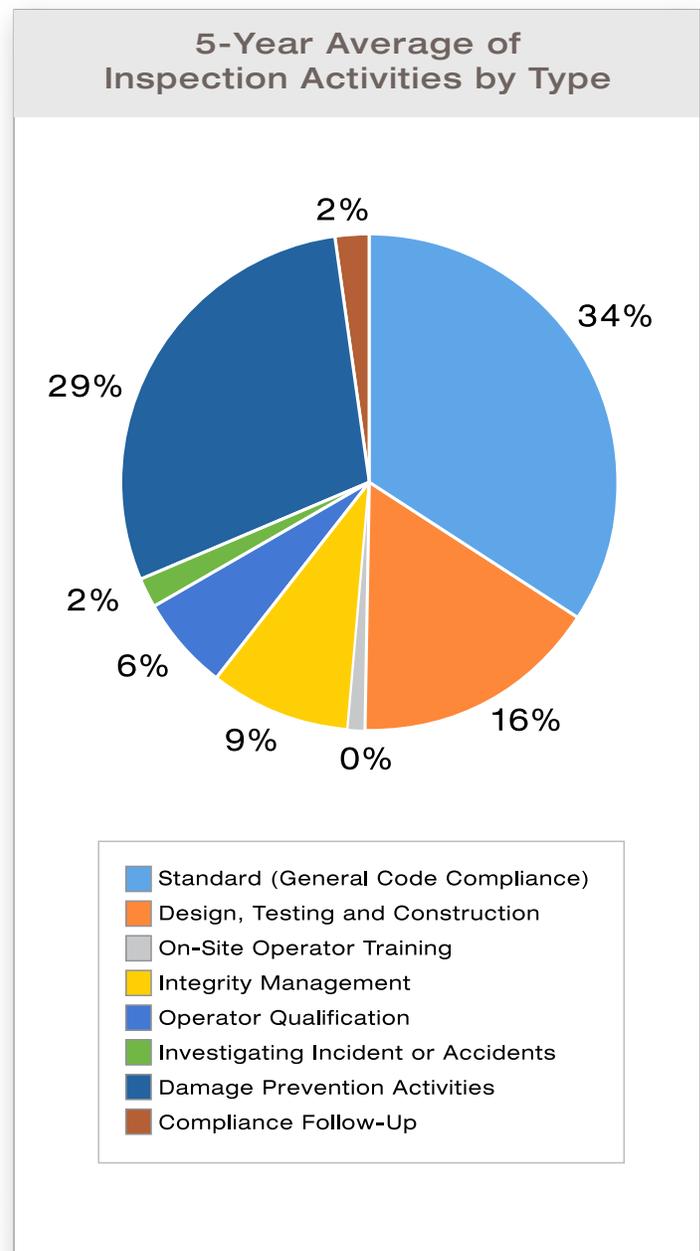
Although federal code sets the maximum time interval for inspections to be completed, the division maintains a data-driven risk model that prioritizes pipeline operators based on relative risk. This then drives the division’s risk-based inspection plan, which includes inspection intervals that are typically more frequent than the federal requirements. This risk-based approach helps the division schedule inspections based on risk and allocate resources as effectively as possible.

Some of the criteria considered in the division’s risk model include the following:

- The length of time since the last inspection;
- The history of the inspection unit (leak history, prior noncompliance, accident/incident history, any other information available from the operator’s annual reports, etc.);

- Internal and external events affecting the inspection unit (construction, recent changes in operator personnel or operating procedures, etc.); and
- For large operators, rotation of locations inspected.

In accordance with PHMSA requirements as well as the division’s risk analysis, the following chart demonstrates the five-year average of inspection activities:



INSPECTOR TRAINING REQUIREMENTS

The division's inspectors must be PHMSA-qualified to perform operator inspections. The training requirements include six core instructor-led classes. Each training class lasts approximately one week, and at the end of each course the inspector must pass an exam. Inspectors receive training on a wide variety of additional topics, including the following:

- Corrosion control of steel pipelines;
- Emergency response requirements;
- Liquefied natural gas safety and inspection;
- Operation and maintenance procedures;
- Pipeline failure investigation techniques;
- Pipeline safety codes;
- Pressure regulation and over-pressure protection;
- Procedures and inspection;
- Public awareness programs;
- Integrity management programs;
- Operator qualifications programs;
- Regulations and compliance procedures; and
- Steel welding and plastic fusion materials.

Select Indiana inspectors also are trained to inspect and audit hazardous liquid pipeline systems and records. Additional technical training is required for inspections and audits of integrity management programs and activities for transmission and distribution pipelines, operator qualification programs and records, control rooms, inline inspection of gas and hazardous liquid pipelines, drug and alcohol program requirements for operators, root cause analysis, and others.

LEAK DETECTION

Federal and state pipeline safety standards require natural gas pipeline operators to systematically patrol and survey all their transmission and distribution pipelines. These patrols and surveys are to be completed at prescribed intervals, which vary depending on specific environmental conditions or circumstances (e.g., earthquakes, construction activity, or weather conditions). The goal of these patrols and surveys is to proactively identify gas leaks or hazardous conditions that can lead to a gas leak. Advances in technology have continued to improve the effectiveness of leak detection equipment. Patrols provide evidence through visual observation of the existence of leaks and potentially hazardous conditions. Surveys, on the other hand, generally require the use of leak detection equipment designed to detect the presence of natural gas.

Indiana pipeline safety regulations go above and beyond federal regulations with regards to requiring leak surveys to be conducted once each calendar year in areas of high-occupancy buildings, such as schools, churches, hospitals, apartment buildings, and commercial buildings.

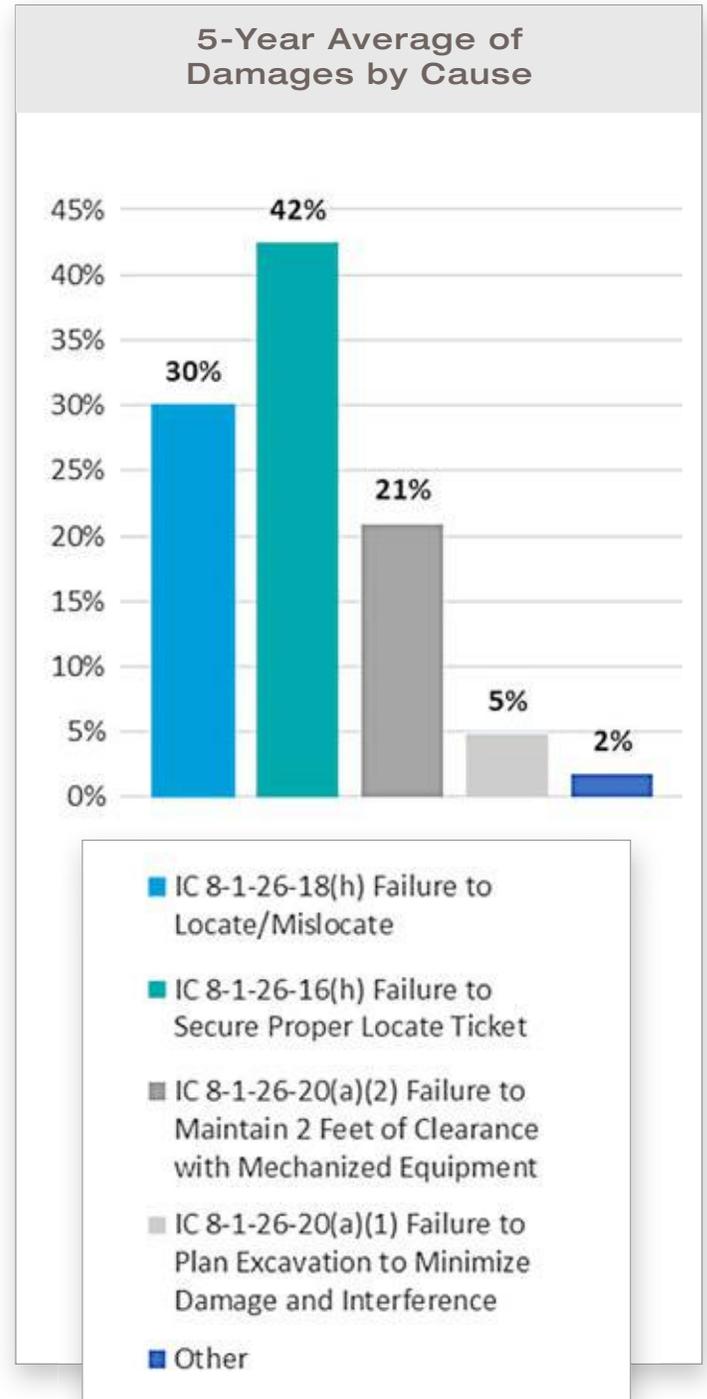
Pipeline safety regulations require natural gas distribution pipeline operators to ensure the gas they deliver is properly odorized. This is an important safeguard and provides additional assurances that natural gas leaks will be detected. Specific requirements are prescribed to achieve this desired odor. However it is achieved, the detection and repair of hazardous natural gas leaks are of paramount importance in the safe operations of natural gas pipeline systems.

DAMAGE PREVENTION

The division also is responsible for tracking and investigating all alleged violations of the Damage to Underground Facilities Act, or Ind. Code chapter 8-1-26, known as the Indiana 811 law, and is active in a variety of damage prevention efforts. On average, the division investigates more than 2,000 cases of alleged violations annually. After the division determines a violation of the state’s law has occurred, its findings are forwarded to the Underground Plant Protection Advisory Committee (UPPAC) for a recommended penalty. The UPPAC reviews each violation and recommends whether a penalty should be assessed. Then, that recommendation is forwarded to the Commission, where the five commissioners approve or deny the recommendation(s). Possible recommended penalties include a warning letter, training, written corrective action plans, and civil penalties (fines). Penalties are assigned based on a penalty schedule and decision log to ensure consistency and fairness.

The UPPAC was established under Ind. Code § 8-1-26-23 to act in an advisory capacity to the Commission concerning the recommendation of penalties under the Indiana 811 law. The committee consists of seven members who are appointed to two-year terms by the Governor. The make-up of the committee includes two professional excavation company representatives, two utility company representatives, one Indiana 811 representative, one utility line locating company representative, and one pipeline operator representative. The UPPAC meets monthly at the offices of Indiana 811, which is the association established under the law that handles the 811 calls and contacts and processes the tickets to locate underground

utilities). UPPAC reviews approximately 140 cases each month and recommends penalties. The average distribution of damage causes is as follows:



Attorneys from the Office of General Counsel serve as counsel and legal advisor to the UPPAC pursuant to Ind. Code § 8-1-26-3. The attorneys provide legal advice with regard to penalty recommendations, warning letters, and training programs, as well as the development of plans to avoid future violations.

Due to increased Indiana 811 law awareness and construction work in recent years, gas facility locate ticket requests have surged to more than one million tickets requested annually. More information on UPPAC can be found on the Commission's website at <http://www.in.gov/iurc/2640.htm>.

It is important to note that at this time investigations and penalties are assessed for damages only to gas facilities. However, the Pipeline Safety Division often receives complaints regarding other facility damages as well as other facility owners failing to locate in accordance with Ind. Code chapter 8-1-26.



UNDERGROUND PLANT PROTECTION ACCOUNT FUND

The Underground Plant Protection Account (UPPA) fund was established in 2009 under Ind. Code § 8-1-26-24. The fund is the accumulation of civil penalties that were levied and collected due to violations of Indiana's Damage to Underground Facilities law—also known as the Indiana 811 law. Civil penalties from Indiana 811 law violations are recommended by the Governor-appointed Underground Plant Protection Advisory Committee (UPPAC) and approved by the Commission. Paid penalties are then reinvested into public awareness, training and education, and incentive programs related to underground utility safety and damage prevention efforts. At the present time, the UPPA fund accrues and invests approximately \$1 million in civil penalties each year.

USE OF UPPA FUNDS

UPPA funds are used to provide programs designed to reduce damages done to buried facilities during excavation and violations of the Indiana 811 law. Per Indiana law, uses of UPPA funds must fall into at least one of three categories:

- Public awareness programs concerning underground plant protection;
- Training and educational programs for contractors, excavators, locators, operators, and other persons involved in underground plant protection; and
- Incentive programs for contractors, excavators, locators, operators, and other persons involved in underground plant protection to reduce the number of Indiana 811 law violations

All uses of UPPA funds strictly follow State of Indiana procurement guidelines. UPPA funds are overseen by a committee of Commission representatives that includes:

- Commission Chair;
- Commissioner;
- Chief of Staff
- Chief Administrative Law Judge;
- Executive Director of External Affairs;
- General Counsel;
- Pipeline Safety Division representative; and
- UPPA Fund Project Manager

Examples of UPPA fund uses include the following:

- Funding seven annual safety trainings across southern, central, and northern Indiana for excavators, operators, locators, and local officials;
- Partnering with the Indiana Broadcasters Association (IBA) to annually air approximately 50,000 utility safety focused public service announcements across Indiana on broadcast TV, as well as AM and FM radio stations. The announcements emphasize the importance of contacting 811 before digging and knowing what's below;
- Developing a free, multi-module, online safety training system for members of the underground facility community, which can be found at SafeDigIndiana.com; and
- Implementing a dedicated training grant program for Indiana municipalities called Safe Dig Indiana Local to assist municipalities in assuring safe excavation training is available to all Indiana municipalities.

The Commission maintains a dedicated UPPA fund website where current account balances, spending and deposit history, training opportunities, and current grants awarded are regularly updated. UPPA funds do not revert to the state general fund. You can access UPPA information at <http://www.in.gov/iurc/2847.htm>.

Those interested in creating a project focused on increasing underground facility safety can apply for a grant from the UPPA fund by visiting www.in.gov/iurc/2861.htm or suggesting a general use for the UPPA fund at www.in.gov/iurc/2854.htm.



GLOSSARY OF TERMS



GLOSSARY OF TERMS

Antitrust: The Sherman Antitrust Act, as enforced by the United States Department of Justice and the Federal Trade Commission, is intended to prevent the exercise of market power or other abusive actions that are detrimental to competition and consumers. These include monopolizing, or attempt to monopolize, trade or commerce; forming mergers or acquisitions that could lessen competition or create a monopoly; and employing price discrimination methods.

Automatic meter reading (AMR): A term denoting meters that collect data for billing purposes only and transmit this data one way, usually from the customer to the distribution utility.

Biomass: Organic, nonfossil material of biological origin. This material makes up a renewable energy source.

Biosolids: When wastewater is treated, bacteria is used to consume the organic waste products in the water. Eventually, these bacteria must be disposed of. Depending on the wastewater facility's sophistication, these bacteria might be concentrated using a digestion process and often are dewatered to make them easier to handle. The resulting product is commonly referred to as biosolids.

Blackouts: The uncontrolled successive loss of power. When a massive power failure occurs, the lack of electricity for illumination results in utter darkness.

Capital investment tracker: A periodic rate adjustment mechanism that enables a utility to reflect statutorily defined capital investment it makes in its system in its rates outside of a traditional base rate case. It allows the utility to match its investment and the compensation for that investment in a timelier manner.

City gate: The interchange at which the interstate and intrastate pipelines sell/deliver natural gas to local distribution companies.

Congestion: Constrained flow of energy—for example, the condition created when the system infrastructure doesn't allow the free flow of the energy.

Customer charge: Also called the service charge, it is a monthly fixed fee that is the same for all customers within a rate class per billing period. The customer charge or service charge typically recovers costs such as meter reading, billing costs, and other costs the utility incurs equally per customer or per account regardless of consumption level.

Cyber security: Preventative methods used to protect information and systems from being stolen, compromised, or attacked. It is a serious and ongoing challenge for the utility sector.

Decoupling: For energy utilities, decoupling separates fixed cost recovery from the amount of electricity or gas the utility sells. By appropriately separating fixed and variable costs, utilities will be protected if their sales decline because of customer efforts to reduce energy use and/or to reduce demand.

Demand: The rate of electricity usage (measured in kilowatt- or megawatt-hours) by a customer.

Demand response: If a customer agrees to reduce its demand during peak use times, it will get a better overall rate.

Demand-side management (DSM): The planning, implementation, and monitoring of utility activities designed to encourage consumers to modify patterns of electricity usage, including the timing and level of electricity demand.

Disinfection byproducts: Although chlorine disinfects drinking water, it also reacts with traces of other materials or particles (for example, organic matter such as decaying trees and leaves as well as urban farm run-off) in water and forms trace amounts of substances known as disinfection byproducts.

Distribution line: A pipeline network that transports natural gas from the transmission line (such as an interstate pipeline) to end users' service line or other distribution lines.

Distribution main: See distribution line.

Distribution system (electric): Generally, the low-voltage lines and transformers that transmit electricity from the large, bulk-power system to retail customers.

Distribution system (water): Consists of distribution pipes, storage tanks/towers, and booster pumps.

Economies of scale: Economies of scale exist when the costs of production decline as plant size and the amount of goods or services produced increase.

Electromagnetic pulse (EMP): A short burst of electromagnetic energy. The pulse may be due to a natural occurrence (for example, a solar flare) or manmade. This is a potential cybersecurity threat that could have significant ramifications to the utility and its customers.

Energy: Includes producing, storing, refining, transporting, generating, transmitting, conserving, building, distributing, maintaining, and controlling energy systems and system components.

Energy efficiency: Refers to measures or technologies that reduce the consumption of energy for a given service level.

Exhaust: A point in time at which the quantity of telephone numbers at the prefix level within an existing area code equals zero.

Expense tracker: A periodic rate adjustment mechanism that enables retail rates to be adjusted outside the context of a base rate case to reflect changes in operating expenses. These adjustments allow the utility to recover what it has spent on a dollar-for-dollar basis.

Fracking: The fracturing of rock by a pressurized liquid. Hydraulic fracturing is a technique in which water typically is mixed with sand and chemicals and then the mixture is injected at high pressure into a wellbore to create small fractures to extract oil and natural gas.

Grid: The interconnected power lines and generators that supply, transmit, and distribute electric power to the customers connected to it at various points.

Integrated resource planning: Indiana's electric utilities are required to supply power at the lowest reasonable cost while providing safe and reliable service. To do so, utilities must strategically plan on both a short-term and long-term basis by evaluating available resource alternatives to meet a utility's future electricity requirements. This is known as integrated resource planning.

Intercarrier compensation (ICC): The method by which communications carriers charge each other for terminating or originating calls.

Interstate pipeline: A natural gas pipeline company that is engaged in the

transportation, by pipeline, of natural gas across state boundaries and is subject to the Federal Energy Regulatory Commission under the Natural Gas Act.

Intrastate pipeline: These pipelines are regulated by state commissions and carry natural gas within state boundaries.

Investor-owned utility: A for-profit utility owned by stockholders that is regulated by the state and federal governments.

Loops: The copper wires that connect a residential customer to the public switched telephone network.

Membrane filtration: The filtering of water through a semipermeable layer such that water molecules pass through the membrane, but bacteria, chemicals, and viruses are prevented from passing.

Municipalization: Occurs when municipalities/cities buy investor-owned water or wastewater systems.

Net metering: An electric utility service offering that enables customers who generate their own electricity by installing renewable energy facilities, such as wind turbines or solar panels, to feed electricity they do not use back into the grid, while also relying on the electric utility as a backup provider. If the amount of electricity the customer receives from the utility is greater than the amount delivered to the utility, the difference is charged to the customer. If the amount of electricity the customer received from the utility is less than the amount delivered to the utility, the customer receives a credit on their next bill.

Off-peak: Period of relatively low electric system demand that often occur in daily, weekly, and seasonal patterns. These off-peak periods differ for each individual electric utility.

Overlay: An area code overlay occurs when more than one area code is available within the same geographic area. This situation requires the dialing of 10 digits for local calls.

Peak demand: The maximum electric load during a specified period of time. Utilities try to forecast their peak load to plan for adequate power supplies and demand response.

Private fire protection: Protection provided to individual customers that receive additional fire protection service through private hydrants, standpipes, or sprinkler connections.

Privatization: Occurs when investor-owned utilities buy municipal systems.

Public fire protection: Protection provided to all customers through public fire hydrants located throughout the water system.

Rate base: The value of property upon which a utility is permitted to earn a specified rate of return. It is established by a regulatory authority and generally represents the value of property purchased and used by the utility in providing service.

Rate class: A group of customers identified as a class and subject to a rate different from the rates of other groups.

Rate structure: The design and organization of billing charges by customer class to distribute the revenue requirement among customer classes and rating period.

Regulatory compact: The obligation of the utilities to provide safe and reliable service to customers, usually in an exclusive territory, in exchange for regulated rates.

Rural electric membership cooperative (REMC): An organization in which each customer is a member and an owner of the business with voting authority within the organization.

Special rate contract: A contract between a customer and a utility. These contracts typically encourage large-volume energy users to expand operations, locate within a service territory, or recognize unique characteristics of a customer's service needs. They also can be used to help retain a large-volume customer.

Stranded costs: Costs that occur when an investment's usefulness is eliminated before recovering its cost. These costs must be borne by either investors or customers.

Substation: Facility equipment that switches, changes, or regulates electric voltage. Except for a few large industrial customers, most customers' equipment generally operates at only a few hundred volts, rather than at the hundreds of thousands of volts used for transmission. Therefore, transformers are required to reduce the voltage before the power reaches a distribution or sub-transmission system.

Transformer: An electrical device for changing the voltage of an alternating current.

Transmission: Moving bulk energy products from where they are produced or generated to distribution lines that carry the energy products to consumers.

Transmission line: A system of structures, wires, insulators, and associated hardware that carry electric energy from one point to another in an electric power system. Lines are operated at relatively high voltages and are capable of transmitting large quantities of electricity over long distances.



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