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The U.S. energy and infrastructure sectors have undergone dramatic change since 2006, the year of Pillsbury's first contribution to the Getting the Deal Through publications. Natural gas production and reserves have increased largely from shale and other unconventional sources, which have reinvigorated the petrochemical sector, challenged the prospects of power generation from coal, nuclear and renewable sources, and turned talk of LNG imports into talk of potential exports and gas as a more widespread transportation fuel. Oil production has increased in the Midwest, which faces obstacles for new and increased means of transportation, and the federal agencies regulating offshore oil leases and safety have been completely transformed after the Macondo accident. Power generators must, as ever, monitor the changing political drivers of policymakers and agencies, with higher renewable procurement standards being more concentrated in the Northeast and the West Coast and new generation projects often needing to coordinate with plans for greater local and regional transmission. A common thread is the greater need for investments in infrastructure of all types, including private finance and public-private partnerships (PPPs) to cope with the constraints on public funding.

In this second edition of our pieces, we present the thought leadership of Pillsbury lawyers across the entire fuel spectrum—oil and gas on one hand, and nuclear, renewable, gas and coal power generation on the other—and across the private and PPP approaches to project development and finance for infrastructure as well as energy facilities. We couple overviews of the complex legislative and regulatory landscape in each sector with Pillsbury's practical take on implications for domestic and foreign investors. We hope this information continues to be helpful as an initial reference by our energy and infrastructure clients and our other friends.

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Oil Regulation 2012

Oil Regulation 2012

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General

1 Describe, in general terms, the key commercial aspects of the oil sector in your country.

The US oil industry is divided into three sectors: upstream (exploration and production), midstream (processing, storage and transportation) and downstream (refining, distribution and marketing).

Industry participants are categorised as 'supermajors', 'majors' and 'independents'. 'Supermajors' are the handful of very large companies integrated across all sectors that account for most of the US oil industry revenues. US-based supermajors include ExxonMobil, Chevron and ConocoPhillips, whereas the overseas-based supermajors, BP and Shell, have substantial US operations. Smaller-scale integrated firms include Marathon, Hess and Murphy Oil.

A larger number of companies specialise in particular sectors. The 'independents' engage predominantly in upstream activities and include Occidental, Devon, Anadarko and Apache. Midstream specialists include Kinder Morgan. Refining and marketing operations are conducted by Valero, Sunoco, Tesoro and Western. The industry is supported by oil service companies led by Schlumberger, Halliburton and Baker Hughes, and by a variety of trade associations including the American Petroleum Institute (API).

US subsidiaries of national oil companies owned or controlled by foreign governments (NOCs) are important participants in the US oil industry. For example, Venezuelan-based Petróleos de Venezuela SA (PDVSA) owns Citgo, which supplies gasoline to nearly 6,000 retail outlets and owns interests in three refineries in the US.

2 What percentage of your country's energy needs is covered, directly or indirectly, by oil as opposed to gas, electricity, nuclear or non-conventional sources? What percentage of the petroleum product needs of your country is supplied with domestic production? What are your country's energy demand and supply trends, especially as they affect crude oil usage?

In 2010, oil provided an estimated 37 per cent of total US energy needs, along with coal (21 per cent), natural gas (25 per cent), nuclear (9 per cent) and renewables (8 per cent). Seventy-one per cent of oil consumption occurred in the transport sector, primarily in the form of gasoline. The industrial sector consumed another 22 per cent for heating, diesel engines and as petrochemical feedstock. Only 1 per cent of US power generation is fuelled by oil.

In 2010, the US consumed 19.1 million bbl/d of petroleum products. The domestic production of the US represents approximately 51 per cent of the total petroleum it consumes. Canada, Mexico, Nigeria, Saudi Arabia and Venezuela collectively provided 67 per cent of US net imports.

The Energy Information Administration (EIA) projects US liquid fuels and other petroleum consumption to increase by 0.5 per cent annually until 2035. US crude oil production peaked in 1970 and has declined 45 per cent since. Domestic production is nonetheless projected to increase until 2035 as rising world oil prices spur both onshore and offshore drilling.

Although US energy consumption is projected to continue to increase over the next 25 years, crude oil as a share of overall energy is projected by the EIA to decrease as a result of federal and state renewable energy programmes and the rising cost of fossil fuels.

'Proved reserves' are estimates of the amount of oil that is reasonably certain to be recoverable from known reservoirs under current economic and operating conditions. According to the CIA World Factbook, the United States ranked 13th among nations in proved oil reserves. The EIA estimated US proved reserves at 20.7 billion barrels at the beginning of 2011. US proved reserves peaked in 1970 and have since declined by 47 per cent. About one-fifth of proved reserves are located offshore.

In 2009, the Securities and Exchange Commission (SEC) changed its reporting guidelines for public companies to permit companies to report probable and possible reserves, as well as proved reserves.

3 Does your country have an overarching policy regarding oil-related activities or a general energy policy?

There is no single source of law that can be considered a United States energy policy. At the federal level, the Department of the Interior (DOI), the Department of Transportation (DOT), the Department of Energy (DOE) and the Environmental Protection Agency (EPA) play important roles in the development and maintenance of a national energy policy. At the state level, their counterpart agencies, which are often delegated authority by federal legislation, play a similar role.

Over the years, there have been several legislative efforts by the United States Congress to develop a general energy policy that promotes the domestic production of oil and gas and other sources of energy, while also responding to environmental concerns. For instance, after many years of debate, Congress passed the Energy Policy Act of 2005. The Act is intended to facilitate the increased domestic production of oil and gas as well as electric and other forms of energy. The law also clarified the reach of the Safe Drinking Water Act in hydraulic fracturing matters, and the application of EPA's storm water rules to the construction of oil and gas production sites.

On the heels of the 2005 Energy Policy Act, the Congress enacted the Energy Independence and Security Act of 2007 (EISA). The EISA expanded the renewable fuel programme established by the Energy Policy Act, which required volumes of renewable fuel to be incorporated into gasoline sold in the United States. The EISA, and subsequent regulatory revisions implemented by EPA in 2010, increased the volumes established for renewable fuel and added new specific volume requirements for advanced biofuels, biomass-based diesel and cellulosic biofuel. The EISA articulated a national policy aimed at reducing the country's carbon footprint and dependence on foreign oil through the use of renewable fuels.

President Obama has endorsed regulatory and legislative initiatives aimed at enhancing energy independence and the reduction of greenhouse gases, such as the increase of the fuel efficiency standards for motor vehicles, the development of renewable energy technology and 'green' jobs. The Obama Administration has proposed the toughest fuel economy standards for passenger vehicles in US history, requiring an average performance equivalent of 54.5 miles per gallon by 2025.

Regulation overview

4 Describe the key laws and regulations that make up the general legal framework regulating oil activities.

The determination of which laws apply to oil activities at a given surface location depends on whether the underlying resources and location are owned by a federal or state government or by private parties, and whether the location is onshore or offshore.

The Mineral Leasing Act of 1920 and the Mineral Leasing Act for Acquired Lands of 1947 govern upstream activities on federal onshore property, while the Outer Continental Shelf Lands Act (OCSLA) governs development of federal offshore property. Additional industry-specific federal statutes include the Oil and Gas Royalty Management Act, which governs lease and royalty agreements, and the Petroleum Marketing Practices Act, which regulates supply agreements and leases held by retailers and wholesalers of trademarked motor fuels.

State laws, such as the Texas Natural Resources Code and the California Public Resources Code, govern exploration and production on state-owned land, including state offshore property, and privately owned land.

5 Identify and describe the government regulatory and oversight bodies principally responsible for regulating oil activities.

Within the DOI, the Bureau of Land Management (BLM) regulates oil exploration and production on federal onshore property; the Bureau of Ocean Energy Management (BOEM) and the Bureau of Safety and Environmental Enforcement (BSEE) manage federal offshore oil production activities; the Office of Natural Resources Revenue (ONRR) collects royalties for both onshore and offshore oil production; and the Bureau of Indian Affairs (BIA) regulates American Indian land development along with the BLM. The Federal Energy Regulatory Commission (FERC) has jurisdiction over interstate oil pipelines. The DOE administers the Strategic Petroleum Reserve, collects industry data, and funds and conducts other energy research and production programmes.

Each of the major oil-producing states has an agency tasked with regulating certain upstream activities, such as the issuance of drilling permits and intrastate pipeline transportation. These agencies include the Railroad Commission of Texas; the California Department of Conservation's division of oil, gas and geothermal resources; the Louisiana Office of Conservation; and the Alaska Department of Natural Resources' division of oil and gas. Some state public utility commissions oversee aspects of intra-state oil pipelines.

Many other agencies enforce police power laws and regulations regarding environmental, health, safety and work conditions (see question 21).

6 What government body maintains oil production, export and import statistics?

Official statistics on oil production, imports and exports are collected by the EIA of the DOE. EIA also provides forecasts and analysis of oil consumption, production, reserves, refining and trade. State agencies maintain data on local oil production.

Natural resources

7 Who holds title over oil reservoirs? To what extent are mineral rights on private and public lands involved? Is there a legal distinction between surface rights and subsurface mineral rights?

In the US, title to oil, gas and minerals is generally held by the owner of the surface until and unless that right is severed and granted to others. This title to the mineral estate may be separated from the surface estate by a grant or a reservation. When the mineral estate has been severed from the surface estate, the mineral estate owner holds what is referred to as the 'dominant estate', and the surface estate owner holds the 'servient estate'. In general terms, this means that the mineral estate owner has the right of reasonable access to and use of the surface estate in order to exploit the minerals.

In Louisiana, the only civil law state in the US, mineral rights do not exist as a separate, perpetual estate in land, but rather can only be held separately from the surface in the form of a 'mineral servitude'. The servitude gives its holder the right to enter the property and extract the minerals, but it may expire, or prescribe, after 10 years of non-use.

Both the federal government and many states own oil, gas and mineral rights both onshore and offshore.

Government and private transfers frequently reserve to the grantor all or a portion of the mineral rights, so the land title records must be carefully reviewed.

8 What is the general character of oil exploration and production activity conducted in your country? Are areas off-limits to exploration and production?

In 2011, US oil production was concentrated in Texas (26 per cent), federal offshore waters (24 per cent), Alaska (10 per cent), California (9 per cent), North Dakota (7 per cent) and Oklahoma (4 per cent). The primary contributors to production growth in 2011 were the onshore fields in the lower 48 states, which together offset decreased production from Alaskan resources and the offshore fields in the federal waters of the Gulf of Mexico.

Almost all existing offshore leasing is in the Central and Western Gulf of Mexico. In March 2010, the US president proposed allowing for the first time oil and gas production in large areas off the East Coast, in the Eastern Gulf of Mexico, and potentially off the coast of Alaska. This proposal was almost immediately followed by the Deepwater Horizon drilling rig explosion and oil spill in the Gulf of Mexico. As a result, the US president declared a six-month moratorium on deepwater drilling activities in the Gulf of Mexico, cancelled a lease sale off the coast of Virginia and suspended all applications for exploratory drilling in the Arctic. In the draft five-year oil and gas leasing programme for 2012–2017, the Obama Administration reinstated much of the programme proposed in 2010, including annual area-wide lease sales in both the Western and Central Gulf, as well as two sales in the Eastern Gulf. The first of the Gulf sales under the new five-year plan are to be held late in 2012. In addition, the programme provides for potential lease sales in the Chukchi and Beaufort seas off Alaska, as well as a special interest sale in Cook Inlet. Although the proposed plan does not reinstate the lease sale off the coast of Virginia, it does contemplate increased seismic activity in the mid- and south-Atlantic to collect data about the oil and gas potential in the region.

Onshore, the Arctic National Wildlife Refuge in Alaska remains off limits to drilling despite many years of intense debate in Congress. Apart from national parks and wilderness areas, federal lands outside Alaska are largely available for exploration and production. However, federal and state agencies can also impose drilling restrictions on particular lands on environmental, military or other grounds.

9 What government body regulates oil exploration and production in your country? How are rights to explore and produce granted?

US practices do not feature concessions or production sharing agreements typically associated with a state oil company. The right to conduct exploration and production on the lands of another is obtained through an oil and gas lease granting the right to explore for and extract oil from the leased premises, and the ownership of oil actually produced. The terms of the lease and applicable law limit leaseholder activities.

Processes established by the BLM (onshore), BOEM (offshore), and BIA (American Indian land) govern the awarding of leases for land subject to federal jurisdiction. Analogous state agencies award leases for state-owned land. Private owners of subsurface mineral rights negotiate or invite tenders for leases, which may follow trade association formats or contain terms and conditions specific to the particular lease.

10 If royalties are paid, what are the royalty rates? Are they fixed? Do they differ between onshore and offshore production?

Federal leases impose a fixed royalty of a defined fraction of the amount or value of the oil or gas removed or sold from each lease. A royalty rate of one-eighth was common up until the 1970s, although now rates such as three-sixteenths or one-sixth are more common. For onshore operations, the federal rate must be no less than one-eighth, whereas offshore rates tend to be higher subject to the various statutory requirements.

Statutes fix most federal royalty rates, but both the DOI and special legislation (such as the Deep Water Royalty Relief Act) can modify standard terms, usually by reducing the stated royalty rate or suspending payment of royalties, to make frontier development more attractive. State and private leases have more variability in their royalty terms and rates, and may include a basis for payment other than proceeds or market value. States reap varying portions of the royalty for federal leases of land within or adjacent to their borders.

11 What is the customary duration of oil leases, concessions or licences?

Private and public oil and gas leases usually feature a fixed primary term and a conditional secondary term. The number of years in the primary term ranges from as low as one year in mature fields to 10 years for frontier regions; private and American Indian leases tend to have short primary terms. Even though no production may be required during the primary term, the lease may be subject to termination if the leaseholder fails to drill test wells or undertake specified action or, in lieu thereof, pay an additional rental fee.

The secondary term continues indefinitely beyond the primary term so long as either the leased area produces oil or gas in paying quantities or the lessee performs other specified activities on the leased premises. The lease often excuses brief interruptions in production and longer interruptions due to force majeure.

12 For offshore production, how far seaward does the regulatory regime extend?

The Submerged Lands Act establishes state jurisdiction over submerged lands extending three nautical miles – 3.5 statutory miles, or 5.6km offshore (except Texas and Florida on the Gulf of Mexico, whose jurisdiction extends three leagues (approximately 10 statutory miles, or 16km)). The OCSLA establishes federal jurisdiction beyond the state limit, and a 1983 presidential proclamation declared that jurisdiction to extend to the boundary of the US Exclusive Economic Zone, 200 nautical miles (about 230 statutory miles, or 370km) from the coastline (in practice, oil development is active only to the edge of the OCS).

13 Is there a difference between the onshore and offshore regimes? Is there a difference between the regimes governing rights to explore for or produce different hydrocarbons?

Upstream activities on onshore federal property are governed by the Mineral Leasing Act of 1920 and the Mineral Leasing Act for Acquired Lands of 1947, while the OCSLA governs development of federal offshore property, see question 4. There are a variety of differences and similarities between the two regimes, see questions 10, 14, 17, 18 and 21.

Generally, there is no difference in regimes governing the rights to explore for or produce different types of hydrocarbons. On the state level, however, regulations will occasionally specifically apply to exploration and production activities at specific geologic intervals, usually aimed at shale formations. Various states have passed regulations governing oil and gas drilling as a result of hydraulic fracturing, a widely used technique in shale oil and gas drilling.

On 18 April 2012, EPA issued rules aimed at reducing pollutants that may result from hydraulic fracturing, but such rules will be phased in over several years and compliance will not be required until January 2015. Several other federal regulatory agencies are considering issuing new rules regulating oil and gas drilling, mainly as a result of shale oil and gas drilling.

14 Who may perform exploration and production activities? What criteria and procedures apply in selecting such entities?

Pursuant to OCSLA and in accordance with a five-year plan, the BOEM grants offshore oil leases on the OCS to the highest qualified responsible bidder on the basis of sealed competitive bids. Auctions are based not on variable royalty rates but rather on the 'signature bonus' offered.

Pursuant to the Mineral Leasing Act, BLM has responsibility for oil leasing on federal lands onshore, as well as state and private surface lands where mineral rights have been retained by the federal government. Lands cannot be leased until they are first offered competitively at an auction, which is conducted by oral bidding; no sealed or mailed bids are accepted. Leases are awarded to the highest qualified responsible bidder. Lands that have been offered competitively and received no bids are then made available non-competitively for leasing for two years.

On privately held lands, any person or entity capable of legally contracting with the lessor can do so, subject to state regulatory requirements.

See question 29 regarding restrictions on foreign holdings.

15 What is the legal regime for joint ventures?

The US does not specify a particular kind of agreement for collaborative development of an oil production project owned by multiple parties. Collaborative development or joint ownership is not considered a 'joint venture' under some applicable laws and often the agreement for collaborative operations negates the existence of a 'joint venture'. Operations by one or more parties come in two main categories. The first is a contract to share costs and benefits from a joint undertaking, often conducted by one mineral rights owner or lessee on behalf of others with interests in the same land or in lands embracing a particular reservoir. An example is the joint operating agreement, often entered into on Association of International Petroleum Negotiators (AIPN) or Association of American Landmen (AAPL) forms. The accounting procedure under a joint operating agreement is often that specified by the Council of Petroleum Accounting Societies (COPAS). The second category consists of separate legal entities, which are typically encountered in processing, midstream and downstream applications. These entities include general or limited partnerships, corporations and limited liability companies. The particular terms

of both types of agreements may substantially differ from those for a joint venture outside the US.

16 How does reservoir unitisation apply to domestic and cross-border reservoirs?

Unitisation is the consolidation of exploration and production activities affecting several parcels of land, or several interest holders in a given parcel. The consolidated activities are usually conducted by a unit operator. The goal is the efficient development of a common reservoir and equitable distribution of the costs, risks and benefits of production. Unitisation may be consensual or, in several jurisdictions, may be mandated when statutory requirements are triggered or agency determinations are made. Unitisation of federal lands requires DOI approval. Pooling can be voluntary or compulsory under certain state statutes.

Transfers to third parties

17 Is government consent required for a company to transfer its interest in a licence, concession or production sharing agreement? Does a change of control require similar approval? What is the process for obtaining approval?

The transfer process differs for federal, state and private agreements, and also differs between onshore and offshore for federal properties. For example, assignments of record title interests and operating rights interests in federal OCS oil and gas leases, as well as offshore pipeline right-of-way grants, require approval of BOEM. The time frame for BOEM processing of assignment applications is not specified. For onshore leasing and operational activities on federal lands, similar assignments are approved by BLM. The new operator on a lease must notify BOEM or BLM of the change in operator and furnish bonding or equivalent financial collateral to secure performance of its operations and cover liabilities. Approval of state and/or local agencies may also be required for transfers of interests in assets under their jurisdiction.

Decommissioning

18 What laws or regulations govern decommissioning of oil and gas facilities and pipelines? In summary, what is the obligation and liability regime for decommissioning? Are there any other relevant issues concerning decommissioning?

Regulations, conditions of approval and lease terms establish the applicable requirements, procedure, and time frames for decommissioning of wells, structures and pipelines on terminated leases, and decommissioning of pipelines on terminated pipeline rights-of-way. On federal outer continental shelf lands, decommissioning is governed by BSEE regulations. When facilities cease to be useful for production, the lessee must obtain BSEE approval to decommission wells and pipelines, platforms and other facilities, permanently plug wells, remove platforms and other facilities (with specified exceptions), and decommission pipelines and remove obstructions on the seafloor created by the lease and pipeline right-of-way operations. Post-production removal of oil and gas facilities may be deferred if they are converted to renewable energy generation or alternate use. Lessees or operators of a right-of-use and easement for renewable energy or alternate use generally must also meet the decommissioning obligations when their projects cease operation. BSEE also may approve conversion of a platform to an artificial reef, if a state agency accepts title and liability for the structure. Lessees, owners of operating rights and holders of a right-of-way are jointly and severally liable for decommissioning obligations.

For onshore leases on federal lands, BLM regulations require lessees or operators to submit a surety or a personal bond in an amount sufficient to ensure compliance with applicable requirements including plugging of wells, reclamation of the lease area, and the restoration of land and surface waters adversely affected by lease operations upon abandonment or cessation of oil and gas operations. States and private lessors generally address offshore and onshore decommissioning through lease terms.

Typical provisions require the lessee to maintain a bond in favour of the state and to either surrender or remove all improvements, at the option of the state, upon lease termination. The lessee may retain the right to remove equipment with reuse or salvage value.

Transportation

19 How is transportation of crude oil and crude oil products regulated within the country and across national boundaries? Do different government bodies and authorities regulate pipeline, marine vessel and tanker truck transportation?

Rates and other terms for oil transportation via interstate pipelines are regulated by FERC, and pipeline operators must file tariffs with FERC. FERC generally allows carriers to charge market-based rates up to a ceiling. FERC regulations also require interstate carriers to provide non-discriminatory service to all shippers. The Pipeline and Hazardous Materials Safety Administration of the DOT regulates the safety of interstate oil pipelines. States regulate intrastate oil pipelines and may regulate gathering lines and other transportation activities. Some states have adopted variations of FERC's market-based rates policy.

Trucking and marine vessel transportation prices are not currently regulated, although safety, health and environmental regulations apply generally to pipelines, vessels and trucks (see question 21).

20 What are the requisites for obtaining a permit or licence for transporting crude oil and crude oil products?

Construction of a new interstate oil pipeline does not require approval from the federal government unless the pipeline will cross federal lands, but the operator must file a tariff with FERC. Pipeline construction projects require permits from state or local agencies, although some states no longer require public utility approval to construct new pipelines. Other forms of transportation are not generally subject to public utility regulation, but are subject to the Federal Motor Carrier Safety Act and other health, safety and environmental law.

Pipelines across national boundaries require a Presidential Permit for construction. Pursuant to Executive Order 13337, this authority has been delegated to the State Department. The State Department must determine whether the proposed pipeline is in the 'national interest,' taking into account the project's potential effects on the environment, economy, energy security, foreign policy, and other factors and must consult with relevant state and federal agencies and solicit public comments. See 'Update and trends'.

Health, safety and environment

21 What health, safety and environment requirements apply to oil-related facility operations? What government body is responsible for this regulation; what enforcement authority does it wield? Are permits or other approvals required? What kind of record-keeping is required? What are the penalties for non-compliance?

The legal regime for energy production and development

A new or modified exploration or development operation will usually need a local land use development permit as well as drilling and operating permits. Many projects must undergo a thorough environmental impact review under the federal National Environmental

Policy Act (NEPA) or a state analogue. The process includes substantial public involvement and can be quite contentious. Failure to complete the process or comply with permits can lead to significant delays, penalties and injunctions.

Discharge restrictions

The federal laws applicable to the discharge of pollutants into the environment are generally not industry-specific. They are instead based on a particular impact: The Resource Conservation and Recovery Act (RCRA) regulates the management of solid and hazardous waste; the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA or Superfund) governs the clean-up of contaminated sites; the Clean Air Act (CAA) regulates air emissions from mobile and stationary sources; and the Clean Water Act (CWA) and Safe Drinking Water Act (SDWA) protect surface water and underground sources of drinking water. The principal federal enforcement agency is the EPA, but state agencies enforce similar state laws and can also be delegated authority by the EPA to implement and enforce certain federal statutes such as the CAA, the CWA and RCRA.

While the foregoing environmental laws are applicable throughout the economy, there are some statutes that are focused on the oil and gas sector. For example, under the CWA, the EPA has issued effluent guidelines specific to both upstream and downstream oil operations, as well as rules applicable to the discharge of oil into navigable waters. The Oil Pollution Act of 1990 (OPA) addresses clean-up and damage assessments relating to oil spills into the navigable waters of the US, the adjoining shorelines, or the exclusive economic zone. Another example is the Pipeline Safety Improvement Act of 2002, which governs the way in which the natural gas industry ensures the safety and integrity of its pipelines. By way of contrast, state regulatory agencies protect 'state waters', which are usually intrastate bodies of water and groundwater. Virtually all oil and gas facilities are subject to the requirements of the CWA, which generally protects the waters of the US from sources of pollution by prohibiting the discharge of pollutants without a permit. The CWA establishes and protects water quality standards, prohibits the oil pollution of these waters and exacts stringent penalties if such pollution takes place, establishes a comprehensive system of water discharge permits, and authorises the US Army Corps of Engineers to issue permits for the discharge of dredged and fill material into waters of the United States. The scope of the federal government's jurisdiction over these waters is often controversial, and the EPA and the Corps of Engineers are developing a new guidance policy for the regulated community. As is the case with most federal environmental statutes, many CWA powers have been delegated to state environmental agencies, subject to EPA oversight.

OPA is a 1990 amendment to the CWA, which increased the federal government's authority to respond to large spills of oil into the waters of the United States. It applies to the owners and operators of onshore and offshore oil handling facilities, including oil cargo vessels, and imposes a CERCLA-like regime of joint and several and strict liability for these spills.

In 1980, CERCLA gave funding and enforcement authority to the EPA for the clean-up of sites contaminated by the spill or release of hazardous substances into the environment. Those persons or business entities determined to be 'responsible parties' can be held jointly and severally liable for the payment of clean-up costs on a strict liability basis; negligence need not be proven. CERCLA contains a 'petroleum exclusion', which excludes petroleum, crude oil and many petroleum products from the list of hazardous substances.

In addition to penalties and enforcement, CERCLA and OPA provide for the assessment of natural resource damages resulting from such spills or releases. Specific to the oil industry, OPA provides that responsible parties under the Act are liable for certain damages caused by an oil spill, which include damages to natural resources, real or personal property, subsistence use, lost government revenues, lost profits and earning capacity, and lost public services.

Both CERCLA and OPA designate state and federal governments and Indian tribes as trustees over the natural resources with the obligation to act on behalf of the public to recover damages. Therefore, when natural resources are damaged due to a discharge or release, one or more trustees will be responsible for ensuring that the resources are restored to their baseline condition and that the public is compensated for the interim loss of use. For example, the National Oceanic and Atmospheric Administration (NOAA) has primary responsibility to ensure that coastal resources are restored to their original condition and use.

Air pollution discharge or emission limits which are enforced under the CAA may apply to all sources of a particular type (eg, refinery heaters and boilers), or may be facility-specific. The CAA utilises permits to control the emission of air pollutants into the environment from industry and commercial activities. The oil and gas sector is subject to stringent regulations in the exploration and production, transportation, petroleum refining and distribution phases of operations. Federal and state environmental laws regulate both new and existing sources of air pollution. New sources, including existing sources undergoing major modifications, must often comply with more stringent emissions or technology standards.

Regulations and permit conditions may include detailed record-keeping and reporting requirements. Each statute and agency has considerable penalty, injunction and criminal law remedies for non-compliance (eg, maximum of $37,500 per day fines and imprisonment for CAA violations), and in some cases private parties may also recover damages or enforce public interests via citizen suits.

Following the Supreme Court's decision in *Massachusetts v EPA*, the mandates of the CAA are being extended to the generation of greenhouse gases, principally carbon dioxide. Recently, the EPA has enacted regulations under the CAA requiring certain facilities to monitor and record greenhouse gas emissions pursuant to the Mandatory Reporting Rule (MRR). Depending on the facility, the monitoring and record-keeping requirements can be substantial. Facilities covered by the rules include both upstream and downstream oil and gas operations.

Waste management

The federal Solid Waste Disposal Act and its 1976 amendment known as RCRA regulate the management and disposal of solid waste and especially hazardous waste. With respect to oil and gas operations, a number of production wastes are specifically excluded from hazardous waste regulation, and states also generally consider these wastes to be non-hazardous solid wastes. On the other hand, several petroleum refinery wastes are listed as hazardous wastes, and are subject to much more extensive regulation. The RCRA waste management system has been described as a 'cradle to grave system', requiring the observance of comprehensive permitting, record-keeping and reporting obligations. Under RCRA, many regulatory powers have been delegated to state agencies for permitting and enforcement.

Navigation

Activities affecting the waters of the United States are regulated by EPA, the Army Corps of Engineers, the US Coast Guard, and various other agencies such as port authorities, each of which enforce laws such as the CWA and the River and Harbors Act.

Ecology

The Endangered Species Act (ESA) can prohibit activities that might materially impair the habitats of threatened and endangered species. For example, a new facility might be prohibited in an area with an endangered plant species, or particular mitigation measures (such as habitat replacement or augmentation) might be required to minimise adverse impacts to an animal species. For offshore exploration, the

Fishery Conservation and Management Act governs the effects on the fishing industry, and the Marine Mammal Protection Act (MMPA) does the same for the affected mammals. In addition, the Migratory Bird Treaty Act (MBTA) prohibits the taking or injuring of migratory birds, including nests and eggs, and the National Marine Sanctuaries Act authorises the secretary of commerce to designate and protect areas of the marine environment having special national significance. The prohibitions enforced by the MBTA have been applied to oil and gas production pits and other facilities, which can present a threat to migratory birds.

Cultural resources

A number of mandates deal with projects that may disturb or uncover property of cultural significance, including the National Historic Preservation Act of 1966, the American Antiquities Act of 1906, the Archaeological Resources Protection Act of 1979 and the Abandoned Shipwreck Act of 1987.

Health and safety

OCSLA authorises the DOI to lease offshore tracts for oil and gas exploration and development, and to regulate that development through permitting, inspections and enforcement actions. (see question 9). The OCSLA permitting scheme involves extensive health and safety requirements.

The Occupational Safety and Health Administration (OSHA) and state and local governments all enforce rules protecting employees and contractors from workplace injuries. The BSEE regulates and enforces safety rules at offshore facilities such as drilling rigs and oil platforms. Record-keeping requirements can be very significant; for example, records of occupational injury must be kept for the duration of the employee's service plus 30 years.

In addition to record-keeping requirements, OSHA also imposes certain inspection and safety programme requirements involving mechanical integrity of equipment, hazards analysis and process safety. OSHA has recently revised and strengthened the Hazard Communication Rule, which requires the workers be advised of the presence and threats of chemical products in the workplace. OSHA inspects facilities and has the power to issue citations for violations. (See question 23 for additional information on OSHA.)

The Chemical Safety Board (CSB), an independent federal agency, has authority under the CAA to investigate accidental releases resulting in a fatality, serious injury or substantial property damages. This authority includes releases occurring at oil-related facilities such as refineries. Although the CSB does not possess enforcement powers under its enabling statute, the board does issue public recommendations and reports that can influence other agency decisions. See question 23 for additional information on the CSB.

Homeland security

The Department of Homeland Security (DHS) implements requirements relating to safety and security under the Maritime Transportation Security Act of 2002 (MTSA) and the Chemical Facility Anti-Terrorism Standards (CFATS). The MTSA requirements include development of site security plans, designation and management of certain information as sensitive security information (SSI), and security clearances for personnel. The CFATS interim final rule issued in 2007 requires covered chemical facilities to prepare security vulnerability assessments, which identify facility security vulnerabilities, and to develop and implement site security plans, which include measures that satisfy the identified risk-based performance standards.

22 What health, safety and environmental requirements apply to oil and oil product composition? What government body is responsible for this regulation; what enforcement authority does it wield? Is certification or other approval required? What kind of record-keeping is required? What are the penalties for non-compliance?

The EPA regulates the composition of mobile source fuels and fuel additives. However, a large portion of oil regulation occurs at the state level. Sales of imported products that do not comply with EPA standards are prohibited. Uniquely, California may adopt its own fuel standards, which may then be adopted verbatim by other states. These regulations specify many elements of fuel composition, such as volatility and aromatics, oxygenate and sulphur content.

Recently there have been several major federal fuel specification changes. Among these changes are a reduction in the sulphur content of gasoline, the elimination of the 2 per cent oxygen content requirement under the CAA for reformulated gasoline, and the 2012 revisions to the renewable fuels standard programme (RFS2) under the EISA (see question 3). Under the Clean Air Act Section 211(o), as amended by the Energy Independence and Security Act of 2007 (EISA), the Environmental Protection Agency (EPA) is required to annually establish specific annual volume standards for cellulosic biofuel, biomass-based diesel, advanced biofuel, and total renewable fuel that must be used in transportation fuel for the following year based on projections from the energy Information Administration (EIA).

On the state level, California regulators adopted the Low Carbon Fuel Standard (LCFS) in 2009, which regulates the carbon intensity of transportation fuels sold in California in order to reduce the amount of greenhouse gas emissions. However, in December 2011, the US District Court for the Eastern District of California held that the LCFS regulations were in violation of the Commerce Clause of the United States Constitution. That decision is on appeal to the Ninth Circuit, and if upheld, would prevent other states from adopting an LCFS regulation identical to California's. In addition, 11 states (Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont) signed a memorandum of understanding to work toward adopting a regional low carbon fuel standard and issued a draft programme framework in August 2011.

In most cases, fuel composition must be certified by the EPA or the state air authority. These agencies may impose substantial penalties for sale of non-complying fuels and for failure to maintain accurate composition and manufacturing records. The EPA incentivises self-evaluation, self-disclosure and correction of violations by not recommending civil or criminal penalties for entities that promptly address their non-compliance.

Other oil-based products, such as lubricants and solvents, are regulated by the EPA pursuant to the Toxic Substances Control Act (TSCA). The TSCA authorises the EPA to require pre-manufacture notifications (PMN) for any new chemical substances prior to its being imported to, or manufactured in, the US above a certain threshold amount. In most cases, PMNs must be supported by adequate health and safety data, and the TSCA imposes reporting and record-keeping obligations on manufacturers and distributors of subject chemical substances. Violations of the TSCA can result in civil and criminal penalties, as well as seizure of products manufactured or distributed in violation of TSCA.

Labour

23 What government standards apply to oil industry labour? How is foreign labour regulated? Are there anti-discrimination requirements? What are the penalties for non-compliance?

Foreign workers

All employers in the United States, including oil companies, must confirm each newly hired employee's identity and lawful right to

Update and trends

Deficiencies in the US's oil infrastructure cause price discrepancies across the nation. Whether crude oil can flow from one side of the US to the other, or from a producing region to a refining area, depends largely on the pipeline system present in the areas. Disconnectedness among the regions means that refiners in different regions are forced to pay widely varying prices for crude oil depending on the source they are able to access. During 2010, the bulk of petroleum product pipeline movements took place among the East Coast, Midwest and the Gulf Coast. By contrast, the Rocky Mountain region and West Coast have very small volumes entering and leaving by pipeline, with nothing leaving the West Coast.

Improvements are beginning to be made, however. In 2008, TransCanada Keystone Pipeline, LP, filed an application for a Presidential Permit with the Department of State to build and operate the Keystone XL Project. The proposed Keystone XL Project consists of a 1,700-mile crude oil pipeline that would primarily be used to transport Western Canadian Sedimentary Basin crude oil across the Canadian border to Oklahoma and Texas. On 18 January 2012, President Obama denied the application due, in part, to environmental concerns relating to the proposed northern section of the pipeline transversing the sensitive Sand Hills of Nebraska. While it reworks the northern route of the pipeline, TransCanada recently announced that it will proceed to build the non-controversial southern section of the pipeline extending from Oklahoma to Texas, which will help to alleviate the oversupply of crude oil in the north by allowing more oil to reach capable refineries along the Gulf Coast.

work for that specific employer in the intended position. The Federal laws requiring this action were established in November 1986 as part of the Immigration Reform and Control Act (IRCA) and apply equally to US citizen and permanent resident workers and foreign national personnel. Recently, certain states, cities and municipalities have enacted additional compliance requirements that businesses must follow to hold business licences within those regions of the country. Failure to properly document the review of appropriate employment verification paperwork can result in substantial fines most often calculated based on the number of personnel employed.

When choosing to hire personnel who are not US citizens nor lawful permanent residents ('green card holders'), it is critical for an employer to understand the rules established by IRCA and the nature of documentation that can be presented by a foreign national to evidence their lawful right to work in the US for that specific business. Non-immigrant visas, which are temporary in nature and not intended to result in green card issuance, can include visitors, students, trainees and employment categories. Commonly used employment-based non-immigrant visas include:

- the L-1 classification used for executive, managerial or personnel with specialised skills and knowledge who are transferred within a corporate group from a location abroad to a related US subsidiary, affiliate or branch location;
- the H-1b classification used for positions classifiable as 'specialty-occupations', which require college-level degrees in a specific field of study to perform the duties and responsibilities of the position;
- the specialised visas created by treaty for citizens of Canada, Mexico, Singapore, Chile and Australia with similar standards to the H-1b classification;
- the E classification for executive, managerial or personnel with essential skills and knowledge who are of the same nationality as the intended employer and are nationals of one of 82 countries with whom the US maintains specialised treaties.

In some cases a foreign national who lacks employment authorisation in the United States can enter in the B-1 (business visitor classification) to represent the interests of a foreign employer. However, that foreign national cannot provide local productive employment while in the United States, but rather can only further the goals of the company abroad.

It is also important to note many recent changes in the law regarding the use of contracted personnel. Although much of the risks and liabilities associated with contract workers is maintained by the company assigning the worker, in recent years the government has increased the responsibilities, notice requirements and many of the liabilities of the company accepting the contract personnel as well.

Labour relations

Employers in oil, as well as other sectors, must comply with a wide range of federal statutes and regulations, including the National Labor Relations Act (NLRA), the Fair Labor Standards Act (FLSA), the Family and Medical Leave Act (FMLA), and the Occupational Safety and Health Act (OSH Act). State and local laws and agencies supplement the federal workplace rules.

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The NLRA confers on private sector employees a variety of rights to form unions; to engage in union organisation campaigns; to bargain collectively; and to strike and take other concerted activity. The NLRA also imposes limitations on those rights, and empowers employers to conduct labour relations alone or in concert with similarly situated firms, and is enforced by the National Labor Relations Board. Important labour unions in the US oil industry include the Oil, Chemical and Atomic Workers Union.

The FLSA imposes overtime and minimum wage requirements for certain 'non-exempt' employees (ie, those not in exempt categories, including management and some administrative activities). Specific wage or overtime rules are provided for some particular oil industry employers, such as certain wholesale distributors of refined products. The FLSA is enforced by the Department of Labor (DOL).

The FMLA requires larger employers to provide up to 12 weeks of unpaid annual leave for certain employees who have serious health conditions or who desire to care for dependants. An employee who exercises the FMLA right enjoys certain assurances of post-leave employment and protection from retaliation. This statute is also enforced by the DOL.

The OSH Act created OSHA to set and enforce workplace health and safety standards. OSHA and similar state agencies remain committed to rigorous enforcement of process safety in the aftermath of high-profile refinery accidents, including the 2005 explosion and fire at the BP refinery in Texas that killed 15 employees and injured 170 others. Another federal agency, the CSB, focuses on safety within the energy industry and champions what the agency considers safer technologies. Several refinery incidents involving the release of hydrogen fluoride, for example, may lead CSB to recommend the use of alternate alkylation catalysts. The CSB's investigation of the Deepwater Horizon incident also will likely lead the agency to re-emphasise the importance of safety culture and oversight much the way the agency did after the Texas City disaster. CSB also may make recommendations to sister federal agencies regarding the offshore safety regulatory scheme. Many observers anticipate that CSB may recommend the implementation of a 'safety case' common in other countries such as the United Kingdom and Australia.

Anti-discrimination

Many federal, state and local laws prohibit discrimination in employment on the basis of a 'protected classification' such as race, colour, sex, religion, national origin, disability (mental or physical, including pregnancy), age, Vietnam-era veteran status, sexual orientation or medical condition. Even an ostensibly neutral policy that results in a 'disparate impact' on a race or sex classification can be the basis for a claim, unless the employer can demonstrate the policy is justified by 'bona fide occupational qualifications'. The federal laws include title VII of the Civil Rights Act of 1964, the Age Discrimination in Employment Act, 42 USC section 1981 (prohibiting racial discrimination in employment), the Equal Pay Act, the Rehabilitation Act and the Americans with Disabilities Act. These statutes are generally enforced by the Equal Employment Opportunity Commission.

The remedies for a discrimination claim can be significant. They can include orders of reinstatement, back and front pay, compensatory damages such as pecuniary losses and emotional distress, and punitive or exemplary damages. Only a few of the anti-discrimination laws have maximum penalties, such as the $300,000 per employee limitation under title VII for compensatory and punitive damages. Oil industry employers have faced significant claims, both by individuals and by collections of similarly situated employees bringing class actions. For instance, in 1996 Texaco paid over $170 million to settle racial discrimination lawsuits. At the time, it was the largest racial discrimination settlement in the United States.

Taxation

24 What is the tax regime applicable to oil exploration, production, transportation, and marketing and distribution activities? What government body wields tax authority?

The income tax regime for exploration and production has numerous special features, whereas transportation, marketing and distribution are generally subject to the same rules facing other industrial businesses. A host of industry-specific deductions apply to upstream expenditures – including pre-drilling exploration costs, intangible drilling costs, accelerated depreciation of oilfield equipment and depletion of subsurface resources. Tax planning is required for optimal acquisition and divestiture of leases and other production interests, such as production payments and farm-ins. State income tax laws supplement these provisions and incentives (though not all states impose an income tax). Some states also impose severance taxes on production.

Federal and state excise taxes are collected on the retail sale of motor fuels. Oil companies are subject to state property tax on holdings of real property and certain personal property; state sales and use tax on certain acquisitions of personal property; withholding requirements on distributions to certain foreign shareholders and partners; and transfer taxes on sales of real property.

The Oil Spill Liability Trust Fund, authorised under OPA, is funded in part through a tax levied on oil companies for barrels of oil produced in or imported into the US.

The principal tax agency is the Internal Revenue Service at the federal level, with customs duties being handled by the US Customs Service of the Department of the Treasury, and state taxes being administered by a variety of agencies.

Commodity price controls

25 Is there a mandatory price-setting regime for crude oil or crude oil products? If so, what are the requirements and penalties for non-compliance?

Crude oil is an international commodity, and as such its price is determined by international supply and demand factors. Neither the US federal government nor the states currently regulate the price of crude oil or refined products. More than half of the states have laws or regulations that seek to regulate 'price gouging', particularly during times of declared emergency.

Competition, trade and merger control

26 What government bodies have the authority to prevent or punish anti-competitive practices in connection with the extraction, transportation, refining or marketing of crude oil or crude oil products?

Two agencies have principal responsibility for enforcing federal competition laws (called 'antitrust laws' in the US): the antitrust division of the Department of Justice (DOJ) and the Federal Trade Commission (FTC). Each agency has civil authority to enforce statutes of general application, including the Sherman Act prohibition against a wide array of restraints of trade, and monopolisation, attempts and conspiracies to monopolise; the Clayton Act on mergers, exclusive dealing and tying arrangements; and the Robinson-Patman Act amendments to the Clayton Act on price discrimination and related practices. Only the DOJ, however, has authority to pursue criminal investigations for cartel behaviour. The FTC also enforces the Federal Trade Commission Act prohibiting 'unfair methods of competition' and similar offences, and has the option of challenging anti-competitive behaviour before either an administrative tribunal or a federal court.

Many states and some subdivisions have antitrust and unfair competition acts of broader generality. Private parties may also bring lawsuits seeking relief for most competition laws. At all levels,

sanctions can include compensatory damages, punitive damages (often mandatory trebling of the compensatory damages), recovery of attorneys' fees and injunctive relief.

Regulations on concentration of oil lease holdings include the BOEM's List of Restricted Joint Bidders, which limits joint bids by two or more companies with high daily average production, and the review of winning OCS lease bids by the FTC and DOJ before any bid is formally accepted.

27 What is the process for procuring a government determination that a proposed action does not violate any anti-competitive standards? How long does the process generally take?

The DOJ's business review letter programme and the FTC's advisory opinion programmes are sometimes used for comfort on proposed joint ventures, information exchanges and similar concerted activities. The review period can extend many weeks or months from the submission of all supporting data, and the agencies only describe their current enforcement intentions without definitively approving the conduct.

Certain joint ventures, mergers and business purchases are subject to mandatory reporting under the Hart-Scott-Rodino Antitrust Improvements Act (HSR Act). Reports are made to both the DOJ and the FTC, but the FTC usually takes the more active role for oil industry matters. The parties are prohibited from closing the transaction until expiration of a waiting period for the government to decide whether to seek an injunction. The waiting period is usually 30 days after filing, or 15 days in the case of a cash tender offer, but is extended significantly when an agency issues a request for additional information, commonly known as a 'second request', for data, documents and interrogatory answers. The issuance of such a request suspends the HSR waiting period until 30 days after the parties comply with the request for additional information (10 days in case of a cash tender offer), although it has become common practice for the FTC to negotiate a 'timing agreement' with the parties providing the government with additional time to review the submission. Unlike in many other jurisdictions, however, neither the DOJ nor the FTC has the ability itself to block a proposed merger at the expiration of the HSR waiting period. Rather, it is necessary for the agencies to seek a preliminary injunction from a federal court pending a trial on the merits of the deal. When DOJ acts, that trial is typically held in the same federal court as the preliminary injunction challenge. When the FTC acts, however, the trial on the merits is held before a hearing officer, typically an FTC administrative law judge (ALJ), and the ALJ's initial decision is thereafter reviewed by the commissioners themselves. Companies may appeal Commission adverse decisions to a US court of appeals. The FTC recently adopted new procedural regulations aimed at expediting the administrative processes, but also giving greater authority to the commissioners themselves to control key aspects of the administrative adjudication.

The FTC and DOJ may also challenge transactions that are not required to be notified under the HSR Act or that are reported but which, for one reason or another, the agencies permit to be consummated without challenge in the first instance. While these challenges are the exceptions, not the rule, the agencies have shown an increasing interest in such post-consummation challenges in recent years. In 2005, for example, the FTC imposed divestiture orders on a merged oilfield business four years after the merger closed.

International

28 To what extent is regulatory policy or activity affected by international treaties or other multinational agreements?

Although the United States is not a signatory to the Law of the Sea Treaty, federal laws and executive orders have established US offshore territorial zones and economic exclusion zones that are comparable to those under the Treaty.

The 1978 protocol to the 1973 International Convention for the Prevention of Pollution from Ships (MARPOL) has spawned several US statutes pertaining to oil tankers, including OPA, the Port and Tanker Safety Act and the Act to Prevent Pollution from Ships.

The US is a member of the World Trade Organization (WTO) and a party to various WTO agreements. These instruments generally prevent member states from discriminating against imported products and services or between products and services of different member states. There is an exception for free trade agreements such as the North American Free Trade Agreement (NAFTA), which created a zero-duty regime for imports and exports of products among Canada, the US and Mexico. The United States has free trade agreements with a number of other countries.

29 Are there special requirements or limitations on the acquisition of oil-related interests by foreign companies or individuals?

The presence of BP, Shell and PDVSA/Citgo demonstrates that foreign investment in oil resources has been welcomed and successful. However, some restrictions exist or may emerge.

Under the Mineral Leasing Act, aliens may hold interests in federal onshore leases only by stock ownership in US corporations holding leases and only if the laws of their country of citizenship do not deny similar privileges to United States citizens. Aliens may not hold a lease interest through units in a publicly traded limited partnership. Foreign-owned and foreign-flagged oil tankers may call at US ports en route to and from foreign destinations. The combination of statutes known as the Jones Act requires that 'coastwise' trade between US ports generally must be conducted by vessels built and flagged in the US and staffed with US crews.

OCSLA limits foreign staffing of many OCS facilities. Foreign investors must comply with record-keeping requirements of the International Investment and Trade in Services Survey Act.

The Exon-Florio Amendment to the Defense Production Act of 1950 empowers a committee of several executive branch agencies (collectively known as the Committee on Foreign Investment in the United States, or CFIUS) to investigate whether proposed foreign acquisitions of US businesses pose a risk to the national security of the United States. Upon receiving a recommendation from CFIUS, the president is authorised to determine whether to block the proposed transaction or require divestment if the transaction has already occurred.

Amendments to the statute in 2007 expanded the review factors to include the effects of the proposed transaction on national requirements for energy sources and physically critical infrastructure 'such as major energy assets'. The impact of CFIUS review is fact-specific depending on the characteristics of the proposed acquisition.

30 Do special rules apply to cross-border sales or deliveries of crude oil or crude oil products?

Imports

Imports of crude oil generally are subject to the regulations and standards of the US Federal Trade Commission, US Customs and Border Protection, the US Department of Energy, and the Federal Energy Regulatory Commission. Furthermore, if the import is a consumer product or a hazardous material, the import is subject to regulations and standards of the Consumer Product Safety Commission in the first instance and regulations and standards of the US Department of Transportation in the second. While in a few limited instances the Department of Energy must authorise importation of petroleum products, generally, licences are no longer required to import petroleum products.

Exports

The Department of Commerce restricts exports of all domestically produced crude oil by requiring a licence for the export of crude oil to all countries, including Canada. Except for a few categories of transactions that are exempted or have a presumption of approval by the Bureau of Industry and Security (BIS), the BIS reviews licence applications on a case-by-case basis. The BIS will analyse the application to determine if the transaction is in the national interest and consistent with the purposes of the Energy Policy and Conservation Act. Exports of refined products are not currently limited in this manner.

Embargoes

The United States maintains economic embargoes on certain countries, including Burma, Cuba, Iran, Libya, North Korea, Sudan (but not South Sudan), and Syria pursuant to regulations administered by the Treasury Department's Office of Foreign Assets Control. These embargoes can prohibit US persons and foreign persons from engaging in transactions involving the embargoed countries or their companies or nationals, even when nothing will be imported into or exported from the United States.

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Gas Regulation 2012

Gas Regulation 2012

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Description of domestic sector

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.

The upstream segments of the United States gas sector are conducted by the same kinds of entities that engage in the exploration and production of liquid hydrocarbons. These segments are characterised 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 (NGLs) can occur in the field by the lessee, or downstream in plants on gathering or trunk lines between the field and the main trunkline pipeline systems. 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 (including Puerto Rico) has 13 LNG terminals. Ten terminals have been permitted to be built or expanded by utilities, private and publicly traded development firms, and oil companies with gas production in other parts of the world.

There are approximately 305,000 miles of natural gas pipelines in the US, approximately 70 per cent of which are owned by interstate pipeline operators. At the end of 2008, the interstate natural gas pipeline grid had about 183 billion cubic feet (bcf) per day of capacity and approximately 217,000 miles of pipeline. The grid continues to grow: in 2009, 43 natural gas pipeline projects were completed, adding close to 3,000 miles, down significantly from 2008, which was the largest expansion in the past ten years.

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

According to the Energy Information Administration (EIA), in 2010 natural gas (including regasified LNG) accounted for approximately one-quarter of US energy consumption. Natural gas consumption was approximately 23.8 trillion cubic feet (tcf); roughly 90 per cent of that demand – about 21.3 tcf – was met through domestic production. Net imports satisfied the balance of demand. In 2010, imports amounted to 3.74 tcf, comprised of pipeline imports (88.5 per cent) and LNG (11.5 per cent). Most of the natural gas that the US imported via pipeline in 2010 was from Canada (99 per cent), with about 1 per cent coming from Mexico. The LNG that the US imported in 2010 primarily came from Trinidad and Tobago (44 per cent) and Egypt (16 per cent).

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

A central feature of US governmental policy for the domestic natural gas sector is to prevent firms with monopoly power from being able to abuse that power. However, this is balanced by policies that support increased 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, with significant delegation of authority to administrative agencies that are part of the executive branch, particularly the Federal Energy Regulatory Commission (FERC).

Regulation of natural gas production

4 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 (for example, 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 natural gas pipelines that cross from Canada into the US.

The federal government does not participate directly as a party in private natural gas production transactions. It derives value from natural gas production through the royalties, annual rentals, and bonus payments it receives for production on federally owned lands. The Office of Natural Resources Revenue (ONRR) is responsible for the management of production revenues following the reorganisation of the Minerals Management Service (MMS) by the Department of the Interior (DoI) in 2010. Production on state land is managed by the appropriate state agency. In addition, government agencies impose a variety of taxes and charges. FERC, for example, is authorised to recoup its entire budget appropriation through the imposition of annual charges and filing fees.

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

Production, drilling and supply

Natural gas producers are not directly regulated by the federal government. The prices they charge are generally a function of competitive markets, and are no longer regulated by the government. State public utility commissions generally exercise regulatory authority over retail natural gas rates and consumer protection issues.

Transmission

FERC is the primary federal regulatory agency governing natural gas transmission. FERC 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 LNG import terminals.

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.

- FERC's regulatory authority extends to the interstate transportation of natural gas, the importing of natural gas by pipeline or LNG import terminals, 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; namely the Natural Gas Act of 1938, 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 pipeline safety.
- State public utilities commissions have jurisdiction over retail pricing, consumer protection, and natural gas facility construction and environmental issues not covered by FERC or DoT.

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

DoI and DoT are cabinet-level agencies, and their respective secretaries are chosen by the president subject to Senate confirmation.

There are several adjudicatory options for challenging or appealing decisions of the regulator. The Commission may make a decision without any further procedures, it may hold a trial-type hearing before an administrative law judge, or it may hold a technical conference or 'paper' hearing. Alternate dispute resolution, like 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, the plaintiff 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 concerns such as ripeness and mootness.

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.

Federal lands

Federal lands are managed by DoI. Within 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.

Offshore

BOEM and BSEE oversee the management of the mineral resources beyond three miles from the coast on the outer continental shelf (OCS), with BOEM responsible for managing development in an environmentally and economically responsible manner and BSEE responsible for enforcing safety and environmental regulations. DoI prepares a five-year programme that specifies the size, timing and 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. Additionally, although FERC has traditionally assumed authority over OCS pipelines, the predecessor of BOEM began regulating OCS pipelines in 2008, pursuant to the decision of the US Court of Appeals for the District of Columbia in *Williams Cos v FERC*, and subsequently passed a final rule to ensure open access to OCS pipelines. The open access rule provides complaint procedures for shippers for oil and gas produced from federal leases on the OCS who believe that they have been denied open and non-discriminatory access to an OCS pipeline. DoI has resumed permit review and leasing for offshore projects following the lifting of the moratoria implemented after the Deepwater Horizon oil spill.

Onshore

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 Forest Service. BLM reviews and approves permits and licenses for companies to explore, develop, and produce natural gas on federal lands. Once projects are approved, BLM enforces regulatory compliance.

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 sets 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 with each individual landowner.

Regulation of natural gas pipeline transportation and storage

6 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 FERC, there are 161 FERC-regulated companies operating interstate natural gas pipelines and 103 companies operating intrastate pipelines in the United States. Private companies in the US operate over 400 underground storage facilities, mainly in depleted reservoirs, aquifers and salt caverns.

7 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 certificated by state and local authorities.

Under applicable statutes, FERC will issue a certificate to a pipeline if there is a benefit to the public, including compliance with environmental standards. Current FERC policy is generally to issue certificates to all proposed pipelines that comply with the statutory standards, but to let the market decide which pipelines will be built.

8 How does a company obtain the land rights to construct a natural gas transportation or storage facility?

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 right-of-way. 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.

9 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 pipelines carry natural gas across state boundaries, whereas intrastate pipelines transport natural gas within a particular state. 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 the 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, not be unduly restrictive and be fair to all parties.

10 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 shall be considered in determining rates to be charged for service by the natural gas company.

11 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. Processing facilities not directly involved in jurisdictional (interstate) transportation of gas are generally exempt from FERC jurisdiction.

12 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 approval 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, but typically do not require advance approval.

Regulation of natural gas distribution

13 Describe in general the ownership of natural gas distribution networks.

In addition to interstate and intrastate pipeline companies, which deliver natural gas directly to primarily large-volume users, natural gas local distribution companies (LDCs) transport gas to specific customer groups. In 2010, 252 LDCs classified themselves as investor-owned, 864 as municipals, 110 as privately owned and 44 as cooperative or other ownership types. Even though the number of municipal LDCs far exceeded the number of investor-owned LDCs, investor-owned LDCs supplied over 86 per cent of the total volume of natural gas deliveries for 2010.

14 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. The territories granted to LDCs are typically exclusive.

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. However, LDCs are protected in most states by an implied right to obtain a reasonable rate of return on their investments.

15 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, the 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. 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.

16 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.

17 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 agreements with terms specific to the customer being served with respect to terms such as quantity of the commodity and the type of service. However, certain terms of service will likely be the same for all customers of the LDC in the same class. There is typically little flexibility for negotiation for individual customers with respect to the terms of a service agreement.

Regulation of natural gas sales and trading

18 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, but counterparties value creditworthiness and staying power in their trading partners.

19 To what extent are natural gas supply and trading activities subject to government oversight?

Under the current regulatory regime, only pipelines and LDCs are directly regulated. Interstate pipeline companies are regulated in 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, which oversee their rates and construction issues, and which ensure that proper procedures exist for maintaining adequate supply to customers.

While there is no direct government agency charged with direct day-to-day oversight of natural gas producers and marketers, producers and marketers must still comply with other laws including authorisation and permitting requirements.

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), enacted in 2010, granted new oversight and rulemaking 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 will be regulated under Dodd-Frank.

The CFTC now has oversight authority for a wide range of practices in the over-the-counter 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 (to be defined by the CFTC). A rulemaking is presently underway to define these key terms and provide guidance for entities subject to CFTC jurisdiction. It is currently unclear how the CFTC and FERC will resolve jurisdictional issues arising out of their overlapping oversight responsibilities.

20 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 the buyer and seller never take physical delivery of the natural gas. The North American Energy Standards Board (NAESB) 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 futures contract that requires the seller to deliver and the buyer to take delivery of the natural gas at the contractually agreed price, in a specified future month. The price to be paid in the future month when the contract matures is determined at the time the contract is sold. 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 over-the-counter (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, 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.

21 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 Order No. 636, FERC required interstate pipelines to separate or unbundle their services for gas transportation and 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 in order to purchase unbundled services. As of 2009, 21 states and the District of Columbia have allowed residential consumers and other small users to purchase natural gas from suppliers other than LDCs. Such 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 the smaller customers to purchase a standby service from the LDC. Although nearly 35 million of the approximately 65 million residential gas customers in the US have access to choice programmes, 15 per cent (5.1 million) are participating in such programmes as of 2009– a modest increase from 2008 (4.7 million).

Regulation of LNG

22 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 either on a 'tolling' basis, where the terminal operator does not take title to the hydrocarbons, or with passage of title to or from the terminal operator or owners before or after completion of the regasification process.

23 Describe the regulatory framework and any relevant authorisations required to build and operate LNG facilities.

For offshore LNG facilities, the US Coast Guard (the USCG) and the Maritime Administration (MARAD) of DoT have joint authority over the application process. In accordance with the National Environmental Policy Act (NEPA) and the Deepwater Port Act of 1974 (the DPA), the USCG oversees the preparation and review of an environmental impact statement, which addresses the environmental impact that a proposed offshore facility would have on the environment.

MARAD has ultimate jurisdiction for approving or denying an application to construct and operate an offshore LNG facility. Its decision is based on input from the USCG and several other federal agencies, including the Environmental Protection Agency (the EPA), DoI's BOEMRE and the US Army Corps of Engineers.

Also, the DPA provides that the governor of a state adjacent to the proposed offshore facility must approve of the facility.

For onshore LNG facilities, which represent the majority of existing and proposed facilities in the US, the NGA confers on FERC the authority to approve or deny an application to develop an LNG terminal. While FERC has ultimate decision-making authority, several other federal, state and local agencies play a role in the process. These agencies include the USCG, with respect to marine transit issues relating to LNG tankers, the US Army Corps of Engineers, DoI and the EPA with respect to environmental impacts, and the Office of Pipeline Safety with respect to issues relating to siting, design, construction, testing, operation and safety of the facilities (including any pipelines associated with such facilities). Various state and local land, environmental, wildlife and historical preservation agencies also play a role in approving or denying a proposed facility.

As discussed further in Update and trends, several LNG import facilities have recently sought export or re-export authorisations from the Department of Energy (DoE) for LNG (pertaining to domestically-produced and previously imported natural gas, respectively). Re-export authorisations are generally non-controversial and several have been granted by DoE, as are applications seeking authority to export LNG derived from domestically-produced natural gas to countries with which the United States has in place a Free Trade Agreement (FTA). However, authorisations to non-FTA countries have been somewhat more controversial.

In addition to the commodity export authorisation, an LNG terminal owner must also seek authorisation from FERC for the construction of liquefaction facilities at the LNG terminal site. Several such applications are currently pending

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

LNG terminals built after FERC's 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 do 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) .

Mergers and competition

25 Which government body may prevent or punish anti-competitive or manipulative practices in the natural gas sector?

Prohibitions of anti-competitive 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 Federal Trade Commission Act (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 (PUCs). 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 anti-competitive practices in electricity and 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 service.

In delegating enhanced authority to the CFTC, Dodd-Frank will provide increased oversight of anti-competitive or manipulative practices with regards to commodities (including natural gas). The CFTC rulemaking process is still ongoing, and, it is unclear when this rulemaking will be finalised.

26 What substantive standards does that government body apply to determine whether conduct is anti-competitive or manipulative?

The antitrust laws generally draw a distinction between conduct that is highly likely to be anti-competitive without redeeming justification and per se unlawful (for example, cartels), and conduct whose anti-competitive 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 for 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 over-the-counter swap markets. Given the similarity between the statutes prohibiting manipulative conduct in the securities and commodities contexts, the CFTC modelled its regulations on Securities and Exchange Commission (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. The Rule prohibits conduct such as fraud, deceit, misrepresentation and manipulation in connection with the trading of securities, and authorises both government and private enforcement.

27 What authority does the government body have to preclude or remedy anti-competitive 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 anti-competitive 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 non-interstate pipelines to post capacity, daily scheduled flow information and daily actual flow information.

In addition, the Energy Policy Act of 2005 confers greater enforcement authority to FERC in order 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.

With the ensuing regulatory implementation of Dodd-Frank, the CFTC will have authority to seek an injunction and penalise manipulative or anti-competitive behaviour. The current CFTC rulemaking proposal will likely establish penalties similar to those of FERC.

28 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 DoJ under the Hart-Scott Rodino Antitrust Improvements Act of 1976, as amended (HSR Act). (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 the size of the parties thereto. A higher threshold exists for acquisitions of natural gas and oil reserves and associated production assets, including gathering pipelines; that minimum is US$500 million. For midstream and downstream transactions, transactions greater than US$68.2 million may require review. The structure of the transaction – whether a merger, contributions to an existing business, or other forms – can also affect whether the deal is reportable.

Update and trends

The subject of exporting domestically-produced natural gas has become an issue of increasing importance in the US in light of the success of domestic shale gas exploration and production and the concurrent reduced demand for imported LNG. To date, DoE has granted authorisation to seven entities to export LNG derived from domestically-produced natural gas to FTA countries. Two additional FTA country export authorisation requests are currently pending at DoE. At the time of publication, Sabine Pass Liquefaction LLC is the only entity to receive DoE authorisation to export LNG derived from domestically-produced natural gas to non-FTA countries; however, seven additional such applications are currently pending at DoE. In late 2011, DoE announced that it would be conducting a 'cumulative impact analysis' in response to concerns raised by members of Congress and others regarding the amount of natural gas being exported out of the US. Thus, potential investors in the US natural gas industry are anxiously awaiting the results of the cumulative impact analysis, which are expected in the first quarter of 2012. The first piece of the cumulative impact analysis was released in late January by EIA. Entitled 'Effect of Increased Natural Gas Exports on Domestic Energy Markets', the paper evaluated four export scenarios set forth by DoE involving different total levels of exports and phase-in rates. Summary findings from that report indicate that domestic natural gas prices will rise with an increase in LNG exports, but that the increase will be in the range of 3-9 percent between 2015 and 2035. This report and several others prepared by consulting groups have garnered wide media attention and increased speculation regarding DoE's potential actions on the current (and any potential future) export authorisation requests.

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 (though 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 in two weeks from 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 forego the opportunity to enjoin the merger and instead challenge it long after the deal has closed. This has occurred several times in the energy sector.

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.

29 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.

30 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 to 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 any transfer of public utility assets, and section 854 requiring Commission approval of any utility merger.

International

31 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 a liquefied natural gas facility under section 3 of the NGA and the regulations issued pursuant to that section by FERC is required to disclose on the 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 (FINSA) and now expressly treats 'energy security' and 'critical infrastructure' as falling within the concept of national security; the law now 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.

32 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 importing, exporting and trading of natural gas. Multilateral agreements 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.

Export to FTA countries (as of the date of publication, such countries include: Australia, Bahrain, Canada, Chile, Costa Rica, Dominican Republic, El Salvador, Guatemala, Honduras, Israel, Jordan, Mexico, Morocco, Nicaragua, Oman, Peru and Singapore, with pending agreements with Columbia, Korea and Panama) is governed by section 3(c) of the NGA (namely, such exports are deemed to be in the public interest and applications for such authority are required to be granted without modification or delay). Potential exporters must also seek approval from DoE to export to countries with which the US does not currently have an FTA in place.

However, in the event of a conflict between a regional trade agreement and a WTO trade agreement, the regional trade agreement preempts the WTO trade agreement. For example, the North American Free Trade Agreement (NAFTA) allows for duty-free imports and exports of gas among the US, Canada and Mexico.

33 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.

In addition, with the potential development of liquefaction facilities for LNG in the US, DoE will also be requested to issue orders pertaining to the long-term, multi-contract export of domestically produced natural gas. Such orders may be specific to the destination countries for the exported product. The first applications of this type for LNG were recently approved by DoE pursuant to section 3 of the NGA, allowing export to any country with the ability to import LNG and with which trade is not prohibited by US law or policy.

Vessels that are importing LNG into the US are deemed to pose a special security risk. The USCG and the US Bureau of Customs and Border Protection scrutinise such vessels more so than many other vessels importing cargo into the US, which often results 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

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

In October 2008, FERC issued Order No. 717, amending the Standards of Conduct governing, among other things, transactions by jurisdictional natural gas transmission providers and their affiliates. Clarified by Orders No. 717-A through 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 (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.

35 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 or revocation of operating authority and civil penalties.

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Electricity Regulation 2011

Electricity Regulation 2011

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1 Policy and law

What is the government policy and legislative framework for the electricity sector?

No single government body sets government policy for the electricity sector. The federal government, which regulates wholesale markets, follows a generally pro-competitive policy. The competition reforms that transformed the US electricity sector represent the latest chapter in three decades of restructuring, deregulation, and regulatory reforms that affected industrial sectors of the economy historically subject to price regulation. Retail sales are regulated by the states. Several states have adopted choice programmes intended to introduce competition among retail suppliers of electricity. While some states have delayed or suspended retail choice plans amid concerns that deregulation may not benefit end-use consumers, retail choice is thriving in other states, such as New York and Texas.

US Congress

The Energy Policy Act of 2005 (EPAct 2005) represents the most significant change in US energy policy since the Federal Power Act of 1935 (FPA) and the Natural Gas Act of 1938 (NGA). EPAct 2005 granted the Federal Energy Regulatory Commission (FERC) the authority to issue rules to:

- prevent market manipulation in wholesale power and gas markets, and in electric transmission and gas transportation services;
- assess civil penalties for violations of the FPA and other energy statutes;
- oversee mandatory reliability standards governing the nation's electricity grid; and
- approve the siting of transmission facilities, traditionally a matter of state or local jurisdiction, under certain circumstances.

Federal administrative agencies

One of the top priorities of the US Department of Energy (DoE) is to protect national and economic security by promoting a diverse energy supply and the delivery of reliable, affordable and environmentally sound energy. FERC, an independent regulatory agency within the DoE, is the principal economic and policy regulator at the federal level for the electric power industry. FERC is charged with implementing, administering and enforcing most of the provisions of EPAct 2005, FPA, NGA and other statutes regulating the electric utility industry.

States

Beginning In the 1990s, a number of states undertook measures to require or encourage vertically integrated utilities to disaggregate into separate generation, transmission or distribution entities. Also, participation in independent system operators (ISOs) or regional transmission organisations (RTOs) was encouraged at the federal level and in some states. In 2003, the Energy Information Administration (EIA, part of the DoE) reported that 23 states (concentrated in the north-east and Great Lakes regions) and the District of Columbia had taken legislative or regulatory actions necessary to implement retail choice in the electric sector (www.eia.doe.gov/cneaf/electricity/page/restructuring/restructure_elect.html, 'Electricity Restructuring by State'). However, some states have since slowed their efforts to promote retail choice and in 2007, Virginia decided to end its 10-year experiment with deregulation and restored full-cost of service regulation of retail sales. Following the disruption of the western wholesale power markets in 2000 and 2001, California suspended its retail access programme (www.eia.doe.gov/cneaf/electricity/page/restructuring/california.html). However, pursuant to a 2009 law, effective 11 April 2010, the California Public Utilities Commission increased the limits on the allowed level of direct access within the service areas of California's major investor-owned electric utilities. The increased limits will be phased in over a four-year period and are subject to annual caps. Five other states have decided to delay further implementation bringing the total number of suspended retail access programmes to seven programmes as of 2010, one of which has been reinstated (www.eia.doe.gov/cneaf/electricity/page/restructuring/restructure_elect.html).

2 Organisation of the market

What is the organisational structure for the generation, transmission, distribution and sale of power?

According to FERC, as of its most recent data from 2007 the US electric industry is comprised of 3,273 electricity providers, including 2,009 publicly owned utilities, 883 co-operatives, 210 investor-owned utilities and nine federal utilities.

The private sector includes traditional utilities that are vertically integrated, generation-owning companies and power marketers, and transmission or distribution 'wires-only' companies. These companies may be privately owned or publicly traded. The public sector includes municipally owned utilities, public power districts, state agencies, irrigation districts and other government organisations, and at the federal level, the Tennessee Valley Authority (TVA) and federal power marketing administrations. Rural electric co-operatives, formed by residents, operate in 47 states and represent about 10 per cent of sales and revenue (www.eia.doe.gov/cneaf/electricity/page/prim2/toc2.html, 'Electric Power Industry Overview 2007').

Generation

According to the EIA, net generation of electric power fell 0.9 percent in 2008, to 4,119 million MWh as compared to 2007, mostly due to an unusually cool year and the economic slowdown (www.eia.doe.gov/cneaf/electricity/epa/epa_sum.html, Electric Power Industry 2008: Year in Review: Generation, report released 21 January 2010 (next release date January 2011)). The three primary energy sources for generating electric power in the United States are coal, natural gas, and nuclear energy, which together have consistently provided between 85 and 90 percent of total net generation during the period

1997 to 2008. Excluding conventional hydroelectric, whose share was 6.2 per cent in 2008 but declining, renewable energy sources have increased their share of total net generation for five straight years, to 3.1 per cent in 2008.

The American Public Power Association (APPA) reports that in 2008, 39.9 per cent of generation came from investor-owned utilities, 38.8 per cent from non-utility power producers, 9.9 per cent from publicly owned utilities, 6.7 per cent from federal power agencies, and the remaining 4.7 per cent from cooperatives (www.appanet.org/files/PDFs/GenerationStatistics.pdf, 'Generation Statistics by Fuel and Ownership').

Power sales

Marketers do not generate, transmit or distribute electricity, but are classified as public utilities under the FPA because they sell electricity at wholesale. In addition to the numerous privately owned power marketers, there are four federally owned power marketing administrations that market and sell the power produced at federal hydroelectric and nuclear plants. As of June 2007, there were 438 independent power marketers, 123 power marketers affiliated with public utilities, and 46 power marketers affiliated with financial institutions, each with authorisation to sell power at wholesale in the US.

Transmission

The US bulk power transmission system is composed of facilities that are privately, publicly, federally or cooperatively owned, which form all or parts of three electric networks (power grids): the Eastern Interconnection, which stretches from central Canada to the Atlantic Coast (excluding Quebec), south to Florida and west to the Rockies (excluding much of Texas); the Western Interconnection, which stretches from western Canada south to Mexico and east over the Rockies to the Great Plains; and the Electric Reliability Council of Texas (ERCOT), which serves a large portion of Texas.

Historically, transmission lines owned by private-sector companies were part of a vertically integrated utility. In 1996, FERC issued Order No. 888, requiring each public utility subject to FERC's jurisdiction to:

- file an open-access transmission tariff (OATT) declaring the terms and conditions for using its transmission system; and
- 'functionally unbundle' its services.

FERC has encouraged the development of ISOs and RTOs as independent transmission providers within a region. These entities are formed by utilities that transfer operational control – but not ownership – of their transmission assets to the ISO or RTO, which is then responsible for operating the regional transmission grid and administering wholesale markets. Today, two-thirds of electricity consumers in the US are served within markets administered by seven ISOs or RTOs: the PJM Interconnection (encompassing such states as Pennsylvania, New Jersey, Maryland, Delaware, Virginia and West Virginia), the Midwest ISO, the Southwest Power Pool, the New York ISO, ISO-New England, the California ISO and ERCOT.

One of the responsibilities of ISOs and RTOs, as well as other transmission providers, is maintenance of the short-term reliability of the grid. Pursuant to EPAct 2005, FERC certified the North American Electric Reliability Corporation (NERC) as the nation's Electric Reliability Organization (ERO) to develop and enforce mandatory reliability requirements to address medium- and long-term reliability concerns, subject to FERC oversight and enforcement. Today, enforcement of electric reliability standards, including the protection of critical energy infrastructure, is a major focus of the ERO and of FERC, which may impose penalties up to US$1 million a day on transmission or generation owners and operators for violation of mandatory reliability standards.

Regulation of electricity utilities – power generation

3 Authorisation to construct and operate generation facilities

What authorisations are required to construct and operate generation facilities?

The siting and construction of electric generation, transmission and distribution facilities has historically been a state and local process, although EPAct 2005 altered this historic arrangement by vesting ultimate transmission siting authority with FERC in certain cases. In making siting decisions, state public utility commissions (PUCs) consider environmental, public health and economic factors. The PUCs exercise their authority in conjunction with state environmental agencies or local zoning boards. A few states have a siting board or commission that provides a single forum where an electricity utility or independent developer can obtain all necessary authorisations to construct electric facilities. Other states have not consolidated the siting process, and electric utilities or independent developers are there required to obtain the necessary permits separately from each of the relevant state and local agencies. State and local permits required for the construction of electric generation facilities include air permits and water use or discharge permits from the state environmental commission, and zoning and building permits from local commissions.

Regulated utilities are required to obtain a certificate of public convenience and necessity from the relevant PUC for the construction of generation, transmission and distribution facilities that will be subject to cost-base rate regulation. No federal certificate of public convenience or necessity is required from FERC for the siting and construction of electric generation, transmission or distribution facilities under Part II of the FPA.

However, a FERC licence must be obtained under part I of the FPA for the construction of hydroelectric facilities on navigable waters. Construction affecting federal lands may also require authorisation from agencies such as the Bureau of Land Management, the US Forest Service or the National Park Service. The US Army Corps of Engineers reviews projects affecting wetlands or navigable waters. Nuclear facilities must be licensed by the US Nuclear Regulatory Commission (NRC).

4 Interconnection policies

What are the policies with respect to interconnection of generation to the transmission grid?

FERC jurisdictional transmission providers are required to provide interconnection service under the terms of an open access transmission tariff (OATT). Generators have the right to request interconnection services separately from transmission services.

In response to complaints by generators that interconnection procedures were being used by some transmission providers in a discriminatory manner, FERC implemented rules to standardise agreements and procedures for generators and required FERC jurisdictional transmission providers to interconnect generators to the grid in a non-discriminatory manner. Under the standard inter-connection procedures, generators are required to pay the full cost of any interconnection facilities up front (from the generator to the point of interconnection) and network transmission facilities (beyond the point of interconnection) necessary to connect the generator with the transmission grid. The generator is reimbursed for the cost of any network transmission facilities through credits for future transmission service on the grid. ISOs and RTOs, but not vertically integrated utilities, have the flexibility to propose changes to the standard interconnection agreement and procedures as well as to the procedures for recovering interconnection costs. For example, ISOs and RTOs may seek authorisation to allocate the costs of network upgrades to the generator requesting the upgrades (in exchange for granting capacity rights on the transmission system). FERC does not regulate

local distribution facilities, but has authority to regulate the rates, terms and conditions of any wholesale sales transaction using such a facility.

5 Alternative energy sources

Does government policy or legislation encourage power generation based on alternative energy sources such as renewable energies or combined heat and power?

Yes. Legislation passed and signed into law by the president in early 2009, the American Recovery and Reinvestment Act of 2009 (Recovery Act), contains provisions for direct spending, tax credits and loan guarantee programmes designed to promote development of renewable energy projects. The legislation extended the production tax credit (PTC) on renewable energy systems by three years, while offering expansions on and alternatives for PTCs (www.ucsusa.org/clean_energy/solutions/big_picture_solutions/production-tax-credit-for.html). The wind energy PTC is in effect until 2012, while PTCs for municipal solid waste, qualified hydropower, biomass and geothermal energy projects extend until 2013. Solar facilities are eligible for a 30 per cent Investment Tax Credit, which applies through 2016. As an alternative to the PTC, a project developer may elect a grant equal to 30 per cent of the facility's tax basis, so long as the facility is depreciable and amortisable. The DoE is administering a loan guarantee programme for renewable energy projects that begin construction by 30 September 2011 (http://lpo.energy.gov/?page_id=45). The DoE Office of Energy Efficiency and Renewable Energy is the focal point for several additional alternative energy programmes, including the biomass programme, the geothermal technologies programme, the solar energies technologies programme, the hydrogen, fuel cells and infrastructure technologies programme, and the wind and hydropower technologies programme (www.eere.energy.gov/#).

As of March 2009, 28 states plus the District of Columbia have adopted renewable portfolio standards (RPS) that require electricity providers to obtain a minimum percentage of their power from renewable energy resources by a certain date and five others have set voluntary goals for adopting renewable energy resources (www.epa.gov/chp/state-policy/renewable_fs.html). Thirteen of these states include combined heat and power (CHP) or waste heat recovery as an eligible resource. More than 2,300MW of new renewable energy capacity through 2003 was attributable to RPS programmes (www.epa.gov/chp/state-policy/renewable_fs.html#fn3).

Cogeneration and small power production purchase and sale requirements

EPAct 2005 amended the mandatory purchase and sale requirements of PURPA. Historically, electric utilities were obligated to purchase or sell electric energy from or to a facility that is an existing qualifying cogeneration or small power production facility (QF). However, if the QF is selling in a market that meets certain criteria established by FERC, that purchase obligation may be terminated. In 2006 FERC issued Order No. 688, which permits the termination of the requirement that an electric utility enter into new contracts to sell energy to or purchase energy from a QF after the electric utility files for such relief from FERC, and FERC makes appropriate findings. Several utilities have successfully pursued relief under Order No. 688. These changes do not affect existing or pending contracts or obligations.

6 Climate change

What impact will government policy on climate change have on the types of resources that are used to meet electricity demand and on the cost and amount of power that is consumed?

Federal and state climate change policies promoting carbon-free energy sources are more likely to have an impact on the types of resource used to meet US electricity demand in the medium- or long-term time frame than in the short term. The US electric industry's reliance on fossil fuels (particularly coal) to meet rising energy demands is driven primarily by cost considerations: coal is a cheap and plentiful domestic fuel source, and coal-fired power plants are a relatively quickly built and inexpensive means by which utilities can meet the electricity demands of their customers. Although recent federal and state legislative initiatives have provided down-payments toward the creation of cost-competitive renewable energy technologies, the large-scale deployment of these technologies is still hampered by variability of resources such as wind, the need for additional backbone transmission capacity between regions, and the lack of storage capacity. Other proposed state and federal legislation (eg, cap-and-trade schemes) and foreign policy initiatives (eg, the Copenhagen emissions treaty) could impose additional costs on electricity generators using carbon-rich fossil fuels. New and existing coal-fired plants may be incentivised or required to have carbon capture and sequestration (CCS) capabilities. Federal and state initiatives to encourage carbon-free energy resources could incentivise other alternatives to coal – particularly new liquefied natural gas (LNG) and nuclear. Coal and other fossil fuels are nonetheless likely to represent the major share of resources for electric energy in the US for the next few decades.

These legislative proposals are, however, likely to impose greater costs on the energy that is consumed. State or federal governments could subsidise renewable energy and carbon mitigation initiatives by surcharges on electricity generation or consumption. Compliance costs incurred by utilities arising from domestic or international cap-and-trade legislation, EPA regulation of greenhouse gasses as airborne pollutants under the Clean Air Act, or state regulation of vehicular carbon emissions would be passed on through every transaction involving electricity. Moreover, these increased costs to utilities and consumers would not likely result in significant demand -reduction; even the most optimistic experts conclude that conservation efforts could realise at best only a marginal reduction of the rate of increase in US demand for electricity.

7 Government policy

Does government policy encourage development of new nuclear power plants? How?

Yes. The US DoE Loan Guarantee Program has promoted development of the nuclear power industry through total available loan guarantees of US$18.5 billion for the construction of new nuclear power plants in the US These loan guarantees help developers of new nuclear plants in the US to obtain favorable financing terms, which is of critical importance when constructing plants with a projected price tag in the range of US$7 to US$10 billion per unit. Indeed, many companies that are considering building new plants have publicly stated that, absent a federal loan guarantee, they will not be able to finance and build their proposed projects. Seventeen companies building 21 nuclear units have applied for the guarantees. To date, a conditional loan guarantee of US$8.33 billion has been granted to the developers of two nuclear units in Georgia, and DoE has targeted two additional projects (in Maryland and Texas) for loan guarantees covering the remaining US$10.17 billion. However, the Maryland loan guarantee is in doubt, because in October 2010, the sponsoring company rejected the terms of the loan proposed by the DoE.

DoE's Loan Guarantee Program also has earmarked an additional US$4 billion for the construction of new uranium enrichment facilities in the US. Access to additional supplies of enriched uranium fuel will be critical to support the development of new nuclear plants in the US. The DoE has granted a conditional loan guarantee of US$2 billion for the construction of a uranium enrichment plant in Idaho, and is considering the loan guarantee application of the United States Enrichment Corporation, which is planning to construct a new uranium enrichment plant in Ohio.

In addition, DoE's Nuclear Power 2010 program has helped to jump-start the proposed construction of new nuclear plants, by

co-funding with the nuclear industry efforts to evaluate and bring new technologies to market. This includes utilising the new licensing process established by the Nuclear Regulatory Commission (NRC) that is intended to streamline NRC approval of such projects. DoE also has put in place a Generation IV Nuclear Energy Systems initiative, which aims to develop new plant designs that minimise waste and are safer and more proliferation-resistant than today's nuclear plant designs.

Finally, EPAct 2005 has further encouraged the construction of new nuclear plants by establishing a production tax credit. Under that plan, operators of the first 6,000MW of capacity from new nuclear power plants that are placed in service before 2021 will receive a production tax credit of 1.8 cents per kWh during the first eight years of the plant's operation.

Regulation of electricity utilities – transmission

8 Authorisations to construct and operate transmission networks

What authorisations are required to construct and operate transmission networks?

Construction

Construction of transmission facilities is primarily a state-regulated function, but federal authorities have jurisdiction over siting on federal lands and multi-state projects may require the authorisation of several states. Historically, this fragmented system for siting new power lines, in addition to other factors such as regulatory uncertainty on the state and federal levels associated with transmission cost recovery, has been a significant barrier to the development of new transmission in the US. The EPAct 2005 provides tools to facilitate new construction and improvements to the existing transmission infrastructure.

EPAct 2005 directed the DoE to identify areas in which transmission capacity constraints or congestion adversely affects consumers (national interest electric transmission corridors) and gave FERC supplemental permitting authority to ensure timely construction of transmission facilities to remedy transmission congestion in those corridors. The DoE has designated two such corridors, the Mid-Atlantic Area National Interest Electric Transmission Corridor and the Southwest Area National Interest Electric Transmission Corridor (http://nietc.anl.gov/nationalcorridor/index.cfm). Under authority provided by EPAct 2005, FERC may issue federal permits to construct or modify electric transmission facilities if it finds that states are holding up transmission projects in these corridors.

EPAct 2005 also provides a mechanism for the private use of the eminent domain power of the US government, where necessary, to obtain property for transmission infrastructure projects. In addition, EPAct 2005 requires that the federal government identify rights of way across federal lands that can be made available for siting electric transmission.

Operation

FERC issued a series of orders beginning with Order No. 890, which were intended to eliminate the broad discretion that transmission providers had in calculating available transfer capacity (ATC), increasing non-discriminatory access to the grid and ensuring that customers are treated fairly in seeking alternative power supplies. Since Order No. 890-A, transmission providers have implemented new service options for long-term firm point-to-point customers and adopted modifications to other services. Instead of denying a long-term request for point-to-point service because as little as one hour of service is unavailable in the course of a year, transmission providers are now required to consider their ability to offer a modified form of planning redispatch or a new conditional firm option to accommodate the request. This increases opportunities to utilise transmission efficiently by eliminating artificial barriers to use of the grid. This standardisation reduces the potential for undue discrimination, increases transparency, and reduces confusion in the industry that resulted from the prior lack of consistency.

Also, FERC regulations require the posting of ATC values associated with a particular path, not available flowgate capacity values associated with a flowgate. With respect to energy and generation imbalance charges, a transmission provider must post the availability of generator imbalance service and seek imbalance service from other sources in a manner that is reasonable in light of the transmission provider's operations and the needs of its imbalance customers. FERC also limited rollover rights to contracts with a minimum term of five years. In Order No. 890-B, FERC reiterated that a power purchase agreement must meet all of the requirements for designation as a network resource in order to be designated by the network customer or transmission provider's merchant functions.

9 Eligibility to obtain transmission services

Who is eligible to obtain transmission services and what requirements must be met to obtain access?

See question 10.

10 Government incentives

Are there any government incentives to encourage expansion of the transmission grid?

Pursuant to EPAct 2005, FERC has established incentive-based rate treatments to encourage investment in and expansion of the US' aging transmission infrastructure. FERC Order No. 679, issued in 2007, includes a number of key provisions to promote transmission investment, including:

- incentive rates of return on equity for new investment by public utilities (both traditional utilities and stand-alone transmission companies);
- a higher rate of return on equity for utilities that join or continue to be members of transmission organisations (for example, RTOs and ISOs); and
- various advantageous accounting methods, including:
- full recovery of prudently incurred construction work in progress, pre-operation costs and costs of abandoned facilities;
- use of hypothetical capital structures;
- accumulated deferred income taxes for stand-alone trans-mission companies;
- adjustments to book value for stand-alone transmission company sales or purchases;
- accelerated depreciation; and
- deferred cost recovery for utilities with retail rate freezes.

In Order No. 679 and Order No. 679-A, FERC extended incentive rate treatments to all utilities joining ISOs or RTOs, irrespective of the date they join. However, this incentive does not apply to existing transmission rate base that has already been built, as its purpose is to attract new investment in transmission.

11 Rates and terms for transmission services

Who determines the rates and terms for the provision of transmission services and what legal standard does that entity apply?

FERC has jurisdiction over unbundled transmission services (including transmission services provided over low-voltage facilities) provided by public utilities to wholesale customers or to retail customers with direct access. The states have jurisdiction over bundled retail service (ie, a combined generation and delivery product sold to retail customers) where direct access is not available. Court decisions and the interconnectivity of the transmission grid in the continental US have led to an expansive view of what constitutes transmission service in interstate commerce in all areas of the US except Alaska, Hawaii and ERCOT. The FPA, however, reserves to the states jurisdiction over the local distribution of electricity.

FERC jurisdictional utilities offering transmission services must do so under FERC-approved tariffs. Order No. 888 required jurisdictional electric utilities to submit pro forma OATTs that functionally unbundled transmission operations and services, and set forth rates for transmission and ancillary services. In 2007, FERC issued Order No. 890, which modified the pro forma OATT to better remedy undue discrimination by, among other things, providing greater transparency and consistency in the calculation of available transmission capacity, and requiring coordinated open transmission planning between regions.

Transmission providers are also required to maintain an open-access, same-time information system (OASIS) to publish information with respect to its transmission system, including services, rates, and available transmission capacity as well as business rules, practices, and standards that relate to transmission services provided under the pro forma OATT.

Finally, the FPA empowers FERC to review rates and terms of transmission services to ensure that they are just and reasonable and not unduly discriminatory or preferential. Generally, tariffs and contracts for transmission services must be filed with FERC before service commences to allow an opportunity for Commission review, as well as public notice and comment. Because transmission services are a natural monopoly, Order No. 888 envisions that FERC will determine whether a particular tariff is just and reasonable via a traditional cost-of-service ratemaking inquiry that balances ratepayer and the utilities' financial interests to realise a rate within the zone of reasonableness. Tariffs can be challenged for being unjust, unreasonable, unlawful, or discriminatory.

EPAct 2005 authorises FERC to require transmission providers not subject to its jurisdiction to provide open access to their transmission system at terms and conditions comparable to those the unregulated entity provides to itself. An unregulated entity may be exempt from this requirement if it sells less than 4 million MWh of electricity annually or if it does not own or operate the transmission facilities needed to operate an interconnected system. However, many of these regulated entities already provide open access based on reciprocity agreements with transmission providers.

12 Entities responsible for assuring reliability

Which entities are responsible for assuring reliability of the transmission grid and what are their powers and responsibilities?

Since 1968, NERC has operated as the primary entity responsible for assuring the reliability of the grid. NERC develops reliability standards through an American National Standards Institute accredited process, and it monitors, assesses and enforces its members' compliance with such standards through a voluntary, self-regulatory process. EPAct 2005 added section 215 to the FPA, which provides for the creation of an ERO to be the organisation responsible for establishing and enforcing reliability standards for the bulk power system in North America. In 2006, FERC certified NERC as the ERO. The ERO oversees an enforcement programme that includes compliance audit and reliability readiness review programmes, as well as a -compliance-monitoring programme.

In 2007, FERC strengthened the reliability regime by approving 83 mandatory reliability standards for the bulk power system proposed by the ERO, approving delegation agreements between the ERO and eight regional entities and creating a new internal Office of Electric Reliability. The mandatory reliability standards apply to users, owners, and operators of the bulk power system designated by NERC. Both monetary and non-monetary penalties may be imposed for violations of these standards.

Regulation of electricity utilities – distribution

13 Authorisation to construct and operate distribution networks

What authorisations are required to construct and operate distribution networks?

Similar to generation, distribution is regulated primarily at the state level.

14 Access to the distribution grid

Who is eligible to obtain access to the distribution grid and what requirements must be met to obtain access?

Specific procedures for connection to the distribution grid vary from state to state. However, state laws generally provide that distributors cannot deny service that is in the public interest.

15 Rates and terms for distribution services

Who determines the rates or terms for the provision of distribution services and what legal standard does that entity apply?

FERC has jurisdiction over delivery of electric energy in interstate commerce by public utilities, regardless of the voltage level of the delivery facilities. Section 201 of the FPA reserves regulatory authority over all facilities used in the local distribution of electricity to the state utility commissions, however. FERC in Order No. 888 promulgated a seven-factor functional test for the case-by-case determination of the jurisdictional separation between FERC-jurisdictional interstate transmission service (including service over low-voltage distribution lines) and state-jurisdictional local distribution service, and FERC generally defers to the states' application of this test.

The functional test looks at; the proximity of the facilities to retail customers; whether the facilities are radial in character; whether power flows into or out of the facilities; whether power entering the facilities is transported to another market; whether power is consumed in a defined area; whether the facilities include meters to measure power flow into the facilities; and the voltage of the power flowing through the facilities.

FERC determines the rates, terms and conditions of transmission service in interstate commerce (including service over low-voltage facilities) under the FPA's just and reasonable standard based on cost-of-service ratemaking principles. Where retail customers buy electricity from a wholesale provider, and the electricity is then delivered over distribution facilities by the load serving entity, the state determines the rates, terms and conditions of such distribution service. Because distribution services are considered to be a natural monopoly, state public utility commissions generally review tariffs for distribution services proposed by the utilities via a traditional cost-of-service ratemaking inquiry. State utility commissions generally approve the tariffs submitted by utilities if they are just and reasonable. The tariffs offered by various utilities will typically vary, even within a state.

Regulation of electricity utilities – sales of power

16 Approval to sell power

What authorisations are required for the sale of power to customers and which authorities grant such approvals?

FERC has jurisdiction over sales of power at wholesale in interstate commerce other than sales by federal or state governmental bodies and rural cooperatives that are indebted to the Rural Utilities Service (RUS) or cooperatives that sell less than 4 million MWh of electricity per year. Retail sales of electricity are regulated at the state level, with variation from state to state.

17 Power sales tariffs

Is there any tariff or other regulation regarding power sales?

Tariffs and contracts pursuant to which public utilities sell power generally must be filed with FERC (wholesale sales) or the applicable state PUC (retail sales) before service commences to allow the applicable regulatory entity an opportunity for review (and for public notice and comment). Under the FPA, FERC has jurisdiction over wholesale rate-making and is charged with assuring the rates, terms and conditions pursuant to which public utilities offer wholesale power sales are 'just and reasonable'.

FERC permits wholesale sales of power at market-based rates if the seller demonstrates a lack of market power by passing a series of horizontal and vertical market screens. FERC has commenced investigations to determine whether utilities should retain their authority to sell power at market-based rates after finding that certain utilities did not pass at least one of the screening tests. In response, several utilities voluntarily agreed to implement cost-based rate caps in the areas where FERC found a presumption of market power and revoked the market-based rate authority of a utility.

Sellers of wholesale power that have applied for and received FERC approval to sell power pursuant to a market-based rate tariff can thereafter enter into new power sales contracts and transactions without filing the contracts prior to commencing service. Instead, such sellers file quarterly reports of their power sales contracts and transactions under their market-based rate tariff. In the absence of a showing of a lack of market power, FERC regulates the rates for wholesale sales under cost-of-service rate-making principles, and each new contract must be filed with FERC before the commencement of service.

Unlike the situation with respect to transmission tariffs, FERC does not generally dictate specific non-price terms and conditions in wholesale power sales contracts but does dictate specific non-price terms and conditions in the market-based rate tariff. The regulatory structure allows complaints to be filed challenging contracts or reported power sales transactions as being unjust, unreasonable, unlawful or discriminatory.

Retail sales are regulated at the state level, with significant variation from state to state. In the absence of a competitive retail market, retail rates are typically established based on cost of service.

18 Rates for wholesale of power

Who determines the rates for sales of wholesale power and what standard does that entity apply?

Section 201 of the FPA grants FERC exclusive regulatory authority over the wholesale of electricity in interstate commerce by jurisdictional entities. The state utility commissions retain regulatory authority over wholesale sales of electricity by purely intrastate wholesale sales (in practice this class is limited to wholesale sales in Alaska, Hawaii and ERCOT), as well as wholesale sales by non-jurisdictional entities such as rural electric cooperatives, municipal utilities, and state- or federally created utilities.

The FPA grants FERC authority over all jurisdictional wholesale sales of electricity to ensure that wholesale rates are just, reasonable and not unduly discriminatory or preferential. Although traditionally FERC had employed a cost-of-service ratemaking inquiry when reviewing wholesale rates to realise this statutory mandate, FERC has also allowed the market to determine wholesale power rates where it has found that the seller and its affiliates lack or have mitigated vertical or horizontal market power, and have adequately restricted affiliate transactions with captive customers. Once FERC approves a jurisdictional entity's generic market tariff, the jurisdictional entity is free to negotiate with other parties in the marketplace over the specific rate charged for the wholesale sale without having to seek FERC approval of the agreement prior to commencing service.

19 Public service obligations

To what extent are electricity utilities that sell power subject to public service obligations?

At retail level, electric utilities have traditionally operated under an obligation to serve. In exchange for what is generally an exclusive service territory and an opportunity to recover prudently incurred expenses through cost-based rates, utilities are obliged to provide service to all customers in that service territory, as well as to plan adequately for the future needs of customers. In states that adopt retail competition, certain electric utilities may still retain an obligation to provide service to customers who do not select a competitive supplier.

FERC has recognised that wholesale electricity sales are generally governed by private contract, rather than by regulatory order or an express obligation to serve.

Regulatory authorities

20 Policy setting

Which authorities determine regulatory policy with respect to the electricity sector?

A number of governmental agencies are involved in different aspects of the regulatory policies governing electricity. At the federal level, Congress ultimately determines the direction of national energy policy through legislation, but it delegates broad authority to implement legislative mandates to FERC and other administrative agencies. At the state level, electric utilities are regulated by PUCs.

21 Scope of authority

What is the scope of each regulator's authority?

FERC has authority to regulate sales of wholesale power and transmission in interstate commerce and to grant and administer licenses for hydroelectric plants on navigable waters. Under the Public Utility Holding Company Act of 2005 (PUHCA 2005), FERC also has authority to grant exempt wholesale generator (EWG) status and foreign utility company (FUCO) status. FERC exercises authority under PURPA with respect to qualifying small power production facilities and cogeneration facilities (QFs).

FERC has jurisdiction over the disposition of assets subject to its jurisdiction, including through mergers, asset divestitures, corporate reorganisations and other transactions in which there is a change in the control of jurisdictional assets. FERC also has oversight authority with respect to the issuance of securities (except if regulated by a state) and interlocks among the officers and directors of public utilities and financial institutions, or the utility's suppliers of electrical equipment. Public utilities under FERC's jurisdiction are subject to various requirements with respect to accounting and record retention and are required to satisfy various reporting requirements.

Under PUHCA 2005, FERC has increased oversight over, and access to, the books and records of public utility holding companies and their subsidiaries and affiliates to the extent that such books and records pertain to FERC jurisdictional rates or charges. Any service company in a holding company system providing non-power goods and services to an affiliated FERC jurisdictional public utility or natural gas company must file annual reports disclosing detailed information about their businesses. Public utility holding companies may seek exemptions and waivers from these regulatory requirements. However, an automatic exemption from all of the requirements is available to companies that are holding companies solely with respect to ownership of EWGs, QFs or FUCOs. In addition, single-state holding companies are entitled to a waiver from some, but not all, of the requirements but must seek the waiver from FERC.

The NRC licenses the construction and operation of nuclear power plants and other nuclear facilities to ensure the protection of public health and safety. The Atomic Energy Act (AEA) governs the

use of nuclear materials by both military and civilian entities, requires that all nuclear facilities be licensed, and establishes compensation for, and limits damages arising from, nuclear accidents. The NRC has developed detailed regulations and guidelines concerning all aspects of the operations of a nuclear power plant.

State PUCs regulate terms and rates for retail sales and delivery of electricity. PUCs are charged with ensuring that the public has access to safe, reliable utility service at reasonable rates and, thus, also have authority over at least some aspects of the organisation and finances of public utilities. Many PUCs also have authority to make siting decisions for transmission lines and generation facilities. However, in other states, siting decisions are delegated to other agencies.

Many local governments operate municipal utilities to provide electric service to their local communities. While the majority of municipal utilities serve smaller communities, several large cities, for example, Los Angeles, Sacramento, San Antonio, Seattle, Jacksonville and Orlando, operate publicly owned electric utilities. City councils govern nearly three-fifths of municipal utilities, while boards of elected or appointed officials govern the rest. In a few states, PUCs regulate municipal utilities.

The RUS promotes electrification of rural America by providing financing to local cooperatives. Electric cooperatives are governed by their member customers through an elected board of directors. Cooperative boards set rates as well as determining the types of services available and other policies. PUCs regulate some aspects of cooperatives' activities in approximately 20 of the 47 states in which cooperatives operate. Rural cooperatives with loans outstanding from the RUS are also obliged to comply with various loan covenants and regulations that affect their operations. The TVA, formed in 1933 as a wholly owned corporation of the US government, generates and transmits power in seven south-eastern states. TVA is governed by a three-member board, appointed by the president and confirmed by the Senate to serve staggered nine-year terms.

The four federal power marketing administrations (PMAs) operate as agencies of the DoE and sell approximately 6.6 per cent of the nation's electricity in 30 states (they are the Bonneville, Southeastern, Southwestern and Western Area Power Administrations – the Alaska Power Administration was privatised in 1998). The PMAs do not own or operate generating facilities but market the power produced by federally owned hydro and nuclear facilities. Administrators of the PMAs have authority to set rates and must certify that rates are 'consistent with applicable law' and 'the lowest possible rate to customers consistent with sound business principles'.

22 Establishment of regulators

How is each regulator established and to what extent is it considered to be independent of the regulated business and of governmental officials?

FERC and NRC are each authorised to have five commissioners. The president nominates, and Congress confirms, commissioners for FERC and the NRC for staggered five-year terms. The president also appoints one commissioner to serve as chair of each commission. No more than three commissioners may belong to a single political party. Furthermore, FERC and NRC decisions are not subject to review by the president, congress, the DoE or other agencies.

State PUCs vary in size, but generally have between three and seven commissioners. It is common to limit the number of commissioners who may be from a single political party. In most states, the governor appoints commissioners, with approval by the upper house of the state legislature, for staggered five or six-year terms. In some states, commissioners are elected. The governor typically designates one commissioner to serve as chair of the commission, although in some states the commissioners select the chair. State commissioners generally are subject to restrictions similar to those of their federal counterparts with respect to employment, investments and ex parte communications.

23 Challenge and appeal of decisions

To what extent can decisions of the regulator be challenged or appealed, and to whom? What are the grounds and procedures for appeal?

Decisions by FERC can be challenged on both substantive and procedural grounds. Within 30 days of a final decision or order by FERC, a party to the proceeding (either the applicant or an intervenor) may file a request for rehearing with FERC. Within 60 days of issuance of the decision on rehearing, an aggrieved party may request a review of the FERC decisions by a US Court of Appeals. The Court of Appeals generally will not consider any objections not raised in the request for rehearing to FERC. US Supreme Court review is possible upon a showing of compelling cause (for example, a conflict between decisions of two or more circuits of the US Court of Appeals). PUC decisions can also be challenged through judicial appeals in state courts, or if the decision violates federal law, a cause of action could be brought in federal court (subject to various limitations).

Acquisition and merger control – competition

24 Responsible bodies

Which bodies have the authority to approve or block mergers or other changes in control over businesses in the sector or acquisition of utility assets?

FERC approval is required prior to the disposition of any facilities subject to its jurisdiction under the FPA of a value in excess of US$10 million, as well as direct or indirect mergers or consolidations of public utility facilities with those of any other person regardless of the value of the facilities. Facilities under FERC's jurisdiction under section 203 of the FPA include facilities used for transmission or sale of electric power in interstate commerce (including 'paper facilities' such as contracts for wholesale power sales) as well as generation assets used for wholesale sales. FERC review is required if there is a change in 'control' of jurisdictional facilities. In general, FERC will presume that a transfer of less than 10 per cent of a public utility's holdings is not a transfer of control.

Any holding company that owns an entity selling power at wholesale or transmitting electric energy must obtain FERC authorisation to acquire securities valued in excess of US$10 million in any entity that sells at wholesale or transmits electric energy or to otherwise merge with any such entity with a value in excess of US$10 million. In addition, the transfer of specific assets or licences may necessitate additional reviews. For example, the transfer of a nuclear generating facility requires NRC approval.

FERC has established blanket authorisations for a variety of transactions. For example, transactions in which a holding company that includes a transmitting utility or an electric utility seeks to acquire or take any security of a transmitting utility or company that owns, operates or controls only facilities used solely for transmission in intrastate commerce or sales of electric energy in intrastate commerce, or facilities used solely for local distribution or sales of electricity at retail, are automatically authorised. Transactions involving internal corporate reorganisations that do not present cross--subsidisation issues or involve a traditional public utility with captive customers or that owns transmission assets are also automatically authorised. Acquisitions by holding companies of non-voting securities do not require prior FERC authorisation. Acquisitions by holding companies of voting securities do not require prior FERC authorisation if, after the acquisition, the acquiring holding company will directly or indirectly own less than 10 per cent of the outstanding voting securities. Moreover, acquisitions by holding companies of foreign utility companies do not require FERC authorisation except where the holding company or its affiliates has captive customers in the US, in which case the holding company must make certain representations that the transaction will not adversely affect such captive customers.

The Federal Trade Commission (FTC) and the Antitrust Division of the Department of Justice (DoJ) (collectively, the antitrust agencies) are the primary agencies with authority to enforce US antitrust and fair trade practice laws. The antitrust agencies can review the antitrust implications of proposed mergers and certain acquisitions of assets or securities in the electricity sector under the Hart-Scott-Rodino Antitrust Improvements Act of 1976 (HSR Act). Their authority is not specific to any one industry, but they, in addition to FERC and the states, may challenge in court anti-competitive practices in the electricity sector. The antitrust agencies' authority comes from laws including the Hart-Scott-Rodino (HSR) Act, the Federal Trade Commission Act (FTCA), the Clayton Act and the Sherman Act.

Finally, individual state regulatory bodies often must approve an acquisition or divestiture of utility companies or assets in that state, pursuant to state law. The procedures and standards for that review vary from one state to another.

25 Review of transfers of control

What criteria and procedures apply with respect to the review of mergers, acquisitions and other transfers of control? How long does it typically take to obtain a decision approving or blocking the transaction?

In considering an application to merge, acquire or transfer control of assets under section 203 of the FPA, FERC must determine whether the proposed transaction is in the public interest. As provided in FERC's merger policy statement in Order No. 592, such determination requires an evaluation of the proposal's effect on competition, rates and regulation. FERC must also consider whether proposed acquisitions will result in cross-subsidisation of any non-utility company in the same holding company system or in any pledge of utility assets for the benefit of any company in the same holding company system. FERC may approve an acquisition resulting in such cross-subsidisation or pledge of utility assets only if FERC determines that such cross-subsidisation or pledge will be consistent with the public interest.

With respect to assessing a proposed transaction's impact on competition under section 203 of the FPA, FERC's merger policy statement generally requires that applicants provide it with a competitive screen analysis (horizontal or vertical, as appropriate) showing the effect of the proposed disposition on relevant products in relevant geographical markets. The competitive screen analysis must:

- identify the relevant products (such as economic capacity and available economic capacity) and the geographical markets in which the competitive effects of the acquisition can be analysed;
- determine the market shares of all participating firms and the degree of concentration in the market, both before and after the proposed acquisition; and
- identify the market characteristics that will influence the ability of the combining entities to adversely affect competition, such as barriers to entry into the relevant market by other firms.

Market power is measured In part using the Herfindahl-Hirschman Index (HHI) measure of market concentration. However, note that the new Horizontal Merger Guidelines released 19 August 2010 by the DoJ and FTC reflect the measure's declining role In merger analysis. The revised guidelines raise the HHI thresholds for determining market concentration, making It less likely for a particular market to be deemed "moderately concentrated" or "highly concentrated" based on HHI alone. Since FERC's Appendix A horizontal electric utility merger analysis closely tracks the previous DoJ/FTC guidelines, some expect FERC's merger analysis to be similarly revised.

FERC currently evaluates both the magnitude of increases in market power and overall post-transaction concentrations of market power to identify those transactions that are likely to have an adverse impact on competition. Applicants, however, are allowed to identify in their analysis other factors that may help to negate the presumption, such as benefits that the proposed acquisition will bring.

FERC will provide expedited consideration of completed applications for approval of: transactions that are not contested, do not involve mergers and are consistent with FERC precedent, as well as uncontested transactions involving a disposition of only transmission facilities under the functional control of a FERC-approved RTO or ISO; transactions that do not require a competitive screen analysis; and internal corporate reorganisations that do not present cross-subsidisation issues. For transactions that do not qualify for such expedited action, FERC is required to act within 180 days after the filing of an application, unless FERC determines there is good cause for requiring additional time, in which case the time for action may be extended up to 180 days. For example, FERC might extend the time frame for action if it finds that an evidentiary hearing is needed to determine whether the transaction is in the public interest.

The antitrust agencies may review the antitrust implications of mergers and certain acquisitions of assets or securities before those transactions are consummated under the HSR Act. The FTC promulgated a set of detailed rules which govern the pre-merger notification that must be filed in connection with such a transaction. A transaction subject to the HSR Act may not close prior to the expiration of the applicable waiting period, which is initially 30 days. If the antitrust agency decides to open a second-phase investigation, the waiting period will be extended until the 30th day following substantial compliance with a second request. If the reviewing antitrust agency determines that the transaction may harm competition in a relevant market, it may seek a preliminary injunction in a federal court which would bar the consummation of the merger until the court (in a DoJ action) or the FTC (in an FTC action) has an opportunity to decide whether to seek a permanent injunction following a full trial. Such a preliminary injunction does not issue automatically; in deciding whether to preliminarily enjoin a merger, the courts give heavy consideration to whether the antitrust agency will eventually be able to prove its case at trial.

If the reviewing antitrust agency determines that the transaction may harm competition in a relevant market, such issues must be resolved before the transaction can proceed. In the electric sector, FERC (not the antitrust agencies) generally takes the lead in addressing any anti-competitive issues presented by a proposed transaction. Under the HSR Act, however, merging entities in such a situation often enter into a consent order with an antitrust agency under which the acquiring company agrees to divest a portion of its existing assets or of the assets it will be acquiring.

Finally, individual state regulatory bodies often must approve an acquisition or divestiture of utility companies or assets in that state, pursuant to state law. The procedures and standards for that review vary from one state to another.

26 Prevention and prosecution of anti-competitive practices

Which authorities have the power to prevent or prosecute anti-competitive or manipulative practices in the electricity sector?

The federal agencies that are primarily concerned with anticompetitive practices in the wholesale electricity sector are FTC, DoJ, FERC and the Commodity Futures Trading Commission (CFTC). State utility commissions and attorneys general generally, but not exclusively, focus on such practices in the retail electric sector.

27 Determination of anti-competitive conduct

What substantive standards are applied to determine whether conduct is anti-competitive or manipulative?

FERC enforces compliance with tariffs or contracts in an effort to assure service is 'non-discriminatory' and charges are 'just and reasonable'. EPAct 2005 amended the FPA to prohibit buyers or sellers of interstate wholesale electric energy or transmission services from knowingly providing a federal agency with false information or from using any manipulative or deceptive device or contrivance in

violation of FERC regulations. Further, a seller of electric products and services applying for market-based rate authority must show it does not possess unmitigated market power in the affected markets.

FERC and the Commodity Futures Trading Commission (CFTC) (which has enforcement authority under the Commodity Exchange Act) have coordinated their efforts to combat manipulation attempts in the energy market. This coordination was recently seen in 2007, where FERC and the CFTC separately brought cases against two natural gas distributors.

The FTC has concurrent authority, pursuant to the FTCA, to enjoin 'unfair methods of competition.' The FTC's authority extends to acquisitions that tend to substantially lessen competition, as well as to price discrimination and other anti-competitive actions. The FTC also has authority to directly protect consumers from any 'unfair or deceptive' practice, defined as an act 'that causes or is likely to cause substantial injury to consumers that is not reasonably avoidable by consumers themselves and not outweighed by countervailing benefits to consumers and to competition'.

The FTC and the DoJ have concurrent power to prosecute violations of the other federal antitrust statutes. States and private parties may also bring actions under federal and state antitrust laws.

Section 1 of the Sherman Act prohibits 'agreements, conspiracies or trusts in restraint of trade'. Under the Sherman Act, some agreements (such as agreements of horizontal price-fixing or territorial division) are determined to be per se illegal because the conduct of the agreement is overwhelmingly considered to be harmful. Other agreements that might be harmful but not necessarily are analysed under the rule of reason, requiring the plaintiff to prove that the -agreement caused economic harm. Section 2 of the Sherman Act prohibits monopolies, specifically targeting anti-competitive conduct that creates or maintains market domination. The Clayton Act bars certain types of price discrimination and tying arrangements when they lessen competition.

28 Preclusion and remedy of anti-competitive practices

What authority does the regulator (or regulators) have to preclude or remedy anti-competitive or manipulative practices?

If a proposed tariff or contract is found by FERC to be unjust and unreasonable, FERC will order mitigating revisions. FERC may require the sellers to refund the difference between the rates collected and the rates FERC determines are just and reasonable, beginning with the date the investigation was initiated. In order for a seller to be eligible to sell wholesale at market-based rates (instead of at cost-based rates), it must demonstrate to FERC that it and its affiliates lack (or have mitigated) market power. FERC can refuse to grant market-based rate (MBR) authority to an applicant that fails to show it does not possess market power. At any point, FERC has the authority to revoke market-based rate authority upon a determination that the seller possesses market power. In addition, FERC maintains the ability to revoke prior grants of MBR authority if the company's behaviour involves fraud, deception or misrepresentation.

Once initially granted MBR authority, sellers are required to take additional measures in order to maintain the market-based rate authority. For example, sellers of more than 500MW of generation in any region of the country must file updates every three years in order to demonstrate its continued lack of market power. Also, such a electrical provider must notify FERC within 30 days of any significant change that might affect its qualification for market-based rates. Further, FERC has enacted market behaviour rules in order to govern sellers' conduct in the wholesale market. These rules address unit operations, communications, price reporting and record retention.

On an ongoing basis, FERC has authority under section 206 of the FPA to regulate markets and protect them against anticompetitive activity. Section 206 grants FERC authority to initiate an investigation, upon its own motion or third-party complaint, regarding whether any rate charged by a utility for any transmission or sale is 'unjust, unreasonable, unduly discriminatory or preferential'.

EPAct 2005 amended the FPA to allow for increases in the maximum penalty amounts for violations of the FPA. FERC is now able to assess civil penalties and fines of up to US$1 million or imprisonment for not more than five years, or both, for wilful and knowing violations, through acts or omissions, of any section of the FPA. Also, EPAct 2005 provides for civil penalties of up to US$1 million per violation per day to be assessed after notice and the opportunity for a public hearing. While FERC has used its penalty authority sparingly in the past, there are indications that, pursuant to its expanded authority, FERC will act more forcefully to demonstrate its authority with more enforcement actions. In 2007, FERC moved to charge two entities with violations of the FPA, assessing penalties in the amount of US$297.5 million.

The FTCA authorises the FTC to issue 'cease and desist' orders requiring electric utilities to refrain from prohibited unfair trade practices and may assess civil penalties for violations, up to US$11,000 per violation per day. Violations of sections 1 and 2 of the Sherman Act may result in fines up to US$100 million for corporations, or by imprisonment of up to 10 years, or both. In addition, under the antitrust acts, private parties are able to bring enforcement actions to address unfair trade practices in the electric sector, including tying arrangements, price squeezes and denial of access to essential facilities.

International

29 Acquisitions by foreign companies

Are there any special requirements or limitations on acquisitions of interests in the electricity sector by foreign companies?

Several current or former US utilities are or have been owned by foreign parties including National Grid USA (owned by UK's National Grid), New York State Electricity and Gas (owned by the Spanish utility, Iberdrola), and LG&E (owned by Germany's E.ON but sold to a US company in September, 2010). (formerly owned by Scottish Power). However, new investors should be mindful of current US regulatory and political attitudes toward foreign investment in the energy sector.

The Exon-Florio amendment to the Defense Production Act authorises the president of the US to block a transaction if foreign persons gaining control of a US business that threatened national security. The recently enacted Foreign Investment and National Security Act of 2007 (FINSA) confirms the broad range of energy and infrastructure transactions that may be covered, and intensifies the screening for certain transactions.

Exon-Florio is administered by the Committee on Foreign Investment in the US (CFIUS), an inter-agency committee chaired by the secretary of the Treasury and including the attorney general and secretaries of homeland security, commerce, defence, state and energy. CFIUS is responsible for reviewing proposed foreign investment transactions and making recommendations to the president.

FINSA confirms that Exon-Florio applies to acquisitions of 'critical infrastructure'. This term has been defined as systems or assets so vital to the US that the incapacity or destruction of it would have a debilitating impact on national security. While the definition has been applied to ports and oil companies, it is unclear whether or to what degree electricity generating, transmission or distribution facilities would be considered critical infrastructure.

FINSA formalises many CFIUS practices, including explicitly encouraging parties to notify and engage with CFIUS regarding a transaction in order to seek CFIUS clearance. FINSA provides for a 30 to 45-day CFIUS review of covered transactions; reviews are mandatory for covered transactions involving foreign government-controlled entities.

Update and trends

Technologies and devices for electricity storage are receiving increasing attention in the US. The ability to store energy can provide important benefits to the electrical grid both as a means of providing ancillary services to support reliability and as means for direct storage of electricity produced by renewable resources with intermittent availability, such as wind and solar. Technologies for electricity storage are varied and a few, such as pumped storage hydroelectric technology, are already commercially established.

Many of these technologies are still in development or limited operational-scale stages, such as compressed air energy storage, plug-in electric car vehicles and flywheels, and the high costs of the technologies has not yielded many commercially-viable devices. Some electricity storage devices, however, participate today in regulation service markets by providing stored electricity to correct for short-term changes in demand that could otherwise affect the stability of the power system. FERC has shown its desire to promote the development of these technologies.

In January 2010, FERC authorised ratemaking incentives (see question 10) for battery storage devices installed on the California ISO grid to provide voltage support and protection from transmission overloads. Western Grid Development, LLC, 130 FERC 61,056 (2010).

The novelty of developing electricity storage devices has presented challenges to regulators. Some electricity storage devices may have different operational characteristics and multiple uses, and they may not clearly lend themselves to the traditional classifications and functions of production, transmission or distribution.

In June, 2010, FERC staff asked for public comment on appropriate rate structure, accounting classification and reporting requirements for electricity storage facilities. FERC has received industry comments, but as of the fall of 2010, has not issued a ruling or policy statement in response to the filed comments. In September 2010, California passed a law directing the California Public Utilities Commission to establish targets for utility adoption of cost-effective energy storage technologies, the first law of its kind in the US.

For nuclear-generating facilities, the Atomic Energy Act (AEA) generally bars the issuance of a reactor licence to a non-US person. Situations where a foreign company would be able to hold a licence include when it owns up to 50 per cent of an entity whose officers and employees responsible for special nuclear materials are US citizens, or it owns a US subsidiary that will hold the licence, the foreign company's stock is 'largely' owned by US citizens, and the subsidiary's officers and employees responsible for special nuclear materials are US citizens.

30 Cross-border electricity supply

What rules apply to cross-border electricity supply, especially interconnection issues?

No electric transmission lines crossing the US international border may be constructed or operated without a presidential permit. The secretary of energy (through the DoE's Office of Electricity Delivery and Energy Reliability) will issue once a permit upon determining that the project is in the public interest. The two primary criteria used to determine if a proposed project is consistent with the public interest are the impact the proposed project would have on the operating reliability of the US electric power supply, and the environmental consequences of proposed projects. The DoE must also obtain concurrence from the secretary of state and the secretary of defence before issuing a permit.

The FPA allows exports of electric energy unless the proposed export would impair the sufficiency of electric power supply within the US or would impede or tend to impede the coordinated use of the US power supply network. Based on these guidelines from the FPA, DoE (again through the Office of Electricity Delivery and Energy Reliability) grants authorisation to export electric energy if it -determines that sufficient generating resources exist such that the exporter could sustain the export while still maintaining adequate generating resources to meet all firm supply obligations, and the export would not cause operating parameters on regional transmission systems to fall outside of established industry criteria. The DoE must also comply with NEPA before granting authorisation to export electric energy. No federal permit is required to import electricity into the US and no federal permit is required to sell imported electricity, if the sale at issue takes place outside of interstate commerce. Federal regulation of a sale for resale in interstate commerce of imported or domestic electricity will apply if title to the electricity changes hands at a point within the US. In this case, the seller must apply to FERC for approval of the rates, terms and conditions of the sale. There are two exceptions. First, in the event the sale for resale in interstate commerce of imported or domestic electricity is conducted by a US government-owned, US state-owned, or US municipally owned utility, or is conducted by a US Department of Agriculture Rural Utilities Service-financed rural electric cooperative, there will be no FERC regulation of the sale. Second, there will be no FERC regulation of retail sales of imported or domestic electricity. The state PUC may regulate the retail sales of electricity within its border.

Transactions between affiliates

31 Restrictions

What restrictions exist on transactions between electricity utilities and their affiliates?

On 16 October 2008, the Federal Energy Regulatory Commission (FERC) issued Order No. 717, which approves a final rule on standards of conduct governing relations between transmission providers for both electricity and natural gas and their affiliates. The new rule represents a retreat to first principles and adopts most if not all of the changes proposed in a Notice of Proposed Rulemaking (NOPR) issued 21 March 2008.

The new rules concentrate on three principles as the way to prevent affiliate abuse. The main elements of the new regulations are the independent functioning rule, the no-conduit rule, and the transparency rule.

Independent functioning rule

FERC eliminated completely the concept of energy affiliates as well as the corporate separation approach to separating grid operators from marketing affiliates, two aspects of the old Order No. 2004 rules that had proven difficult to understand and enforce. Instead, the new rules are based on the employee functional approach that was first utilised in industry restructuring orders from the 1980s and 1990s. This approach focuses on an employee's actual function on the job rather than the employee's position in the organisation chart. Thus, whereas under the former rules any employee of a marketing or energy affiliate was prohibited from interacting with transmission function employees, the new rules limit the category of employees who must function independently from transmission operators to those who are actively and personally engaged on a day-to-day basis in marketing functions. By narrowing the focus in this manner, the new rules provide needed clarity to supervisors, managers, and executives, and allow the free flow of the type of information needed for long-term planning.

No-conduit rule

The no-conduit rule prohibits a transmission provider from using anyone as a conduit for the disclosure of non-public transmission function information to its marketing function employees. FERC

believes the no-conduit rule is a critically important part of the new regulatory scheme and intends for this rule to cover both information and employees not falling within the scope of the independent functioning rule. For example, although there is no general requirement that lawyers employed by transmission providers need to function independently of the company's marketing function employees, lawyers must nevertheless avoid serving as a conduit for passing non-public transmission information to marketing function employees.

In the NOPR, FERC proposed a version of the no-conduit rule that would have prohibited marketing function employees from receiving non-public transmission function information from any source. In response to numerous objections, FERC eliminated this prohibition from the new regulatory text. But in so doing, FERC stressed that marketing function employees should remain vigilant about the possibility of inadvertent disclosures of non-public transmission information and be prepared to report such incidents to the company's chief compliance officer.

Transparency rule

The new regulations also contain a new transparency rule, the provisions of which are designed to alert interested persons and FERC to potential acts of undue preference. This rule is largely a collection of the existing public posting and reporting requirements, modified to conform with the new standards.

Reliability exception

Reflecting the importance of reliability, the new rules make an exception to the independent functioning rule and the no-conduit rule for the exchange of information 'pertaining to compliance with reliability standards approved by the Commission' and information 'necessary to maintain or restore operation of the transmission system or generating units, or that may affect the dispatch of generating units'.

32 Enforcement and sanctions

Who enforces the restrictions on utilities dealing with affiliates and what are the sanctions for non-compliance?

FERC has authority to impose penalties in the amount of US$1 million per day per violation under sections 316 and 316A of the FPA or to use its rate authority to remedy affiliate abuse (as discussed more fully in question 27).

Mechanisms for enforcement and remedies for violations of states' affiliate rules vary.

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Project Finance 2013

Project Finance 2013

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1 Collateral

What types of collateral are available?

Collateral security interests may be obtained over all real and personal property interests of the project company, including all present and after-acquired assets. It is also common to obtain a security interest in the equity interests of the project company itself. Real property assets may include complete or 'fee simple' interests, leasehold interests, easements, as well as fixtures such as buildings. Personal property security interests range from equipment, inventory, contract and licensed rights, receivables and other rights to payment, bank accounts, securities, general intangibles (such as intellectual property rights) as well as proceeds of all of the foregoing.

Rights in collateral are governed by federal law, the laws of the 50 states and the District of Columbia, and local laws within the states. Generally, personal property security interests are governed by article 8 (with respect to investment securities) and article 9 of Uniform Commercial Code (UCC) in effect in each state. Although the UCC is intended to be a truly 'uniform' commercial code, slight differences among the enactments in each state exist. Real property security interests are governed by the law of the state in which the property is located. Federal law is implicated with respect to the perfection of security interests in intellectual property such as trademarks, copyrights and patents.

2 Perfection and priority

How is a security interest in each type of collateral perfected and how is its priority established? Are any fees, taxes or other charges payable to perfect a security interest and, if so, are there lawful techniques to minimise them? May a corporate entity, in the capacity of agent or trustee, hold collateral on behalf of the project lenders as the secured party?

Most collateral for US project financings will consist of personal property governed by the UCC and real property. The following discussion sets aside more specialised collateral types such as aircraft, railcars and other 'rolling stock', motor vehicles, certain maritime vessels and contracts with the US government.

Real property security interests

Security interests in real property are perfected by filing a mortgage instrument in the applicable filing office of the state or county in which the property is located. This filing creates a public record that serves as notice to third parties. Mortgage instruments are referred to simply as a 'mortgage' in some states or as a deed of trust or deed to secure debt in others. Regardless of its name, the purpose of the recorded instrument is to grant a lien on the property to be encumbered, describe that property and the debt secured, and identify the debtor and the secured party. The rest of the mortgage is privately negotiated, with covenants and representations usually tailored to real property-related topics, because other project terms are dealt with in the primary credit or common terms agreement among lenders. Other than for certain regulated utilities, governmental approvals are not typically required in connection with a mortgage.

Priority among creditors with respect to mortgages is governed by state law, generally based on recordings that are first in time or first without any prior notice of existing claims. However, priority may be affected by state laws applicable to mechanics liens and unpaid real estate taxes, and by inter-creditor subordination agreements.

The taxes and fees payable in connection with mortgage filings vary among states and within cities and counties of the states. Techniques for minimising such taxes include modifying an existing mortgage that may exist on the real property, rather than reconveying the mortgage. However, for most greenfield project finance transactions, there will be no prior mortgages on file that are capable of being modified in this manner.

Personal property security interests

Many types of personal property security interests subject to the UCC can be perfected by filing a financing statement in the state-level office (often the secretary of state) of the state in which the project company is organised. For non-US project companies, the filing office is the Washington, DC, recorder of deeds. However, filing a financing statement is not sufficient for other types of collateral where perfection can only be achieved through possession or control, as in the case of deposit accounts or project finance waterfall accounts established through a depositary. Perfection by control is usually achieved through a control agreement with the deposit bank or depositary granting the secured party exclusive control over the account to the exclusion of any other person. As between the project company and the secured party, the exercise of this right is usually limited to periods of time following a defined trigger event (such as in event of default). Although it is possible to perfect a security interest in investment property by filing, most secured parties take the extra precaution of obtaining possession of certificated securities in order to avoid another party gaining possession of the item and taking a competing security interest.

It is important to distinguish between perfection and enforcement of a security interest. Although a lender may be perfected in certain contract rights, the lender may also seek consents to assignment from the project company's counterparties. Such a consent agreement contains an acknowledgement by the counterparty of the lender's security interest in the contract and sets forth the agreed upon terms pursuant to which the counterparty will recognise performance under the contract by the lender or its designee following the exercise of remedies. Many states exclude security interests in insurance policies from their UCC. However, insurance payable to the project company or the lender for loss of, defects in, or damage to, the collateral, is considered 'proceeds' of collateral and a security interest in proceeds automatically attaches to the collateral.

There are many rules governing priority of UCC security interests and several notable exceptions where control over certain collateral will prevail over filing. In the context of a project financing

where significant diligence will be attended to in connection with prior liens, the most important rule is that, as between perfected security interests, the secured party that files its financing statement or obtains perfection otherwise first wins: the 'first-to-file-or-perfect' prevails.

Fees payable in connection with UCC filings in almost all states are de minimis (with Florida being a notable exception). If there is an administrative agent or trustee for the lenders, that agent or trustee would commonly be a party to the security documents on behalf of the secured parties and the secured party of record for purposes of UCC and mortgage filings. Title to assets, which are being pledged to a collateral agent or trustee in a project financing, remains with the project company and if there were ever a bankruptcy of the agent or trustee, the project company's assets would be excluded from the agent's or trustee's estate (assuming standard collateral security documentation).

3 Existing liens

How can a creditor assure itself as to the absence of liens with priority to the creditor's lien?

Other than with respect to intellectual property (for which searches of registries can be conducted through the US Patent and Trademark Office and the US Copyright Office), there is no federal registry of either land titles or of personal property security interests.

To assure itself of the priority of liens on real property, lenders rely on title insurance procured through the private insurance industry. This involves procuring and purchasing a preliminary report through the insurance company that identifies previously recorded liens on the property, if any, such as prior mortgages, mechanics, judgment or tax liens as well as other recorded easements and similar encumbrances. It is also possible to purchase a survey showing the location of certain recorded encumbrances on the property. Then, the project company, the lender, or each of them will purchase a title insurance policy insuring the status of title as shown on the preliminary report (after taking steps to remove or cure certain defects appearing in the preliminary report).

To assure itself of the priority of its liens on personal (UCC) property, a lender may conduct searches of the applicable filing offices for prior liens. The accuracy of the results of these searches is usually capable of being certified by the filing office. If prior liens are discovered, further diligence is necessary to determine if such liens are material or remain in existence. Once a lien has been terminated, it is possible to remove the lien filing from the public records by filing a termination statement that is authorised in accordance with the UCC. Private sector companies provide lien search results and also conduct searches for judgments, bankruptcy and tax liens. The extent to which liens can be uncovered prior to closing by conducting a filing search is a function of the date on which the search is conducted. Accordingly, it is possible for new liens to arise after a search has been conducted. To this end, lenders usually update their search results near the financial closing date and also rely on representations that there are no liens other than permitted liens. It is possible, though not that common in the project finance context, to also obtain insurance as to the absence of liens on personal property types of collateral.

4 Enforcement of collateral

Outside the context of a bankruptcy proceeding, what steps should a project lender take to enforce its rights as a secured party over the collateral?

In project financings in the United States, lenders aspire to obtain collateral security over the broadest pool of collateral available. Accordingly, the lenders' security interest would extend to the assets of the project company (both real and personal property) as well as the equity held by the project company sponsor(s). In an enforcement proceeding, the lender will elect whether to foreclose on the project equity or on the assets.

Enforcement of a security interest in the project company's equity is governed by remedies available under the UCC, and by state and federal securities laws. Foreclosure on the equity and other applicable UCC collateral may be achieved by allowing the lender to accept the equity in exchange for satisfaction of all claims (the project debt) secured by the equity. This is known as strict foreclosure. Although it is possible to foreclose on equity interests and other UCC collateral by selling it in a private foreclosure sale, most project company equity fails to qualify under the UCC tests that permit private sales. This is because a private foreclosure sale is only permitted where the collateral is customarily sold on a recognised market or the subject of a widely distributed price quotation. A recognised market is one where prices are not individually negotiated, such as the New York Stock Exchange. The general legal standard that all creditors are required to comply with in connection with UCC foreclosures is that the entire process be commercially reasonable. A sale is commercially reasonable if it is made in the usual manner on any recognised market, at the price current in any recognised market, and is otherwise in conformity with reasonable commercial practices among dealers of similar property.

With respect to real property, while foreclosure laws vary from state to state, there are two primary methods that a lender may use to foreclose on real property. In judicial foreclosure, a lender files an action with the local court for a judgment ordering that the real property be sold at a public auction that is judicially supervised. The court also mandates that the proceeds are applied to satisfy the underlying debt. In statutory foreclosure, a lender may foreclose on the real property without commencing judicial proceedings, however, mortgages with a power of sale clause generally require that the real property be publicly sold (eg, through an auction). By satisfying the statutory requirements, a lender may be permitted to privately sell the real estate and apply the sales proceeds to satisfy its debt. In states that allow statutory foreclosure, the lender may elect either method of foreclosure sale.

Lenders possess statutory rights that enable them to protect their interests in the mortgaged real estate. If a lender establishes that a mortgagor is not sufficiently managing the property, then a court may appoint a receiver to preserve that property for the benefit of the lenders and mortgagor during the foreclosure period.

Generally, a lender may 'credit bid' its debt in a foreclosure sale. A lender may bring an action against the mortgagor for a deficiency judgment if the proceeds from the sale of foreclosed property are less than the amount owed, however, several states have enacted a 'one form of action rule' to restrict deficiency judgments and coordinate the order of remedies.

State law sometimes affords defaulting mortgagors either an equitable or a statutory right of redemption, which allows the mortgagor to 'redeem' the real property from the foreclosing lender by repaying the lender for missed payments and interest and other costs associated with the foreclosure. The right to equitable redemption terminates after a valid foreclosure. Conversely, a statutory right of redemption (available in some but not all states) survives for a fixed period after the foreclosure sale has occurred and the mortgagor may redeem the foreclosed real property by paying the price paid at the foreclosure sale.

5 Bankruptcy proceeding

How does a bankruptcy proceeding in respect of the project company affect the ability of a project lender to enforce its rights as a secured party over the collateral? Are there any preference periods, clawback rights or other preferential creditors' rights (eg, tax debts, employees' claims) with respect to the collateral? What entities are excluded from bankruptcy proceedings and what legislation applies to them? What processes other than court proceedings are available to seize the assets of the project company in an enforcement?

The US Bankruptcy Code governs reorganisation and liquidation proceedings in the United States for both individuals and business entities such as corporations, limited liability companies, and partnerships. As a general rule, commercial entities may be subject to liquidation and reorganisation proceedings, typically under chapter 7 or 11 of the US Bankruptcy Code, respectively.

Certain state laws provide for non-judicial foreclosures, allowing lenders to foreclose on mortgages without a court proceeding. However, most jurisdictions do not permit seizure of assets outside of court proceedings and generally bar a deficiency claim following a non-judicial foreclosure.

Foreign and local creditors have equivalent standing under the US Bankruptcy Code. The US Bankruptcy Code also permits US recognition of foreign insolvency proceedings undertaken abroad and allows agents of foreign debtors to obtain assistance in the United States in connection with such proceedings.

As discussed above, the commencement of a bankruptcy case by a project company may pre-empt or stay state law foreclosure actions given that, in general, an automatic stay provision is applicable to companies in a US bankruptcy proceeding. A lender may seek relief from the automatic stay to continue or commence its state law foreclosure rights by reaching an agreement with the representative for the project company or through noticed motion, and in either case, following the approval of the US Bankruptcy Court. The US Bankruptcy Code includes provisions addressing preference periods and fraudulent conveyance and therefore claw back rights of creditors may arise with particular facts or circumstances. Preferred liens to secured lenders in a US project financing generally arise from taxes and mechanics liens.

In addition, a debtor under the US Bankruptcy Code may file a motion for the Bankruptcy Court to determine the current market value of a lender's collateral. If the debtor can demonstrate that the fair market value of the collateral has decreased, the debtor may be able to recategorise a portion of the lender's loan as unsecured and repay such unsecured portion pro rata with other general unsecured creditors.

6 Foreign exchange

What are the restrictions, controls, fees, taxes or other charges on foreign currency exchange?

Generally, the US government does not impose exchange controls or taxes on the exchange of foreign currency. However, economic and trade sanctions imposed by the rules of the Office of Foreign Assets Control (OFAC) of the US Department of the Treasury should be consulted. Further, the US government monitors substantial foreign exchanges and requires persons involved in such transactions to make full and accurate disclosure of these exchanges.

7 Remittances

What are the restrictions, controls, fees and taxes on remittances of investment returns or payments of principal, interest or premiums on loans or bonds to parties in other jurisdictions?

A foreign investor may generally remit US profits abroad and repatriate equity or debt capital investments. The United States maintains a list of countries, companies, and individuals that are subject to sanctions and embargoes. The Treasury Department restricts payments and remittances to such entities (exceptions may be granted by the federal government). Dividends, interest, royalties and service fees may be subject to US withholding tax. The rate of such withholding tax is 30 per cent unless a lower treaty rate applies. In the case of interest, a zero per cent statutory rate may apply in many situations (but typically not to interest payments on intercompany debt).

In addition, the Foreign Account Tax Compliance provisions of the Hiring Incentives to Restore Employment Act (FATCA), when applicable, will impose a US federal withholding tax of 30 per cent on certain 'withholdable payments' (generally certain US-source income, including interest and dividends and the gross proceeds from the sale or other disposition of assets producing such income) to foreign financial institutions and other non-US entities that fail to comply with certain certification and information reporting requirements. The obligation to withhold under FATCA is currently expected to apply to (i) US source interest or dividend income that is paid on or after 1 January 2014 and to (ii) gross proceeds from the disposition of property that can produce US-source interest and dividends paid on or after 1 January 2015. However, FATCA will not apply to debt obligations issued before, and not the subject of a significant modification on or after, 1 January 2013 (or such other date as is specified in guidance issued by the US Treasury Department).

8 Repatriation

Must project companies repatriate foreign earnings? If so, must they be converted to local currency and what further restrictions exist over their use?

US companies may (but are not required to) repatriate foreign earnings. Even if not repatriated, foreign profits, especially passive income (such as interest), may be subject to taxation in the United States on a current basis.

9 Offshore and foreign currency accounts

May project companies establish and maintain foreign currency accounts in other jurisdictions and locally?

The United States does not prohibit offshore accounts, but the Internal Revenue Service (IRS) requires US persons who have an interest in or signature authority over foreign financial accounts to declare such accounts with holdings over US$10,000 by 30 June of each year. Accounts of non-US entities controlled by a US company may need to be reported under these rules. Penalties for non-compliance can be significant. There are no longer any restrictions in the United States on offering foreign currency deposits.

10 Foreign investment and ownership restrictions

What restrictions, fees and taxes exist on foreign investment in or ownership of a project and related companies? Do the restrictions also apply to foreign investors or creditors in the event of foreclosure on the project and related companies? Are there any bilateral investment treaties with key nation states or other international treaties that may afford relief from such restrictions? Would such activities require registration with any government authority?

The United States allows open foreign direct investment and has entered into a number of bilateral and multilateral treaties to broaden investment opportunities and protect for foreign investors. One example is the North American Free Trade Agreement (NAFTA) between Canada, Mexico and the United States. Protection of investors against expropriation is discussed in the response to question 16. One example of protection under NAFTA is the provision requiring each NAFTA party to treat investors from other NAFTA countries and their investments no less favourably than the country's own investors or their investments and investors or investments of third parties. NAFTA also requires that each NAFTA party treat foreign

investments in accordance with international law principles, requiring 'fair and equitable treatment' and security.

Nonetheless, foreign investments in the United States are somewhat restricted. The most notable barrier to foreign investments in the United States is the Exon-Florio Provision, as amended by the Foreign Investment and National Security Act of 2007 (FINSA). The Exon-Florio Amendment to the Defense Production Act of 1950 authorises the president to block or unwind a foreign investment when there is credible evidence that the transaction at issue is a threat to US national security. To obtain approval for a given transaction, the parties may be required to divest certain sensitive assets or agree to comply with other risk mitigation measures. For decades, the Committee on Foreign Investment in the United States (CFIUS), established by executive order, has been responsible for reviewing foreign investments in US assets for national security concerns in areas such as defence and high technology. The controversy regarding the acquisition of management contracts for several US ports by Dubai Ports World, a state-owned company based in the United Arab Emirates, raised concerns about the Exon-Florio review process. Congress responded by passing FINSA, which reformed the longstanding Exon-Florio process. The implementing regulations of FINSA (Final Rules) became effective in late 2008.

FINSA did not change the general structure created by the Exon-Florio Provision. FINSA authorises the president to review, and suspend, prohibit or unwind, based on national security concerns, mergers, acquisitions, and takeovers by or with a foreign person that could result in 'control' of a US business by that foreign person. However, FINSA codified the existence of CFIUS and various aspects of its structure, roles, and responsibilities and those of complementary governmental agencies involved in the review process. Further, FINSA expanded the illustrative list of national security factors that CFIUS may consider when conducting a review. This list includes consideration of the impact of the transaction on US critical infrastructure, such as major energy assets, and whether the foreign entity acquiring the assets is controlled by a foreign government.

The International Economic Emergency Powers Act also grants the president authority to investigate, regulate and prevent the acquisition of US companies by foreign entities. This process, however, requires a declaration of an 'unusual and extraordinary threat' to national security. Federal laws also impose restrictions on foreign investment to protect national security, for example, in the development of natural resources on federally owned lands or of nuclear power, and foreign investments involving the transfer of advanced technology. Additionally, there are separate restrictions in the agriculture, energy, communications, transport and defence sectors.

Finally, the United States historically has had a number of restrictions on foreign ownership of real property, though many states have eliminated such restrictions. The remaining limitations are primarily in the western states and apply only to property conducive to specific uses, such as agricultural, mining or forest lands.

The federal government and many states have enacted specific laws that require foreign acquirers to file reports disclosing ownership of real property in the United States. These laws are typically used to gather information and do not directly affect the foreign acquirer.

Companies owned by US or foreign investors are subject to the same tax regime. Earnings or debt service payments made to foreign investors may be subject to withholding taxes at a rate of 30 per cent, subject to tax treaty or statutory reduction. In addition, if the project company is a US real property holding company, tax liability accrues upon the sale of such companies.

11 Documentation formalities

Must any of the financing or project documents be registered or filed with any government authority or otherwise comply with legal formalities to be valid or enforceable?

There are few requirements to register or file documentation or otherwise comply with special legal formalities with respect to financing and project documents typical of US-based transactions (other than for documents related to real property). Power purchase agreements may be an exception and may need to follow certain formalities as required by a state public utility commission, including having the power purchase agreement formally approved by such a commission. There may be additional exceptions with respect to project documents depending on the details of the transaction at issue. For example, a lease or concession that is part of a PPP transaction that may require certain formalities as codified by state or local law.

With respect to real property, as stated in the response to question 2, a mortgage, once executed, is effective and enforceable between the parties to the transaction, but the mortgage must be filed in the local recording office to provide sufficient notice to third parties as well as to perfect the lien. Government approvals are not generally required for granting a mortgage.

Outside those express formalities, the private parties are generally free to negotiate deal terms subject to general requirements of contract law and the charter and by-laws of the signatory parties. Virtually all jurisdictions require a notary to acknowledge the mortgagor's signature and some states require witnesses to the execution of the mortgage.

12 Government approvals

What government approvals are required for typical project finance transactions? What fees and other charges apply?

Necessary permits depend on a range of variables such as the location, sector and size of the project. Any particular project may require a number of approvals, licences, permits and consents on the federal, state, regional and local level.

The siting and design of substantial projects usually will be subject to government review and approval requirements. For projects that include federal grant funding or are located on federal lands, the National Environmental Policy Act generally requires preparation of an environmental impact statement or other review document, including consideration of mitigation measures to reduce impacts. Approximately half the states and some localities have their own environmental impact review and mitigation requirements, applicable to project approvals by state and local agencies including municipal governments. Various construction and operating permits are also required under the federal Clean Air Act and Clean Water Act and state laws. In many states, federally mandated permit programmes are administered by state agencies, some of which impose requirements under state laws that are more extensive than those of the 'federal floor'. Projects located in or affecting water bodies and wetlands, coastal areas, historic and archaeological resources, habitat for endangered and threatened species, and other sensitive areas require additional federal, state and, in some jurisdictions, local permits and approvals. Moreover, most local governments have planning and zoning laws, which require land use permits or other forms of approval for new projects or expansion of existing facilities and impose conditions on consistency with land use plans, noise and other issues of local concern.

Specific types of projects require additional permits, licences and approvals for their activities. For example, electricity generating projects require regulatory approval for connection to the transmission grid.

Many regulatory agencies impose application processing fees to support programme administrative activities. In addition, compliance with land use permit conditions and environmental mitigation

requirements can add to project costs and should be considered at an early stage of project budgeting.

13 Foreign insurance

What restrictions, fees and taxes exist on insurance policies over project assets provided or guaranteed by foreign insurance companies? May such policies be payable to foreign secured creditors?

In the United States, insurance companies are regulated by state rather than federal government, and insurance regulations vary from state to state. In general, however, insurers must be qualified to do business in each state in which they issue insurance policies. Policies issued by insurers that satisfy the highest degree of state regulatory scrutiny ('admitted' insurers) are often also partially guaranteed by state insurance guarantee funds in the event that the insurance company becomes insolvent. Insurers that satisfy a lesser degree of regulatory scrutiny may nevertheless be permitted to conduct business in a state (as 'surplus lines' insurers), although their policies lack public backing, and the state in which such a policy is issued may levy a 'surplus lines tax' (ranging from 1 to 6 per cent of the premium, depending on the state) that is added to the premium charged to the insured. In the event of disputes over payment of claims, foreign insurance companies will generally be subject to the jurisdiction of US courts, especially if the insurance policy does not contain any contractual provision requiring disputes to be resolved by private arbitration or in the foreign forum. Like insurance company regulations, the law applicable to insurance claim disputes varies significantly from state to state, with the law in some states being relatively favourable to the insurance company and the law in other states being pro-policyholder. In many states, the insured may be entitled to collect its attorneys' fees and punitive damages if it prevails in a claim dispute with its insurer.

A federal excise tax on the amount of the premiums paid to foreign insurance companies applies to casualty insurance and indemnity bonds at the rate of 4 per cent, and to reinsurance at a rate of 1 per cent, subject to reduction or elimination by tax treaty. In addition, many states charge foreign insurers a premium tax on policies that are issued in-state, although this tax is generally charged directly to the insurer and not to the insured.

14 Foreign employee restrictions

What restrictions exist on bringing in foreign workers, technicians or executives to work on a project?

All employers in the United States, including project developers, must confirm each newly hired employee's identity and lawful right to work for that specific employer in the intended position. The Federal laws requiring this action were established in November 1986 as part of the Immigration Reform and Control Act (IRCA) and apply equally to US citizens and permanent resident workers and foreign national personnel. Recently, certain states, cities and municipalities have enacted additional compliance requirements businesses must follow to hold business licences within those regions of the country. Failure to properly document the review of appropriate employment verification documents can result in substantial fines most often calculated based on the number of personnel employed.

When choosing to hire personnel who are not US citizens nor lawful permanent residents (green card holders), it is critical for a project developer to understand the rules established by IRCA and the nature of documentation that can be presented by a foreign national to evidence their lawful right to work in the United States for that specific business. Non-immigrant visas, which are temporary in nature and not intended to result in green card issuance, can include visitors, students, trainees and employment categories. Commonly used employment based non-immigrant visas include:

- the L-1 classification used for executive, managerial or personnel with specialised skills and knowledge that is transferred within a corporate group from a location abroad to a related US subsidiary, affiliate or branch location;
- the H-1b classification used for positions classifiable as 'specialty-occupations', which require college-level degrees in a specific field of study to perform the duties and responsibilities of the position;
- the specialised visas created by treaty for citizens of Canada, Mexico, Singapore, Chile and Australia with similar standards to the H-1b classification; and
- the E classification for executive, managerial or personnel with essential skills and knowledge who are of the same nationality as the intended employer and are nationals of one of 82 countries with whom the United States maintains specialised treaties.

In some cases a foreign national who lacks employment authorisation in the United States can enter in the B-1 (Business Visitor Classification) to represent the interests of a foreign employer. However, a foreign national cannot provide local productive employment while in the United States, but rather can only further the goals of the company abroad.

It is also important to note many recent changes in the law regarding the use of contracted personnel. Although much of the risks and liabilities associated with contract workers is maintained by the contractor assigning the worker, in recent years the government has increased the responsibilities, notice requirements and many of the liabilities of the project developer accepting the contract personnel as well.

A related issue is whether a foreign national will require an export licence to work on a project, which can occur if he or she will be provided access to technology that may be export-controlled. This is because providing technology to a foreign national even within the United States can be viewed as an export to the foreign national's home country. Export licences for defence technology subject to the International Traffic in Arms Regulations (ITAR) are issued by the Department of State, those for commercial technology with potential military application (dual use) subject to the Export Administration Regulations (EAR) are issued by the Department of Commerce and those for certain nuclear technology are issued by the Department of Energy. For certain categories, the Department of Homeland Security now requires that human resource managers certify whether an ITAR or EAR licence is required when applying for a visa for the foreign national.

15 Equipment import restrictions

What restrictions exist on the importation of project equipment?

Some important restrictions on the import of equipment include those set forth below.

Goods imported into the United States must clear customs and are subject to a customs duty, unless specifically exempted by law. The Harmonized Tariff Schedule sets forth the rates of duty for each imported item. US Customs and Border Protection (CBP) does not impose an obligation on an importer to acquire a licence or other certification, but importers may be subjected to such requirements by other agencies, depending on the nature of the import. CBP also enforces health, safety and technical standards for imported merchandise.

There can also be additional non-tariff duties imposed on imports due to unfair trade practices such as dumping or subsidisation, as administered by the Tariff Act of 1930 (as amended), which provides for anti-dumping and countervailing duties.

The Department of the Treasury Office of Foreign Assets Control (OFAC) administers US embargoes and economic sanctions, which can include certain prohibitions on imports, in addition to restricting financial and other transactions with certain countries, individuals or entities.

16 Nationalisation and expropriation

What laws exist regarding the nationalisation or expropriation of project companies and assets? Are any forms of investment specially protected?

The US Constitution provides that private property cannot be taken for public use without just compensation. This does not prohibit the taking of private property, but instead requires compensation in the event of a taking. In some extreme instances, government regulation of private property may be so onerous that it is tantamount to a direct appropriation requiring compensation. For example, the government might be required to pay compensation if regulations completely deprive an owner of all economically beneficial use of the owner's property.

In addition, investment treaties between the United States and other nations also contain expropriation clauses offering foreign investors protection against both direct seizure and against impairment of value. One example is the North American Free Trade Agreement (NAFTA), which prohibits expropriation of an investment in a given host country unless such expropriation is undertaken for a public purpose, is carried out on a non-discriminatory basis, occurs in accordance with due process of law and prompt and adequate compensation is paid.

17 Fiscal treatment of foreign investment

What tax incentives or other incentives are provided preferentially to foreign investors or creditors? What taxes apply to foreign investments, loans, mortgages or other security documents, either for the purposes of effectiveness or registration?

Generally, none. Individual states have a wide range of tax and fiscal incentive schemes for projects with attractive local employment opportunities, whether domestic or foreign owned.

States may impose fees as well as taxes on filing or registration of mortgages or other security documents.

18 Government authorities

What are the relevant government agencies or departments with authority over projects in the typical project sectors? What is the nature and extent of their authority? What is the history of state ownership in these sectors?

There is no overarching US authority for project development and finance, and different industry sectors are subject to varying levels of government regulation. For the energy sector, the major authorities at the federal level include the Nuclear Regulatory Commission (NRC) as to the licensing and administration of nuclear power plants, and the Federal Energy Regulatory Commission (FERC) as to the approval of facilities for interstate or foreign import, export or transmission of oil, gas and power. For example, development of a liquefied natural gas (LNG) liquefaction export terminal requires an order by the Department of Energy (DOE) authorising the exports (easier to obtain for exports to countries with free trade agreements with the US), authorisation by FERC of the siting and construction of the facility itself and approval of the onward transmission of gas in the US market. FERC also regulates rates for electric transmission projects and natural gas pipelines, which can determine whether a project can be financed. There are also significant authorities at the state and local level, including regulatory approvals by state energy siting commissions, state public utility or public service commissions, and local boards whose approval may be needed for siting and rights-of-way for electric generation and transmission projects. In particular, the state siting commissions take into account a number of factors regarding the economic and environmental impacts of a proposed project, and solicit the views of diverse public and private stakeholders, including competitors and nongovernmental organisations.

Projects in other public utility sectors, such as telecommunications, water and wastewater, transportation hubs and ports, are also subject to regulation by specialised bodies at the federal and state levels and by local governments with more general powers. Projects in private sectors, including minerals extraction, oil refining and chemical manufacturing, are primarily regulated based on environmental, health and safety considerations.

Many of the key project development sectors have experienced both public and private ownership. The power sector was formerly occupied by investor-owned utilities subject to extensive public utility regulation and by publicly-owned generators such as the Tennessee Valley Authority and Bonneville Power Administration. Waves of deregulation have introduced a large number of privately owned independent power producers and wholesale generators exempt from general public utility commission oversight. Similar patterns of public, public utility and private ownership have occurred in the other project sectors.

19 International arbitration

How are international arbitration contractual provisions and awards recognised by local courts? Is the jurisdiction a member of the ICSID Convention or other prominent dispute resolution conventions? Are any types of disputes not arbitrable? Are any types of disputes subject to automatic domestic arbitration?

The United States is a signatory to the New York Convention on the Recognition and Enforcement of Foreign Arbitral Awards (the New York Convention) and the Panama Inter-American Convention on International Commercial Arbitration (the Panama Convention). The Federal Arbitration Act (the FAA) is the federal substantive law applicable to both international and domestic arbitration contractual provisions and awards. It includes enabling provisions for both the New York Convention and the Panama Convention. Actions to enforce an arbitration provision, or to confirm or vacate an arbitral award under the FAA may be brought in either state or federal courts. The United States is also a signatory to the Washington Convention, which creates the framework for the International Centre for Settlement of Investment Disputes (ICSID) Convention and the North American Free Trade Agreement (NAFTA) treaty, which provides for the arbitration of investment disputes between non-US investors and governmental entities in the United States.

Both federal and state courts in the United States apply a consistent, well-articulated policy of recognising and enforcing both foreign and domestic arbitration awards. The US federal policy, embodied in the FAA, strongly favours the enforcement of arbitration agreements and the confirmation of arbitration awards. Note that, while the FAA pre-empts inconsistent state arbitration statutes, state law may address matters that are not covered by the FAA. All 50 states have enacted arbitration statutes, some of which specifically address international arbitration. Grounds for challenging an arbitration award under the FAA are quite narrow. The exclusive grounds for vacation of an arbitration award are articulated in section 10 of the FAA. Specifically, an award may be vacated under the FAA only:

- where the award was procured by corruption, fraud, or undue means;
- where there was evident partiality or corruption in the arbitrators;
- where the arbitrators were guilty of misconduct in refusing to postpone the hearing, upon sufficient cause shown, or in refusing to hear evidence pertinent and material to the controversy; or of any other misbehaviour by which the rights of any party have been prejudiced; or
- where the arbitrators exceeded their powers, or so imperfectly executed them that a mutual, final, and definite award upon the subject matter submitted was not made.

However, recent US Supreme Court rulings have cast doubt on the continued viability of the previously recognised independent ground for vacating an award on the basis of 'manifest disregard of the law'.

Only one of the US Circuit Courts of Appeals has continued to recognise 'manifest disregard' as an independent ground, while several have ruled that it is no longer available as an independent ground.

In general, all types of commercial disputes common to project finance transactions can be heard in an arbitration proceeding. The scope of the arbitration will be determined based upon the language of the agreement to arbitrate.

20 Applicable law

Which jurisdiction's law typically governs project agreements? Which jurisdiction's law typically governs financing agreements? Which matters are governed by domestic law?

Project documents are typically governed by (i) the law of the state in which the project is located; (ii) the law of the state in which one or more of the project parties is organised; or (iii) the law of a state with a highly developed commercial legal system, such as New York. As to financing documents, New York law is the dominant choice by far. Real property related finance documents, such as mortgages, sometimes contain split-law choice of law provisions, with the law of the state in which the property is located governing the creation, perfection and enforcement of the security interest and New York law governing the other provisions of the document.

21 Jurisdiction and waiver of immunity

Is a submission to a foreign jurisdiction and a waiver of immunity effective and enforceable?

An agreement by parties to submission of a dispute in a foreign jurisdiction is generally effective and enforceable unless it is unfair or unreasonable. Such an agreement will be disregarded if it is the result of overreaching or unfair use of unequal bargaining power, or if the foreign jurisdiction would be seriously inconvenient. A waiver of sovereign immunity in the project development context, for government contracts of a commercial character, is generally effective and enforceable.

22 Title to natural resources

Who has title to natural resources? What rights may private parties acquire to these resources and what obligations does the holder have? May foreign parties acquire such rights?

In the United States, title to oil, gas and minerals is generally held by the owner of the surface until and unless that right is severed and granted to others. This title to the mineral estate may be separated from the surface estate by a grant or a reservation. When the mineral estate has been severed from the surface estate, the mineral estate owner holds what is referred to as the 'dominant estate', and the surface estate owner holds the 'servient estate'. In general terms, this means that the mineral estate owner has the right of reasonable access to and use of the surface estate in order to exploit the minerals.

In Louisiana, the only civil law state in the United States, mineral rights do not exist as a separate, perpetual estate in land, but rather can only be held separately from the surface in the form of a 'mineral servitude'. The servitude gives its holder the right to enter the property and extract the minerals, but it may expire, or prescribe, after 10 years of non-use.

Both the federal government and many states own oil, gas and mineral rights both onshore and offshore. Government and private transfers frequently reserve to the grantor all or a portion of the mineral rights, so the land title records must be carefully reviewed.

Water rights are generally governed by state law. For bounded bodies of water, the rights to the water are governed by either (or both) the riparian doctrine or the prior appropriation doctrine. Under the riparian doctrine, a person whose land is adjacent to a body of water is entitled to reasonable use of the water. Prior appropriation jurisdictions are generally located in areas where water is scarce, and landowners in these areas obtain rights in and priority to the water supply by actual beneficial use.

The right to groundwater is governed by four doctrines. The absolute ownership doctrine grants the owner of the surface land the right to remove an unlimited quantity of water. The reasonable use doctrine grants the landowner the same privileges as the absolute ownership doctrine but limits groundwater extraction for export purposes if the removal harms other persons with rights to the same aquifer. The appropriative rights doctrine is the groundwater equivalent of the prior appropriation doctrine. The correlative rights doctrine, generally only used in California, allocates surface owners reasonable amounts of water for personal use, who are treated as joint tenants of the groundwater.

23 Royalties on the extraction of natural resources

What royalties and taxes are payable on the extraction of natural resources, and are they revenue- or profit-based?

Federal leases impose a fixed royalty of a defined fraction of the amount or value of the oil or gas removed or sold from each lease. A royalty rate of one-eighth was common up until the 1970s, although now rates such as three-sixteenths or one-sixth are more common. For onshore operations, the federal rate must be no less than one-eighth, whereas offshore rates tend to be higher subject to the various statutory requirements.

Statutes fix most federal royalty rates, but both the Department of the Interior and special legislation (such as the Deep Water Royalty Relief Act) can modify standard terms, usually by reducing the stated royalty rate or suspending payment of royalties, to make frontier development more attractive. State and private leases have more variability in their royalty terms, and may include a basis for payment other than proceeds or market value. States reap varying portions of the royalty for federal leases of land within or adjacent to their borders.

Natural resource operations are subject to applicable state and federal taxes (such as taxes on business profits), in addition to severance taxes assessed by the states regarding certain land. These taxes generally do not vary for domestic and foreign parties, but federal law restricts direct foreign ownership of federal mineral leases. There are no broadly imposed federal taxes for the extraction of natural resources, however, a federal coal excise tax (capped at 4.4 per cent of the sales price) applies to coal producers.

24 Export of natural resources

What restrictions, fees or taxes exist on the export of natural resources?

Relevant export controls include the following:

- natural gas exports require prior approval from the Department of Energy;
- domestically produced crude oil requires a licence from the Department of Commerce for the export of crude oil to all countries, including Canada; and
- exports of certain natural resources with potentially dangerous or harmful applications are restricted by the Department of Homeland Security (DHS).

No general taxes are imposed on the export of natural resources.

The United States maintains economic embargoes on certain countries, including Cuba, Syria, Iran, Libya and Sudan, pursuant to regulations administered by the Treasury Department's Office of Foreign Assets Control. These embargoes can prohibit US persons and foreign persons from engaging in transactions involving the embargoed countries or their companies or nationals, even when nothing will be imported into or exported from the United States.

Update and trends

Expansion of federal TIFIA financing
In July 2012, the US Congress passed legislation expanding the Transportation Infrastructure Finance and Innovation Act (TIFIA). This expansion, called MAP-21, will expand by almost ten times the amount of low-cost federal loans available over the next few years. MAP-21 allows for TIFIA to finance up to 49 per cent of project costs, up from the 33 per cent in the prior authorisation bill. The bill also allows increased use of tolling on federal highways to expand revenue sources for PPPs. TIFIA loans have been used to finance PPPs such as the Port of Miami Tunnel and the LBJ Freeway. Further, subtitle C of MAP-21 encourages the use of innovative project delivery methods, including design-build and 'construction manager/general contractor' (a structure similar to 'project manager at risk').

Potential broadening of the PPP market beyond road deals
Following the example of the Long Beach Courthouse Building in California, states may become more willing to utilise PPP models for new facility construction and infrastructure projects, particularly given budget deficits in many states. The California legislature recently approved the use of state issued bond funds for its high-speed rail project in order to meet a deadline for obtaining federal funds authorised under the American Recovery and Reinvestment Act. However, the portions of this landmark project to be constructed with the proceeds of these funds are expected to be procured under design-build contracts as opposed to the DBFMO project delivery mechanisms seen in recent PPP toll road projects. In the universe of PPPs, the design-build project delivery method is one where public sector involvement is perceived to be relatively high because the government is generally responsible for owning, financing and operating the project and bears the residual risks and rewards of the enterprise.

Renewable energy project finance
The expiration of the US Treasury Department's cash grant programme for projects that were not able meet a safe-harbour or actually commence construction by the end of 2011, combined with uncertainty over the renewal of the production tax credit (PTC) and investment tax credit (ITC), has resulted in a slowdown in renewable financings. To help spur this market, the US Department of Energy has been promoting the benefits of tax-equity financing and recently hosted a seminar at the White House to help broaden awareness among private sector participants regarding opportunities to invest in tax equity structures. Although many of the large concentrated solar power (CSP) projects broke through the permitting log-jam that delayed these projects for years, not all of them were able to obtain financing for construction (most notably Solar Trust of America, which filed for bankruptcy in 2012), and the number of developers pursuing traditional photovoltaic projects continues to outpace new concentrated solar projects.

Port and airport projects
With the expansion of the Panama Canal set to open in 2014, US ports are preparing to expand capacity to accommodate larger ships, and PPPs may play a role in these expansion plans. Additionally, roadway infrastructure related to ports has been a driver of PPP development, including the Port of Miami Tunnel and the proposed Gerald Desmond Bridge project at the Port of Long Beach. PPPs also offer opportunities for airport growth. For example, Southwest Airlines and Houston, Texas officials have entered into an agreement under which Southwest will invest US$100 million to expand William Hobby Airport in exchange for preferential flight scheduling rights and fee abatements.

25 Environmental, health and safety laws

What laws or regulations apply to typical project sectors? What regulatory bodies administer those laws?

Environmental

Environmental matters are governed by a number of federal, state and local laws. The Environmental Protection Agency (EPA) administers the principal federal laws, though the EPA regularly delegates authority to state agencies. The most material laws include those set forth below.

The Clean Water Act's (CWA) National Pollutant Discharge Elimination System permitting programme delegates authority to either the EPA or approved state agencies to issue permits that regulate discharges to waterbodies. In addition, the CWA's Oil Pollution Prevention Regulation requires certain facilities to prepare Spill Prevention Control and Countermeasure plans.

The Comprehensive Environmental Response, Compensation, and Liability Act (the CERCLA) grants the EPA broad authority to address hazardous substances that might endanger the environment and enables EPA to compel parties responsible for environmental contamination to clean up the sites. However, petroleum is exempt from the CERCLA.

The Clean Air Act (the CAA) regulates air emissions and subjects new facilities and significant modifications to existing facilities to extensive permitting and performance standards for emissions controls.

The federal Solid Waste Disposal Act and its 1976 amendment known as the Resource Conservation and Recovery Act (the RCRA) regulate the management and disposal of solid waste and especially hazardous waste. With respect to oil and gas operations, a number of production wastes are specifically excluded from hazardous waste regulation, and states also generally consider these wastes to be non-hazardous solid wastes.

The Endangered Species Act can prohibit activities that might materially impair the habitats of threatened and endangered species. For example, a new facility might be prohibited in an area with an endangered plant species, or particular mitigation measures (such as habitat replacement or augmentation) might be required to minimise adverse impacts to an animal species.

Health and safety

Federal rules governing the health and safety of workers are generally implemented by the Occupational Safety and Health Administration (OSHA) and state and local governments all enforce rules protecting employees and contractors from workplace injuries. OSHA imposes certain inspection and safety programme requirements involving mechanical integrity of equipment, hazards analysis and process safety. OSHA inspects facilities and has the power to issue citations for violations. Recently, OSHA issued the largest citation in its history – over US$87 million – after finding that the oil refinery had failed to correct previously cited safety hazards.

The Department of Homeland Security (DHS) implements requirements relating to safety and security under the Maritime Transportation Security Act of 2002 (the MTSA) and the Chemical Facility Anti-Terrorism Standards (the CFATS). The MTSA requirements include development of site security plans, designation and management of certain information as sensitive security information (SSI), and security clearances for personnel.

The Bureau of Safety and Environmental Enforcement (BSEE) has the authority to inspect, investigate, levy penalties, and oversee safety, response and removal preparedness for offshore oil sites. This authority was previously vested with the Minerals Management Service, however, this agency was divided into three separate agencies in response to the Deepwater Horizon oil spill.

26 Project companies

What are the principal business structures of project companies? What are the principal sources of financing available to project companies?

The principal business structures are corporations, limited liability companies and limited partnerships. Many project sponsors favour the limited liability company because it combines the limited recourse of a corporation with the pass-through taxation attributes of a partnership. Project companies are not limited in their sources of financing, however, the principal source is traditional commercial, project-finance, limited recourse bank debt. Although the project bond market has not been that robust in recent years, sometimes there is a tranche of capital markets debt that is on equal footing with bank debt. As the market for private-public partnerships develops (see responses to questions 27 to 29), sources of taxable and tax-exempt government-supported debt financing may become more available and common. Last, many sponsors and developers have also been able to finance a larger portion of projects in equity markets by attracting tax-equity investors who are attracted to and able to monetise the generous tax incentives (eg, accelerated depreciation) available to certain renewable energy projects.

27 Public-private partnership legislation

Has PPP-enabling legislation been enacted and, if so, at what level of government and is the legislation industry-specific?

PPP-enabling legislation in the United States exists mainly at the state and local government levels. Such legislation varies in scope among the 50 states and not all states have enacted PPP-enabling legislation. A recent survey indicated that 31 states have some form of PPP-enabling legislation. However, many states have authorised PPPs only for specific types of projects (such as transportation or utility projects), or only allow a limited number of projects to be implemented under each enabling statute. PPP enabling legislation for roadway projects has become more prevalent in recent years for projects financed with toll revenues, and many such projects include the construction and operation of high occupancy toll lanes adjacent to existing highways. However, variation in enabling legislation between states can be an impediment to the use of PPP structures as PPP project proposals require significant diligence to understand the risks of the particular authorising legislation in the jurisdiction at issue.

States also differ as to whether they allow private entities to make unsolicited proposals for PPPs. Further, nine states that authorise PPPs require that the state legislative body approve the PPP proposal before developing a proposed project.

Some municipalities can enact implementing legislation even though the states in which they are located have not enacted implementing legislation (Chicago authorised a PPP for the Chicago Skyway toll road at a time when the state of Illinois did not have enabling PPP legislation).

28 PPP – limitations

What, if any, are the practical and legal limitations on PPP transactions?

The primary limitation on PPP transactions in the United States is the variation in legislation among the 50 states as well as at the local government level within each state. Lack of uniform legislation could cost a sponsor significant time and effort when putting together proposals and fund sources. Further, not every state has legislation conducive to PPP investment.

Two notable failed transactions highlight the current practical and legal limitations of PPP transactions. The Pennsylvania Turnpike is an example where the State of Pennsylvania initiated a bid process before passing enabling legislation. After the winning sponsor expended significant resources preparing its bid, the governor was unable to convince the state legislature to dismantle the state's Turnpike Authority in order to lease the Pennsylvania Turnpike to the winning sponsor. Without enabling legislation, the sponsor allowed its bid to expire.

A proposed PPP that would have privatised operation and development of Chicago's Midway Airport is an example of the financial markets stopping a transaction rather than the lack of enabling legislation. Ultimately the sponsor could not obtain financing for its bid and forfeited its deposit.

In addition to the risk that the legislative process poses, there is an ongoing risk in US PPP transactions that the applicable government entity will not appropriate funds annually over the duration of the transaction. Many states have general limitations on the long-term debt they may incur, and one legislature typically cannot bind future legislatures to financial commitments beyond a current budget cycle. Hence the budgetary process creates a degree of political risk for many US PPP transactions. The I-595 toll road in Florida is notable as the first PPP transaction in the United States to offer availability payments made by the government instead of relying on toll collections. As a result, the state's payment obligations to the project sponsor are still subject to the appropriation of funds by the state legislature.

PPP roadway projects funded by toll revenues face the risk that such revenues will be lower than forecast, resulting in reduced returns for private investors. The South Bay Expressway, a PPP roadway project in Southern California, filed for bankruptcy in 2010 after toll revenues (upon which private investors relied to finance the project) failed to meet projections. The roadway opened just as the subprime mortgage crisis hit the US, causing ridership and toll collection to fall short of projections.

The potential for future projects to compete with PPPs, particularly roadway PPPs with financial projections based on toll revenues, can also limit project development. Competition can reduce the collection of user fees, decreasing a project's returns. Some public agencies have agreed to non-compete clauses in roadway PPP agreements that prevent the public agency from building competing projects, or compensate the PPP developer for certain losses.

Furthermore, PPPs face the risk of litigation, particularly for the first PPP executed under a given enabling statute. Such litigation may cause delays in executing the PPP contract, arraigning project financing and constructing the project, and lead to an overall higher cost of borrowing generally. The Presidio Parkway/Doyle Drive Project in San Francisco was delayed by litigation challenging the project's implementation under a new California enabling law. In the case of the Presidio Parkway/Doyle Drive Project, although building and trade union labour is being used in the construction of the project, the litigation challenge was mounted by the engineers' union that was concerned over the use of private contractors rather than state workers for their portion of the work. Litigation challenges to a PPP project, like any infrastructure project, can come from a variety of involved stakeholders, including politicians who may seek to repeal enabling legislation, or local governments and non-governmental organisations who may challenge the environmental reviews or other permitting requirements applicable to a project.

A lack of institutional knowledge within government limits the ability of local and state agencies to work with the private sector to successfully structure and promote PPPs. This problem is particularly acute as political administrations (and their emphasis on PPPs) change during the course of multi-phase projects. Some states are working to address this problem by creating state offices focused on promoting the development of PPPs. For example, Virginia created the Office of Transportation Public Private Partnerships in late 2010: the office currently has a pipeline of eight candidate projects and 14 conceptual projects across the state. The office is working to develop these projects as PPPs and to build support for future projects.

The cost of borrowing money in the US is generally higher for private entities than for government entities because public

entities can sell tax-free bonds, increasing the costs of PPPs relative to government-funded projects. To counteract this higher borrowing cost, PPP proponents have been and will continue to be faced with the challenge of demonstrating that the cost-saving aspects of PPPs outweigh higher borrowing costs by emphasising that PPPs are structured to provide long-term cost certainty to public entities while shifting the risk of increased costs to the private partner.

PPP agreements may take longer to negotiate than traditional transactions due to negotiation of provisions allocating risk, particularly for the first PPP developed under a new enabling statute, which can lead to higher costs and make PPPs less attractive. These higher up-front costs should be reduced as proponents gain experience working with each PPP enabling statute and as governments create offices with institutional knowledge of PPP transactions.

These challenges may mean that smaller transactions will dominate for at least the near future, as they can be funded entirely with equity and therefore withstand shifts in the financial markets. However, as precedent for PPPs is established and litigation risk related to such projects decreases, upfront transaction costs should become more predictable and the line between a traditional project financing and a PPP project will become less stark. To avoid the risk of spending significant amounts on bids for projects not currently authorised by statute, investors may require that authorising legislation be enacted prior to engaging in a bidding process. Furthermore, the lack of universal authorising legislation may encourage investors to make unsolicited bids to local governments while encouraging those local governments to enact legislation allowing for the proposed project. The potential for future projects to compete with PPPs, particularly roadway PPPs with financial projections based on toll revenues, can also limit project development. Competition can reduce the collection of user fees, decreasing a project's returns. Some public agencies have agreed to non-compete clauses in roadway PPP agreements that prevent the public agency from building competing projects, or that compensate the PPP developer for certain losses.

29 PPP – transactions

What have been the most significant PPP transactions completed to date in your jurisdiction?

Some of the more recent significant PPP transactions completed in the United States include the Chicago Skyway, Indiana Toll Road, I-495 Capital Beltway HOT Lanes, the Eagle Commuter Rail Project in Colorado, the I-595 toll road and the Port of Miami Tunnel in Florida, the LBJ Express, North Tarrant Express and SH-130 road projects in Texas and the Long Beach Courthouse Building in California. In the first half of 2012, there have only been two PPPs to reach financial close: the US$362 million Presidio Parkway/Doyle Drive Project in California (which raised US$316 million of debt), and the US$1,369 million Midtown Tunnel project in Virginia (which raised US$1 billion of debt). Both the Presidio Parkway/Doyle Drive Project and the Midtown Tunnel project involved 'DBFMO' (design, build, finance, maintain, operate) project structures.

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