ENERGY REGULATION AND MARKETS REVIEW

SIXTH EDITION

Editor David L Schwartz

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PREFACE

In our sixth year of writing and publishing *The Energy Regulation and Markets Review*, we have seen dramatic changes in global energy policies. Notwithstanding President Trump's announcement that the United States will withdraw from the Paris Agreement, and the referendum in the United Kingdom to leave the European Union, there have been continued efforts to reduce greenhouse gases (GHGs) by the signatories to the Paris Agreement. There is still a significant need to invest in infrastructure, and we have seen significant investment throughout the supply chains in the oil, gas and power sectors globally. The Fukushima nuclear incident continues to impact energy policy, and we continue to see extensive liberalisation of the energy sector.

I CLIMATE CHANGE DEVELOPMENTS

With respect to climate change efforts, the Paris Agreement went into effect on 4 November 2016, and thus far, 148 countries have ratified the Agreement. President Trump has recently announced that the United States would be withdrawing from the Paris Agreement, but we continue to see significant carbon reduction efforts, such as increased development of renewable resources, as well as energy efficiency and demand reduction measures, globally, including in the United States.

In Europe, the European Union adopted 'A Framework Strategy for a Resilient Energy Union with a Forward-Looking Climate Change Policy', and it is expected that there will be a large amount of European secondary legislation to increase the amount of renewable resources. While the United Kingdom voted to exit the European Union, the United Kingdom continues to invest heavily in offshore and onshore renewable projects, and has been particularly active in the battery storage sector to round out intermittent renewable production, offset demand and arbitrage energy prices. President Macron has stated his intent to have France fulfil its goals of closing all coal fired power plants within five years and doubling the capacity of wind and solar renewable generation. Denmark continues to seek to have renewable energy meet all of its electricity demands by 2050. The Netherlands has a goal of reducing GHGs by at least 25 per cent by 2020, and is closing at least two coal-fired power plants. Germany undertook significant steps to increase reliance on renewable energy resources.

China released a plan to have 15 per cent of its energy supplied by non-fossil fuels, 20 per cent from natural gas and no more than 58 per cent from coal by 2020. Korea's goal is to cut GHGs by 37 per cent by 2030. India announced a goal to have at least 40 per cent of its installed electric capacity powered by non-fossil fuels. Japan and Australia are working to improve energy efficiency and conservation and to increase reliance on renewable

energy supply. The United Arab Emirates continues its efforts to reduce its carbon footprint, announcing a goal of having 25 per cent of its capacity from renewables by 2030, and 75 per cent by 2050. Australia is adding significant new renewable resources. Even the United States is seeing significant investment in renewable energy development. While the Trump Administration is seeking to reverse the Obama Administration's Clean Power Plan, individual states are moving forward to achieve reduced reliance on fossil fuels and greater reliance on renewable energy, including California and New York, which are seeking a 50 per cent renewable portfolio standard goal by 2030, and Hawaii, which is seeking 100 per cent reliance on renewables by 2045.

II INFRASTRUCTURE DEVELOPMENT

For many countries, reliable energy supply is the primary concern, regardless of fuel source. Rural electrification and system reliability remain priorities in Indonesia, Mozambique, Angola, parts of Nigeria and Central and West Africa and we are seeing significant efforts to pursue electric generation projects in those regions. Iran is seeking approximately US\$200 billion in investments for its oil and gas industries over a five-year period, and Iraq is seeking approximately US\$18 billion in foreign investments over a three-year period. Turkey is aggressively diversifying its energy industry and building infrastructure, including the TANAP pipeline from the Caspian Sea to Europe, and is pursuing shale gas opportunities. Malaysia is constructing a 2,000MW coal plant to meet its growing energy demands. South Africa has taken steps to add 863MW of coal generation, and is seeking to add over 3,000MW of natural gas-fired generation. Denmark has a new North Sea Agreement to secure future exploration and production of hydrocarbons from the North Sea, and Cyprus, Mozambique, Lebanon and Mexico are establishing mechanisms to license offshore oil and gas exploration and production.

III NUCLEAR POWER GENERATION

Six years after the Fukushima disaster, Japan has shut down 45 out of its 48 nuclear power stations pending new detailed safety reviews. Germany continues its phase out all nuclear generation, and has agreed to assume the responsibility for nuclear waste management following shut-down, decommissioning and dismantlement by existing owners. France is seeking a reduction of nuclear power generation to 50 per cent of total electricity production within five years. Switzerland and Korea are planning to limit the life of their nuclear generation units. On the other hand, Turkey is continuing with development of the Akkuyu nuclear power plant, and the United Arab Emirates is still proceeding with construction of the Barakah nuclear power plant, both of which are expected to be operational in 2020. The United Kingdom continues to push forward with the Hinckley Point C new nuclear facility. South Africa is facing substantial resistance to its efforts to develop 9,600MW of new nuclear generation capacity. In the United States, the early retirement of certain nuclear plants has been driven by cost and power market considerations, rather than safety concerns. Some nuclear owners in the United States have sought state subsidies in New York, Illinois, Ohio and Pennsylvania, among others, in order to avert premature retirements. Illinois and New York have implemented legislative and regulatory payment programmes for nuclear facilities in those states, but they are currently being challenged in federal district court on constitutional grounds.

IV LIBERALISATION OF THE ENERGY SECTOR

We have seen significant energy sector regulatory reforms in many countries. Australia is continuing to move toward retail choice, and is seeking to implement a new energy market operator and market rule change committee. Italy is seeking to develop more competitive retail markets. Spain has been engaged in regulatory reforms to reduce its 'tariff deficit' and re-establish the correlation between costs and rates. Portugal continues to work on liberalising its electricity and gas markets. Japan is actively working on developing competitive retail electric and gas markets and is seeking to unbundle electric transmission and gas transportation sectors to improve competition. And we are seeing continued efforts to partially privatise state-owned energy companies in the United Arab Emirates, Turkey, Brazil and Colombia.

I would like to thank all the authors for their thoughtful consideration of the myriad of interesting, yet challenging, issues that they have identified in their chapters in this sixth edition of *The Energy Regulation and Markets Review*.

David L Schwartz

Latham & Watkins LLP Washington, DC June 2017

Chapter 5

ANGOLA

Catarina Levy Osório and Helena Prata¹

I OVERVIEW

Angola's energy sector is characterised by strong public activity, with state companies acting throughout the value chain of the oil, natural gas and electricity industries.

Despite the prominent public presence in the energy industry, the country is progressively widening entry to private players, creating the necessary mechanisms to allow private companies to take part in the industry's activities alongside and in close cooperation with the relevant state-owned companies.

The electricity industry is the one that requires the most significant investment, undergoing transformation and expansion plans that amount to US\$13 billion, between 2009 and 2025, to meet growing demand.

In accordance with the measures set out by the National Energy Security Policy and Strategy,² the Angolan government is committed to reforming the energy industry. With this intention, among other measures, in the electricity industry the government is mainly focusing on:

- *a* restructuring state-owned companies;
- b developing a strategic and regulatory framework for renewable energies;
- c reinforcing powers of the Regulatory Institute of the Electrical and Water Sectors (IRSEA);
- d revising the legal framework for the electricity sector;
- e defining an attractive model for private investment and development of its legal framework; and
- f progressively eliminating electricity price subsidies.

In the oil and natural gas industry, the focus is on:

- a ensuring the 'Angolanisation' of upstream activities;
- *b* implementing the liberalisation of the market and creating a new legal and regulatory framework;
- c enacting a natural gas regulatory framework;
- d reinforcing existing refining capacity;
- e finishing short-term projects such as pipelines and railways; and
- defining a new tariff model and removing fuel price subsidies.

¹ Catarina Levy Osório and Helena Prata are partners at ALC Advogados.

² Put into force by Presidential Decree No. 256/11 of 29 September.

The Angolan electricity system is divided into two separate segments:

- a the Public Electricity System (PES), which encompasses the Electricity National Transmission Network (NTN)³ and all generation and distribution infrastructures tied to the NTN; and
- the Non-Tied Electricity System (NTES), which encompasses non-tied producers, self-producers and non-tied customers (collectively, non-tied agents).

The commercial relations between the aforementioned agents is governed by the General Electricity Law⁴ and the Commercial Relationships Regulation.⁵

The producers tied to the PES are public service concessionaires or licence holders who have the obligation to sell electricity to the NTN concessionaire. Under its capacity as a 'single buyer', the NTN concessionaire is required to acquire all power generated by tied producers. To do so, tied producers and the NTN concessionaire must enter into power purchase agreements (PPAs), which set out the terms and conditions of their commercial relations.

Subsequently, the NTN concessionaire (in which the Angolan state must have a majority equity participation or a veto right) must sell the electricity acquired under the PPAs to the high-voltage (HV) distribution network operators, at a single price, including those who operate in isolated systems.

In turn, HV^6 distributors sell electricity to medium-voltage (MV) distributors who then sell electricity to low-voltage (LV) distributors, who in turn sell the electric power to the customers, therefore acting as suppliers.

Without prejudice to the necessities of the PES, the non-tied agents are committed to the role of strengthening the competitive regime on the supply and consumer markets of the Angolan electric system. Hence, non-tied producers and customers are entitled to establish bilateral agreements, freely negotiated between the parties, governing the terms and conditions of the supply of electricity. Nonetheless, the terms and conditions of such agreements must comply with the Regulation for the Licensing and Security of Electric Facilities and the Networks Access Regulation, as well as the rules and procedures put into force by the IRSEA. With the reform of the General Electricity Law, non-tied producers who wish to sell their electricity to the PES are no longer required to enter into generation concession agreements or request the award of a power generation licence.

The commercial relationships established under the regime of the PES are therefore regulated, with contractual terms and sale prices administratively set, as opposed to relations with non-tied agents, whose contractual terms and prices can be freely established by the parties. It should be noted that any tied customer who wishes to migrate to the non-tied electric system is allowed to do so.

³ Mainly composed of ultra-high-voltage networks, which operate at a voltage greater than 60kV.

⁴ Put into force by Law No. 14-A/96 of 31 May and amended by Law No. 27/2015 of 14 December.

⁵ Put into force by the Presidential Decree No. 2/11 of 5 January.

⁶ The HV networks operate at a voltage of between 35kV and 60kV, the MV networks between 35kV and 1kV and the LV networks below 1kV.

II REGULATION

i The regulators

The IRSEA, created by Decree No. 4/02 of 12 March and its governance, currently governed by the provisions of Presidential Decree No. 208/14 of 18 August, is the Angolan regulatory authority in the electricity sector, a public institute with management, administrative and financial independence, responsible for regulating the activities of generation, transmission, distribution and sale of electricity in the PES.

The IRSEA is, *inter alia*, in charge of regulating the business relationship between agents included in the PES and between the PES and non-tied agents, and the specification of tariffs and of revenue transfer models between different players in the electricity industry, as well as the performance of duties related to national arbitration and the composition of interests of different stakeholders of the industry.

The Oil Derivatives Regulating Institute (IRDP), created by Presidential Decree No. 133/13 of 5 September, is the Angolan regulatory authority, with management, administrative and financial independence, responsible for regulating the activities of the oil-derived products sector.

The IRDP is, *inter alia*, responsible for defending the consumers' rights and interests in matters of price, services and quality of service, fostering competition among industry players, ensuring fairness and transparency of commercial relations, monitoring compliance with public service obligations, performing duties related to national arbitration and proposing public policies to the executive power regarding the oil-derived products industry.

ii Regulated activities

Exploration for and production of oil and gas

Exploration and production activities related to oil and natural gas in Angola are governed by Law No. 10/04 of 12 November.

The right to produce and explore for oil or natural gas is granted by concession agreement, generally preceded by a public tender procedure.⁷

The concession for exploration and production, after the public tender procedure, is granted by concession decree, issued by the Angolan government, awarding the national concessionaire Sonangol⁸ the right to develop a specific oil concession.

All successful companies that wish to explore for and produce oil or natural gas in Angola have to form an association with Sonangol in one of three possible ways: incorporation of a joint company, a consortium agreement or a production-sharing agreement. The concession agreement must subsequently be signed by the parties within 30 days of the publication of the concession decree.

⁷ Decree No. 48/04 of 1 September governs the Rules and Procedures for Public Tenders in the Oil Sector.

⁸ Sociedade Nacional de Combustíveis de Angola, EP, the exclusive concessionaire for mining rights in Angola.

With the restructuring of the oil and gas sector enacted by Presidential Decree No. 109/16, Sonangol's equity holdings in the oil and gas and other sectors shall be transferred out of the company and supervised by a new government agency (yet to be incorporated).

Companies that wish to undertake preliminary exploration and prospection works may do so by applying to the Ministry responsible for oil exploration and production matters for the grant of a prospection licence. After hearing the national concessionaire, the said Minister decides on the request and grants the licence by executive decree.

Refining, storage, transportation and markets of oil-derived products

The construction, exploration, capacity transformation, licence renewal and any activity that affects the safety condition of (1) oil refining facilities, (2) storage structures, (3) transportation via pipelines, (4) oversight of the oil-derived products system, or the (5) functioning of the oil-derived products wholesale and retail markets are subject to licensing procedures set out in accordance with Presidential Decree No. 132/13 of 5 November.

The activities mentioned in (2), (3) and (4) above are classified as activities of strategic interest for the country and are subject to public service concession agreements, which are granted after completion of a tender procedure, except when such concessions are awarded to entities controlled by the state.

Oil refining is authorised by the grant of a licence and is developed under market conditions, except for the case of the Refinaria de Luanda, which is a refinery that operates under a special regime.

Construction of electric facilities

The construction of electric facilities¹⁰ is subject to the licensing procedures prescribed in Decree No. 41/04 of 2 July, the Regulation for the Licensing and Security of Electric Facilities.

Under this Regulation, any entity interested in developing new electric facilities is required to obtain an establishment licence (which grants the authorisation for the construction of the facility) and, subsequently, an exploration licence, which grants the necessary authorisation to start operating the facility.

The request for these licences is made to the licensing entity (the entity within the energy sector¹¹ Ministry that is competent to conduct the licensing process), with full details of the project and all other elements necessary to understand the project as a whole.

The licensing entity may impose any modifications it deems essential to ensure the safety of the population and assets as well as complying with the applicable security regulations. In certain situations, the project may be subject to various consultation procedures, namely with affected populations or official departments in charge of activities that are affected by the project in question.

After all the foregoing formalities are successfully concluded, an establishment licence is granted after the payment of the fee, allowing the commencement of construction. Usually, the project developer is obliged to finish the construction works within two years of the establishment licence being granted, although this may be extended depending on the circumstances.

Following the completion of the construction works, the project developer should request an inspection to ensure compliance of the facility with all applicable rules. If it complies, the exploration licence is granted (no later than 15 days after the inspection) and the facility may enter into operation.

¹⁰ Meaning generation, transmission or distribution facilities.

¹¹ At present, the Ministry of Energy and Water.

In certain cases – mostly construction of small facilities that do not interfere with public domain terrains or assets – there may be an exemption from obtaining the establishment licence, or both the establishment and exploration licences.

Authorisation to develop generation, transmission or distribution activities

The authorisation to develop generation (without prejudice to the exemption applicable to non-tied producers), transmission or distribution activities is granted through concession agreements, 12 entered into with the Angolan government, or through licences granted by the local authority, depending on the circumstances.

Concession agreements

The award of concession agreements is made after a public tender procedure and the concession is awarded for a maximum term of 50 years, determined on a case-by-case basis. At the request of the concessionaire, the concession agreement may be renewed, if the renewal is in the public interest. At the end of the term of the concession agreement, all of the related assets of the concession become the property of the state.

Licences

Licences regulate the activities of public supply to isolated localities (not included in the concession areas), of self-generation and of private supply. Licences are awarded by the local authorities within their jurisdiction areas, authorising the generation, transmission and distribution under a public service regime. Licences are awarded for each facility and any entity may hold several licences, regardless of its category or nature.

Generation

As previously noted, the right to develop generation activities is granted either by concession agreement or the award of a generation licence, depending on the circumstances, without prejudice to the obtainment of the aforementioned establishment and exploration licences for the corresponding facilities.

The producers tied to the PES hold concession agreements or licences for power generation and must comply with public service obligations. Thus, the electric power generated by the tied producers is earmarked to supply the PES. As compensation for this obligation, these producers are entitled to receive a fair price¹³ for the sale of the electric power they generate, established in the PPAs entered into with the NTN concessionaire.

Alternatively, non-tied producers are not required to hold administrative rights to pursue generation activities and are free to dispose of their electric power solely by entering into bilateral agreements, with terms and conditions set by the parties (even if the electricity is sold to the PES).

¹² The concession agreements are signed and approved by the Council of Ministers. Although the law grants the Council of Ministers the power to approve the concession agreements, as a result of the governmental structure established by the Constitution of 2010, the Council of Ministers ceased to develop executive functions, becoming merely an advisory body. As such, given the concentration of executive power in 2010, it is presumed that this competence now rests with the holder of executive power.

¹³ Considering an adequate return on the investment made.

The integration of new generation plants by tied producers into the PES depends upon the generation needs of the country, provided in the Electric System Expansion Director Plan, in accordance with the National Energetic Plan. If the generation plant uses public domain water resources, the project developer must also obtain the correct authorisation for the use of public domain resources.

The granting of the right to explore a generation plant via concession agreement is made through a public tender process.

The contractual position on a concession agreement may be assigned to third parties, but it is subject to the IRSEA's opinion and dependent upon authorisation by the Ministers' Council.

Licences for the development of generation activities are granted by local authorities to entities who ensure supply to isolated localities whose power needs are equal to or under 1MW. These licences are valid for a minimum of 15 years.

To obtain a generation licence, a request must be submitted to the local authority, which shall request the opinion of the Energy and Water Ministry. In turn, the Energy and Water Ministry must request the opinion of several official bodies that may be involved or affected by the project. These opinions must be submitted to the local authorities within 90 days. ¹⁴ Upon receipt of the opinions, within 60 days, the local authority must award a provisional generation licence, and the project developer then has 180 days in which to obtain the establishment licence from the Energy and Water Ministry.

Distribution

As with the generation of electric power, distribution activities are authorised via concession agreements, entered into with the state, or through a licence, granted by local authorities.

In general terms, the authorisation to operate HV and MV distribution networks is granted via concession agreements, and distribution in LV or closed networks is authorised by the granting of a licence.¹⁵

Supply

Pursuant to the reform of the General Electricity Law, supply of electricity is authorised through a licence, in terms to be regulated by the government.

iii Ownership and market access restrictions

Oil and gas

As previously mentioned, companies who wish to develop exploration and production activities must do so in association with Sonangol in one of three ways: incorporation of a joint company, consortium agreement or production-sharing agreement. Only commercial

¹⁴ Or 120 days, in the case of a hydropower generation unit.

Except for settlements with more than 50,000 inhabitants or networks with a maximum peak power required by the system equal or greater than 4MW, in which case the right is awarded via concession agreement, under the terms of Article 5 of the Electric Power Distribution Regulation (Decree No. 45/01 of 13 July).

companies may become associates of Sonangol, and if the association is made via incorporation of a joint company, or via consortium agreement, Sonangol is legally required to hold an equity participation greater than 50 per cent.¹⁶

Companies that intend to dedicate their activities to oil refining, storage and transportation of oil-derived products, oversight of the oil-derived products system, or that wish to operate in the wholesale or retail markets of oil-derived products must be controlled ¹⁷ by Angolan citizens. Furthermore, oil refining, storage and transportation of oil-derived products (activities subject to the award of concession agreements) must be developed by companies with management and headquarters effectively established in Angola; the said activities must be their primary scope of business; and they must demonstrate that they possess the technical and financial capacity to develop these activities.

Electricity

Concessions and licences for generation, transmission and distribution activities may only be granted to legal persons, private or public, and the development of new electric facilities is dependent upon the award of the aforementioned establishment and exploration licences.

Companies that develop generation, transmission or distribution activities authorised by licence are allowed to hold several licences, regardless of their category or nature. Consequently, there are no impediments to the development of such activities by vertically integrated companies.

The Angolan state is legally required to hold a majority equity participation in the share capital of the concessionaire of the NTN, or a veto right.

iv Transfers of control and assignments

Oil and gas

The assignment of a contractual position in the exploration and production concession agreement requires the prior authorisation of the Minister responsible for the exploration and production of oil matters, provided that the transferee is of proven competence, and technical and financial capability, unless the assignment is made between subsidiary companies of the transferor.

If the assignment is authorised, Sonangol has a right of pre-emption. If Sonangol does not exercise this right, Angolan companies that are party to other concession agreements at the time of the transfer are entitled to exercise this pre-emption right.

The concessionaires of oil refining, storage and transportation of oil-derived products activities cannot transfer or encumber the assets pertaining to the concession, as these acts are subject to the prior authorisation of the grantor.

Electricity

Subject to prior authorisation by the Council of Ministers, concessionaires for generation, transmission or distribution activities may assign, sell or encumber their contractual positions

¹⁶ In duly justified situations, the government may authorise Sonangol to hold a smaller equity participation.

In accordance with Presidential Decree No. 132/13 of 5 September, 'control' means owning at least 51 per cent of the company's share capital, holding more than half the voting rights, being able to appoint more than half the members of the board of directors and having the power to set operational and strategic policies of the company.

to third parties. Licensees may also transfer their licences to third parties, provided that the licensing entity agrees to the transfer and the requirements that determined its award are fulfilled at the time of the transfer.

III TRANSMISSION/TRANSPORTATION AND DISTRIBUTION SERVICES

Vertical integration and unbundling

As previously noted, the energy industry in Angola is strongly dominated by the presence of state-owned companies.

Oil and gas

In the oil and gas industries Sonangol is party to every exploration and production agreement made with foreign companies, being responsible for the technical management of these agreements to maximise both the state and the company's interests.

Sonangol Group, through its multiple subsidiaries, operates as a vertically integrated company that has its main activities concentrated in all phases of the oil value chain. Its activities include exploration, production, development, marketing, transportation and refining of hydrocarbons and their derivatives. Those activities can be performed independently or in association with other companies, national or foreign.

The activity of oil-derived products' storage and transportation is now subject to a functional and accounting unbundling regime.

The activity of overseeing the oil-derived products system¹⁸ is subject to a legal unbundling regime.

The exploration, evaluation and development of natural gas reserves are the responsibility of Sonagas, a subsidiary of Sonagol Group. Sonagas create joint ventures with partners with financial capability, expertise and willingness to contribute to the development of the natural gas industry in Angola.

In 2007, an agreement was made to develop the Angola LNG Project, ¹⁹ where Sonagas is a partner. Angola LNG operates one of the world's most advanced liquefied natural gas (LNG) processing facilities in Soyo, in Zaire province, under a consortium of companies that includes Sonangol (22.8 per cent), and subsidiaries of Chevron (36.4 per cent), Total (13.6 per cent), BP (13.6 per cent) and ENI (13.6 per cent).

Electricity

In the electricity industry, the main public players are, after the formal unbundling of the public entities of the electricity sector effected by Presidential Decree No. 305/14 of 20 November, Rede Nacional de Transporte de Electricidade, EP (RNT) (which is responsible for managing the NTN, for the global management of the system, offtake and acting as market operator), Empresa Pública de Produção de Electricidade, EP (PRODEL) (which is responsible for the operation, under a public service regime, of publicly owned power generation facilities) and Empresa Nacional de Distribuição de Electricidade, EP (ENDE), whose sole purpose is the distribution and supply of electricity in the PES.

¹⁸ Currently developed by Sonangol Logística, EP.

¹⁹ More information about this project can be found at www.angolalng.com.

This reorganisation stemmed from the National Energy Security Policy and Strategy, whereby the government has approved an ambitious reform plan for the electricity sector, which foresees provision of access to electricity for between 50 and 60 per cent of the population by 2025.²⁰ As part of the reform, the government envisaged:

- a state-owned company exclusively dedicated to the management of generation assets, resulting from the merger of ENE and GAMEK, resulting in the incorporation of PRODEL;
- b a state-owned company dedicated to the transmission of electricity in ultra-high and HV networks and to the management of the national electricity system, resulting in the incorporation of RNT; and
- a state-owned company dedicated to the distribution of electricity, resulting from the merger of the distribution assets of ENE EP, EDEL EP and the municipalities, resulting in the incorporation of ENDE (which was, however, incorporated without the assets of the aforementioned municipal distribution networks).

This restructuring model accommodates the creation of a national holding company, owning the aforementioned three companies.

The government estimates that the execution of the restructuring programme for the electricity industry in Angola will require an investment of US\$13 billion by 2025. Consequently, the electricity sector will gradually open up to competition, and private investors will be welcomed.

ii Transmission/transportation and distribution access

Oil and gas

Under the Law for the Transport and Storage of Oil and Natural Gas,²¹ operators of oil and gas pipelines have an exclusive right to develop these infrastructures.

The operators are prohibited from adopting discriminatory behaviour, unless such discrimination is justified by technical conditions.

Electricity

Concession agreements and licences grant the concessionaires or the licensees the exclusive right to explore and operate the transmission and distribution networks.

Under the Networks Access Regulation, the NTN concessionaire and the tied distribution operators of HV and MV networks are obliged to provide equal access conditions to third parties.

The Networks Access Regulation acknowledges the network access rights of:

- a entities that are tied to the PES and hold concession agreements or licences to generate electric power under the terms of the Electric Power Generation Regulation;
- b entities that are not tied to the PES and hold a concession agreement or a licence to generate electric power;
- c tied customers under the terms of the Electric Power Supply Regulation;
- d non-tied customers who are recognised as such under the Commercial Relations Regulation; and

²⁰ Today, only around 30 per cent of the Angolan population has access to electricity.

²¹ Enacted by Law No. 26/12 of 22 August.

e self-producers or producers for private supply who intend to exercise their right of providing electric power through access to PES networks, as well as the entities that are supplied by these.

The commercial relations regarding networks access are governed by written agreements, valid for a period of one year, and its general terms are approved by the IRSEA.

According to the Commercial Relations Regulation, the NTN concessionaire is responsible for operating and maintaining the NTN, managing the national electric system and acting as a commercial agent.²² Also, the commercial relations between non-tied agents and the PES are centralised in the NTN concessionaire.

For the purpose of avoiding discriminatory behaviours and ensuring transparency, the NTN concessionaire must separate, in terms of organisation and accounting, the three aforementioned activities.

iii Terminalling, processing and treatment

Angola has great potential for natural gas production, with proven reserves of 270,000 million cubic metres (with some estimates indicating resources of over 1.2 billion cubic metres), and intends to develop this industry aiming for the exportation markets.

Investment, however, has been limited (the main investment in the industry is the Angola LNG project),²³ mainly because of great legal and regulatory uncertainty.²⁴ To address these uncertainties, Presidential Decree No. 256/11 of 29 September sets the development of the legal and regulatory framework for these activities as a primary goal for the strategic orientation of the oil and natural gas industries.

Recent developments have been made with the publication in 2012 of the Law for the Transport and Storage of Oil and Natural Gas. It is a first step, but the natural gas industry is in great need of regulatory progress to provide certainty and clarity to the development of activities such as terminalling, processing and treatment of natural gas, as well as access conditions by third parties to LNG facilities.

iv Rates

Rates for transmission and distribution of electricity are established in accordance with the Tariffs Regulation,²⁵ put into force by the IRSEA. Rates are uniform for the entire country, the application of different tariffs being prohibited for customers in the same tariff category. The IRSEA sets the maximum tariffs and hence the maximum prices for the provision of transmission or distribution services.

Tariffs are based upon the provider's costs plus a reasonable rate of return, resulting in the allowed revenues of the network operators. The rate of return of the transmission and distribution companies is calculated using the weighted average capital cost/capital asset pricing model methodology.

²² The commercial agent is the part of the NTN concessionaire that ensures supply and the optimisation of the PES, managing the PPAs with tied producers and distributors, among other duties.

²³ More information available at www.angolalng.com.

An example is the fact that there is as yet no concession model specific to natural gas exploration and production.

²⁵ Presidential Decree No. 4/11 of 6 January.

The calculation of the allowed revenues of NTN transmission concessionaires includes:

- a efficient investment costs;
- b efficient operation and maintenance costs;
- c other costs necessary to efficiently develop the transmission activity; and
- d a fair rate of return over the investments.

Investments made on network expansion projects are remunerated in accordance with the aforementioned methodology.

For distribution services, remuneration is set through a distinction between the rate of return of the distributor's activity, via the HV, MV and LV networks, and the rate of return of the investment costs and the costs for the connection of consumers' facilities to the grid. The first is called the aggregated value of standard distribution (AVSD), while the second is called the connection fee.

The AVSD is set for a certain number of standard distribution areas, distinguished by several variables such as consumption per unit area, consumption per capita, number of consumers per unit area or the facilities' age, which justify differences on the efficient costs of the distribution activity.

The AVSD is composed of operational costs, calculated in respect of a reference company for each standard distribution area, and a fair rate of return on efficient investments. Operational costs should consider, *inter alia*, commercial, distribution, administrative, financial and management activities.

The unitary cost of investment in the distribution network is calculated from the annuity of the capital cost corresponding to the new value of replacement of the existing network. The annuity is calculated considering a useful lifetime of the distribution facilities of 30 years.

The tariffs set for activities authorised by concessions are defined in the corresponding concession agreements, taking into account the rules to be set in a separate regulation (the latter to be approved by the Minister of Energy and Water).

v Security and technology restrictions

The NTN concessionaire, in its capacity as system operator and manager, is responsible for ensuring the continuous and safe operation of the NES. As such, it is responsible for constantly evaluating the security level of the grid and declaring, in extreme situations, a 'situation of absolute shortage of power'. The NTN concessionaire is also tasked with the responsibility of elaborating a security plan, establishing the necessary preventive measures to avoid incidents that may disrupt the provision of electric power to customers.

Under Article 6 of the General Electricity Law, concessionaires or licensees of generation, transmission or distribution activities must ensure, at their own expense, that their facilities are protected against sabotage or acts of war.

In a state of emergency, the state assumes the responsibility for the supply of electricity to the PES. In addition, in these situations the state may tie independent producers to the PES, without prejudice to the right of compensation of the affected entities.

Retail suppliers of oil-derived products are obliged to maintain safety reserves in accordance with the law.

IV ENERGY MARKETS

i Contracts for sale of energy

As previously mentioned, only non-tied agents use a market-based approach. Accordingly, the Commercial Relations Regulation allows the establishment of physical bilateral agreements for the sale and purchase of electric power, with their terms and conditions freely defined by the parties.

These agreements may be for long or short-term periods, with short-term meaning less than one year.

ii Energy market rules and regulation

Only the entity in charge of overseeing the oil-derived products market (Sonangol Logística) is entitled to import oil-derived products to the Angolan market. This entity preferentially buys its oil-derived products from Refinaria de Luanda (a refinery operating under a special regime). In addition, the entity in charge of overseeing the oil-derived products market is committed to the role of last-resort supplier of oil-derived products, thus having the obligation to provide oil-derived products to retail suppliers at the price set administratively by the IRDP.

The retail suppliers of oil-derived products must ensure their supply by entering into bilateral agreements either with the oil refineries' operators under the market regime, or with the entity in charge of overseeing the oil-derived products market.

V RENEWABLE ENERGY AND CONSERVATION

i Development of renewable energy

The Angolan government considers renewable energies to be a key element in the development of the country's electric system, particularly in rural areas. The country has high potential in terms of renewable resources, mainly in terms of hydro and solar power. Solar power will play an important role in providing electricity to rural areas, while large hydropower projects are intended to be connected to the NTN supplying the PES. The country is also undertaking a wind power study to ascertain the potential of this energy source.

The electric power industry in Angola is urgently in need of major financial investment in the area of power generation. As a result, Angola is now seeking to create attractive conditions for private investors to participate in the development of the electric power industry. This goal is now expressly set out in the reformed General Electricity Law, which states that 'temporary economic advantages' may be granted to renewable energy promoters.

To ensure attractive remuneration to private investors (without compromising the cost-efficiency for the government and customers) the government is taking into account the utilisation of PPAs as a privileged instrument to capture investment into new large-scale generation units (over 10MW), and as a mechanism that guarantees an adequate return on the investment made and ensures its long-term amortisation.

In addition, Angola is ever more inclined towards establishing public–private partnerships (PPPs) with interested investors, allowing state-owned companies to improve their skills and expertise, and favouring the creation of long-lasting commercial relationships with such investors.

For smaller projects, the use of feed-in tariffs will be the main mechanism of remuneration for generation capacity in isolated systems (under 10MW).

Presidential Decree No. 88/13 of 14 June recently established the Strategic Plan for New Environmental Technologies, which is divided into two perspectives, a transversal and a sectoral perspective. The governmental body in charge of implementing this project is the General Directorate for Environmental Technologies.

The transversal perspective aims essentially to promote, disseminate, foster and raise the population's awareness regarding the use of environmental technologies in Angola, mainly by (1) developing information campaigns using social media, (2) implementing information campaigns in schools and local communities, (3) creating a platform to share information between entities related to the environmental technologies industries, and (4) promoting the country's adherence to an international sustainability index.

The sectoral perspective focuses on promoting and implementing tailored measures and actions according to economic sector, including specific programmes for the following sectors: (1) real estate and construction, (2) agriculture and forestry, (3) industry, (4) energy and water, (5) oil and (6) transportation.

The government has allocated around 224 million kwanzas to complete the Strategic Plan for New Environmental Technologies.

ii Technological developments

During 2013, the government committed to successfully complete a pilot project for solar power villages – the Aldeia Solar de Cabiri. This project is being financed by Sonangol, which invested around US\$30 million, and aims to test a solar village concept that could be implemented throughout the country, especially in rural areas. The project was inaugurated in 2014.

By the end of 2013, the Angolan authorities had foreseen that the construction of the first wind farm in Angola would begin in the near future, after the wind studies were completed. Located in the municipality of Tômbwa, the wind farm will be developed under a PPP regime and will add 100MW to the country's installed capacity.

The government approved a series of agreements regarding the construction and development of generation, transportation and distribution of electric power, namely a generation project in the city of Malanje²⁶ and the construction of transportation grids between Cambambe and Catete, and Cambambe and Gabela.²⁷

ZTE Corporation, a Chinese company, will provide smart meter solutions to EDEL EP (currently ENDE), the distribution network operator in Luanda, including equipment, construction, personnel training, and operations and maintenance

This project is intended to solve difficulties such as bill arrears, inefficient manual meter reading and electricity theft, and to improve ENDE's management efficiency, while reducing its operation and maintenance costs.

²⁶ Approved by Presidential Order No. 57/13 of 26 June.

²⁷ Approved by Presidential Order No. 49/13 of 15 May.

VI THE YEAR IN REVIEW

The main issue the Angolan energy market faces continues to be low oil prices. This significant change in prices has put downward pressure on Sonangol's financial prospects, as well as on the Angolan economy at large, which has seen a low rate of growth relative to the boom years of the past decade.

However, 2016 has seen a slight improvement in oil prices and new significant discoveries of oil and natural gas, which has somewhat alleviated the country's economic situation. Throughout most of 2016, Angola has also become the largest oil producer in the African continent.

Nevertheless, Presidential Decree No. 109/16 has determined that:

- a Sonangol would be the only awarding entity of concessions in the oil and gas sector;
- *b* a government agency (the Oil Sector Agency) has been created to regulate the oil and gas sector; and
- Sonangol's equity holdings (including participations in upstream oil concessionaires) shall be transferred out of the company and supervised by a new government agency (the Council for the Monitoring of the Oil Sector).

The aforementioned decisions have yet to be regulated (and are thus not in force), but it is public knowledge that Sonangol's organic and governance restructuring is currently ongoing.

VII CONCLUSIONS AND OUTLOOK

Angola is struggling to rebuild its infrastructure, and rise from the wreckage of its civil war. Since 2002, it has managed to increase generation capacity, improve operational capability and progressively rehabilitate and maintain the country's electric power grids. Nonetheless, productive ability is still unable to sustain existing demand and the service is generally unreliable. Poor access and unpredictable power is also a consequence of the fragmented nature of Angola's power system. The three main Angolan grids – the north, south and central systems – are not interconnected (which would free up excess power from the north to the central and south systems).

The electricity tariffs structure also needs revising. The current tariffs structure does not allow state-owned companies to cover their costs and finance the necessary investments, but subsidies need to start being cut from supply prices.

The problem is exacerbated by the high level of commercial losses due to the inefficiency of the transmission and distribution networks, unbilled consumption or fraudulent connections, which lead to serious financial constraints from these companies.

In this context, Angola has committed to reforming the legal framework for energy-related activities and restructuring of the companies in these industries, welcoming new private players that may provide valuable expertise, along with a new financial stimulus.

Despite recent economic headwinds, the country has all the conditions to create a sustainable and prosperous energy industry. Its economy is steadily growing and the country is rich in natural resources. Now, it needs to create attractive conditions for new investors, and a business environment that inspires trust and security in its players.

Appendix 1

ABOUT THE AUTHORS

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Catarina Levy Osório is a partner with ALC Advogados. She previously worked at another law firm as a consultant in the tax department and as a senior tax consultant with a major international consulting firm.

Ms Osório is a consultant for Morais Leitão, Galvão Teles, Soares da Silva in all matters pertaining to Angola. She is a member of the Angolan and Portuguese Bar Associations and has relevant experience in Angolan law, having advised clients on private investment, tax and labour law in that jurisdiction.

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Helena Prata is a partner with ALC Advogados, with expertise ranging from advisory to complex corporate and asset financing and restructuring transactions, incorporation of SPVs and structured security arrangements and labour law. She is highly experienced in corporate law, environment, oil and gas and has worked extensively with national and international clients in these areas.

She is the author of several articles published in specialised Angolan magazines and also teaches business law at the law faculty of the Agostinho Neto University. Ms Prata was recently elected a member of the Luanda Provincial Council of the Angolan Bar Association.

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