

United States

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DOMESTIC SECTOR OVERVIEW

State of the market

- 1 | Describe the domestic natural gas sector, including the natural gas production, liquefied natural gas (LNG) storage, pipeline transportation, distribution, commodity sales and trading segments and retail sales and usage.

Operations in the upstream segment of the United States gas sector are conducted by the same kinds of entities that engage in the exploration and production of liquid hydrocarbons. This segment is occupied by a variety of private parties, from individual entrepreneurs to large integrated firms, engaged in securing grants of licences and leases to explore for and produce valuable substances. Processing of gas and fractionation of natural gas liquids can occur in the field by the lessee, or in plants along gathering or trunk lines between the field and the main trunkline pipeline systems. Operations in the midstream and downstream segments of gas and LNG storage, trunkline transportation and local distribution are typically conducted by private entities subject to public utility regulation at the federal or state level, or by municipal utility districts.

The US has six LNG export terminals. As of October 2019, 16 new terminals had been approved by the Federal Energy Regulatory Commission (FERC), eight of which were under construction. The US has been a net exporter of natural gas since 2017, and the US Energy Information Administration (EIA) predicts that US exports will continue to increase as new LNG facilities come online. In 2019, the US became the world's third largest exporter of natural gas, behind Australia and Qatar, and the International Energy Agency predicts the US will surpass those countries to become the largest exporter within the next five years. Although the US's LNG exports continue to rise, 70 per cent of total US natural gas exports were by pipeline in 2018, 67 per cent of which went Mexico.

In 2019, the US natural gas pipeline network consisted of approximately 3 million miles of mainline, gathering and distribution systems. Approximately 1,200 entities (many of which are affiliated) operate the interstate and intrastate transmission system, and more than 1,300 entities operate the distribution system. The network serves more than 75 million customers, including approximately 5.4 million commercial customers and over 185,000 industrial and power generation consumers.

The US Department of Energy's (DOE) 2015 Quadrennial Energy Review report predicted that the US interstate transmission network will continue to expand until 2030. Between 2015 and 2030, the DoE anticipates the addition of 38 to 46.5 bcf/d (billion cubic feet per day) of interstate pipeline capacity at a cost of between US\$42 billion and US\$53.5 billion. The DoE projects that much of that expansion and investment will be front-loaded (2015–2020), with subsequent years (2021–2030) experiencing slower rates of expansion and comparatively

less investment. The DoE's long-term forecast of slower interstate transmission capacity expansion and lower investment reflects the fact that much of future natural gas production and demand are expected to be in close geographic proximity with one another, thereby reducing the need for additional infrastructure. The DoE's long-term projections also reflect its expectation that existing natural gas pipelines will support much of the changing supply and demand conditions and government energy policies.

Consumption

- 2 | What percentage of the country's energy needs is met directly or indirectly with natural gas and LNG? What percentage of the country's natural gas needs is met through domestic production and imported production?

According to the EIA, in 2018, natural gas accounted for approximately 31 per cent of total US primary energy consumption, which represents a 2 per cent increase from 2017. The US consumed approximately 30 trillion cubic feet of natural gas, and 100 per cent of that demand was met through domestic production. Most of the natural gas that the US imported via pipeline in 2018 was from Canada (more than 97 per cent).

US natural gas demand is projected to increase significantly in the years ahead. The EIA's 2019 Annual Energy Outlook predicts that natural gas will comprise 34 per cent of total US energy consumption by 2050, driven by increases in US domestic electric and industrial consumption and comparatively low prices. Exports (via pipelines to Mexico and LNG terminals) are also expected to be significant long-term sources of demand. In 2018, FERC issued several amended presidential permits to increase natural gas export capacity to Mexico, including one for Tennessee Gas Pipeline, which increased the pipeline's permitted capacity by approximately 250 per cent.

Government policy

- 3 | What is the government's policy for the domestic natural gas sector and which bodies set it?

A central feature of governmental policy for the domestic natural gas sector is to regulate firms with monopoly power so they are unable to abuse that power. This is balanced by policies that support increased domestic gas production and, for limited parts of the sector, deregulation and the promotion of competitive market forces. Policies are set by the legislative and executive branches of both federal and state governments. Principal authority for establishing policies of the US federal government regarding natural gas has been delegated to administrative agencies that are part of the executive branch, particularly FERC.

Regulatory authorities

4 Which authorities make regulatory policies and decisions in respect of the production, transmission, distribution and supply of natural gas?

Production, drilling and supply

Federal lands

Federal lands are managed by the Department of Interior (DoI). Within the DoI, the Bureau of Ocean Energy Management (BOEM) and the Bureau of Safety and Environmental Enforcement (BSEE) regulate offshore drilling, the Bureau of Land Management (BLM) regulates onshore drilling on federal lands and the Bureau of Indian Affairs oversees mineral leasing on Indian lands.

State lands

Drilling on state lands is managed by state departments of natural resources and related agencies. Coastal states additionally have authorisation rights over submerged lands and 'inland waters' generally within three miles of the coast. Each state has its own set of requirements and regulations governing the leasing of such state-owned lands.

Privately owned lands

The leasing of private land is generally negotiated by lessees and individual landowners.

Transmission

The primary federal regulatory agency governing natural gas transmission is FERC. It has jurisdiction over the regulation of interstate pipelines, and is concerned with overseeing the implementation and operation of the natural gas transportation infrastructure. In addition, FERC has primary regulatory authority to permit, site and approve onshore and nearshore LNG import and export terminals.

FERC's regulatory authority extends to the interstate transportation of natural gas, the import and export of natural gas by pipeline or LNG terminal, and certain environmental and accounting matters. FERC obtains its authority and directives in the regulation of the natural gas industry from a number of laws:

- the NGA;
- the Natural Gas Policy Act of 1978;
- the Outer Continental Shelf Lands Act;
- the Natural Gas Wellhead Decontrol Act of 1989;
- the Energy Policy Act of 1992; and
- the Energy Policy Act of 2005.

The Office of Pipeline Safety of the Department of Transportation (DoT) has jurisdiction over interstate pipeline safety, while the DoE has authority over permits to import and export LNG. Comprehensive rules have been issued by those agencies.

State authorities regulate pipeline capacity that is considered to be 'intrastate'.

Distribution

State regulatory utility commissions have oversight of issues related to the siting, construction and expansion of local distribution systems.

State public utilities commissions have jurisdiction over retail pricing, consumer protection and natural gas facility construction and environmental issues not covered by FERC or the DoT. FERC also regulates interstate pipeline rates, and ensures that rates and charges for such pipeline services are just and reasonable and not the product of undue discrimination.

FERC is designed to be independent from influence from the executive or legislative branches of government, or industry participants, including the energy companies over which it has oversight. It is

composed of five commissioners who are nominated by the President and confirmed by the US Senate. Each commissioner serves a five-year term, and one commissioner's term is up every year.

The DoI, the DoT, the EPA and the DoE are cabinet-level agencies, and their respective secretaries or administrators are chosen by the President, subject to Senate confirmation.

There are several adjudicatory options for challenging or appealing decisions of the regulator. FERC may make a decision without any further procedures, hold a trial-type hearing before an administrative law judge or hold a technical conference or 'paper' hearing. Alternate dispute resolution, such as mediation and arbitration, may also be used. FERC decisions may be appealed to the federal courts of appeal.

Where FERC is implementing a federal statute, an objecting party must usually show that FERC's implementation is an 'arbitrary and capricious' interpretation of the federal statute. This is a high standard that is rarely satisfied. Additionally, a party must show that it has standing to bring the suit, and satisfy other justiciability requirements.

Members of state regulatory commissions are appointed in most states, but are elected in some states. Decisions of state regulatory commissions on matters such as intrastate pipeline and distribution rates, as well as customer billing and service issues, can be appealed through the state court system. However, such decisions are rarely overturned unless the appellant can convince the court that a decision is patently contrary to the evidence taken as a whole.

The government authorisations required to carry on natural gas exploration and production activities depend on whether the proposed project is to be conducted on federal, state- or privately owned land, and whether it is proposed to be conducted onshore or offshore.

Enforcement

As with any segment of the industry that interacts with and is regulated by government agencies, natural gas explorers and producers, suppliers and other operators can be subject to licence revocation, fines and penalties for failure to comply with applicable regulations or permit requirements. Agencies follow notice and hearing procedures to issue rulings, the findings and decisions of which are generally reviewable by courts. Agencies can also seek court intervention to enforce their determinations. Failure to comply with applicable requirements can result in a loss of entitlements and suspension or termination of operations, in addition to monetary penalties.

REGULATION OF NATURAL GAS PRODUCTION

Ownership and organisation

5 What is the ownership and organisational structure for production of natural gas (other than LNG)? How does the government derive value from natural gas production?

In contrast to the oil sector, in which some companies are active in all segments, it is more common for companies in the natural gas sector to concentrate on two or three segments (eg, production and gathering or transmission and storage). Ownership of pipeline transportation capacity is separated from ownership of the natural gas transported via pipeline, although some Canadian producers also own pipelines that cross from Canada into the US.

The federal government does not participate directly as a party in private natural gas production transactions. However, in fiscal year 2018, approximately 9 per cent of all natural gas and 6 per cent of natural gas liquids produced in the US occurred on federal or native lands. The federal government derives value for gas produced on federal lands through royalties, annual rentals and bonus payments. The Office of Natural Resources Revenue, an agency within the DoI, is responsible for the management of production revenues. Production on state lands

is managed by the appropriate state agency. In addition, government agencies impose a variety of taxes and charges. For example, FERC is authorised to recoup its entire budget appropriation through the imposition of annual charges and filing fees.

Regulatory framework

6 Describe the statutory and regulatory framework and any relevant authorisations applicable to natural gas exploration and production.

The relevant statutory and regulatory framework for natural gas exploration and production depends largely on whether the activity is conducted on federal, state or private lands, and whether it occurs onshore or offshore. Enforcement generally occurs through administrative processes with the right to seek court review.

The BOEM and the BSEE oversee the management of the mineral resources generally located more than three miles from the coast on the outer continental shelf (OCS). The BOEM is responsible for managing development in an environmentally and economically responsible manner, and the BSEE is responsible for enforcing safety and environmental regulations. The DoI prepares a five-year programme that specifies the size, timing and the location of areas to be assessed for federal offshore natural gas leasing. Bids are usually solicited on the basis of a cash bonus and a royalty agreement, with the highest bidder awarded the lease. OCS leases contain decommissioning obligations requiring lessees to return the leased area to the legally required condition, and the BOEM requires lessees to post security to ensure the decommissioning and other lease obligations are met.

Additionally, federal regulations require open access to OCS pipelines. The open access rule provides complaint procedures for shippers of oil and gas produced on federal leases on the OCS who believe that they have been denied open and non-discriminatory access to an OCS pipeline.

Onshore, the BLM is charged with managing and conserving federally owned land, including natural gas resources. Unless they are specifically carved out of the leasing programme, all BLM-managed lands and national forests are open to leasing. Gas leasing is generally not permitted in the national park system, in national wildlife refuges, in the Wild and Scenic River Systems or in wilderness areas. Leasing in national forests requires permission from the US Forest Service of the Department of Agriculture. The BLM reviews and approves permits and licences for companies to explore, develop and produce natural gas on federal lands. Once projects are approved, the BLM enforces regulatory compliance.

State resource agencies are generally responsible for production occurring on state-owned lands. Many coastal states also have separate offshore leasing programmes and rules pertaining to state coastal waters and associated pipelines.

Unconventional gas production

7 Are there different rules for, or any restrictions on, unconventional natural gas production (including fracking)?

US federal policy is generally characterised by promotion of alternative drilling methods, while a number of states and local governments have rules restricting such practices. Although fracking and other unconventional production methods have turned the US into a net exporter of natural gas, concerns regarding the safety of the practice are a topic of intense public debate. Because much of US energy policy is governed at the state and local levels, a patchwork of laws, restrictions and outright bans on fracking has emerged across the United States.

For example, in November 2019, the governor of California halted approval of all new hydraulic fracturing in the state pending review of

the projects by an independent panel of scientists. The Colorado legislature passed a bill in 2019 allowing local governments more control over health, environmental and siting rules for new wells in their jurisdictions, and several cities in Colorado are expected to use the law to impose fracking bans and other restrictions on natural gas producers.

Going in the opposite direction are states such as Texas, which passed a state-wide law prohibiting cities and counties from instituting fracking bans, and Ohio, whose Supreme Court ruled that the state government has the exclusive authority to regulate natural gas production, thereby invalidating all municipal fracking bans in the state.

Required security and guarantees

8 Are participants required to provide security or any guarantees to be issued with a licence to explore for or to store gas?

BLM requires natural gas producers operating on public lands to post bonds prior to drilling. In addition, many states have bonding requirements that exceed the federal requirements as a prerequisite to issuance of a well permit or authorisation of other drilling or exploration operations. Security requirements associated with the storage of natural gas may also be included in the storage provider's tariff.

Offshore, the BOEM, with input from the BSEE, has adopted and enforces an array of financial responsibility and security requirements applicable to lease holders. This includes a requirement to post a base bond in an amount set by regulation. In addition, and depending on a number of factors, the agency may require supplemental security from lessees to cover decommissioning and other lease obligations.

REGULATION OF NATURAL GAS PIPELINE TRANSPORTATION AND STORAGE

Ownership and infrastructure

9 Describe in general the ownership of natural gas pipeline transportation, and storage infrastructure.

Pipeline transportation and storage of natural gas are conducted by the private sector. According to the DoT, there are roughly 170 operators of interstate gas transmission pipelines and 1,100 operators of intrastate transmission pipelines in the US.

As of November 2018, private companies operated 380 active underground storage facilities, mainly in depleted reservoirs, aquifers and salt caverns. In 2018, storage capacity decreased 1.2 per cent from 2017 levels, driven by several factors, including increased natural gas production that has caused a reduced reliance on storage services.

Regulatory framework

10 Describe the statutory and regulatory framework and any relevant authorisations applicable to the construction, ownership, operation and interconnection of natural gas transportation pipelines, and storage.

Pursuant to section 7 of the NGA, interstate pipelines and gas storage facilities must obtain certification from FERC before constructing or expanding facilities. Intrastate gas transmission and distribution facilities are subject to certification by state and local authorities.

Under applicable statutes, FERC will issue a certificate to a pipeline if the applicant demonstrates that the benefits from construction of the pipeline outweigh the potential adverse impacts. FERC's assessment of the potential benefits focuses in part on whether there is a demonstrated market need for the pipeline. Under FERC's current policy, in assessing need, FERC generally looks for whether, at the time the application is filed, the applicant has entered into precedent agreements with

shippers, obligating the shipper to purchase firm capacity on the pipeline on a long-term basis. FERC is currently reviewing its policy, though, and may apply different criteria in the future. In weighing the potential benefits and adverse impacts from proposed pipelines, recent court decisions have required FERC to examine the potential environmental impact of increased carbon emissions that might result if the pipeline is allowed to move forward.

FERC decisions may be appealed to a US court of appeal and state commission decisions may be appealed to the state court system. FERC may impose conditions on certificates requiring the recipient to obtain additional approvals or permission from other federal and state administrative agencies.

The Pipeline and Hazardous Materials Safety Administration within the DoT regulates the safety of gas pipeline and storage facilities. In late 2016, the agency issued broad new safety requirements for both interstate and intrastate underground gas storage facilities. Those new regulations were issued under a statute (the Protecting our Infrastructure of Pipelines and Enhancing Safety Act of 2016) incorporating lessons learned from a massive 2015 leak from the Aliso Canyon storage facility in southern California. The requirements included new safety standards for interstate and intrastate underground storage facilities, annual safety reporting obligations, adverse event reporting requirements and mandatory prior event reporting for certain significant events (eg, change of operator or new facility construction). In late 2017, the agency reopened the comment period for the rule and stayed enforcement until early 2018. General compliance under the rule went into effect in January 2018, and facility inspections by the agency began in March 2018, with an estimated 390 facilities requiring inspection. Initial inspection of all facilities is anticipated to be completed within five years.

Land rights

11 How does a company obtain the land rights to construct a natural gas transportation or storage facility? Is the method for obtaining land rights to construct natural gas distribution network infrastructure broadly similar?

The location, construction and operation of interstate pipelines, facilities and storage fields involved in moving natural gas across state boundaries must be approved by FERC. The pipeline company proposes the route or location, which is then reviewed by FERC. If a proposed pipeline route is on or adjacent to private land, the company will inform the private landowners and obtain any necessary rights of way (or alternative access rights) prior to construction. The applicant must consider alternative routes or locations to avoid or minimise the effects on buildings, fences, crops, water supplies, soil, vegetation, wildlife, air quality, noise, safety and landowner interests. FERC staff will consider whether the pipeline can be placed near or within an existing pipeline, power line, highway or railroad rights of way. By federal law, a pipeline certified by FERC has eminent domain authority. Storage facilities are usually located in depleted oil or natural gas production fields or in salt deposits. Obtaining land rights for distribution network infrastructure is broadly similar as for interstate pipelines, but approval must be sought from state entities instead of FERC. Typically, the company must obtain approval from the state siting authority (often the state utility board), comply with city and local safety and zoning ordinances, negotiate with private landowners or obtain eminent domain powers through a state specific approval process.

Access

12 How is access to the natural gas transportation system and storage facilities arranged? How are tolls and tariffs established?

There are essentially three major types of pipelines along the transportation route: the gathering system, the transmission pipeline and the distribution system. The gathering system transports raw natural gas from the wellhead to the processing plant. Transmission pipelines use higher-pressure and larger-diameter pipes to move natural gas quickly over long distances; they are typically interstate, but can also be intrastate. Interstate natural gas pipeline networks transport processed natural gas from processing plants in producing regions to those locations with high natural gas requirements, particularly large, populated urban areas. Distribution systems deliver natural gas to homes, businesses and power plants, although power plants may also be served directly from transmission pipelines through FERC-approved laterals.

Transportation of natural gas is closely linked to its storage. If the natural gas being transported is not required at the time, it can be put into storage facilities for when it is needed. Natural gas pipeline companies have customers on both ends of the pipeline – the producers and processors that deliver gas into the pipeline, and the consumers and local distribution companies that take gas out of the pipeline.

In accordance with FERC rules, access to interstate natural gas transportation and storage services must be provided on a non-discriminatory basis. Generally, purchasers of gas interstate transportation and storage services negotiate individual contracts with pipeline and storage companies, which are subject to the service provider's tariff as approved by FERC. Where there is limited capacity for interstate storage or transportation, capacity is allocated through a bidding process in which the pipeline or storage capacity is generally awarded to the highest bidders. Under FERC rules, the terms and rates charged for all interstate pipeline transportation and storage services must be applied in a non-discriminatory manner, cannot be unduly restrictive and must be fair to all parties.

Traditionally, balancing of natural gas volumes was on a once-per-day basis, known as the gas day. However, with the increase in the use of natural gas to generate electricity, FERC moved to align gas nominations and balancing more closely to scheduling of electricity by system operators. An order issued by FERC changed the Timely Nomination Cycle for scheduling gas transportation from 11.30am Central Clock Time (CCT) to 1pm CCT, and to add an additional intraday scheduling opportunity during the gas day to the existing two.

Interconnection and expansion

13 Can customers, other natural gas suppliers or an authority require a pipeline or storage facilities owner or operator to expand its facilities to accommodate new customers? If so, who bears the costs of interconnection or expansion?

FERC is authorised under section 7(a) of the NGA to order a company to establish physical connection of its transportation facilities with the facilities of, and sell natural gas to, persons engaged in local distribution of natural or artificial gas to the public. Such an order will be issued if FERC finds that it is 'necessary or desirable in the public interest' to do so and that 'no undue burden will be placed upon a natural gas company'. Customers and natural gas suppliers can petition FERC to order an expansion of interstate natural gas transportation facilities. FERC is prohibited from compelling the enlargement of transportation facilities, the establishment of physical connection or the sale of natural gas if those actions would impair a natural gas company's ability to render adequate service to its existing customers. The costs of such

expansion are considered in determining rates to be charged for service by the natural gas company.

Processing

- 14 Describe any statutory and regulatory requirements applicable to the processing of natural gas to extract liquids and to prepare it for pipeline transportation.

The processing of natural gas is largely unregulated at the federal and state levels except for applicable environmental, health, safety and related regulations enforced by federal or state agencies. This may include a requirement that the operator confirm the gas has been processed to remove contaminants or impurities before putting it into a transmission pipeline. Processing facilities not directly involved in jurisdictional (interstate) transportation of gas are generally exempt from FERC jurisdiction.

Contracts

- 15 Describe the contractual regime for transportation and storage.

Each pipeline or storage company providing gas transportation or storage services subject to FERC jurisdiction is required to file and obtain FERC acceptance of a tariff for such services. Each tariff contains the general terms and conditions of service, rate schedules and form agreements. General terms and conditions in both transportation and storage tariffs typically address:

- priority and curtailment of service;
- nominations and scheduling;
- receipt and delivery points;
- quality and pressure;
- title and risk of loss;
- measurement;
- fuel reimbursement; and
- balancing.

Transportation rate schedules typically set forth maximum and minimum rates for the various types and classes of service and mutually agreed recourse rates that are no less than the minimum tariff rate.

Contracts for intrastate transportation and storage of natural gas can also be privately negotiated. In many states, these contracts are subject to the provider's tariff that has been filed with a state governmental authority.

REGULATION OF NATURAL GAS DISTRIBUTION

Ownership

- 16 Describe in general the ownership of natural gas distribution networks.

In addition to interstate and intrastate pipeline companies that deliver natural gas directly to large-volume users, natural gas local distribution companies (LDCs) transport gas to specific customer groups. In 2017, approximately 190 LDCs classified themselves as investor-owned, 960 as municipally owned and 220 as privately or cooperatively owned.

Regulatory framework

- 17 Describe the statutory and regulatory structure and authorisations required to operate a distribution network. To what extent are gas distribution utilities subject to public service obligations?

The operation of a local distribution network by an LDC is governed by the state regulatory authority with jurisdiction where the facilities are located. The LDC may be required to obtain certificates of convenience and necessity to serve in the state, and comply with all applicable safety regulations.

Service by LDCs is generally required to be non-discriminatory and at rates approved by the state regulatory authority. While each LDC retains the right to disconnect service for non-payment, those rights are subject to consumer protection regulations in most jurisdictions.

In the past, LDCs offered only bundled services, combining the cost of natural gas transportation and distribution into one price reflected on consumers' bills. However, many states have moved towards retail unbundling, following FERC's example at the wholesale level, and now offer customer choice programmes that allow them to purchase natural gas from one supplier, and use the LDC only for service and delivery of the gas. Following the community aggregation trend emerging in electricity markets, three states – Ohio, New York and New Jersey – are allowing customers to leverage their combined purchasing power to contract for natural gas.

Access and pricing

- 18 How is access to the natural gas distribution grid organised? Describe any regulation of the prices for distribution services. In which circumstances can a rate or term of service be changed?

State and federal regulatory agencies have authority over access to the natural gas distribution grid and, as a result, requirements differ from state to state. Generally, LDCs are granted the exclusive right to serve customers within a geographic area. An LDC has the benefit of a known customer base, but is also subject to rate regulation and an obligation to provide service. In many states, large customers have the ability to bypass the LDC with respect to the purchase of gas because of their ability to buy in significant quantities; however, even these customers will need to avail themselves of the LDC's distribution services. In some circumstances, large retail customers can receive service directly from interstate pipelines through FERC-approved laterals, thus bypassing the LDC completely.

Privately owned LDCs generally have their rates determined by the state regulatory authority, but the rates of publicly owned LDCs are normally set by the LDC's governing body. Rates typically allow the LDC a reasonable return on investment, based on the cost of providing service and returns on investments of comparable risk. Bundled rates include fees for access to the distribution system.

Periodic adjustments may be made to rates and terms of service, either at the LDC's request or by order of the governing state regulatory authority. Changes are typically made on the basis of changes in operating costs or the applicable law. New capital investments may also be the basis for a rate increase request.

System/service expansion and limitation

- 19 | May the regulator require a distributor to expand its system to accommodate new customers? May the regulator require the distributor to limit service to existing customers so that new customers can be served?

If an LDC has been granted an exclusive right to serve within a particular geographic area by state law, it will also generally be required to extend its system to serve new customers within that area if it can do so without jeopardising the service provided to existing customers. The process for expanding an existing system (including issues such as the manner in which costs of expansion are recouped) is set forth in state statutes or regulations.

Contracts

- 20 | Describe the contractual regime in relation to natural gas distribution.

Most contracts for natural gas distribution are either established by a filed tariff or bilateral service agreement, with terms such as quantity and type of service specific to the customer being served. However, certain terms of service will likely be the same for all customers of the LDC who are within the same customer class. There is typically little flexibility for negotiation by individual customers with respect to the terms of a service agreement.

REGULATION OF NATURAL GAS SALES AND TRADING

Ownership and organisation

- 21 | What is the ownership and organisational structure for the supply and trading of natural gas?

Natural gas is supplied and traded by private-sector companies, pursuant to privately negotiated transactions. These companies can be privately or publicly owned and range in size from entrepreneurs to very large organisations. There are both physical and financial markets for trading natural gas, and prices vary depending on supply and demand across a myriad of production, aggregation, and demand hubs or market centres. While physical trading involves an obligation to deliver or take delivery of natural gas in exchange for payment, financial trading is based on the movement of the price of natural gas. Financial trading is conducted only through financial instruments and does not involve physical delivery of gas, although pricing and settlement of the financial products are tied to physical natural gas.

Pricing and trading takes place at various locations across the country, primarily at the intersections of major pipeline systems known as hubs. While there are more than 20 hubs, the key trading hub used as a benchmark for the US natural gas market is Henry Hub in the Gulf of Mexico region in Louisiana, and futures contracts trade on natural gas to and from this hub. Much of the financial trading in natural gas is 'basis' trading reflecting the need to hedge differences between the reference Henry Hub futures contract and prices at the regional market centres.

Government oversight

- 22 | To what extent are natural gas supply and trading activities subject to government oversight? What authorisations are required to engage in wholesale trading of gas?

Under the current regulatory regime, only pipelines and LDCs are directly regulated. Interstate pipeline companies are regulated regarding the rates they charge, the access they offer to their pipelines and the siting and construction of new pipelines. Similarly, LDCs are regulated by state utility commissions that oversee their rates and

construction issues, and that ensure that proper procedures exist for maintaining adequate supply to customers.

The trading of natural gas is largely market-driven; however, rules are in place to ensure that the market is operated fairly. FERC has also implemented 'anti-manipulation' rules that prohibit fraudulent or deceptive practices, and omissions or misstatements of material facts in connection with purchases or sales of natural gas or transportation services subject to FERC jurisdiction.

The Dodd-Frank Wall Street Reform and Consumer Protection Act (Dodd-Frank) granted oversight and rule-making authority to the Commodity Futures Trading Commission (CFTC) to regulate derivatives transactions, including trades involving energy commodities such as natural gas. Many transactions previously exempt from regulation under the Commodities Exchange Act are regulated under Dodd-Frank.

The CFTC has oversight authority for a wide range of practices in the over-the-counter (OTC) derivative market, requiring registration of swap dealers and major swap participants, imposing capital and margin requirements on participants, requiring that derivatives trading take place on regulated exchanges or swap execution facilities, and creating a derivatives clearinghouse.

Dodd-Frank includes an 'end user' exception, allowing an exemption from clearing and exchange trading requirements for trades in which one party is not a 'financial entity' (as defined by Dodd-Frank), the purpose of the trade is to mitigate 'commercial risk' (to be defined by the CFTC), and the entity notifies the CFTC how it will meet its financial obligations associated with entering into uncleared swaps.

FERC and the CFTC are parties to a memorandum of understanding (MOU) on jurisdiction and information sharing to resolve issues arising out of their overlapping responsibilities. Pursuant to the MOU, the two agencies work together to share appropriate data relating to financial markets for natural gas and electricity on an ongoing basis to further the mutual interest of the agencies in protecting the nation's energy markets. In addition, the participating agencies will, to the extent practicable, take steps to avoid duplicative information requests and coordinate oversight (including market surveillance), investigative and enforcement activities.

Trading processes

- 23 | How are physical and financial trades of natural gas typically completed?

There are two primary types of natural gas marketing and trading: physical trading and financial trading. Physical trading is the buying and selling of natural gas. Financial trading, on the other hand, involves derivatives and other financial instruments where neither buyer nor seller may take physical delivery of the natural gas. The North American Energy Standards Board serves as an industry forum for the development and promotion of standards and form contracts for natural gas and electricity markets.

Physical trading contracts are negotiated between buyers and sellers. There are numerous types of such contracts but they normally contain standard terms, such as specifying the buyer and seller, the price, the amount of natural gas to be sold, the receipt and delivery points and the term of the contract. Additional terms and conditions outline the payment dates, quality specifications and any other provisions agreed to by both parties.

There is a significant market for natural gas derivatives and financial instruments in the US, exceeding the value of physical natural gas trading.

Natural gas derivatives are traded on the New York Mercantile Exchange (NYMEX) and other exchanges. One of the most common derivatives is a monthly futures contract that requires the seller to deliver and the buyer to take delivery of a fixed amount of natural gas (10,000

MMBtu), delivered at Henry Hub in Louisiana. The vast majority of these contracts are settled financially at the market price at the time the buyer or seller closes out its position. For buyers or sellers who choose to take physical delivery, pricing is based upon the final settlement price for the applicable contract on the day trading on NYMEX ends. Other natural gas derivatives include options contracts, calendar spread options and basis swap futures contracts. In addition to the derivatives available on NYMEX, other derivatives are traded in OTC markets.

The International Swaps and Derivatives Association (ISDA) has also created a standard contract – the ISDA master agreement – for OTC derivatives transactions, which can be used for physical and financial trades as well. The ISDA master agreement contains general terms and conditions, such as provisions relating to payment netting, tax gross-up, tax representations, basic corporate representations and basic covenants and events of default and termination, but does not include details of any specific derivatives transactions the parties may enter into. Details of individual derivatives transactions are included in 'confirmations' entered into by the parties to the ISDA master agreement. Each confirmation sets out the agreed commercial terms of a particular transaction.

Available services and products

- 24** | Must wholesale and retail buyers of natural gas purchase a bundled product from a single provider? If not, describe the range of services and products that customers can procure from competing providers.

In its Order No. 636, FERC required interstate pipelines to separate or unbundle their services for gas transportation from gas sales. Regulators in many states have also required LDCs to offer unbundled sales and transportation services for large customers located in their distribution systems. As a result, LDCs, large industrial customers and electric utilities can now buy gas directly from producers or marketers in a competitive market; contract with interstate pipelines for transportation; and separately arrange for storage and other services formerly provided by interstate pipelines or LDCs (such as nominating, balancing, parking, loaning, metering and billing) from marketers, market centres, hubs, storage operators and other third-party providers.

Some state regulatory agencies allow smaller-volume customers to participate in aggregation programmes to purchase unbundled services. As of late 2018, 23 states and the District of Columbia allowed residential consumers and other small users to purchase natural gas from suppliers other than LDCs, up from 20 states and the District of Columbia in 2001. These customers are typically offered unbundled services on a limited basis through an intermediate marketer who 'rebundles' the services and offers them as a competitively priced alternative. Where unbundled LDC services are available, some states require that smaller customers purchase a standby service from the LDC. Participation in customer choice programmes decreased slightly in 2018 to 6.8 million customers, which represented 17 per cent of eligible residential customers, down from 19 per cent in 2017.

REGULATION OF LNG

Ownership and organisation

- 25** | What is the ownership and organisational structure for LNG, including liquefaction and export facilities, and receiving and regasification facilities?

All currently operating US LNG facilities are ultimately owned by US or foreign private companies. Ownership structures vary from project to project and may include direct ownership by a single entity, joint ventures among two or more parties or many other possible structures.

Terminals may be operated on a 'tolling' basis, where the terminal operator does not take title to the hydrocarbons; on a 'merchant' basis, where the terminal operator purchases and takes title to gas and then sells the LNG after completion of the regasification process or following delivery; or on a 'hybrid' basis where the terminal operator or an affiliate engages in tolling and buy-sell arrangements.

Regulatory framework

- 26** | Describe the regulatory framework and any relevant authorisations required to build and operate LNG facilities.

Responsibility for regulating construction and operation of LNG facilities and for authorising LNG exports is divided between different agencies. Under section 3 of the Natural Gas Act, FERC is responsible for authorising the siting and construction of onshore and near-shore LNG import or export facilities. The Deepwater Port Act (DPA) provides that the US Maritime Administration (MARAD) is responsible for siting and construction of offshore facilities. The DPA also provides that the governor of a state adjacent to the proposed offshore facility must approve of the facility, effectively providing veto power to the state.

FERC or MARAD must also ascertain whether a proposed LNG export terminal meets environmental standards subject to the National Environmental Policy Act (NEPA). Various state and local land, environmental, wildlife and historical preservation agencies also play a role in approving or denying a proposed facility's environmental impact statement (EIS), as well as outside advocacy groups. The environmental and construction approval process is very lengthy and takes about three years on average to complete, including a mandatory six-month pre-filing process with FERC.

To export LNG overseas, project operators must apply for export authorisation from the DoE. Separate authorisations are required for exports to countries with which the US already has a free trade agreement (FTA) and countries that have not yet signed FTAs with the US (non-FTA countries). By statute, approval for exports to countries with FTA agreements is essentially automatic. To obtain approval for exports to non-FTA countries (including Japan and most European countries), the DoE must make a determination that allowing exports is in the 'public interest'. This determination must be made based upon an administrative record that includes public comments. It also includes the DoE's analysis of the economic impact of allowing exports. In determining whether to grant approval, the DoE generally looks at whether exporting natural gas will have a significant impact on the domestic supply of natural gas and the potential impact on prices in the US.

In addition, the DoE must make an independent determination regarding whether allowing LNG exports is consistent with the requirements of NEPA. This determination is generally based on the EIS or Environmental Assessment prepared by FERC or MARAD, with respect to which the DoE is a 'cooperating agency', but may also include additional analysis prepared by the DoE.

The US Court of Appeals for the District of Columbia (DC) Circuit issued two opinions in 2017 that provide additional guidance for LNG permitting decisions issued by the DoE and FERC. Taken together, the cases provide that while there is a strong public interest presumption in favour of LNG exports, an EIS must include an analysis of downstream greenhouse gas emission impacts, including impacts from, for example, power plants the pipeline will serve.

The natural gas industry and importing countries have placed significant pressure on Congress and the administration to expedite LNG export applications, particularly those for small-scale exports. The administration and the DoE published a final rule in 2018 intended to expedite the application process for small-scale natural gas exports, and similar legislation was introduced in Congress in 2019. Although

Asia remains the largest importer of US LNG, tariff disputes between the US and China were disruptive to the industry in 2019.

As of November 2019, FERC had approved 11 new LNG export projects in the prior nine months, and the DoE had approved seven new export and re-export applications. Including projects under construction, the US's export capacity is expected to rise from 6.9 bcf/d in 2019 to 9.6 bcf/d by the end of 2020.

Pricing

27 Describe any regulation of the prices and terms of service in the LNG sector.

LNG terminals built after FERC's 2002 *Hackberry* decision and the passage of the Energy Policy Act of 2005 are not required to offer open access to terminal customers. Instead, the owner of the terminal may operate the terminal in accordance with market conditions, thereby offering access to customers of its choosing at prices and on such terms and conditions as may be agreed between the owner and the customer. The terms and conditions of such access are generally reflected in a terminal use agreement between the terminal owner and the customer. However, open access requirements still apply to interstate pipelines transporting regasified LNG from LNG terminals in the US and with respect to the terms and conditions of LNG import and regasification services provided by non-Hackberry terminals (which are still subject to regulation by tariff). FERC can deny an application if an LNG terminal is not open-access, thus providing FERC discretion to decide whether to allow non-open access in connection with new or expansion applications.

MERGERS AND COMPETITION

Competition authorities

28 Which government body may prevent or punish anticompetitive or manipulative practices in the natural gas sector?

Prohibitions on anticompetitive and manipulative conduct are found in federal and state laws of general application (called 'antitrust laws' in the US) and in the laws and regulations applicable to public utilities in particular. The antitrust laws include the Sherman Act (combinations in restraint of trade, monopolisation), the Clayton Act (mergers, exclusive dealing) and the Robinson-Patman Act amendments to the Clayton Act (discrimination on price and other terms of sale), and are enforced at the federal level by the Federal Trade Commission (FTC) and the antitrust division of the Department of Justice (DoJ). The FTC may also enjoin unfair acts of competition under the FTC Act. Many states have analogues to some or all of the federal antitrust laws, and some of the state laws have particular application to petroleum products, including natural gas. The main federal and state antitrust laws are also enforced by state attorneys general, local governmental bodies and, in some cases, by private parties injured by the conduct in question.

The governmental bodies responsible for regulation of public utilities enforce their own rules, particularly FERC and the various state public utilities commissions. FERC created its own Office of Enforcement (superseding the former Office of Market Oversight and Investigations) with responsibility for identifying and taking action against fraud and anticompetitive practices in the electricity and natural gas sectors. The Energy Policy Act of 2005 broadened the scope of FERC's rule-making and enforcement authority under the NGA to prevent market manipulation. Competition principles also inform the review and approval by these bodies of the rates and terms and conditions of tariffs for interstate and intrastate transportation and storage services.

Under Dodd-Frank, the CFTC was granted enforcement authority for futures, swaps and spot commodity markets, including natural

gas markets, substantively similar to the enforcement authority of the Securities and Exchange Commission (SEC) under Rule 10b-5 under the Securities Exchange Act of 1934. Section 6(c)(1) of the Commodity Exchange Act prohibits manipulative or deceptive devices or contrivances; Rule 180.1(a), which Implements Section 6(c)(1), prohibits any manipulative device, scheme or artifice to defraud. The scope of this enforcement authority has recently been at issue in several court cases.

Competition standards

29 What substantive standards does that government body apply to determine whether conduct is anticompetitive or manipulative?

The antitrust laws generally draw a distinction between conduct that is highly likely to be anticompetitive without redeeming justification and per se unlawful (eg, cartels), and conduct whose anticompetitive effects must be examined and weighed against any justifications, employing a 'rule of reason'. The definition of the relevant geographical and product market, and measures of industrial concentration within that market, must be evaluated under the rule of reason and other antitrust laws dealing with market power and monopolisation offences. The FTC Act and similar acts enjoining unfair competition employ a wider variety of standards that may not fall within the scope of specific laws, potentially including manipulation of prices or price indices.

Congress delegated to the CFTC expanded authority to regulate manipulative conduct with respect to certain commodities in interstate commerce (including natural gas), as well as futures, derivatives and OTC swap markets. Given the similarity between the statutes prohibiting manipulative conduct in the securities and commodities contexts, the CFTC modelled its regulations on SEC Rule 10b-5 and similar standards already in place at FERC and the FTC. Rule 10b-5 is the most predominant regulation covering manipulative conduct associated with the purchase or sale of publicly traded securities. CFTC rules broadly prohibit fraud and manipulation in connection with any swap or contract of sale of any commodity in interstate commerce. The scope of the CFTC's enforcement authority has recently been at issue in several court cases.

Enforcement

30 What authority does the government body have to preclude or remedy anticompetitive or manipulative practices?

All of the federal and state antitrust enforcement agencies have power to seek monetary damages and a variety of equitable remedies for violation of the laws they are authorised to enforce. Many of these laws carry criminal penalties, and damages can be trebled or otherwise subject to increase for punitive or exemplary purposes. Federal and state agencies have the power to revoke authorisations for market-based rate-making in the event that an entity is found to have engaged in anticompetitive practices. Violations of an unfair competition law are ordinarily subject to an injunction, but a violation of that injunction can result in fines. Private parties can seek damages for injuries to them occasioned by violation of the laws, and in some cases can bring class actions for others similarly situated.

Pursuant to the Energy Policy Act of 2005, FERC has the authority to issue rules to inhibit market manipulation and to facilitate price transparency in natural gas markets. FERC has recently instituted regulations that require certain gas market participants to annually report information regarding their wholesale physical natural gas transactions; their reporting of transactions to price index publishers; and their blanket certificate status. Similar regulations require interstate and certain major intrastate pipelines to post capacity, daily scheduled flow information and daily actual flow information.

FERC's 2018 decision in *Calpine v PJM Interconnection* has triggered greater scrutiny of competition in wholesale power markets. States are expanding programmes favouring renewable, nuclear and coal sources over natural gas-fired power producers, who then have to compete with one another in regional transmission organisation (RTO) and independent system operator (ISO) capacity auctions. FERC responded to the gas-fired power producers' complaint of an unlevel playing field by (i) requiring minimum bids on certain subsidised generators, and (ii) allowing states to exempt both certain quantities of generation and equivalent amounts of load from the regional auctions. The outcome of these mandates could be severely challenging for the generators that have been the beneficiaries of state-level subsidies. Further FERC proceedings, and parallel actions in the RTOs, ISOs, state agencies and courts continued in 2019.

In addition to agency regulations, the Energy Policy Act of 2005 confers greater enforcement authority to FERC to prevent market manipulation. FERC has the ability to seek injunctions prohibiting those who have engaged in energy market manipulation from further engaging in activities subject to FERC's jurisdiction. The Act also increases the maximum civil penalties to US\$1 million per violation per day, and increases the maximum criminal penalties to US\$1 million per violation and up to five years' imprisonment.

As a result of Dodd-Frank, the CFTC has the authority to seek an injunction, penalise manipulative or anticompetitive behaviour and issue penalties.

States also have antitrust statutes and the ability for plaintiffs to seek damages in state courts. This remedy took on new importance as a result of the US Supreme Court's decision in *Oneok v Learjet* in 2015. In that case, the court held that FERC's exclusive jurisdiction under the NGA did not pre-empt state law antitrust claims for gas market manipulation.

Merger control

- 31 | Does any government body have authority to approve or disapprove mergers or other changes in control over businesses in the sector or acquisition of production, transportation or distribution assets?

Mergers and certain changes in control are subject to notification to the FTC and the DoJ under the Hart-Scott-Rodino Antitrust Improvements Act of 1976, as amended. (Natural gas transactions are usually reviewed by the FTC.) The reportability of a transaction depends on the size of the transaction, and in certain circumstances, on the size of the parties thereto. Acquisitions of natural gas and oil reserves and associated production assets, including gathering pipelines, have a higher threshold of US\$500 million before reporting is required. For midstream and downstream transactions, transactions greater than US\$90 million may require review. The structure of the transaction – whether it is a merger, contribution to an existing business or other form – can also affect whether the deal is reportable.

The purpose of the requirements is to provide the enforcement agencies with the information needed to evaluate whether the combination would violate the antitrust laws, and the time needed to seek an injunction in court barring the deal from proceeding. The parties ordinarily may not consummate the transaction until 30 days after the filing (although the agencies can make a second request for more information and stop the clock while the additional information is assembled and delivered). For non-controversial transactions, as is typical in the upstream sector, the agencies grant an early termination of this waiting period, and a merger can be completed within two weeks of the filing. For controversial transactions, the agencies may signal their willingness to enter into a consent decree conditioned on certain divestitures or promises to engage or refrain from engaging in certain acts, or the

parties can enter into sustained negotiations or litigation occupying months. Moreover, the agencies can forgo the opportunity to enjoin the merger and instead challenge it long after the deal has closed. This has occurred several times in the energy industry.

FERC itself has limited grounds for reviewing mergers in the natural gas sector. In some cases, FERC action must be taken for issuance or revision of certificates of public convenience and necessity, or for abandonment of assets under the NGA.

Price restrictions

- 32 | In the purchase of a regulated gas utility, are there any restrictions on the inclusion of the purchase cost in the price of services?

The purchase of a regulated gas utility is subject to state regulation. Upon purchase of a regulated utility, most states will set rates based on the net book value of facilities instead of the purchase price. Additionally, states typically bar the inclusion of any acquisition premium in rates.

Corporate governance regulations

- 33 | Are there any restrictions on the acquisition of shares in gas utilities? Do any corporate governance regulations or rules regarding the transfer of assets apply to gas utilities?

With the repeal in 2005 of the Public Utility Holding Company Act of 1935, there are no general federal prohibitions on entities that may own a gas utility company or requirements for registration with the SEC. However, acquisition of assets that have been dedicated for use by public utilities is often also subject to review and approval by the state commission with jurisdiction. Examples are California Public Utilities Code section 851, requiring approval by the California Public Utilities Commission of transfers of public utility assets, and section 854, requiring Commission approval of utility mergers.

INTERNATIONAL

Foreign participation

- 34 | Are there any special requirements or limitations on foreign companies acquiring interests in any part of the natural gas sector?

There are no special requirements or limitations on foreign companies acquiring interests in the natural gas sector. However, an entity applying for certification of an LNG facility under section 3 of the NGA and the regulations issued pursuant to that section by FERC is required to disclose on its application any ownership by a foreign government or subsidisation by a foreign government.

In addition, under the Exon-Florio Amendment to the Defense Production Act of 1950, the Committee on Foreign Investment in the United States (CFIUS) reviews proposed foreign investments in US facilities to determine whether such investment threatens US national security. Exon-Florio was amended by the Foreign Investment and National Security Act of 2007 to treat 'energy security' and 'critical infrastructure' as falling within the concept of national security. The law mandates full-scale CFIUS review where the proposed purchaser is owned by a foreign government. Finally, there are other laws applicable to the natural gas industry restricting foreign ownership, including the Mineral Lands Leasing Act, which forbids aliens and foreign corporations from directly owning mineral leases on federal lands. However, these laws do not prohibit aliens and foreign corporations from forming a US entity that owns mineral leases on federal lands.

In 2017, Congress repealed the SEC disclosure rule for payments by resource extraction issuers (ie, oil, natural gas and mining companies

that file annual reports with the SEC). The repealed rule would have required resource extraction issuers to disclose payments made to the US government and foreign governments for the purpose of the commercial development of oil, natural gas or minerals beginning with fiscal years ending on or after 30 September 2018. While similar rules were adopted by the SEC in 2012, such rules were vacated by the US District Court for the District of Columbia. Although the Dodd-Frank Act and the Securities Exchange Act of 1934 require the SEC to issue resource extraction disclosure of payment rules, Congress may amend Dodd-Frank to limit or delete this requirement. In September 2019, the Department of Treasury published proposed regulations to implement changes to CFIUS' jurisdiction and processes that were made by passage of the Foreign Investment Risk Review Modernization Act, which was signed into law in 2018.

An acquired US company may need to obtain a licence from the Department of Commerce to export technology. Defence-related technologies used in energy projects may be subject to this requirement.

International agreements

35 | To what extent is regulatory policy affected by treaties or other multinational agreements?

While treaties and other multinational agreements have little direct effect on purely domestic US gas regulatory policies, they do have an effect on international import, export and trade of natural gas. Multilateral agreements, such as the General Agreement on Tariffs and Trade (GATT), entered into by the US and other members of the World Trade Organization (WTO), typically dictate how WTO members may treat goods exported from other WTO members, including gas and other petroleum products. It is not settled whether the export provisions of regional trade agreements conflict with the obligations of the US and other parties under the GATT.

Many US LNG import facilities have sought export or re-export authorisations from the DoE for LNG (pertaining to domestically produced and previously imported natural gas, respectively). The NGA, as amended, has deemed FTA exports to be in the public interest, and applications shall be authorised without modification or delay. FTA countries include Australia, Bahrain, Canada, Chile, Colombia, Costa Rica, Dominican Republic, El Salvador, Guatemala, Honduras, Israel, Jordan, Korea, Mexico, Morocco, Nicaragua, Oman, Panama, Peru and Singapore.

Potential exporters must also seek approval from the DoE under section 3 of the NGA to export to countries with which the US does not currently have an FTA in place. It is not settled whether gas export restrictions remaining after entering into regional trade agreements conflict with the obligations of the US and other parties under the GATT.

Cross-border sales and deliveries

36 | What rules apply to cross-border sales or deliveries of natural gas?

The NGA prohibits the import or export of natural gas to or from the US without obtaining the prior approval of the DoE. The DoE offers two types of import and export authorisations: long-term authorisation and 'blanket' (short-term) authorisation.

Long-term authorisation must be sought by a party wishing to import or export natural gas pursuant to a signed gas purchase and sale contract that has a term longer than two years. The applicant must submit to the DoE an application, a copy of the gas purchase and sale contract identifying the seller of the gas and the markets in which the gas will be sold, and the term of the contract.

Vessels that are importing LNG into the US are deemed to pose a special security risk. The US Coast Guard and the US Bureau of Customs

and Border Protection scrutinise such vessels more closely than many other vessels importing cargo into the US, often resulting in delays in the delivery and unloading of LNG.

Like most goods imported into the US, gas imports are subject to US customs regulations. While many of these regulations apply uniformly across products, in the case of bulk petroleum imports, certain additional information is required in order for imports to be cleared by customs.

TRANSACTIONS BETWEEN AFFILIATES

Restrictions

37 | What restrictions exist on transactions between a natural gas utility and its affiliates?

FERC requires interstate natural gas pipelines with affiliates that engage in gas marketing functions to comply with FERC's Standards of Conduct rules. These rules are designed to ensure that pipelines treat all customers, both affiliated and non-affiliated, on a non-discriminatory basis with respect to the transportation of natural gas in interstate commerce and also to ensure that the reliability and integrity of transportation systems are not compromised.

In furtherance of these goals, FERC issued Order No. 717, amending the Standards of Conduct rules governing, inter alia, transactions by jurisdictional natural gas transmission providers and their affiliates. Clarified by Orders No. 717-A to 717-D, the rules are designed to foster compliance with the Standards of Conduct to facilitate enforcement by the commission and to conform the rules to the 2006 decision of the US Court of Appeals for the DC Circuit in *National Fuel Gas Supply Corporation v FERC*. The standards now have three principal rules:

- the 'independent-functioning rule', which requires employees handling transmission functions and employees handling marketing functions (such as commodity sales) to operate independently of each other;
- the 'no-conduit rule', which prohibits employees of a transmission provider from passing information about transmission functions to marketing function employees; and
- the 'transparency rule', which imposes streamlined posting requirements on transmission providers to help FERC and other interested parties detect any instances of undue discrimination or preference.

Enforcement

38 | Who enforces the affiliate restrictions and what are the sanctions for non-compliance?

FERC has enforcement authority with respect to its regulations governing transactions between a natural gas utility and its affiliate. It has the ability to impose sanctions that could include restrictions on or revocation of operating authority and civil penalties.

UPDATE AND TRENDS

Gas sector-specific regulation

39 | Describe recent trends and developments in the regulation of the domestic natural gas sector.

The New York Independent System Operator (NYISO) is proposing a plan to put a price on CO₂ emissions in the power sector. The plan is intended to complement the climate legislation that was signed into law by New York's governor in July 2019, which requires the state to achieve 100 per cent carbon-free electricity by 2040. Under the plan, the NYISO would attempt to incorporate the social cost of carbon into the wholesale

energy markets by assigning a per-ton price for CO₂ emissions. The cost would be factored into electricity generators' offers to sell into the ISO market. Once completed, the plan will be submitted to FERC for approval under section 205 of the Federal Power Act. Analysts predict that the proposal will raise questions at FERC, including whether an ISO should be allowed to influence public policy in this manner through its tariff.

Another issue that is causing significant debate within FERC and its regulated power markets is how to account for states' out-of-market subsidies. In the wake of the 2018 *Calpine* decision, in which FERC rejected PJM Interconnection LLC's proposal to change how its auctions are run to account for states' nuclear subsidies, FERC voted in December 2019 on a plan that would effectively raise the price floor applicable to subsidised resources. PJM, as well as a number of states and clean energy advocates, asked FERC to reconsider its decision and the issue may turn into a long drawn-out legal battle. Significant uncertainty remains among grid operators, and this state of uncertainty characterises much of the US energy landscape for 2020.

Other regulatory developments of particular relevance to the gas sector

40 | Describe any other recent regulatory trends and developments of particular interest to those operating in the domestic natural gas sector.

In September 2019, the US Fish and Wildlife Service (FWS) and US National Marine Fisheries Service revised the Endangered Species Act (ESA) regulations. The revised rules are designed to accelerate agency determinations for listing and delisting of endangered or threatened species and allow the government to take economic impacts into consideration when making listing decisions or designating critical habitat. Importantly, the revised rules redefine 'foreseeable future' in a way that will likely foreclose future listing or designation on the basis of climate change impacts, and eliminate automatic protections to species listed as threatened, as opposed to endangered.

These rule revisions come at a time when the government, NGOs and the natural gas industry are involved in litigation over protections for the dunes sagebrush lizard, which has habitat in some of the most productive parts of the Permian Basin. Listing the lizard as threatened or endangered under the ESA would limit energy development in the area. Last year, NGOs petitioned the FWS to list the lizard as a threatened or endangered species and to designate critical habitat; the FWS did not act. In October 2019, the groups filed a lawsuit in federal court challenging FWS's failure to add the lizard to the Endangered Species List.



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