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Power Generation Transmission & Distribution 2025

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David P. Flynn, Lindsey E. Haubenreich, Thomas F. Puchner and Dennis W. Elsenbeck Phillips Lytle LLP

Chambers

Global Practice Guides

Power Generation Transmission & Distribution

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Phillips Lytle LLP

2025

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Phillips Lytle LLP is a pre-eminent law firm with a fast-paced energy and renewables practice, providing cutting-edge expertise to a wide range of developers, owners, utilities, pipeline and transmission companies, retail energy suppliers and financial partners involved in renewable and other energy projects across New York State and beyond. The firm's extensive experience and knowledge allows it to complete projects on time and within budget. Phillips Lytle's areas of energy and renewables expertise include siting (such as working with New York's Office of Renewable Energy Siting and Electric Transmission), zoning and environmental reviews; solar, wind and energy storage pro-

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Transformation in the Power Industry

We are pleased to present the Chambers Global Practice Guide for Power Generation, Transmission and Distribution. Much is occurring in this dynamic space. A fundamental transformation of the electric energy and power industry is under way, and a number of things are driving change, growth and innovation. Technological advancement, engaged and educated customers, evolving regulatory requirements, economic impacts, and the constant reminder of significant climate change are all driving growth and development in this space.

As the market continues to evolve at a fast pace, the legal and regulatory systems are often driving some of these changes; at the same time, these same systems are, in certain instances, forced to play the difficult role of catch-up. That is certainly the case with the power industry. This Guide seeks to inform readers as to what various jurisdictions are doing to drive industry changes, respond to significant market evolution, and foster, encourage and manage the development of their energy resources.

While change in the energy sector has always occurred, it has been at a much different pace and scale in recent years. While the primary driver in the evolution of this sector was once the unbundling/deregulation of the utility industry, that has clearly changed. Though the unbundling of utilities continues, the legal and regulatory framework in many jurisdictions is also evolving to encourage – if not mandate – new non-carbon sources of electric energy as well as new entrants into the energy generation and transmission market. Every indication is that this will continue, and most likely accelerate, in many jurisdictions.

Legal and Regulatory Frameworks

Today, many of the changes in the legal and regulatory frameworks that pertain to the energy sector are impacted – if not driven by – unparalleled technological change. While wind and solar generation have been around for many years, the scope and deployment of these energy resources is approaching levels that require changes to the existing legal framework in place in many jurisdictions. In addition, emerging technologies, which are critical to addressing and supporting efforts to decarbonise, are becoming more impactful. Things such as large-scale energy storage, hydrogen and even a potential resurgence in nuclear energy are all creating pressures on existing legal and regulatory frameworks. These changes are causing jurisdictions to adjust in order to respond to these new and/ or emerging technologies.

All of these changes – whether they relate directly to decarbonisation or to the further penetration of alternative energy sources – impact the energy consumer. At the individual consumer level, this results in potentially significant impacts to power quality, increases in energy costs to facilitate and underwrite the increased electrification of our economies, as well as potentially more costly sources of energy generation. The impacts to large energy consumers, such as large manufacturing operations and other energy-intensive businesses, can be game-changers. For large industrial users of electricity, energy is tantamount to a raw material. An industry's ability to manage potentially significant increases in cost over a relatively short period of time can have material consequences. Therefore, it is important for the legal and regulatory frameworks in the various jurisdictions that are aggressively moving forwards with decarbonisation and/or electrification to manage the process, such that

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the costs do not escalate out of control or lead to unintended economic consequences.

Decarbonisation

Ongoing efforts to decarbonise the energy and power sector, together with a push to use renewable energy resources to replace carbon-based generation, is creating both opportunity and tension. The opportunity is an almost limitless market to provide new and/or emerging technologies that do not rely on carbon or a carbon-based fuel to provide electric energy. There is also a very significant effort focused on further electrification of our economies and life – for example, transitioning from natural gas or coal as a source of heat, with an ever-increasing reliance on electric energy. This is creating incredible pressure on generation, transmission and distribution capabilities around the world.

Certain estimates of growth in the energy sector put this into some context. Growth in renewable energy (primarily solar and wind) may result in renewable energy generation representing almost 40% of all global energy generation by 2040. In certain jurisdictions, the penetration of renewables and other non-carbon-based energy sources could reach double that number.

With the tangible impacts of climate change seemingly presenting themselves on an almost daily basis, more and more countries are recognising the need to decarbonise their economies. What could have been a more gradual transition is now taking on the feel of a crisis. This is forcing very significant (and costly) changes to occur in a very short period of time. It is also forcing the existing legal and regulatory frameworks and systems in many countries to evolve at a pace that is uncharacteristic for this sector. Consequently, it is imperative for those entities that are either impacted or involved in the decarbonisation effort to use tools such as this Guide to better understand and facilitate the implementation of the decarbonisation efforts.

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1. Structure and Ownership of the Power Industry

1.1 Law Governing the Structure and Ownership of the Power Industry

Today, the US power industry is comprised of four main segments:

- generation;
- storage/demand management;
- · transmission; and
- distribution.

No single entity sets the policy for each segment. The US legal system operates according to the concept of shared sovereignty: government power is generally divided between state institutions and the federal government. Wholesale power markets and interstate transmission systems are generally governed by federal regulation, while retail power markets and distribution systems are generally governed by state regulation. The contours of state and federal jurisdiction are increasingly being blurred with the advent of new technologies and policies, driven in large part by changes tied to alternative energy and power.

State Utility Commissions

Individual state utility commissions are, generally, the collective architects of the US power sector. They are each uniquely structured, but are generally comprised of between three and seven members, who may be elected or appointed, with authority granted by either the state legislature or state constitution to balance policies and preferences related to reliability, affordability, environmental impacts, consumer protection, utility profitability and security. Federal laws and policies governing the power sector are typically implemented by the states and layered with independently generated state laws

and policies, all of which are distilled and implemented by state utility commissions.

There are generally two broad classes of utilities in the USA – private investor-owned utilities (IOUs) and public utilities. Within each class are three general types. Private IOUs include vertically integrated (ie, bundled), restructured (ie, unbundled) and retail. Public utilities include municipal, co-operative and miscellaneous. Each class and type has a unique historical structure and legal framework.

Private IOUs

Vertically integrated IOUs are for-profit share-holder-owned entities that take on the functions of generating, transmitting and distributing electricity to the customer, and operate within a defined service territory as a regulated monopoly. In restructured states, the generation function has been opened up to competition. Restructured IOUs, therefore, operate primarily as transmission and distribution companies.

In restructured states, a significant share of power is provided by merchant generators, as many IOUs were required or incentivised to sell off most of their generation portfolio. The final category of privately owned utilities is competitive retailers that serve as commodity suppliers and brokers.

Public utilities

Public utilities are comprised of municipal utilities, co-operatives and uniquely structured miscellaneous entities. Municipal utilities are primarily distribution utilities that purchase wholesale power. Co-operatives are consumer-owned, non-profit entities that can be either distribution-focused businesses that serve member customers, or generation and transmission entities that serve distribution co-operatives. The final cat-

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egory of public utilities includes those that are the product of a state and/or federal statute to provide utility services and/or generation to a particular district.

History

Integrated IOUs and municipal utilities were the first to emerge in the late 1800s. As early utility competition resulted in the construction of parallel redundant power lines and infrastructure, prices plummeted and many utilities became bankrupt. Those that remained were granted a defined geographical service territory in which they could operate as a monopoly, in exchange for government regulation under what is known as the "regulatory compact".

In the 1930s, President Franklin D Roosevelt enacted a series of economic measures to counteract the effects of the Great Depression (the "New Deal"), which included, among other things, passage of the Federal Power Act of 1935 (FPA), the Rural Electrification Act of 1936 (REA), and the creation of certain federally authorised public utilities. The FPA established jurisdictional boundaries between the federal government, which regulates wholesale sales and interstate transmission, and the states, which exercise authority through state utility commissions that oversee retail sales and distribution infrastructure. To promote electrification of underserved rural areas, the REA provided funding to a new class of utility - publicly owned co-operatives.

Regulations

The Public Utilities Regulatory Power Act of 1978 (PURPA), created in response to the 1970s' energy crisis, encouraged conservation and created a market for non-utility power producers by requiring utilities, in certain circumstances, to purchase power generated by qualifying facilities (QFs). PURPA was implemented by each

state, resulting in a range of regulatory regimes across the country. PURPA paved the way for a series of Federal Energy Regulatory Commission (FERC) orders that promoted open access to transmission facilities. Beginning in the 1990s, a number of states further deregulated the vertically integrated utility sector such that over 16 states and the District of Columbia now have some level of active retail choice programmes.

The Energy Policy Act of 2005 (the "EPAct") represents one of the most significant pieces of federal legislation in the energy sector since the New Deal. It grants FERC enhanced authority to:

- prevent market manipulation and abuse;
- assess extraordinary civil penalties;
- approve siting of major transmission projects;
 and
- implement reliability standards.

A number of initiatives are under way at both the federal and state levels to facilitate the development of alternative power generation as well as to deal with the demands brought on by increasing electrification of economies in response to climate change. At present, at the federal level, aggressive steps are under way (and subject to ongoing legal challenges) to greatly reduce the scope of federal involvement in these initiatives; this increases the role and importance of a number of states in this regard.

1.2 Principal State-Owned or Investor-Owned Entities

The US electricity industry is comprised of over 3,000 electricity providers, which include over 2,000 publicly owned utilities, over 800 cooperatives, nearly 200 IOUs and over 200 power marketers.

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The largest vertically integrated public utility holding companies include Duke, Southern Company, NextEra, Entergy, Dominion and Xcel.

The largest restructured public utility holding companies include PG&E, Exelon, Edison International, Consolidated Edison, First Energy, National Grid and Northeast Utilities.

The largest retailers include AEP, NRG, Constellation, EFH, Exelon and ConEd.

The largest public power systems, based on net generation, are the New York Power Authority, the Salt River Project and CPS Energy.

1.3 Foreign Investment Review Process

While US utilities or utility holding companies may have foreign ownership, and the USA generally maintains – in principle – an "open investment" policy, that policy has been tempered by growing concerns about national security. The 1988 Exon-Florio Amendment to the Defense Protection Act of 1950 authorises the President of the USA, through the inter-agency Committee on Foreign Investment (CFIUS), to review and restrict foreign investments (particularly foreign states of concern) that may impact national security.

The Foreign Investment and National Security Act of 2007 (FINSA) enhances the Exon-Florio Amendment by broadly defining the type of infrastructure transactions covered and adding more stringent rules pertaining to the review and investigation of foreign investments. In 2018, Congress enacted the Foreign Investment Risk Review Modernization Act (FIRRMA), which expands the scope of transactions covered under CFIUS's jurisdiction. Currently, there is a growing level of concern at the federal level as to the role (and related control) of a number of

foreign-owned/controlled entities in this sector, suggesting further restrictions may be forthcoming.

1.4 Sale of Power Industry Assets

The sale of generation, storage, transmission and distribution system assets as well as the merger of industry entities generally requires federal and state approval. At the federal level, FERC approval is required under Section 203 of the FPA for the sale, lease or disposition of:

- facilities valued at over USD10 million under FERC's jurisdiction that are used for the transmission or sale of electrical energy in interstate commerce; and
- generation assets making wholesale sales.

FERC approval is also required to effectuate mergers, acquisitions, or change in control of jurisdictional facilities. In examining such transactions, FERC reviews the effect on competition, rates and cross-subsidisation and whether the transaction is consistent with the public interest.

Additional requirements may apply to transactions involving nuclear generation facilities, where approval from the US Nuclear Regulatory Commission (NRC) is required to effectuate an asset transfer. At the state level, state utility commissions are often required to approve acquisition or divestiture of power assets.

1.5 Central Planning Authorities

The USA does not have a central planning authority that oversees and administers the electricity supply and development of transmission and distribution facilities. The USA is broadly divided into three electricity grids – the Eastern Interconnection, the Western Interconnection and the Electric Reliability Council of Texas. Across those three grids are seven competitive

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wholesale power markets operated by the following FERC-regulated operators, which provide non-discriminatory access to the transmission network:

- the New York ISO;
- the California ISO;
- the Electric Reliability Council of Texas;
- New England ISO;
- PJM Interconnection;
- · Southwest Power Pool; and
- the Midcontinent ISO.

These seven regional transmission organisations/independent system operators (ISOs), collectively known as regional system operators (RSOs) serve roughly two thirds of the USA. Certain states in the South, Mountain West and Northwest did not join an RSO and continue to operate independently. RSOs are responsible for maintaining operation of the grid; they ensure that demand meets supply through capacity auctions and market mechanisms, and they are governed by FERC tariffs, rules and regulations.

Neither FERC nor the RSOs are responsible for making resource mix decisions, as such authority lies solely with each state. Some states require utilities to perform integrated resource planning and to demonstrate how utility infrastructure and investment will meet the needs of customers. Other states impose legislation and/or regulation to mandate or incentivise a certain resource adequacy mix.

1.6 Recent Changes in Law or Regulation

Material changes in law or regulation seemingly occur almost daily at the state level, particularly with respect to the role of decentralised, alternative energy resources. This increasing pace of change continues. At least 20 states and terri-

tories have passed legislation or taken executive action to achieve 100% renewable energy and/ or zero greenhouse gas emissions in either the power sector or economy-wide, each with distinct timelines, definitions and structures.

Federal Level

At the federal level, things are now much different. There have been several decisions, orders and regulations that have impacted the power industry, and there is an aggressive agenda to roll back some of these. More recently, in July 2020, the DC Circuit reaffirmed FERC's authority under the FPA to regulate the participation of distribution-level energy storage resources in wholesale markets without intruding on state authority over local distribution systems (National Association of Regulatory Utility Commissioners v FERC, No 19-1142, slip op (DC Cir 10 July 2020)). Building on that authority, FERC adopted Order 2222 in September 2020, which removes barriers to the participation of distributed energy resources (DERs) in energy, capacity and ancillary markets managed by RSOs. Order 2222 sets the foundation for enabling groups of diverse, distribution-level and/or behind-themeter resources (eg, electric vehicles, storage, efficiency, demand response) to be aggregated as a cohesive resource that would compete with conventional generation.

In November 2020, FERC issued Order 872-A, which clarified certain components of its landmark Order 872, first issued in July 2020, which updates rules that govern QFs under PURPA. Among other things, Order 872-A:

- clarified the use of tiered avoided cost rates to promote renewable energy development;
- relaxed certain recertification requirements for QFs; and

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 established rules for determining whether facilities are presumed to be at the same site for purposes of establishing whether they exceed the 80 MW cap for QFs.

In July 2023, FERC issued Order 2023, which reformed the pro forma generator interconnection procedures. Among other things, Order 2023 eliminated the one-by-one interconnection study, replacing it instead with a first-ready, first-served "cluster" study process. A cluster study process allows for the study of a group of interconnection requests by multiple generating facilities at the same time, rather than sequentially. Order 2023 also implemented enhanced financial commitments and withdrawal penalties, and established firm study deadlines to address the unjust and unreasonable rates resulting from interconnection queue delays. In March 2024, FERC further issued Order 2023-A to continuously streamline the generator interconnection process. Order 2023-A maintained the findings of Order 2023, clarified transmission provider obligations and extended the compliance filing deadline.

1.7 Announcements Regarding New Policies

The Trump administration has issued a number of policy decisions and executive orders to eliminate or roll back a number of the Biden administration's efforts to promote renewable energy and decarbonise the US economy. These redirected efforts reflect a government-wide approach to climate change initiatives and include the potential repeal of the Inflation Reduction Act of 2022.

1.8 Unique Aspects of the Power Industry

Investors and market participants should consider the powerful role played by state utility commissions in the architecture, pricing and

development of the US power industry – particularly as technology applications trend towards smaller-scale distributed energy resources (DERs), intermittent generation and locational value-based pricing mechanisms.

2. Market Structure, Supply and Pricing

2.1 The Wholesale Electricity Market The Role of FERC

The wholesale electricity market in the United States is generally regulated by FERC, an independent regulatory agency within the US Department of Energy (DOE), which implements the FPA, the Natural Gas Act (NGA), the Natural Gas Policy Act (NGPA) and the EPAct, among other statutes. According to Section 201 of the FPA, the wholesale market encompasses all sales of electrical energy made to any person for resale (16 USC Section 824). The FPA requires that all rates for wholesale sales of electrical energy in interstate commerce be just and reasonable and not unduly discriminatory or preferential.

FERC oversees three methods for setting wholesale rates.

- First, Section 205 of the FPA, codified at 16 USC Section 824 (d), requires public utilities to file their rates with FERC.
- Second, Section 206 of the FPA, codified at 16 USC Section 824 (e), empowers FERC, upon complaint or its own investigation, to fix a new rate based on the cost of service when it determines that the existing rate is not just and reasonable, or is unduly discriminatory or preferential.
- A third method of rate-setting in wholesale markets is by an avoided cost under PURPA.
 Under PURPA, certain co-generation and

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small power production facilities that meet specific operating and ownership standards may become QFs, and their power output must be purchased by an electricity utility. An avoided cost is the cost of the power purchased from the qualifying facility that is lower than the cost of the energy that the buying utility would generate itself or purchase from another source. QFs are determined by FERC and are commonly limited to facilities whose primary energy source is wind, hydro, solar, biomass, thermal or waste resources.

Wholesale rates can also be set by the marketplace through bilateral contracts or power purchase agreements. Before an entity can make sales at such market-based rates (MBR), they must obtain MBR authority from FERC. FERC will review wholesale contracts to ensure that there is adequate competition in the wholesale market guaranteeing that contracts were freely negotiated. FERC also engages in oversight over wholesale markets by regulating the terms and conditions of wholesale market sales.

RSOs and areas outside a regional operating authority

The US wholesale market is comprised of seven regional, centralised RSOs, and a patchwork of decentralised geographic areas that operate outside a defined, regional operating authority.

FERC has encouraged the creation of RSOs, which dispatch generation as necessary and have operational control, but not ownership, of transmission assets necessary to administer wholesale markets. RSOs are required to maintain operation of the grid (among other things), and are subject to enforcement by the North American Electric Reliability Corporation (NERC), which is the FERC-designated electricity reliability organisation of the USA.

The seven RSOs serve roughly two thirds of the USA. Certain states in the South, Mountain West and Northwest did not join an RSO and continue to operate independently through individual utility control areas where wholesale sales are made on a competitive basis primarily by power purchase agreements and bilateral contracts. The utilities in these control areas remain subject to certain aspects of FERC's jurisdiction, and individual control area operators must co-ordinate among themselves to ensure region-wide service reliability. Certain service jurisdictions located in regions not within RSO regions have recently joined a quasi-RSO wholesale market called the Energy Imbalance Market.

Locational marginal pricing

In the seven RSO regions, wholesale prices are set by the centralised market using locational marginal pricing (LMP). LMP sets the marginal cost of energy for certain locations (or nodes) based on the operational characteristics of the nodal transmission system itself, incorporating the financial value of congestion, energy losses and the actual energy being transmitted. Security-constrained economic dispatch ensures that least-cost energy is provided to each node based on operational, reserve and transmission constraints to address reliability and system needs.

Competitive auctions

RSOs typically also run capacity markets outside the traditional wholesale energy market to ensure reliable service through competitive auctions. In capacity markets, generators will submit bids one year or more in advance to be paid for their willingness to provide electricity at any time within the year in order to meet peak demand. Certain sales may be made on a cost-of-service basis in limited circumstances where competition does not provide adequate price signals.

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2.2 Electricity Imports and Exports

Transmission of electricity to a foreign country is regulated by FERC under Section 202 (e) of the FPA (16 USC Section 824a(e)). Upon application, FERC may grant an order to authorise the requested exportation of electrical energy. The DOE has authority over emergency authorisations of electricity transmission (16 USC Section 824a(c)).

Generally, electricity imported from a foreign country is not regulated by FERC or the DOE, but by the state within which the importing facility is located (16 USC Section 824a(f)).

2.3 Supply Mix of Electricity

Renewable energy is forecast to account for 44% of electricity generation by 2050. In 2024, approximately 55% of energy came from fossil fuels and approximately 19% from nuclear sources.

2.4 Market Concentration Limits Role of FERC

The wholesale market concentration of electricity supply is regulated by a number of federal government agencies, principally FERC. FERC ensures competition in wholesale markets through (among other things) screening and authorising market participants that seek to make wholesale sales of energy, capacity and ancillary services at MBR. Negotiated rates will only be upheld if neither party has market power – that is, the ability of one party to set prices above competitive rates due to their unilateral or co-ordinated ability to leverage undue influence on the market.

MBR authorisation

Market participants seeking MBR authorisation must file an application and receive approval from FERC, which may be granted if the applicant can demonstrate that it lacks, or has adequately mitigated, horizontal and vertical market power. FERC has adopted two screens for determining whether a party has horizontal market power: a pivotal supplier screen and a market share screen.

Applicants that fail one or both screens are presumed to have significant market power, but may rebut that presumption. In 2019, FERC Order 861 revised the requirements applicable to MBR sellers in certain RSO markets, allowing a seller to forego submittal of indicative screens by indicating compliance with FERC-approved market-monitoring measures adopted by RSOs.

MBR sellers must also demonstrate that they do not have vertical market power. FERC has determined that when an applicant owns, operates or controls transmission facilities a FERC-approved Open Access Transmission Tariff (OATT) adequately mitigates vertical market power. As such, an MBR applicant must either be bound by a FERC-approved OATT or receive a waiver of the OATT requirement.

FERC's oversight of M&A

FERC also regulates wholesale market concentration by overseeing mergers and acquisitions (M&A) of public utilities to ensure that the merger's effect on competition, rates, regulation and cross-subsidisation is consistent with the public interest.

FERC's use of the HHI and MPS

FERC generally relies on the Herfindahl-Hirschman Index (HHI) – a commonly accepted measure of market concentration – to determine whether the proposed transaction will increase market concentration to exceed the relevant market's threshold concentration levels. FERC uses the HHI and its Merger Policy Statement

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(MPS), issued in 1996, to analyse the transaction. The MPS articulates methods for further computing market concentration, identifies safe-harbour concentration levels and outlines the methods to be undertaken if a transaction failed either screen.

Role of Other Bodies

Energy industry M&A are also subject to review by the US Department of Justice (DOJ) and the Federal Trade Commission (FTC). While FERC's review M&A is a relatively straightforward public interest inquiry, the DOJ and FTC will typically follow their 2010 Horizontal Merger Guidelines (HMG) for a more complex analysis. DOJ and FTC authorisation may still be required upon FERC's approval of a transaction.

State utility commissions may also have jurisdiction to review public utility M&A transactions. However, instead of focusing on the wholesale market, their review focuses on the impact on retail rates and the public interest.

2.5 Surveillance to Detect Anti-Competitive Behaviour The EPAct

The EPAct significantly augmented FERC's authority to prohibit market manipulation, anti-competitive behaviour and fraud. FERC remains the primary authority overseeing competition in the wholesale electricity markets, while a variety of other federal agencies, such as the FTC or DOJ, may also have jurisdiction over electricity market participants (particularly over antitrust violations and criminal behaviour) as part of their generalised authority to regulate anti-competitive behaviour across a variety of market sectors.

In the EPAct, Congress enhanced and added sections to the FPA, NGA and NGPA, which prohibit manipulative or deceptive practices, and provided for maximum civil penalties of USD1 million per day, per violation of rules, regulations and orders issued under those acts. It also expanded FERC's authority with respect to anticompetitive behaviour by expressly prohibiting fraudulent or manipulative acts by "any entity" in the sale or purchase of electrical energy or the sale or purchase of transmission services – not merely entities providing service under FERC-approved, MBR authority (16 USC Section 824v).

Anti-Manipulation Rule

FERC implemented its authority under the EPAct by promulgating the Anti-Manipulation Rule in Order No 670 in 2006. The Anti-Manipulation Rule broadly defines market manipulation to include conduct such as:

- using or employing any device, scheme or artifice to defraud;
- making untrue statements or omitting to state material facts; or
- engaging in any act, practice or course of business that would operate as fraud or deceit upon another entity (16 USC Section 824v).

Office of Enforcement

For market surveillance and enforcement, FERC has an Office of Enforcement (OE), which is comprised of scientists, engineers, attorneys, auditors, financial analysts and energy analysts. Each division of OE oversees a variety of functions, including:

- ensuring compliance from market participants:
- initiating and executing investigations;
- providing warning of vulnerable market conditions;
- maintaining an Enforcement Hotline to informally resolve disputes; and

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 advising FERC on enforcement and compliance issues.

RSO Market-Monitoring Plans

Each RSO has market-monitoring plans, which implement a variety of activities designed to assess and improve wholesale electricity market competition. Similar to the functions of FERC's OE, RSO monitoring system functions include:

- monitoring and ensuring compliance with market rules and procedures;
- · gathering data;
- evaluating and reporting on market performance;
- proposing rule changes to improve market operation and performance; and
- in some cases, employing mitigation measures and sanctions where authorised.

3. Generation Facilities

3.1 Constructing and Operating Generation Facilities

The system of laws applicable to the construction and operation of generation facilities varies depending on the type of facility and its location. For the purposes of this discussion, distinction is drawn between offshore facilities and onshore facilities.

State law is the primary authority for the construction and operation of onshore generation facilities. Applicable laws generally take the form of:

- public utility law regulatory authorities;
- · local/state permitting laws; and
- state environmental review laws.

In the first category, some states require that electricity-generating facilities obtain a Certificate of Public Convenience and Necessity (CPCN) or similar approval for generating facilities prior to construction and operation under the state's public utility laws.

In the second category, local permitting may be required from the municipality where a facility will be sited in the form of a special use permit or similar approval under local land use and zoning laws. In some states, permitting is governed by a centralised ("one-stop") siting board that may supersede some or all local permitting authorities.

In the third category, various state environmental review acts (or "mini-NEPAs") apply, which generally resemble the federal National Environmental Policy Act (NEPA). Generally, if a federal permit is involved and the project may result in discharge into waters of the USA, a Clean Water Act (CWA) Section 401 Water Quality Certification will be necessary. Efforts are under way to streamline the Federal NEPA process as it relates to certain energy projects, including energy infrastructure projects.

Projects may also implicate federal authority. Specifically, where onshore projects involve federal lands, authorisation from the US Department of the Interior's (DOI) Bureau of Land Management (BLM) or the US Forest Service may be required. Depending on potential impacts, involvement by various consulting agencies may be necessary under the Endangered Species Act, the Migratory Bird Treaty Act, the Bald and Golden Eagle Protection Act and the CWA. Where federal action is involved, environmental review under NEPA will also be necessary. Again, as it relates to fossil fuel projects, efforts are under way to open up additional federal lands

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for exploration and development on an expedited basis.

Offshore generation facilities are routinely being proposed in the offshore areas of coastal states throughout the country. The Block Island Wind Farm – the country's first offshore wind farm – began operating off Rhode Island in 2016, and a number of other projects are in the development queue. The applicable laws for offshore facilities can be divided based on whether they are proposed for federal waters or state waters.

Pursuant to the Submerged Lands Act of 1953, 43 USC Section 1301 et seq, states regulate coastal waters in the areas within three miles from shore. Federal regulatory authority is applied beyond that point. Section 388 of the EPAct gave the US Secretary of the Interior authority over offshore renewable energy facilities (including all energy resources other than oil and gas and minerals) in federal waters. In general, the DOI Bureau of Ocean Energy Management (BOEM) issues leases, easements and rights of way for renewable energy development in federal waters pursuant to its regulations.

Projects also typically require approval from the US Army Corps of Engineers under Section 10 of the Rivers and Harbors Act (RHA) (obstructions to navigation in "navigable waters") and Section 404 of the CWA (discharge of dredged or fill material). As with onshore facilities, offshore federal actions that may affect the environment require compliance with NEPA.

For offshore facilities within state jurisdiction, construction and operation of renewable generation projects is governed by applicable state laws, including a state's mini NEPA. State laws may also provide for the necessary easement, lease or other right to use state-owned land

underwater. On the federal side, such projects require federal RHA Section 10/CWA Section 404 permission (due to installation of facilities in navigable waters), which will also trigger compliance with NEPA. Finally, a CWA Section 401 State Water Quality Certificate will be needed for projects that require RHA Section 10/CWA Section 404 permits. Recently, the federal government has taken actions to halt or eliminate approval and permits for offshore generation in federal jurisdictional waters, which is subject to ongoing litigation.

3.2 Obtaining Approvals to Construct and Operate Generation Facilities

As noted, local, state and federal approvals may be required to site, construct and operate electrical generation facilities. In many states, the applicant will need a CPCN or its equivalent from the state utility commission. As part of the CPCN proceeding, or as a separate process, an applicant will likely be subject to review by a multitude of state agencies and authorities, including the relevant counties and municipalities, drainage districts, state natural and environmental agencies, transportation authorities and cultural heritage preservation offices.

3.3 Approvals to Construct and Operate Generation Facilities

State, local and federal agency approval of generation facilities is contingent on the terms and conditions as determined by the applicable agencies in the review process. A company seeking a generation facility permit must undergo review by numerous authorities, which may include local, state and federal agencies/authorities. During such review, the applicable authorities often condition their approvals on certain modifications or considerations intended to make the proposed project compliant with the relevant permitting standards, or otherwise

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reduce impacts that are of concern to the regulators.

3.4 Eminent Domain, Condemnation and Expropriation Rights to Construct and Operate Generation Facilities

A CPCN issued by a state public utility commission may include eminent domain rights for the facility developer under terms and conditions specific to that state and its relevant laws. To act on their eminent domain authority, the developer must provide the landowner with just compensation based on the fair market value of the property being condemned, on the date that the eminent domain is exercised.

3.5 Decommissioning a Generation Facility

Decommissioning is often included as part of the terms and conditions of approval for generation facilities. The specifics of such requirements and how they are implemented are highly dependent on the local, state or federal authorities involved, and their unique practices. Permitting authorities may require formal decommissioning plans and financial security.

In some cases, decommissioning requirements are applied based on discretionary approval conditions, while in other cases, specific legal requirements for decommissioning may be derived from applicable laws or regulations.

4. Transmission Lines and Associated Facilities

4.1 Constructing and Operating Transmission Lines and Associated Facilities

The US transmission system is generally comprised of facilities that are privately, publicly, fed-

erally or co-operatively owned. While individual states may have primary authority over environmental reviews, siting and construction of electrical transmission lines and their associated facilities (including storage), federal authorities are involved when a project is subject to federal jurisdiction, located on federal lands, spans multiple states or lies in certain designated areas.

4.2 Obtaining Approvals to Construct and Operate Transmission Lines and Associated Facilities

Both state and federal certifications and approvals can generally be required to construct and operate electrical transmission facilities.

Some states may have a pre-filing consultation requirement designed to co-ordinate the review process across multiple agencies. Ultimately, the applicant will generally need to obtain a CPCN, or an equivalent certificate, from the state utility commission. As part of the CPCN proceeding, or as a separate process, an applicant may be subject to review by a multitude of state agencies and authorities, including the relevant counties and municipalities, drainage districts, state natural resource and environmental agencies, transportation authorities and cultural heritage preservation offices.

In addition to state permits and authorisations, an applicant may need to obtain approval from several federal agencies, including:

- the US Army Corps of Engineers;
- the Federal Aviation Administration;
- the US Fish and Wildlife Service;
- the Department of Agriculture;
- the Department of Commerce;
- the Department of Defense;
- the DOE;
- the Environmental Protection Agency (EPA);

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- the Council on Environmental Quality;
- the Advisory Council on Historic Preservation;
- the DOI; and
- FERC.

Building upon a 2023 Memorandum of Understanding between nine of these agencies aimed at expediting the siting, permitting and construction of transmission infrastructure, in April 2024 the DOE established the Coordinated Interagency Transmission Authorizations and Permits (CITAP) Program. The CITAP Program:

- implements a new integrated inter-agency pre-application (IIP) process for transmission projects;
- makes the DOE the lead agency for the preparation of a single environment review document to serve as the NEPA document for all required federal authorisations; and
- sets an expedited two-year deadline for completion of all federal authorisations and permitting from the date the DOE issues a notice of intent (NOI) to prepare an environmental impact statement (EIS).

The IIP process requires the project proponent to submit a project participation plan and a public engagement plan, which are intended to identify opportunities for the public to participate in project authorisation decisions and promote engagement with communities of interest and relevant stakeholders.

When a company's permit application is subject to review by FERC, the company must meet with FERC's Director of Energy Projects to initiate the pre-filing review process. Upon approval from the Director, FERC will issue a notice of the pre-filing process, and the company must implement a Public Participation Plan to identify how

it intends to communicate with stakeholders and disseminate information to the public.

Once the company files a complete application, FERC will review comments and recommendations from involved entities and individuals, hold public meetings and technical conferences, and clarify project-related issues. FERC is required to act on an application within one year of the filing date. In addition, FERC will issue an NOI to prepare an environmental assessment (EA) or EIS.

The NOI is sent to federal agencies, state and local agencies, and to any entity or individual that may be affected by the transmission facilities, seeking comments from interested parties. After the comment period, FERC will prepare an EA or EIS to outline its findings and recommendations. FERC will address the comments in the EA or EIS, or in the final order granting or denying the application. The extent of the federal review process will depend on a number of factors, including the size and location of the project and the degree of co-ordination between the federal agencies and the applicant. The future of this initiative, particularly as it relates to renewable energy-related transmission projects, is unclear.

4.3 Terms and Conditions Imposed on Approvals to Construct and Operate a Transmission Line and Associated Facilities

State, local and federal agency approval of transmission facilities is contingent on the terms and conditions as determined by the applicable agencies in the review process. As discussed previously, a company seeking a transmission facilities permit must undergo review by numerous authorities, both state and federal. During such review, the applicable authority will make comments and recommendations and will con-

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dition its approval on certain modifications or considerations that will make the proposed project compliant with the relevant safety, environmental, engineering and zoning standards.

4.4 Eminent Domain, Condemnation and Expropriation Rights to Construct and Operate Transmission Lines and Associated Facilities

A CPCN (or its equivalent) issued by a state public utility commission may include eminent domain rights to the transmission facility developer under terms and conditions specific to that state. To act on their eminent domain authority, the developer must provide the landowner with just compensation, based on the fair market value of the property being condemned, on the date that the eminent domain is exercised.

On the federal level, if a facility project is granted a permit by FERC or the DOE, the transmission facility developer will have eminent domain authority (16 USC Section 824p). The eminent domain authority can only be used for the permitted facilities.

The developer should refer the landowner to the relevant state agency or state Attorney General, and should explain to the landowner that they have the right to acquire the property, or property rights, by eminent domain under FPA Section 216 (e).

When a developer exercises eminent domain under FPA Section 216 (e), a condemnation proceeding in federal court must conform as nearly as practicable to the practice and procedure of condemnation proceedings in the courts of the state in which the property is located (FERC Order No 689, Sections 225–227).

4.5 Monopoly Rights to Provide Transmission Services

Under federal law, transmission entities do not have monopoly rights to provide transmission service within a specific geographic area. While transmission lines were historically owned by private, vertically integrated entities, FERC required transmission services to be unbundled and provided pursuant to each utility's FERC-approved OATT, which sets forth the terms and conditions of using the transmission system (FERC Order Nos 888, 889 and 890).

In 2011, FERC Order No 1000 built upon Order 890 to increase transmission development by requiring public utility transmission providers to participate in a regional transmission planning process to generate regional transmission plans.

While federal law does not provide for monopoly transmission rights, state law and utility commission regulation may provide for such rights under terms and conditions that will vary by state.

4.6 Transmission Charges and Terms of Service

Laws Governing Transmission Charges
Pursuant to the FPA, FERC has exclusive jurisdiction over:

- the transmission of electrical energy in interstate commerce;
- the sale of electrical energy at wholesale in interstate commerce; and
- all facilities for such transmission or sale of electrical energy.

This jurisdiction is conferred by Section 201 of the FPA, and the principal laws of such jurisdiction are codified at 16 USC Section 824, 824 (d) and 824 (e). Utilities providing transmission service subject to FERC's jurisdiction must abide

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by an OATT, which sets forth non-discriminatory rates for transmission and ancillary services.

Wholesale rates are set according to Sections 205 and 206 of the FPA. A rate case can be initiated by a utility filing for a rate change, by complaint from another person or entity, or by FERC's own initiative. Upon hearing, FERC will determine whether the utility's proposed rate is just and reasonable or will make appropriate modifications to the rate as necessary (16 USC Section 824e).

Transmission providers must publish service rates and available capacity, as well as rules and standards related to their transmission services, on the Open Access Same-Time Information System (OASIS). FERC has authority to review and ensure that rates and terms of transmission service are just and reasonable and are not unduly discriminatory or preferential.

Establishing Rates Through Formulas

FERC's policy is to permit utilities to establish rates through formulas. FERC will generally approve of or formulate new rates that are based on the utility's cost of service, to balance the interests of the utility and its customers. Under this approach, the aggregate costs – such as a reasonable return on investment – for providing each class of service are determined, and prices are set to recover those costs. FERC generally uses the formula E + d + T + (V - D)R, derived from a 12-month test period, to determine cost of service. In this formula:

- E = operating expense utilities are generally entitled to recover prudently incurred operating expenses that relate to the provision of wholesale service;
- d = depreciation expense depreciation means the loss in service value not restored

by current maintenance that is incurred in the course of service:

- T = taxes certain tax expenses associated with cost of service revenues;
- V = gross value of property facility cost plus working capital;
- D = accrued depreciation depreciation of assets: and
- R = overall rate of return sufficient to allow the utility to maintain financial integrity, attract additional capital and earn a return comparable to similarly situated companies.

In May 2020, FERC issued Opinion No 569-A, which accepts the use of an alternative model – the "risk premium model" – for determining whether a rate of return on equity is just and reasonable under Section 206 of the FPA.

Rehearing the Case

If any party to a FERC hearing is aggrieved by or does not agree with the result of FERC's order on the hearing, that party may request that FERC rehear the case. If FERC does not act on the request for a rehearing within 30 days, the request is deemed denied.

After FERC issues an order upon rehearing, the parties to the hearing have the right to petition the United States Court of Appeals for review of the order – typically the United States Court of Appeals for the District of Columbia Circuit or the jurisdiction in which the utility has its principal place of business.

FERC has authority to take in and resolve complaints by assigning the case to alternative dispute resolution, issuing an order on the merits based on the pleadings, or establishing a hearing before an administrative law judge.

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4.7 Open-Access and Non-Discriminatory Transmission

Pursuant to a series of FERC Orders first promulgated in 1996, transmission services must be provided on a non-discriminatory and openaccess basis.

FERC issued three key orders to require open access to transmission facilities.

- Order No 888, issued in April 1996, required all public utilities that own, control or operate facilities used for transmitting electrical energy in interstate commerce to file OATTs.
 Order No 888 permitted public utilities and transmitting utilities to seek recovery of legitimate, prudent and verifiable stranded costs associated with providing such open access.
- Order No 889 required all public utilities that own, control or operate facilities used for transmitting electrical energy in interstate commerce to participate in an OASIS to provide actual and potential open access transmission customers with information that would enable them to obtain open-access non-discriminatory service.
- Order No 890 was issued in February 2007
 to strengthen the OATT, reduce opportunities
 for undue discrimination, facilitate FERC's
 enforcement and increase overall transparency. Issued in July 2011, Order No 1000
 amended Order 890 by requiring public utility
 transmission providers to participate in a
 regional transmission planning process that
 produces a regional transmission plan.

5. Distribution

5.1 Constructing and Operating Electricity Distribution Facilities

The distribution system – which can include storage and microgrids – is primarily governed and regulated at the state level. State law and state utility commission regulations govern the methods and standards by which prudent distribution system investments are recovered in a utility's rate base or through other appropriate mechanisms. Construction, siting, zoning and other land use considerations and approvals generally fall within the purview of relevant city, county and municipal authorities, which vary significantly by state.

5.2 Regulatory Process for Obtaining Approvals to Construct and Operate Electricity Distribution Facilities

While the substantive and procedural regulatory process for constructing and operating distribution facilities varies by state, state utility commission regulations generally focus on compliance with reliability, operational and safety standards. While some state utility commissions have authority over the siting and approval of permits for the construction of distribution infrastructure, most states require the involvement and/or approval of multiple agencies, beyond the state utility commission, to review environmental, cultural, historical, technical and economic impacts.

Generally, FERC plays a limited role in distribution infrastructure development, only becoming involved to the extent that there is a jurisdictional question regarding the facility's status as a distribution or transmission facility, or if the facility implicates a federal law under the purview of FERC's jurisdiction.

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Public Participation

Public participation and input may be permitted in accordance with applicable state and local laws. Similar to the federal processes, state law may require a public hearing, and the overseeing state agency or state utility commission may solicit public comments. Most state utility commissions have an online public docketing portal where applications, notices, comments, petitions, rulings and orders are posted.

Depending on the state and the type of distribution facility being proposed, a utility or developer may need to file advance notice of a proposed facility, which may be subject to public comment. Timing of distribution system approvals may depend on state-specific public notice and comment requirements, utility rate case schedules, local government involvement, and state policy and regulation.

5.3 Terms and Conditions Imposed in Approvals to Construct and Operate Electric Distribution Facilities

The terms and conditions of distribution facility approval vary based on state regulations and market structures. In vertically integrated states, a state utility commission typically requires the distribution facility applicant to demonstrate that a facility is necessary, prudent, in the public interest, and just and reasonable in light of current market conditions and state policy objectives. Approval may be conditional on compliance with certain safety, environmental, engineering and public interest standards.

5.4 Eminent Domain, Condemnation or Expropriation Rights to Construct and Operate Electricity Distribution Facilities

The power of eminent domain, condemnation and expropriation is commonly granted to electrical energy distribution facility applicants upon review and approval of their construction and operation application. However, depending on the applicable state laws governing eminent domain, the rights of the distribution facility applicant will vary.

A distribution facility or utility exercising its right of eminent domain must provide just compensation for the property being condemned.

5.5 Monopoly Rights for Electricity Distribution Entities

In most states, utilities have geographically defined service territories, provided for by state legislation or regulation, within which the utility has monopoly rights to provide a distribution service. Exceptions may exist in some states for competitive market participants, depending on state law and regulation. The degree to which monopoly service rights exist, the extent of deregulation, the method by which such rights are modified and the opportunity for competitive market participants to compete within those service territories varies significantly by state.

5.6 Electricity Distribution System Charges and Terms of Service

The primary authority over electrical energy distribution is each state's utility commission, which typically has broad authority to ensure just and reasonable rates, terms and conditions of distribution service in accordance with state legislation, regulation and promulgated rules.

FERC imposes a functional test for the case-bycase determination of whether a facility is providing interstate transmission service or local distribution service, but generally defers to states' interpretation and application of those factors in making its determination. State utility commissions have jurisdiction over rates and terms of service for retail distribution-level utility service.

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Generally, the rate-making process is designed to balance the utility company's opportunity to earn a fair return on its investments and the customer's interest in receiving a safe, reliable service at just and reasonable rates.

State Utility Commission

For utilities with rates that are regulated by a state utility commission, rates are generally set through regulatory proceedings following submission of a request to increase base rates, along with written supporting testimony and evidence. The state utility commission, along with interested parties that seek to intervene, may propound interrogatories and/or requests for information on the utility, and vice versa. Generally, parties will brief their positions, and the rate case may settle if a sufficient number of parties agree to a joint settlement, or the case may proceed to formal hearings.

In most states, the utility rate case documents are posted on a public docketing database, unless they are confidential or protected pursuant to state regulations and state utility commission rules. The process, frequency, duration and timeframe for rate cases depend on the state in which the distribution facility is located and the utility tariffs sought to be modified, but the process generally ranges from eight to 12 months and results in an order covering one or more years.

Cost-of-Service Regulatory Model

Most states operate under a cost-of-service regulatory model whereby the regulator determines the utility's revenue requirement that reflects the total amount that must be collected from customers in rates for the utility to recover its reasonable and necessary expenses, as well as to earn a reasonable return on investment. The revenue requirement is generally derived from a formula that accounts for the utility's rate base, a fair rate of return, operating costs, depreciation expenses, taxes and other costs. The treatment of electricity supply, among other items, will vary depending on the degree to which states have restructured their electricity market.

While states may have different approaches to calculating a rate of return, the rate should be sufficient to maintain the financial integrity of the utility, enable the attraction of additional capital and be equal to that earned by other companies with comparable risk profiles. Depreciation rates are approved by state utility commissions upon review and consideration of depreciation studies, which are generally performed by depreciation consultants and supported with expert testimony in rate case proceedings. Some states have adopted alternative rate-making methodologies that are focused on incremental rate recovery, performance-based metrics and other adjustment mechanisms that vary by state.

Reconsideration of Utility Rates

Following issuance of a formal ruling or order on a utility's rate request, a utility or interested party may request a rehearing or reconsideration depending on state law and regulation. Once a final agency determination has been reached and all administrative remedies have been exhausted, an entity may appeal the decision to the applicable state court for judicial review.

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