

THE ENERGY
REGULATION
AND MARKETS
REVIEW

SIXTH EDITION

Editor

David L. Schwartz

THE LAWREVIEWS

THE ENERGY REGULATION AND MARKETS REVIEW

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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 Hinkley 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

SOUTH AFRICA

Lido Fontana and Sharon Wing¹

I OVERVIEW

The transformation in the South African energy sector in relation to renewable energy hardly progressed in 2016. This is because of state-owned power provider Eskom Holdings SOC Limited² (Eskom) pushing back on its obligation to sign any further power purchase agreements with 36 independent power producers (IPPs) from bid windows 3.5 (principally the Redstone CSP project) and 4 (the preferred bidder announcements in respect of round 4.5 are also significantly delayed with no certainty on when these will be announced). There is also significant uncertainty with respect to the Small Scale Renewable IPP Programme. Eskom argues that renewable energy is too expensive, and that it is being compelled to buy electricity it did not negotiate (as the Department of Energy has been the procuring body in respect of the Renewable Energy Independent Power Producer Procurement Programme (REIPPPP)³ in South Africa, with Eskom being required to sign a standardised form of power purchase agreement).

Although the implementation of new renewable energy projects have stagnated, it should still be noted that investments in renewable energy under the REIPPPP programme have been approximately 193 billion rand of private sector investment as of June 2016.⁴

With the apparent decline in support for renewables, there have been apparent positive steps forward in the conventional energy sector with two significant coal baseload power projects (Khanyisa and Thabametsi) being announced as preferred bidders, and progress being undertaken towards financial closure. Once operational, both projects will collectively add 863.3MW to the national electricity grid. In addition, the South African government has called for expressions of interest for a proposed 600MW gas-fired power project alongside one or more state-owned companies. This project will exist in parallel with South Africa's 3,123MW LNG-to-Power IPP Procurement Programme, which saw a preliminary information memorandum being released by the Department of Energy on 4 October 2016.

The South African government has also indicated support for development of shale gas in South Africa, and Eskom released a request for information for a nuclear new-build programme that it is planning, to add 9600MW to the national power grid. Several ministerial determinations (i.e., regulations providing for state procurement of additional

1 Lido Fontana is of counsel and Sharon Wing is an associate at Covington & Burling LLP.

2 Eskom is the buyer of electricity for these projects.

3 REIPPPP is an unprecedented, world-class procurement programme launched by the government's Department of Energy in August 2011 with the ambitious goal of the country producing 17,800MW of renewable energy in 2030.

4 www.fin24.com/Economy/Eskom/a-bumper-year-for-renewable-energy-20170113.

energy capacity) pertaining to coal, gas and nuclear have been determined by the Minister of Energy; however, the nuclear determination was recently overturned by the courts in South Africa (this will be discussed later in this chapter).

II REGULATION

i The regulators

In South Africa, energy regulation is split among three regulators, being:

- a* the National Energy Regulator (NERSA), established under the National Energy Regulator Act, 2004, which regulates electricity, piped gas and petroleum pipelines industries;
- b* the National Nuclear Regulator (NNR), established under the National Nuclear Regulator Act, 1999, which regulates nuclear energy; and
- c* the Petroleum Agency of South Africa (PASA), established under the Mineral and Petroleum Resources Development Act 28, 2002 (MPRDA), which regulates petroleum exploration and production.

Each of these Acts, together with other key legislation regulating the relevant industry (the Electricity Regulation Act, 2006 (the Electricity Regulation Act) in the case of electricity; the Petroleum Pipelines Act, 2003 in relation to the petroleum industry; the Gas Act, 2001 (the Gas Act) as regards piped gas; the Nuclear Energy Act, 1999 in the case of nuclear energy; and the MPRDA in respect of petroleum exploration and production) establish the framework for energy regulation in South Africa. That legislation, together with regulations, notices, rules and guidelines issued thereunder grant expansive regulatory power to the regulators, including the powers to issue, amend and revoke licences, as well as to approve tariffs.

ii Regulated activities

Under the Electricity Regulation Act, a licence is required for the operation of each of electricity generation, transmission and distribution facility and in respect of the import, export and trading of electricity (collectively, the Licensed Activities). That Act provides exemptions for licences in respect of (1) any generation plant constructed and operated for demonstration purposes; (2) any generation plant constructed and operated for own use; (3) any non-grid connected electricity supply other than for commercial use; and (4) any other activity relating to the Licensed Activities in respect of which NERSA has determined that a licence is no longer needed. In relation to the last referenced exemption, NERSA may require that persons undertaking such activities nevertheless register the activities with NERSA.

A person obliged to hold a licence in terms of the Electricity Regulation Act must apply to NERSA for the licence in the form and applying the procedure prescribed. The application must be accompanied by the prescribed licence fee. The information required to form part of such an application includes, among other things, (1) a description of the applicant, including the vertical and horizontal relationships with other persons engaged in the operation of the relevant Licensed Activity; (2) the administrative, financial and technical abilities of the applicant; (3) a description of the proposed generation, transmission or distribution facility to be constructed or operated; (4) a detailed specification of the services that will be rendered under the licence; (5) a general description of the type of customer to be served; (6) the tariff and price policies proposed to be applied; and (7) evidence of

compliance with the Integrated Resource Plan.⁵ The process entails publication of notices of the application in appropriate newspapers or other media, the applicant responding to objections to the application being granted, and culminates in NERSA making a decision on the application within the prescribed period.

In terms of the National Nuclear Regulator Act, 1999, no one is allowed to procure a site, construct, operate, decontaminate or decommission a nuclear installation except under the authority of a nuclear installation licence. The process prescribed for the making, consideration and issue of such licences is similar to that outlined above, albeit that the time lines are shorter and an applicant may further be directed to serve a copy of its application upon every municipality affected by the application and such other body or person as the chief executive officer of the NNR determines.

Licences are also required for the storage, transportation and reticulation of gas and petroleum through petroleum pipelines. The licenses for the storage, transportation and reticulation of petroleum through pipelines are issued by NERSA. Although the procedure for applying for the licenses is similar to that of Licensed Activities, only owners of storage, transportation and reticulation facilities respectively, may apply for licenses for the storage, transportation and reticulation of petroleum.

Licenses for exploration or production rights in petroleum resources are generally issued pursuant to bidding processes initiated by the Minister of Mineral Resources. The Minister invites applications for exploration and production rights in respect of designated blocks on predefined terms and conditions.⁶ Successful applicants are still required to submit applications to PASA for a reconnaissance permit, technical cooperation permit, exploration right or production right. In certain instances, the Minister will upon consideration of PASA's recommendations either grant or refuse the application. In the event that the application is granted, the exploration right or production right must be registered with the Mineral and Petroleum Titles Registration Office, while the permits must be filed and noted with the Mineral and Petroleum Titles Registration Office. The rights issued by the Minister of Minerals Resources only constitute limited real rights.⁷

iii Ownership and market access restrictions

In 2010, much of South Africa's electricity generation capacity was state-owned. At that stage, Eskom, a state-owned utility with a monopoly over the national transmission grid produced close to 95 per cent of the country's electricity, while the balance of the country's electricity was sourced mainly from municipalities. Like electricity generation, transmission and distribution capacity was restricted to the state and state-owned entities.

In 2011 the South Africa government launched the Integrated Resources Plan, which called for the doubling of the country's electricity capacity from its 2010 level of 238,272GWh using a diverse mixture of energy sources, mainly coal, gas, nuclear and renewables, including large-scale hydro to be imported from other countries in the southern African region.

The REIPPPP has served as the primary vehicle through which the South African government has procured renewable energy from private sector power producers. That programme provides that projects developed thereunder must be 40 per cent owned by South Africans with people of colour holding a minimum of 12 per cent (with a target of 20 per cent),

5 Section 10(2)(a)–(h) of the Electricity Regulation Act, 2006.

6 Section 73(1) of the MPRDA.

7 Section 5(1) of the MPRDA.

and a minimum of 2.5 per cent ownership by local communities (those communities within a 50km radius of the project). In addition to the ownership requirements, REIPPPP bidders are also required to bid on other non-price factors known as 'economic development requirements', which are designed to achieve the government's Integrated Resource Plan objectives of promoting job growth, domestic industrialisation, community development and black economic empowerment (a programme designed to counter the adverse economic impacts of apartheid by initiating, among other things, ownership and control of capital by South Africans of colour, women and disabled persons (Historically Disadvantaged Persons or HDSA), as well as skills transfer and enterprise development of legal entities owned by HDSAs).

The Coal Baseload IPP Procurement Programme provides that 51 per cent of each project must be owned by South Africans. Ownership criteria for the gas-to-power and nuclear procurement is still unknown. Save as outlined above, there are no foreign ownership or aggregate holdings constraints under the REIPPPP and the Coal Baseload IPP Procurement Programme.

The preliminary information memorandum (PIM) for the Liquefied Natural Gas to Power Independent Power Producer Procurement Programme (LNG-to-Power IPP Procurement Programme) was released on 4 October 2016 by the Department of Energy. The PIM provides insight into the proposed LNG-to-Power IPP Procurement Programme and provides the basic framework being considered by the Department of Energy for the minimum mandatory socio-economic objectives, all of which will be provided in further detail under the request for qualifications (RFQ), which was meant to be issued during November 2016. However, at the time of writing there is no certainty when the RFQ will in fact be issued. In all probability the RFQ will only be released once the Department of Energy has finalised the contentious updated Integrated Resource Plan, which was released for public comment in December 2016 (discussed *infra*).

The Petroleum and Liquid Fuels Charter, issued under the MPRDA provides a framework for black economic empowerment within that industry. Holders of exploration and production rights are obliged to reserve shareholdings for HDSAs in their respective companies. Companies active in the upstream sector are obliged to reserve participation interest of not less than 9 per cent for HDSAs, while companies in the midstream and downstream sectors must reserve a 25 per cent participating interest for HDSAs. These companies must further make contributions towards the funding of skills development initiatives.

iv Transfers of control and assignments

Transfer of control and the assignment of a licence issued in respect of Licenced Activities, including generation licences issued to IPPs, are restricted by conditions imposed on the licensee by NERSA.⁸ Accordingly, each licence must be reviewed on a case-by-case basis to determine what specific approvals are required for its transfer. However, the Electricity Regulation Act generally provides that a licensee may not cede or transfer its powers or duties under a licence to any other person without the prior consent of NERSA. The transfer of control and the assignment of licences issued to IPPs are further regulated by

8 Section 15(1)(k) of the Electricity Regulation Act, 2006.

the Implementation Agreement between the South African Department of Energy and the IPP; that agreement provides for, *inter alia*, government support for the development and financing of relevant IPP projects.

A nuclear licence is not transferable in terms of the National Nuclear Regulator Act, 1999.

Regarding the transfer of control and the assignment of a license or permit in the petroleum sector, the position is as follows: (1) a reconnaissance permit is not transferable, nor does it grant the holder any exclusive right; (2) a technical co-operation permit is not transferable, but the holder of the right has an exclusive right to apply and be granted an exploration right over the area described in that permit; (3) an exploration right is transferable and the holder has an exclusive right to apply for and be granted a renewal of the right, or for a production right, over the area described in that exploration right; and (4) a production right is transferable and the holder has an exclusive right to apply for and be granted a renewal of that production right.

The consent of the Minister of Mineral Resource must be obtained in the event that a holder wishes to cede, transfer, let, sublet, assign, alienate or otherwise dispose of a prospecting right or exploration right or interest in such a right, or a controlling interest in a company that holds such a right (except in the case of a change in controlling interest in a listed company). An application for the Minister's consent must set out and prove that the transferee has the required technical and financial ability to comply with the obligations imposed on the holder of the exploration or production right.

A license granted to a person or entity under the Gas Act may not be assigned to another party, is valid for a period of 25 years and may be renewed after the expiry of the licence period.

III TRANSMISSION/TRANSPORTATION AND DISTRIBUTION SERVICES

i Vertical integration and unbundling

Electricity

The Independent System and Market Operator (ISMO) Bill was introduced in 2011. The ISMO Bill intended to restructure the electricity supply industry by providing for the establishment of the ISMO as a state-owned company autonomous from Eskom to serve as the dedicated procurer of electricity for onward sale to wholesale off-takers. The ISMO Bill, when established would have removed the operation of the transmission grid from Eskom and allow for easier access to the grid by IPPs.

However, the ISMO Bill was suddenly withdrawn in its final stages of being adopted by its sponsor, the Department of Energy (DoE), in June 2015.

In 2015, the government had apprised the market that a new ISMO Bill was being drafted; however, a draft has not yet been released for public comment.

Gas

The gas pipeline network comprises the Rompco Pipeline⁹ (used to transport gas from Mozambique into South Africa), which is the main pipeline network in South Africa, and

⁹ This is a joint venture between South African Gas Development Company Limited (iGas), Companhia Limitada de Gasoduto (CMG) and Sasol Gas Holding Proprietary Limited.

several other short-range pipelines, which are privately owned. Owners of these pipelines are compelled under their licence conditions to grant access to third parties on commercially reasonable terms only to the extent that they have uncommitted capacity in these transmission pipelines.

ii Transmission/transportation and distribution access

The transmission of electricity is currently being undertaken exclusively by Eskom. Save for contractual commitments under wheeling agreements with Eskom, there is no obligation on Eskom to provide third-party access to the transmission grid. Eskom distributes electricity directly to customers and to municipalities, who redistribute the same (see Section IV on energy markets, *infra*).

There is currently no regulated framework for use-of-system charges for embedded generators. Some of these generators (primarily IPPs) sell to Eskom through approved power purchase agreements, while others wheel energy to third parties through bilateral agreements with Eskom.

Generators that wish to wheel energy face a number of challenges, including the charges involved, which may render small projects uneconomical; the generator being required to obtain a licence from NERSA to generate and for the wheeling transaction; the generator having to comply with Eskom's onerous requirements for grid connection; and entering into multiple agreements with various distributors.

Although Eskom has provided guidelines on its website for wheeling costs on its network,¹⁰ it still remains a complicated process. NERSA has said that it is currently working on developing a standardised framework for these arrangements.

The Gas Act provides that a licensee of a gas transmission pipeline must provide access to its transmission pipelines to third parties, while the Petroleum Act provides that a licensee of a petroleum pipeline must provide access to its loading facilities and uncommitted capacity in storage facilities to third parties. These requirements will be provided as conditions on a licensee's licence. However, a distributor is not compelled to grant access.

iii Rates

Electricity

Eskom's tariffs are regulated by NERSA under the Electricity Regulation Act. These tariffs are based on Eskom's costs plus a reasonable rate of return.

A suite of supply policy guidelines for the integrated national electrification programme 2016/2017 was released by the Department of Energy (the integrated national electrification programme's objective is to achieve universal access to electricity by 2012, which date was changed to 2019 and is one of the pillars of the South African government's energy transformation strategy, born in the 1998 White Paper on Energy Policy).

The objective of the policy guidelines is to develop and provide a suite of supply frameworks in line with the 1998 White Paper Policy and guidelines, thus providing a uniform set of standardised supply options and connection fees, as well as a uniform approach to electrification tariffs for electrification customers for all licensed entities providing electricity.

10 www.eskom.co.za/Whatweredoing/Pages/Wheeling_Of_Energy.aspx.

Oil and gas

In relation to gas and piped petroleum product, tariffs are negotiated on a commercial basis and then approved by NERSA.

The DoE is mandated to regulate the tariffs applicable to the manufacturing, wholesaling and retailing of petroleum products through the implementation of the Petroleum Products Act, 1977 and the responsibility resides with the Controller of Petroleum Products (this is too wide a matter to be discussed in this chapter).

iv Security and technology restrictions

South Africa's nuclear legislation,¹¹ which is based on several international conventions to which South Africa is a party,¹² provides for the establishment of internationally endorsed protocol on nuclear safety, political and financial risk and ultimate state liability. The NNR is mandated to provide for the protection of persons, property and the environment against nuclear damage as the competent authority for nuclear regulation in South Africa.

The NNR has regulatory requirements developed in accordance with the National Regulator Act, the South African Nuclear Energy Policy (2008), Minimum Information Security Standards and IAEA Nuclear Security Series No. 7. The IAEA Nuclear Security Series No. 7 is the International Atomic Energy Agency implementing guide on Nuclear Security Culture, which prescribes characteristics, attitudes and behaviour of individuals, organisations and institutions in supporting the establishment of effective nuclear security. The development of the regulatory requirements is to assure nuclear security or physical protection systems at nuclear installations or associated actions in South Africa.¹³

Several of Eskom's power stations and other facilities, as well as municipality distribution installations, have been designated national key points. National key points are strategic installations, which require heightened state security.

IV ENERGY MARKETS

i Electricity

NERSA is mandated to, *inter alia*, regulate trading activities such as electricity resale (buying and selling). Eskom purchases electricity that is supplied by IPPs to the national grid and in turn sells the electricity to industrial, mining, commercial, agriculture and residential customers in South Africa, some members of the Southern African Development Community and redistributors (municipalities), who in turn redistribute electricity to businesses and households within their areas.

Section 155(6)(a) and (7) Schedule 4B of the Constitution¹⁴ lists electricity reticulation as a competence of municipalities in South Africa. Each municipality is a service authority for the electricity reticulation function for the whole of its jurisdictional area and has the right to set tariffs in respect of its sale of electricity in its areas of jurisdiction. On 30 October 2014, the

11 Nuclear Energy Act 46 of 1999.

12 For example, the Convention on Nuclear Safety, 1994; the Convention on Early Notification of a Nuclear Accident, 1986; the Convention on Assistance in the Case of Nuclear Accident or Radiology Emergency, 1986; the Convention on Physical Protection of Nuclear Material, 1979. See also: www.nti.org/treaties-and-regimes/treaties/.

13 www.nnr.co.za/nuclear-security/.

14 The Constitution of the Republic of South Africa, 1996 (Act No. 108 of 1996).

South African Local Government Association entered into a memorandum of understanding and active partnering agreement with all distributors, including Eskom, to ensure cooperative and collaborative working relationships.

Electricity can also be onsold to multiple customers by persons with bulk supply points, such as bodies corporate and office parks (known as Resellers). These Resellers are 'non-licensed traders' of electricity in terms of the Electricity Pricing Policy.¹⁵ Resellers are not required to hold a distribution licence, but they must be registered with the licensed authority (generally a municipality) from which the bulk connection was obtained.

To resell electricity the licensed authority must complete a service level agreement with the Reseller to operate in its area of jurisdiction. The Reseller is also obligated to supply its customers with information on tariffs and tariff structures.

South Africa is part of the Southern African Power Pool (SAPP), which includes several Southern African utilities. While SAPP faces a number of major challenges such as lack of maintenance of infrastructure, high transmission losses and limited funds to finance new investments, the energy volumes traded by Eskom since its inception in 1996 (around 4,500GWh) have increased steadily to over 9,977GWh a year since 2003.¹⁶

ii Natural gas

Natural gas is likely to be a key feature of the South African energy mix as it will facilitate South Africa's transition from coal to a low-carbon energy sector and provide for its long-term energy security. Some noteworthy developments in the gas sector during 2016 are given below.

Shale gas

Exploration right applications have been submitted to the Department of Mineral Resources to explore the possibility of a shale gas resource of 485 trillion cubic feet in the Karoo Basin. The South African government, based on available scientific evidence provided (we assume from the Strategic Environmental Assessment mandated in 2015 to provide a science-based assessment to improve government understanding of the risks and opportunities of shale gas development and to inform on shale gas regulations by 2017), has now allowed for the shale gas development in the Karoo Basin (this development was, however, announced in the first quarter of 2017). To date, none of the exploration right applications for the rights to explore for shale gas have been granted.

600MW gas

The government of South Africa commenced with the invitation for interested parties to respond to the expression of interest, which closed on 20 June 2016 for the Gas 600MW IPP Procurement Programme in order for the government to determine the private sector interest in seeking appointment as a strategic partner to one or more state-owned companies to implement the project.

15 Electricity Pricing Policy, GN 1398 of 19 December 2008.

16 www.energy.gov.za/files/esources/electricity/electricity_powerpool.html.

Gas pipeline

Although there is only one main gas pipeline network in South Africa (see Section III, *supra*), on 1 March 2016, SacOil Holdings Limited announced that a cooperation agreement had been concluded with new partners and the China Petroleum Pipeline Bureau for the construction of an estimated US\$6 billion, 200km, large-diameter pipeline to transport natural gas from Mozambique's Rovuma Basin to Gauteng, South Africa.

iii Nuclear

The South African government has committed itself, by means of its Nuclear Energy Policy and Integrated Resource Plan, to an energy mix consisting of coal, gas, hydro, nuclear, solar and wind.

The following developments have catapulted nuclear into high gear:

- a* Eskom's submission of a final environmental impact assessment to the Department of Environmental Affairs;
- b* the submission of a nuclear installation site licence application to the National Nuclear Regulator for assessment;
- c* a ministerial determination was published in a Government Gazette on 14 December 2016, providing for new generation capacity of 9,600MW from nuclear energy (see Section VI, *infra*); and
- d* on 20 December 2016, Eskom released a request for proposals for South Africa's new-build programme after the aforementioned determination was published by the Minister of Energy.

The development of nuclear power has been met with constant opposition in relation to the environmental and financial impact it may have. In fact, the Western Cape High Court delivered a judgement on 26 April 2017, ruling that the following are unlawful, unconstitutional and have been reviewed and set aside:

- a* the decision to table Russian IGA before parliament in terms of Section 231(3) of the Constitution;
- b* the decision to table the agreement for cooperation between the government of the Republic of South Africa and the United States of America concerning Peaceful Uses of Nuclear Energy before Parliament;
- c* the decision to table the agreement between the government of the Republic of Korea and the government of the Republic of South Africa regarding the Cooperation in the Peaceful Uses of Nuclear Energy;
- d* the ministerial determination dated 14 December 2016 (discussed *supra*); and
- e* the determination gazetted on 21 December 2015 (discussed in the 2015 chapter) in relation to the requirement and procurement of nuclear new generation capacity.

Accordingly, requests for proposals or for information issued pursuant to the determination were also set aside. The Department of Energy has decided not to appeal the judgment and has advised that it will start the nuclear procurement process afresh.

V RENEWABLE ENERGY AND CONSERVATION

i Development of renewable energy

Background

The South African energy sector has undergone extensive transformation in recent years. In August 2011, the government's Department of Energy launched the REIPPPP, an unprecedented, world-class procurement programme with the audacious goal of the country producing 17,800MW of renewable energy by 2030. This objective was set against a backdrop of the country's then current generation capacity becoming increasingly inadequate to meet the ever rising electricity demand of a growing economy. The inadequacy manifested in Eskom, with a monopoly over generation and transmission capacity, implementing rolling blackouts throughout the country in late 2007 and early 2008. Rolling blackouts resurfaced in 2014 and early 2015. Although widespread load-shedding has not occurred since September 2015, consumer trust in Eskom's ability to deliver reliable power supply is conditioned on a wait-and-see approach.

After the electricity blackouts in 2008, the country decided to draw investor interest by initiating a process to introduce renewable energy feed-in-tariffs (REFIT) to facilitate the introduction of renewable energy into the power system. In 2009, NERSA published REFITs with proposed tariffs designed to cover generation costs plus a real after-tax return on equity of 17 per cent, fully indexed for inflation.

However, in 2011, NERSA terminated the REFIT programme because the National Treasury was of the opinion that the REFIT approach contravened public finance and procurement regulations. The REFIT programme was subsequently terminated and replaced by the REIPPPP.

The Integrated Resource Plan (IRP)

The initial IRP sets out the South African government's strategy for the establishment of new generation and transmission capacity for the country for the period 2010 to 2030. It calls for the doubling of the country's electricity capacity from its 2010 level of 238,272GWh, using a diverse mixture of energy sources, mainly coal, gas, nuclear and renewables, and including large-scale hydro to be imported from other countries in the southern African region. The initial IRP further details how this demand should be met in terms of generating capacity, type, timing and cost. The initial IRP also serves as an input to other government planning functions, *inter alia*, economic development, funding, environmental and social policy formulation. It is also a process by which the requirement for further investment in electricity generation capacity for South Africa is determined.

At the time that the IRP was initially promulgated, the South Africa government advised that the IRP should be viewed as a 'living plan' that would be revised by the DoE every two years to ensure its relevance with regard to (among other things) technological and environmental developments in the global arena. An update to the IRP was provided for public comment in November 2013; however, this document was subsequently gazetted and remains of no binding relevance. On 2 November 2016, the Minister of Energy released drafts of an updated Integrated Energy Plan (IEP) and an IRP on 22 November 2016. The IEP serves as the government's master plan for the entire energy system, with its focus on the broader objective of reducing the overall energy intensity of the country. The IEP regulates

energy industries and promotes electric power investment, greater employer benefits and more favourable environmental impact. The IRP on the other hand, being the subordinated legislation to the IEP, focuses specifically on electricity.

The updated IRP has received more attention due to the South African government (and Eskom) promoting the importance of nuclear power within the overall electricity provision forecasts to 2050. The Minister of Energy announced that public consultation would be held on the draft IRP during December 2016 and January 2017. This would then allow the South African government to make the necessary adjustments and promulgate the updated IRP in 2017, once approved by Cabinet. The first consultation was held on 7 December 2016, where major issues were raised. Some critics believe that the cost assumptions for solar PV and wind were too high and that if proper costs were reflected there would be no need to construct a nuclear plant up to 2050. Eskom, on the other hand, is unhappy that the updated IRP will delay the construction of new nuclear plants for 15 years. In addition, the updated IRP has not considered concentrating solar power and co-generation into its future energy mix.

What is the IPPPPP?

The Independent Power Producer Procurement Programme (IPPPP) was introduced as a vehicle for securing private sector investment for the development of new electricity generation capacity. The 1998 White Paper on Energy Policy identified that IPPs were expected to play a key role in developing and producing new electricity capacity in the country.

The REIPPPP was initiated with a request for proposals in August 2011, in terms of which IPPs were invited to bid in a competitive process. Although progress in the renewable energy sector has stagnated, a legal opinion sought by the South African Renewable Energy Council, relating to Eskom's refusal to sign the power purchase agreement with 35 IPPs, has been publically released. The opinion from senior counsel (advocate/barrister) in South Africa concludes that preferred bidders of the REIPPPP programme are entitled to approach the courts to enforce Eskom's obligation to such agreements.¹⁷ It is unclear whether the preferred bidders will pursue any court action to force Eskom to sign the outstanding power purchase agreements or whether they will wait for the South African government to force Eskom's hand.

VI THE YEAR IN REVIEW

i 2016 determinations

Section 34 of the Electricity Regulations Act¹⁸ empowers the Minister of Energy to:

- a* change the way in which IPPs are involved in power production in South Africa through regulations pronouncing on new capacity requirements. These regulations have become colloquially known as Determinations;
- b* 'determine the new generation capacity needed to ensure uninterrupted supply of energy'; and
- c* determine the energy sources, and the buyers and sellers of electricity generation.

17 www.esi-africa.com/wp-content/uploads/2017/01/SAREC-Opinion-Final.pdf.

18 Act 4 of 2006.

The Minister of Energy, in consultation with NERSA, published five Determinations in various Government Gazettes during 2016.¹⁹ The Ministerial Determinations of 2016 can be summarised as follows:

- a* The Determination published on 20 April 2016: The Determination allocates 3750MW to be generated from coal, from cross-border projects for the years 2025 to 2030.
- b* The three Determinations published in the Government Gazette²⁰ on 27 May 2016 where:
 - 600MW is to be generated from gas that may be generated from any gas type or source and generated using any appropriate technology, notwithstanding that the IRP 2010–2030 may not have contemplated such technology or have considered it viable. It may be required by the procurer (the Department of Energy) that one or more state-owned companies participate as minority strategic partners in any such independent power producer.
 - It was determined that a new generation capacity is needed to contribute towards energy security, including 100MW to be generated from gas, liquid fuels or both. The new generation capacity may be generated from any gas type or source, and may be generated using any appropriate technology, notwithstanding that the IRP 2010–2030 may not have contemplated such technology or have considered it viable. In addition, the new generation capacity shall be established by Eskom at the existing Ankerlig Power Station for the purposes of providing dedicated backup power to Koeberg Nuclear power station.
 - 1500MW of renewable energy is to be generated from solar technologies. The Determination also specified that electricity will be procured from IPPs through one or more IPP procurement programmes, tendering processes, direct negotiations with one or more project developers or other procurement procedures. The Department of Energy may include as a requirement that one or more state-owned companies participate as minority strategic partners in any such independent power producer. The energy shall be generated from projects located within one or more Solar Parks situated in the Northern Cape, and that the procurer (being the Department of Energy) may include storage solutions, notwithstanding that the IRP 2010–2030 may not have contemplated such technology or have considered it viable.
- c* On 14 December 2016, a further determination was published in the Government Gazette in respect of nuclear energy, and determined that 9,600MW of energy should

19 'Coal from Cross Border Projects IPP Procurement Programme 2015', published in Government Notice 454 in Government Gazette No. 39940 on 20 April 2016; 'Additional 600MW Gas Programme 2016', published in Government Gazette Notice 602 in Government Gazette No. 40023 on 27 May 2016; 'Ankerlig 100MW Additional Capacity Gas Programme', published in Government Gazette Notice 601 in Government Gazette No. 40023 on 27 May 2016; 'Renewable Energy (Solar Park) Programme 2016', published in Government Gazette Notice 603 in Government Gazette No. 40023 on 27 May 2016; and 'Nuclear Programme', published in the Government Gazette Notice 1557 in Government Gazette No. 40494 on 14 December 2016.

20 'Additional 600MW Gas Programme 2016', published in Government Gazette Notice 602 in Government Gazette No. 40023 on 27 May 2016; 'Ankerlig 100MW Additional Capacity Gas Programme', published in Government Gazette Notice 601 in Government Gazette No. 40023 on 27 May 2016; 'Renewable Energy (Solar Park) Programme 2016', published in Government Gazette Notice 603 in Government Gazette No. 40023 on 27 May 2016.

be generated from nuclear energy. The energy produced shall be procured through tendering procedures that are fair, equitable, transparent, competitive and cost-effective, and provide for private sector participation. In addition, the procurer will be Eskom. (Note: in the court ruling, the determinations were rendered void.)

The Determinations found in (a) and (b) determined that the procurer would be the Department of Energy; the buyer would be Eskom; and the capacity shall be procured through one or more IPP procurement programmes as contemplated in the New Gen Regulations.

VII CONCLUSIONS AND OUTLOOK

2016 brought political challenges that lessened growth in the renewable energy space. Time will tell whether the South African government will buckle under political pressure and force Eskom to sign the outstanding power purchase agreements. If the South African government were to remain pro-nuclear and fasttrack the procurement of state-owned and operated nuclear power, this will probably limit developments in the renewable energy sector in order to pave the way for nuclear development.

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