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A brief overview of the new Mexican Electricity Wholesale Market

March 2017

Summary

Mexico has enacted secondary legislation that creates a competitive power market open to private investment in almost all areas.

As part of a package of nine new laws covering the energy sector and amendments to 11 existing laws, a new electric industry law (Ley de la Industria Eléctrica) came into force on 11 August 2014.

CMS and its associate law firm in Mexico, Woodhouse Lorente Ludlow S.C. ('**WLL**') advised the Mexican Ministry of Energy (the '**SENER**') on all aspects of the electricity market reform in Mexico.

The reform was the biggest change to the Mexican electricity market in over 40 years, and the largest market reform of this scale in the world for over a decade. The Economist called it 'the crown jewel' in the Mexican Government's programme of reforms¹. Advising on this ground-breaking reform positions CMS at the forefront of the development of the global electricity industry.

The reform's objectives were to reduce the price of electricity, promote competitiveness and growth and bring holistic benefits such as economic growth, higher employment levels, improving economic status and improving quality of life and accessibility to electricity in remote regions.

The reform consisted of two main parts, (i) the legal separation and restructuring of the state-owned utility company, and (ii) the creation of a brand new wholesale electricity market, allowing the private sector to generate and commercialise electricity.

This note will begin by explaining what the reform involved and then will explain how the new wholesale market operates and the role of each market participant.

¹**The Economist:** 'Mexico's reforms: The power and the glory'
(<http://www.economist.com/news/americas/21606269-foreigners-enthuse-over-enrique-pe-nietos-reforms-mexicans-are-warier-power-and>)

An introduction to the old market and the electricity reform

Prior to the reform, electricity in Mexico was predominantly generated and controlled by the Federal Electricity Commission (the '**CFE**'), as a state-owned vertically-integrated monopoly. All utility functions of the electricity industry (electricity generation, transmission, distribution, commercialisation and operation of the system) were performed by the CFE. This model was largely inefficient; the final cost of electricity to end users was not transparent and the Mexican Government had to step in to fund the industry through subsidies, thus spending public money inefficiently.

As part of the reform, the CFE was unbundled and the vertically-integrated monopoly was dissolved. The CFE's functions were spun-off into the following fully independent subsidiaries: several separate electricity generating subsidiaries to manage and operate the electricity generating assets previously owned by the monopoly, a subsidiary dedicated to transmitting electricity within the grid system, a subsidiary dedicated to distributing electricity within the distribution networks, a subsidiary dedicated to supplying electricity to basic end-users in the market and an affiliate company dedicated to supplying electricity to large end-users. None of the CFE's assets were privatised.

The reform also provided a liberalised market where electricity generation and commercialisation (supply) are open to the private sector attracting a lot of investment into Mexico. Transmission and distribution remain in the hands of the CFE; nonetheless, the private sector is able to participate in these activities through agreements and joint ventures with state-owned agencies. The operation of the system is conducted by the National Centre for the Control of Electricity (the '**CENACE**') as an independent system operator. These aspects of the market are further explained below in the section called 'Operation of the new wholesale electricity market'.

The legal separation and restructuring of the state-owned utility company

The first step of the reform involved breaking up and restructuring a long established state monopoly providing a key public service. Complete legal separation between the different functions of the CFE was achieved and protocols for independent decision-making were put in place. The different functions of the CFE were separated as follows:

Electricity generation:

The different electricity generating assets were divided among several newly incorporated and independent electricity generating companies ('**GenCos**') of the CFE, which now compete with each other and other private GenCos in the newly constituted electricity wholesale market.

Transmission and distribution:

Transmission and distribution of electricity are strategic functions which remain in the hands of the CFE as a state-owned monopoly. However, the private sector will be able to participate in transmission and distribution of electricity through agreements and joint ventures with state-owned agencies to provide services for the construction and operation such lines and projects under the CFE's control.

Commercialisation:

The commercialisation function of the CFE was segregated into a subsidiary which supplies electricity to Basic Users in the market and an affiliate company which supplies electricity to Qualified Users. Both these companies operate in the market independently and compete with other privately-owned Basic and Qualified Services Suppliers (for further information about how the market operates please see the next section). Both these CFE subsidiaries may purchase electricity from CFE GenCos and private GenCos, which have entered the market and may be offering more competitive prices.

Operation of the system:

In order to guarantee open access to private entities and full independence, the CFE function previously responsible for operating the system was spun-off into a newly constituted and independent system operator, the National Centre for the Control of Electricity (the '**CENACE**'). The CENACE is responsible for the operative control of the system and the new electricity market, including conducting the electricity long-term auctions ('**LTAs**') and maintaining a registry of market participants, among others.

Regulating the market:

The SENER and the Energy Regulation Commission (the '**CRE**'), will have regulatory and supervisory authority over the wholesale electricity market.

The SENER issued the initial market rules, and the CRE will be responsible for issuing permits for market applicants to participate in the wholesale market as generators or suppliers of electricity. The CRE is also responsible for setting tariffs for transmission, distribution and basic retail services, setting general conditions for market participants, issuing forms of interconnection contracts, and managing clean energy certificates.

Operation of the new wholesale electricity market

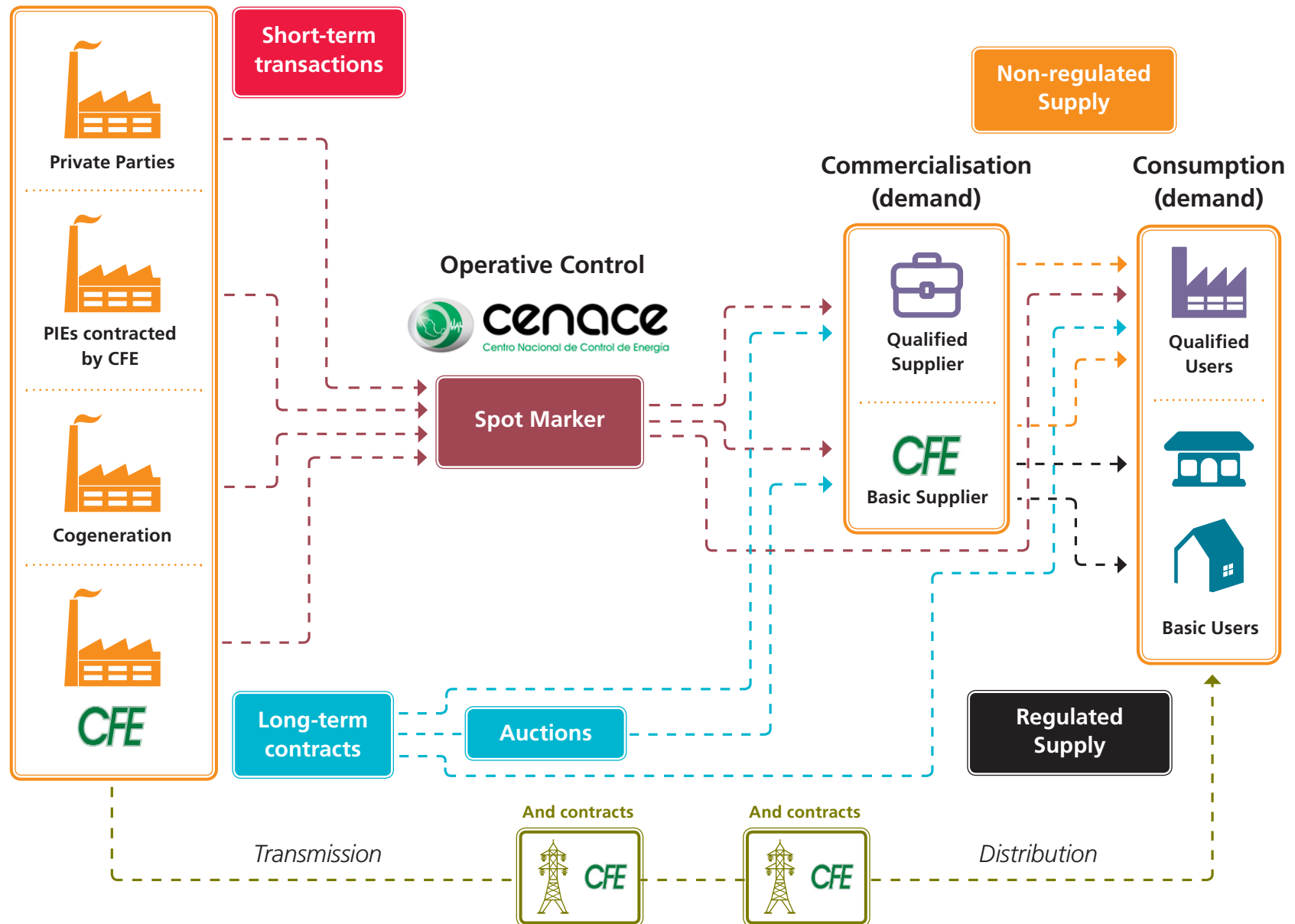
The old electricity market in Mexico lacked competition and investment to innovate and produce clean energy. The reform involved the creation of a brand new wholesale electricity market in Mexico open to the private sector. The new market operates with the basic market forces of supply and demand, where GenCos supply electricity to Qualified and Basic Services Suppliers in charge of satisfying the demand of Qualified and Basic Users (for further information about how the market operates please see below).

As part of designing a unique and competitive wholesale electricity market, CMS drafted the Market Rules, which consist of the Market Bases and Business Practice Manuals that describe the general principles for the operation of the new market (e.g. the Manual for Registration and Accreditation of Market Participants and the Manual for the Capacity Market).

Another key aspect for the operation and competitiveness of the new market were the LTAs. The LTAs are a first of a kind in Mexico and worldwide due to the combination of products that are available for purchase under a single model electricity coverage contract. CMS also drafted the Long-Term Auctions Manual and the model electricity coverage contract (please below see further explanation about the LTAs).

Below is a diagram explaining how the new wholesale market operates followed by a brief description of the key market participants and their interaction with each other. Please note that the new electricity industry law prohibits any single company from participating in more than one of the following activities: generation, supply of electricity or basic resources for the electric industry. However, a common parent can participate in all the activities as long as it does each through separate subsidiaries.

Generation (supply)



Key



Market participants:

The CENACE – this appears in the second column of the diagram under Operative Control. The CENACE has operative control of the market and the system. It supervises the LTAs (blue boxes and lines on the diagram, which will be further explained below) and registers short-term transactions by allocating the relevant amount electricity produced and injected in the system by GenCos to the Supplier which has purchased it. The CENACE will also monitor prices of electricity in the short-term market.

GenCos (Generators) – these are represented by the icons on the first column of the diagram under Generation. As mentioned earlier, these can be private GenCos or independent subsidiaries of the CFE which have been spun-off as independent market participants. All GenCos will compete with each other in the market and can produce electricity using different types of technology. GenCos are permitted to sell electricity directly into the system through the CENACE, to a Qualified Services Supplier, to a Basic Services Supplier and/or to a Participating Qualified User (the concept of Participating Qualified User is discussed in further detail below). Each GenCo participating in the short-term market will be able to set its price for electricity, but will have to report its operating costs to the CENACE on a daily basis. The CENACE will maintain a database of the operating costs of all generators and will be able to determine whether prices are being offered competitively.

Qualified Services Suppliers and Basic Services Suppliers – these appear in the third column under Commercialisation. Services suppliers are those entities in the market which purchase products from GenCos, to then supply to the end users. Such entities will drive the demand in the market in accordance with consumption from end users.

Qualified Services Suppliers – these appear at the top of the third column under Commercialisation. Qualified Services Suppliers may purchase products in both the short-term and long-term markets, but must only supply to Qualified Users (users consuming 1MW or more, e.g. shopping malls and theme parks), for which the supply is non-regulated (symbolised by the orange dotted lines in the diagram). In the long-term market, Qualified Services Suppliers may execute non-regulated electricity coverage contracts with GenCos at negotiated prices and quantities to supply electricity to Qualified Users. Additionally, they may also participate in regulated LTAs and execute electricity coverage contracts with bidding GenCos, if the price of products is low enough dictated by market forces. In the short-term market, Qualified Services Suppliers may purchase products in the Spot Market through the CENACE to satisfy last minute demands of its qualified user clients. As part of its business, Qualified Services Suppliers will execute electricity supply agreements with Qualified Users, under which they will supply Qualified Users with electricity that they have obtained by virtue of the electricity coverage contracts with GenCos or from the Spot Market through the CENACE. Qualified Services Suppliers shall also buy and may sell Clean Energy Certificates.

Basic Services Suppliers – these appear at the bottom of the third column under Commercialisation and is symbolised by the CFE icon. Basic Services Suppliers provide regulated supply to Basic Users (indicated by the black dotted lines in the diagram) and as such they are required to purchase their products with the model electricity coverage contracts awarded at the LTAs.

Qualified Users – these appear at the top of the fourth column under Consumption. Qualified Users are those users who consume 1MW or more. By virtue of their size, bargaining power and electricity consumption, transactions between Qualified Services Suppliers and Qualified Users are not regulated and as such can be negotiated freely. Qualified Users can also enter the market as Participating Qualified Users and purchase products directly from GenCos, thus skipping the Qualified Services Supplier intermediary. This, however, is a significant risk to Qualified Users and they must have a dedicated department in-house which understands the market and is able to purchase and negotiate electricity prices in the short-term and long-term markets, and purchase related products and negotiate guarantees.

Basic Users – these appear at the bottom of the fourth column under Consumption. Basic Users are retail and small-scale users of electricity and who consume less than 1MW. These are usually homes and small shops.

As a general note, Generators, Qualified Services Suppliers, Basic Services Suppliers and Participating Qualified Users shall become direct participants in the wholesale market by entering into the relevant agreement with the CENACE and then providing a performance bond to the CENACE.

Market products:

Electricity – is the general product of providing generating electricity.

Capacity – is a commercial product determined by the amount of electricity which a GenCo made available to the grid system during peak hours (100 critical hours) throughout a year, in accordance with the calculations made by the CENACE at the end of the given year. Capacity can be sold by GenCos, in which case they will undertake the obligation to ensure production availability to the short term market for a determined period of time.

Clean Energy Certificates (CELs) – were designed as an instrument to promote investment in renewable and clean energy with the aim of supporting Mexico's clean energy targets in an efficient way and at a low cost to the government. CELs are title certificates issued by the CRE in favour of those GenCos which evidence the production of a determined amount of clean energy. The obligation of purchasing CELs from GenCos lies with Qualified and Basic Services Suppliers and Participating Qualified Users. These market participants must purchase a certain amount of CELs with reference to the total amount of electricity which they have purchased in the market. CELs are transferrable title certificates which may be purchased through bilateral transactions between two parties, insofar as the transaction satisfies the monetary, reporting and verification requirements established by the CRE in order to validate the title certificates.

Financial Transmission Rights ('FTRs') – allow market participants to offset potential losses (hedge) related to the price risk of delivering energy to the grid. FTRs are a financial contract entitling the FTR holder to a stream of revenues (or charges) based on the day-ahead hourly congestion price difference across an energy path. FTRs are a method to bypass congestion charges associated with Locational Marginal Pricing. They give market participants the ability to attain a better price certainty when delivering energy across the grid. FTRs are worth the economic value determined by the day-ahead hourly congestion prices. The FTR serves as a benefit, or credit, to the holder if it represents a flow of energy in the same direction as the congested flow. The FTR serves as a liability, or charge, to the holder if it represents a flow of energy in the opposite direction as the congested flow.

Ancillary Services – Ancillary Services relate to the operation of the grid system and are necessary to ensure and maintain quality, reliability, continuity and security. It includes operational and revolving reserves, the monitoring of frequency and voltage and emergency start of the system.

Market transactions:

Short-term market/Spot Market – still within the second column under Operative Control, the short-term market/spot market is segmented into three parts, (i) one hour in advance, (ii) one day in advance, and (iii) real-time. GenCos which do not hold long-term coverage contracts can sell electricity through the CENACE to Qualified Services Suppliers on a more immediate basis.

Long-term auctions/market – this is symbolised by the blue boxes and lines under the second column. Qualified and Basic Services Suppliers may purchase any combination of electricity, capacity and clean energy certificates from bidding GenCos through the LTAs. Electricity and/or capacity are subject to a supply of 15 years and clean energy certificates are subject to 20 years. The LTAs provide a regulated and transparent mechanism for selecting the most cost-efficient projects proposed by GenCos, which are then awarded model electricity coverage contracts with Qualified or Basic Services Suppliers who participated in the auction (the CENACE will also be a party to this contract for monitoring purposes only). Basic Services Suppliers, in particular, are required to purchase their products through LTAs because they provide a regulated supply to Basic Users (family homes). Such contracts are designed to cover large periods of time in order to provide a secure supply to small-scale users.

Relevant media coverage of the Mexican electricity reform

PV TECH: 'Mexico second power auction preliminary results reveal 'highly competitive' rates''

<http://www.pv-tech.org/news/mexico-second-power-auction-preliminary-results-reveal-highly-competitive-r>

PV TECH: 'Results of Mexico's USD \$4bn second renewable energy auction'

<http://www.pv-tech.org/news/who-won-what-in-mexicos-us4-billion-second-renewable-energy-auction>

Bloomberg: 'Mexico First Power Auction Awards 1,720MW of Wind and Solar'

<http://www.bloomberg.com/news/articles/2016-03-29/mexico-first-power-auction-awards-1-720-megawatts-of-wind-solar>

Financial Times: 'Investment influx promises cheaper and greener power for Mexico'

<https://www.ft.com/content/acebee56-586b-11e4-a31b-00144feab7de>

The Economist: 'Mexico's reforms: The power and the glory'

<http://www.economist.com/news/americas/21606269-foreigners-enthuse-over-enrique-pe-nietos-reforms-mexicans-are-warier-power-and>

Renewable Energy Focus: 'Mexican energy reforms: Mexico's path to a clean economy'

<http://www.renewableenergyfocus.com/view/43775/mexican-energy-reforms-mexico-s-path-to-a-clean-economy/>

The Guardian: 'Energy reform: will Mexico's newest revolution boost renewables – or just fossil fuels?'

<https://www.theguardian.com/sustainable-business/2015/jun/02/mexico-oil-companies-reforms-gas-hydrocarbon>

Power: 'Mexico's Electricity Sector Reform in Perspective'

<http://www.powermag.com/mexicos-electricity-sector-reform-in-perspective/>

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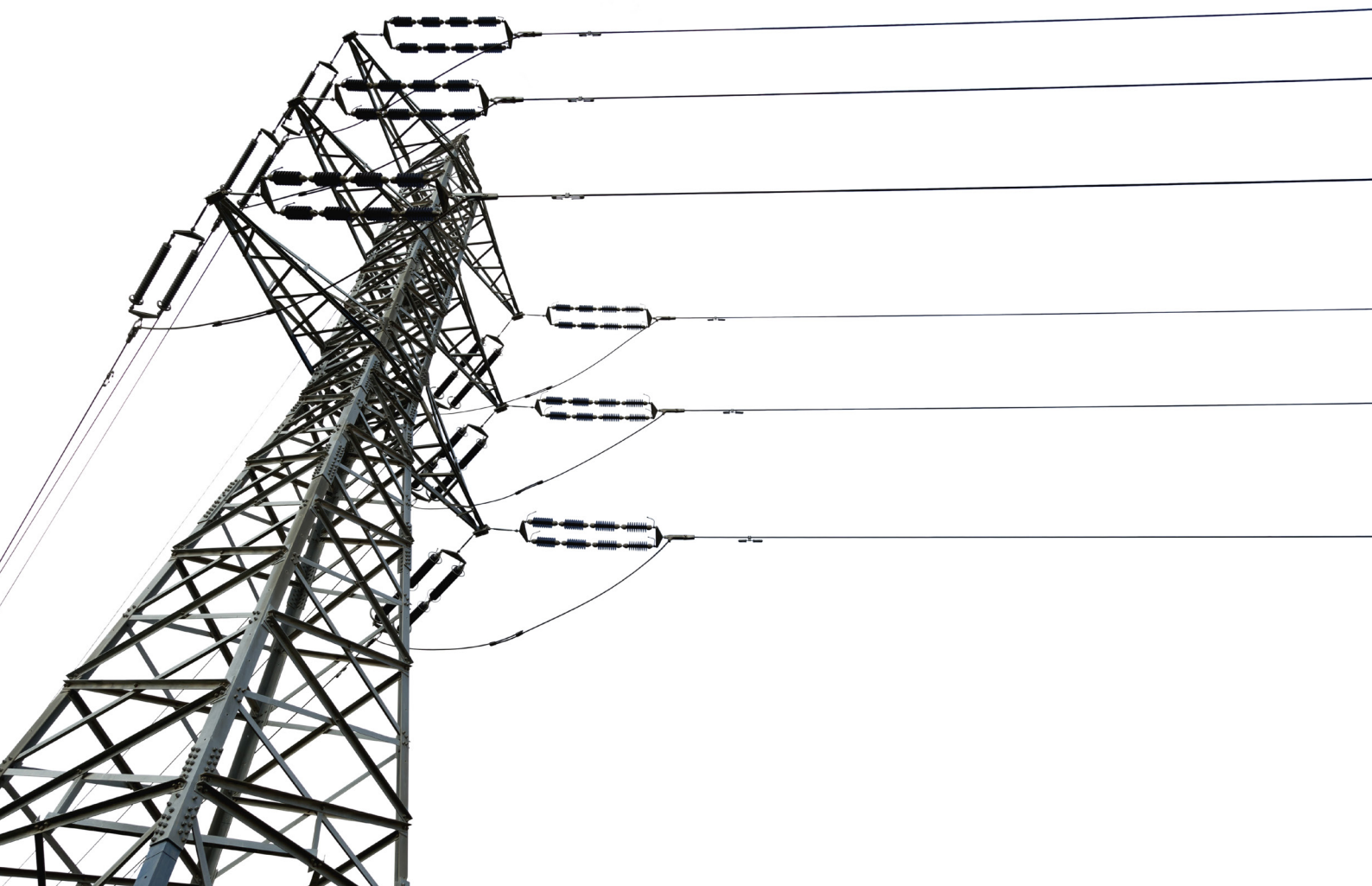


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Appendix: About CMS

Your World First – the CMS approach to delivering value

We have a phrase to sum up our promise to our clients: 'Your World First'. This phrase reflects our priorities of being client-centric, providing world vision and being performance driven.

Client-centric

You, the client, are at the heart of our business - whether you are a large or small organisation. Our emphasis is not just on being great technical lawyers, but really understanding your business and your key objectives. One way we do this is by organising CMS into sector groups that operate locally and internationally. CMS's international sector specialists take pride in understanding your industry and engaging with your company-specific issues.

We deliver added value services based on real client needs, such as Law-Now which provides easy-to-access, practical and timely knowledge that matters to your business. CMS expands to meet client needs, moving into countries where we can make a difference to your business. Recent examples include our new offices in Dubai and Mexico, which we set up to support our energy clients operating there.

World vision

Our sector insight means we immerse ourselves in the world of our clients' business and we make sure we understand the global business issues you are facing. We have deep local expertise in our clients' most significant jurisdictions as well as all the major global centres and we have established CMS in emerging markets in line with client needs. CMS professionals act as trusted partners, managing your global projects and transactions wherever you need us.

Performance-driven

We work with our clients' to define what success means for them and their organisations and we focus on making it happen. CMS takes pride in first-class execution and project management – we deliver results, not just opinions. We will actively ask for our clients' feedback to help us assess and improve our performance.

Delivering Client Service

We take the same approach to service delivery everywhere, based on a common training programme and a shared understanding of what our clients value most.

We provide them with management information to help them manage their account with us, covering areas such as invoicing, matter progress, fees, work in progress (WIP) along with bespoke reports on other factors specific to your business and your needs.

Our client's satisfaction with our performance drives our efforts to continuously improve our service. Through regular exchange of information and independent feedback we identify opportunities to reach higher levels of efficiency and effectiveness in service delivery and act upon them.

Facts & Figures

61 offices
55 cities
35 countries

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CMS practice area and sector groups

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