Electricity Regulation 2022

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Getting The Deal Through

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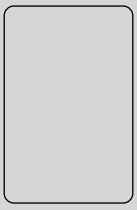

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Lexology Getting The Deal Through is delighted to publish the twentieth edition of *Electricity Regulation*, which is available in print and online at www.lexology.com/gtdt.

Lexology Getting The Deal Through provides international expert analysis in key areas of law, practice and regulation for corporate counsel, cross-border legal practitioners, and company directors and officers.

Throughout this edition, and following the unique Lexology Getting The Deal Through format, the same key questions are answered by leading practitioners in each of the jurisdictions featured. Our coverage this year includes a new chapter on Indonesia.

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Every effort has been made to cover all matters of concern to readers. However, specific legal advice should always be sought from experienced local advisers.

Lexology Getting The Deal Through gratefully acknowledges the efforts of all the contributors to this volume, who were chosen for their recognised expertise. We also extend special thanks to the contributing editor, John Dewar of Milbank LLP, for his continued assistance with this volume.

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Getting The Deal Through

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India

Neeraj Menon, Swathy S Pisharody and Kuhoo Mishra

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LEGAL FRAMEWORK

Policy and law

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

Constitutional framework

The seventh schedule of the Constitution of India sets out the subjects on which the parliament and the state legislatures can frame legislation. It demarcates such subjects into three lists:

- the Union List;
- the State List; and
- the Concurrent List.

While Parliament and the state legislatures legislate exclusively upon subjects mentioned in the Union List and the State List respectively, the subjects mentioned in the Concurrent List can be legislated upon by both. However, in the case of a conflict between the laws made by the state legislatures and Parliament on the same subject matter under the Concurrent List, the state legislation will be void to the extent it is inconsistent with the legislation made by parliament. Electricity is a subject mentioned in the Concurrent List.

Legislative framework

The Electricity Act 2003 (the Electricity Act) is the parent legislation governing the electricity sector in India (other than nuclear energy, which is governed by the Atomic Energy Act 1962). The Electricity Act consolidated various laws governing the electricity sector in India and introduced key reforms such as:

- restructuring of state electricity boards into separate entities governing generation, transmission and distribution activities;
- delicensing most generation activities, recognising power trading as a distinct activity and promoting captive generation;
- introducing the requirement for providing non-discriminatory open access;
- constituting electricity regulatory commissions at state and central levels (ie, state electricity regulatory commissions (SERCs) and the Central Electricity Regulatory Commission (CERC) respectively), and an appellate tribunal (ie, the Appellate Tribunal for Electricity, among other things) to hear appeals against decisions of the SERCs and CERC;
- recognising the Central Electricity Authority (CEA) as the technical advisory body to the government of India and the electricity regulatory commissions; and
- promoting renewable energy projects.

The Electricity Act is proposed to be amended during the ongoing monsoon session of the parliament through the Electricity (Amendment) Bill, 2021 (Proposed Electricity Act Amendments). Some of the key amendments proposed include:

- the delicensing of power distribution activities similar to generation activities;
- increased focus on the promotion of competition;
- increased penalty for non-compliance of Renewable Purchase Obligation (RPO);
- increased rights and powers to the consumers and obligation relating to the continuous supply of power; and
- cross-border trade of electricity, to name a few.

The government of India, under the provisions of the Electricity Act, and in consultation with CEA and state governments, has prepared the National Electricity Policy 2005 (NEP) and the Tariff Policy 2016 (Tariff Policy) for the development of the power sector, based on the optimal utilisation of natural resources. A draft of the updated National Energy Policy was issued in 2021 by the Ministry of Power (the Power Ministry), which is yet to be notified. The draft Policy proposes actions for the revitalisation of distribution companies, development of efficient markets for electricity, and generally a move towards light-touch regulation.

In May 2018, the Power Ministry, issued draft amendments to the Tariff Policy. Some of the key amendments proposed include stricter operating norms with certain restrictions on aggregate technical and commercial (AT and C) losses, adoption of direct benefit transfer for subsidy payments, moving electricity consumers from a post-paid to a pre-paid metering system, prescribing mandatory debt-to-equity ratio for financing the capital cost of future projects, allowing for a change in law relief on the introduction of any charges and surcharges after the awarding of the bids, stricter implementation of renewable purchase obligations (RPOs), providing a service standard framework for the distribution of electricity, identifying clear categories of consumers for tariff fixation, and reduction of cross-subsidy charges.

Organisation of the market

2 What is the organisational structure for the generation, transmission, distribution and sale of power? How is this reflected in the regulatory structure?

The Electricity Act restructured the electricity sector into separate generation, distribution and transmission sectors. Additionally, there exists a separate market for electricity trading that is undertaken by companies with a trading licence or at power exchanges.

Generation

Generation of electricity (including captive generation) is a delicensed activity (other than for hydro projects exceeding the notified capital cost, for which an approval of the CEA is required). Private entities are permitted to set up power stations using any type of fuel or power source (eg, coal, gas, wind, solar and biomass) except for nuclear power

projects, which may be undertaken only by a government of India entity or a government company (ie, where the government holds a minimum of 51 per cent of the shareholding).

Historically, India's power sector focused on long-term generation contracts, however, in its annual report for the financial year 2020–21, the Power Ministry noted that the power sector is moving towards short-term contracts on electricity spot markets and power exchanges.

Conventional power

Power generation activities in India have until now been dominated by long-term power offtake purchase agreements. For thermal power projects (coal and gas) and hydro projects, long-term power is procured either through a negotiated route or a competitive bidding route. Under the negotiated route, a distribution company's power procurement tariff is determined by the relevant electricity regulatory commission, upon considering various factors such as return on equity, interest on loans and working capital, depreciation, operation and maintenance expenses and allowances for any renovation and modernisation. Under the competitive bidding route, the tariff discovered through a competitive bidding process is adopted by the relevant electricity regulatory commission and procurement is governed by standard bid documents including power purchase agreements, which are issued by the Power Ministry. While the statutory option to procure electricity under the negotiated route still exists, the Power Ministry has directed state governments and distribution companies to procure power only under the competitive bidding route (except that negotiated route may be used for hydropower projects until the end of 2022 and waste to energy projects).

Before 2013, all tariff-based competitive bidding for thermal power projects was done through standard bidding documents, which provided for two modes for procurement (ie, Case 1 and Case 2). Under Case 1, all project assets and inputs (eg, land, fuel, water, etc) and relevant statutory approvals required for the construction and operation of, and the supply of power from, the power station had to be arranged by the power producer, while the same had to be arranged by the distribution licensee in Case 2. While these standard bidding documents provided a comprehensive framework for procurement of electricity, they did not address key concerns such as shortage of fuel availability in the domestic market, indexation of fuel prices to market rates, uncertainty in obtaining key approvals such as environmental clearance, delays in land acquisition and foreign exchange variations.

To address the manifold concerns of all stakeholders, in 2013, the Power Ministry issued revised competitive bidding guidelines and standard bidding documents that provided for two modes of bidding and supply of electricity (the Revised standard bidding documents (SBDs)):

- design-build-finance-own-operate model (DBFOO) (on the lines of Case 1); and
- design-build-finance-operate-transfer model (DBFOT) (on the lines of Case 2).

The Revised SBDs prescribe higher normative availability, single variable bidding, restrictions on usage of fuel procured at subsidised rates from government suppliers, pass-through of variable charges (including the cost of fuel) to consumers, detailed construction, operation and maintenance standards, the appointment of a mandatory independent engineer for each project and also provision for the cost of imported fuel to be benchmarked at actuals and linked to prevailing prices on international indices.

Following the dismal industry response to the competitive bidding process for allotment of ultra-mega power projects (UMPPs, ie, coal-based projects of at least 4 gigawatts capacity) that were proposed on the DBFOT model, and general criticism from developers and lenders concerning various aspects of the DBFOT model, the Power Ministry issued draft guidelines and standard bidding documents for UMPPs. The draft bidding documents for UMPPs (which are based on domestic captive coal blocks) contemplate a build, own and operate structure where the government provides part of the land for the power plant and the captive coal block on a long-term lease to the selected bidder and the selected bidder is required to build and operate a power plant and sell the power generated under a long-term power purchase agreement with state distribution licensees. The draft proposes that upon expiry of the power purchase agreement term the power generator will cease to have any rights over the coal block but will continue to have leasehold rights over the power plant land. The Power Ministry has not clarified the rationale of this approach and hence this structure appears to be fraught with key bankability issues. A key lender concern is an obligation on the developer to acquire the remaining part of the land (ie, the land required in addition to the part of the land provided by the government) required for setting up the power plant and captive coal block.

In addition to long-term power procurement guidelines, the Power Ministry has introduced guidelines (and revised standard bidding documents) for medium-term power procurement (ie, one year to five years) of electricity from coal, gas or hydro-based power stations on a DBFOO basis, and power traders and distribution licensees having back-to-back arrangements with power generators. The Power Ministry in January 2019 released new norms for the procurement of electricity for the medium-term (five to seven years). The Power Ministry has also issued revised guidelines for the procurement of power on a short-term basis (ie, for a period of more than one day up to one year). The revised guidelines introduce tariff determination through an e-auction with an overall aim of reducing power procurement costs in the short term for distribution licensees. Additionally, the Power Ministry is also in the process of finalising new bidding documents for short-term power procurement (one day to one year).

Further, for coal-based generation of electricity, the Power Ministry ran a scheme for procurement of aggregate power of 2,500 megawatts for three years from commissioned coal-based generating companies that are not a party to a power purchase agreement. The Power Ministry has recently through a notification also liberalised the eligibility criteria of thermal power plants for participation in auctions. The notification has permitted power plants that do not have power purchase agreements to participate in an auction of coal linkage for a short-term period.

Other than the above amendment, to introduce competition, transparency and private sector participation in the coal sector, the government of India is also looking to further amend the methodology for auction of coal and lignite mines or blocks for sale of coal or lignite. Some of the key amendments proposed by the government of India through Part 4 of the Atmanirbhar Bharat Plan, dated 16 May 2020, include:

- the introduction of a revenue-sharing mechanism instead of the regime of a fixed rupee per tonne;
- any party is allowed to bid for the coal block and sell it on the open market;
- the liberalisation of entry norms for nearly 50 blocks offered immediately and with no eligibility conditions, other than an upfront payment;
- partially explored blocks to be open for auction;
- increased private-sector participation in exploration; and
- rebates offered in revenue share payments in the event of the early production of coal

Non-conventional power

For renewable energy projects, power is typically procured through contracts entered into with state utilities under specific state policies at a regulator determined feed-in tariff or at a tariff discovered through competitive bidding depending on the state or central policy. All

distribution utilities, captive-power users and open-access consumers are mandated to procure a prescribed quantum of electricity generated from renewable energy sources (ie, RPO). The Tariff Policy sets out several measures to promote renewable energy development in the country, including:

- an increase in the solar RPO to 10.50 per cent by 2022;
- the procurement of power from renewable energy sources by distribution licensees through competitive bidding; and
- applicability of RPOs on co-generation power plants.

To further the objective of renewable energy development, the relevant electricity regulatory commissions have introduced market-based policy instruments (called renewable energy certificates (REC)), which the renewable energy producers can get if they do not opt for the preferential feed-in tariff offered by distribution utilities. To incentivise distribution licensees to procure renewable energy, all distribution licensees procuring renewable power above their RPOs are also eligible for obtaining RECs. Additionally, the Supreme Court of India (Supreme Court) has also upheld the imposition of RPO on captive power generators and open-access consumers on the ground that there is a need to promote renewable energy. On the other hand, despite electricity regulatory commissions having the authority to enforce RPOs, there is repeated failure by the state distribution utilities to comply with their RPO requirements, and accordingly, there is an abundant supply of RECs in the market, with few takers. In January 2021, the RPO compliance trajectory was tweaked to increase the total RPO to 21.18 per cent by 2022, solar RPO to 10.50 per cent by 2022 and it introduced hydropower purchase obligation within non-solar renewable purchase obligation. In this regard, penalties for non-compliance with RPOs are proposed to be increased under the Proposed Electricity Act Amendments and the proposed Renewable Energy Act. Finally, the Ministry of New and Renewable Energy constituted an RPO compliance cell in 2019 to handle all RPO compliance issues across states and to publish monthly reports on compliance, among other activities.

Captive power plants

Another mode of setting up generation facilities is through captive power plants where the captive power user has to hold a minimum of 26 per cent of the ownership of such a power plant and should consume at least 51 per cent of the annual aggregate electricity generated by such a power plant. On 22 May 2018, the Power Ministry issued draft amendments to the electricity laws governing captive generating plants (which are yet to be notified). The proposed amendments aim at reinforcing the intent of the legislature by ensuring that there is actual ownership in the company developing and operating the captive power project and consuming the electricity generated by the project. To this end, the proposed amendments to the Electricity Rules, 2005 prescribe an ownership stake of at least 26 per cent of the equity share capital with voting rights (excluding equity shares with differential voting rights and preference shares), mandate a maximum of two shareholding patterns changes per year and allow for a variation in consumption in proportion to their ownership shares not exceeding 15 per cent and in the case of solar and wind power plants not exceeding 30 per cent. Additionally, CERC has amended its regulations, to disqualify renewable energy generators (including captive generators) – to the extent of their self-consumption and selling of power on open access while availing promotional wheeling, transmission, cross-subsidy or banking charges – from obtaining the benefit of RECs. The amendment aims to reduce the unsold inventory of RECs, of which a major portion is contributed by captive generators. The CERC was of the view that developers under the third-party model were able to leverage the concessional benefits while participating under the REC framework and has therefore amended the regulations to prevent developers from doing so. However, CERC has given renewable energy generators (including captive generators) the option of availing the benefit of RECs three years after they forgo the benefits of concessional transmission or wheeling charges or the banking facility benefits or both.

Transmission

Transmission of electricity in India is a licensed activity and transmission systems are divided into interstate and intra-state transmission systems. The interstate transmission system is mainly owned and operated by Power Grid Corporation of India Ltd, a government of India-owned company, and the intra-state transmission systems are owned and maintained by respective state transmission utilities.

Transmission projects may be undertaken for developing new transmission systems or for strengthening the existing transmission system (which typically include investments in substations along with transmission lines for augmenting the capacity of the existing transmission system). Like generation projects, such projects may be implemented under two modes, namely the negotiated route (where the transmission tariff is determined by the relevant electricity regulatory commission) and the competitive bidding route (where the transmission tariff is discovered through competitive bidding under standard bidding documents). For interstate transmission projects, the Tariff Policy states that while all future interstate transmission projects should ordinarily be developed through competitive bidding, the central government may give an exemption for certain projects that are of strategic importance or technical upgrading and where works are required to be done to cater to an urgent situation on a case-by-case basis. For intra-state transmission projects, in March 2021, the Power Ministry requested state and union territory governments adopt a tariff-based competitive bidding route for the development of such projects.

Distribution

The sale and distribution of power to consumers is undertaken under a single licence and once the distribution licence has been issued, the licensee does not require a separate licence for the sale of power. However, the Proposed Electricity Act Amendment not only expands the meaning of distribution companies but also aims to delicence the distribution sector on the same lines as the power generation sector. The distribution sector has been the weakest link in terms of financial and operational sustainability, a realisation that has led to many such changes in the sector.

It has also been indicated under the Atmanirbhar Bharat Plan that privatisation of the distribution of electricity may also improve the sub-optimal performance of the power distribution and supply sector. However, while the government of India is moving towards privatisation of the distribution and supply sector, it was noted in the recent budget speech for the financial year 2020–21 that both government and private distribution companies have started monopolising. Thus, the sector needs to provide a choice to consumers to promote competition. Also, the recently approved Electricity (Rights of Consumers) Rules, notified on 31 December 2020, empower customers with rights against distribution companies and provides access to the continuous supply of quality and reliable electricity to increase accountability of the distribution sector.

Trading

Electricity trading is a distinct recognised activity for which a separate licence is required (except for distribution licensees) from CERC or a SERC (for interstate and intra-state trading respectively). Trading may involve the purchase of electricity from generating stations or distribution licensees for sale to end consumers.

Trading has led to the rise of real-time markets, which allow distribution licensees to buy electricity an hour before the delivery.

The recently approved CERC (Power Market) Regulations, 2021 allow power markets to schedule and deliver transactions for the day ahead contracts and real-time contracts in coordination with the National Load Despatch Centre.

REGULATION OF ELECTRICITY UTILITIES – POWER GENERATION

Authorisation to construct and operate generation facilities

3 What authorisations are required to construct and operate generation facilities?

Generation is a delicensed subject; however, construction, operation and maintenance of a generation facility require permits, consents and approvals under other laws relating to land acquisition, environmental clearance, corporate and labour compliances, approvals for use of restricted land and consent to establish and operate the power station from pollution control authorities (except for renewable energy projects that fall under the white category and are exempt from the requirement of obtaining consent to establish and operate). Further, in the case of power stations using domestic coal, the developer is required to obtain a coal linkage (which provides for assured fuel supply from the coal mines of Coal India Ltd and its subsidiaries) or use coal extracted from a coal block specifically allotted to it by a government entity. If coal is used from an allotted mine, the developer is also required to obtain specific approvals (such as an environmental clearance) concerning the coal mine. The Ministry of Environment, Forests and Climate Change, Government of India (Environment Ministry), mandates that standalone coal-fired thermal power plants of all capacities are required to be supplied with, and are required to use, raw, blended or beneficiated coal with an ash content not exceeding 34 per cent, on a quarterly average basis.

All power-generating stations are also required to comply with technical standards prescribed by the Central Electricity Authority (CEA), including those concerning the construction of power plants, safety requirements for construction, operation and maintenance. Hydropower projects above 25 megawatts have an additional requirement to obtain a techno-economic clearance from the CEA before the commencement of construction works. Similarly, a clearance is required from the Atomic Energy Regulatory Board for atomic energy based power plants.

Grid connection policies

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

Under the Electricity Act 2003 (the Electricity Act), each transmission licensee is required to provide non-discriminatory use of transmission lines, distribution systems or associated facilities to a licensee, consumer or a person engaged in generation. An applicant is first required to obtain connectivity to the transmission network and then obtain long, medium or short-term open access, as the case may be, depending on the period for which it requires the transmission capacity. On obtaining these approvals, an applicant can interchange power with the transmission grid.

Grant of connectivity and long, medium or short-term open access is governed by regulations issued by the Central Electricity Regulatory Commission (CERC) and the respective state electricity regulatory commissions (SERCs). The CERC in January 2019 issued amendments to regulations dealing with the interstate transmission system with the aim of planning and developing an efficient, coordinated, reliable and economical system for the smooth flow of electricity from generating stations to the load centres. These amendments specifically include renewable energy developers and operators of solar and wind power parks. The amendments provide an enabling framework for the transfer of connectivity (in limited circumstances such as transfer to the parent company) granted for renewable energy projects. Under the amendments made to CERC connectivity regulations in 2019, CERC on 20 February 2021 issued revised detailed procedures for grant of connectivity to projects based on renewable sources to interstate transmission systems. This provides much-needed clarity on procedures to be followed by solar and wind park developers.

Through a recent order issued in November 2020, the Ministry of Power (the Power Ministry) mandated that all conventional grid-connected electricity units (coal, gas, liquid fuel, hydro), nuclear-generating stations, captive power plants, renewable energy generators, off-grid generating units of more than 0.5 megawatt capacity, and all generating units supplying power to neighbouring countries, irrespective of whether they have connected to the Indian Electricity Grid, must obtain a unique registration number from the CEA.

Alternative energy sources

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

The regulatory environment increasingly seeks to incentivise renewable energy, with favourable tariff regimes established by SERCs. The Electricity Act, the National Electricity Policy 2005 and the Tariff Policy 2016 encourage private-sector participation in renewable energy through measures such as fixing Renewable Purchase Obligations (RPOs) for obliged entities. In 2017, tariff-based competitive bidding guidelines for the procurement of power were introduced for solar and wind power projects where the procurer sets a benchmark tariff above which a bid cannot be made and the bidder with the lowest tariff bid discovered through a reverse auction is selected to enter into a power purchase agreement with the procurer. These bidding guidelines have introduced several provisions to enhance the attractiveness of the solar and wind bids through measures such as:

- generation compensation by the procurer to the developer in the case of power evacuation constraints;
- the payment security mechanism for tariff payments; and
- termination compensation in the event of procurer default.

On 10 May 2021, the Ministry of New and Renewable Energy (MNRE) issued an amendment to the guidelines for setting up 12,000 megawatts grid-connected solar projects where:

- the amount of viability gap funding available on a per megawatt basis has been decreased;
- the usage charges have been decreased; and
- the timeline for project commissioning from the date of the letter of award has been increased.

Other than the above monetary incentives provided for solar and wind bids, the feed-in tariff regime continues to be applicable for solar and wind plants with capacities under 5 megawatts and 25 megawatts respectively. Benefits such as the continued availability of accelerated depreciation for wind power projects and exemptions from payment of electricity duty (which are state-specific but are typically granted by a majority of the states) are also provided to renewable power generators. Further, the Power Ministry has recently ordered that no interstate transmission charges (and losses) shall be levied on the interstate sale of power from solar and wind power projects that have been awarded through competitive bidding with a power purchase agreement for the sale of power to a distribution company and other entities for the compliance with their RPOs, provided these projects are commissioned by 30 June 2025. This waiver of transmission charges has also been

allowed for the trading of electricity generated from solar, wind, hydro pumped storage plants in the green term ahead market and green day ahead market until 30 June 2023. Nonetheless, unlike conventional power generation, renewable power projects are primarily based on state-specific policies that provide incentives and policies that are not always consistent, leading to developers choosing states based on their financial model and operational expertise. This is why some states have witnessed tremendous growth in the renewable energy sector compared to others.

The MNRE has also made amendments to the implementation guidelines of the Pradhan Mantri Kisan Urja Suraksha evam Utthan Mahabhiyaan Scheme on 13 November 2020. The new amendments allow solar plants to be installed on pastures and marshland owned by farmers. The size of the solar plant that can be implemented has also been reduced, and this will allow the participation of small farmers. The period for completion has also been increased from nine to 12 months, coupled with the abolition of the penalty for a shortfall in generation.

The renewable energy sector has experienced exponential growth in the past few years and various government incentives (both fiscal and non-fiscal) have played critical roles in this. However, as the renewable energy sector has come of age and achieved grid parity, the government aims to gradually roll back the incentives. For instance, until now renewable energy project developers (along with other power project developers) had the benefit of a 10-year corporate tax holiday that has expired. Even so, the rolling back of incentives by the government has not deterred private-sector developers from developing renewable energy projects in the country. The solar sector in particular has led the way in India's clean-energy growth transition. Solar plants can be set up under state policies or the government-of-India-launched National Solar Mission (NSM), which has been at the forefront of the government's renewable energy policy. Solar projects, under either the NSM or state-specific policies, are envisaged to be developed in a phased manner with a target of achieving 100 gigawatts (increased from the original target of 20 gigawatts) of installed solar capacity by 2022 (out of which a capacity of 40.1 gigawatts has already been installed as on March 2021). The government of India intends to develop 40 gigawatts (of the 100 gigawatts) through rooftop solar projects and the remainder through ground-mounted solar projects. To achieve these targets the government of India is developing large solar parks in collaboration with the state governments and has also issued detailed guidelines for their development. MNRE has modified its guidelines for the development of solar parks and ultra-mega solar power projects to introduce another model called Ultra-Mega Renewable Energy Power Parks. The intention is to provide ring-fenced, shovel-ready land to the power developer along with providing the associated power evacuation facilities. The government of India has doubled the capacity target from 20 gigawatts to 40 gigawatts for solar projects to be set up in a solar park, to be achieved by 2021–22.

In May 2021, the Solar Energy Corporation of India (SECI) floated a tender for the procurement of 1,200 megawatts of power from wind-based sources. While onshore wind power projects account for a substantial portion of the installed renewable capacity in India, the government of India issued the National Offshore Wind Energy Policy in September 2015 intending to promote the country's offshore wind energy potential and had invited expressions of interest in 2018 from suitable and experienced bidders for the development of 1 gigawatt of offshore wind energy anywhere within India's exclusive economic zone. Gujarat and the state of Tamil Nadu are estimated to have the potential to generate 106 gigawatts and 60 gigawatts of offshore wind energy respectively. The principal agency charged with the development of the sector is the National Institute of Wind Energy (NIWE). Under this policy, blocks are to be allocated through a competitive bidding route and developers are required to enter into seabed lease agreements with NIWE. As a part of the planned off-take arrangement, NIWE or the respective state distribution utilities will sign power purchase agreements. Transmission utilities owned by the government will provide the onshore infrastructure required to evacuate power generated from these projects. Offshore power evacuation infrastructure up to the first onshore substation will have to be constructed by developers at their own cost. While the government has put in place a policy and institutional framework to support the development of offshore wind energy in the country, there has not been any project development activity yet.

In May 2020, Oil and Natural Gas Corporation Ltd and NTPC Ltd entered into a memorandum of understanding to set up a joint venture to explore and set up renewable power assets, which includes offshore wind projects, in India. The government of India plans to develop 5 gigawatts and 30 gigawatts of offshore wind energy by 2022 and 2030, respectively.

Additionally, in May 2018, the MNRE issued a National Wind-Solar Hybrid Policy that seeks to optimise the utilisation of infrastructures such as land and the transmission system, as there are regions in India where wind and solar energy have moderate to high potential. A wind-solar plant will be considered hybrid if the rated power capacity of either source is at least 25 per cent of the rated power capacity of the other source. The policy not only aims at the development of new wind-solar hybrid plants but at the hybridisation of existing wind and solar plants. In facilitating this, in May 2018, the MNRE issued a scheme for setting up 2,500 megawatts of interstate transmission connected wind-solar hybrid power projects that initially provided only for battery storage but was later expanded to include all forms of storage, such as, pumped hydro, compressed air and flywheel, etc. In December 2020, SECI issued a tender for the development of a 1.2 gigawatts solar-wind hybrid power project under Tranche III of the interstate transmission programme at a tariff of 2.41 Indian rupees per kilowatt hour, which, apparently, is the lowest tariff yet for solar-wind hybrid projects.

In the context of municipal waste-to-energy projects, while Indian cities present significant scope for growth, the industry has faced intense opposition on account of environmental and health concerns. The government of India is undertaking measures to promote waste-to-energy projects. In this context, the National Biofuels Policy was approved by the Union Cabinet in May 2018, which, among other things, promotes research and development into technology using biofuels for the generation of power.

The government of India also recently issued Electricity (Rights of Consumers) Rules, notified on 31 December 2020, that allow prosumers (according to the rules, these are consumers that while consuming electricity from the grid can also inject electricity into the grid using the same point of supply), to set up net metering for rooftop solar projects of capacity 500 kilowatts or the sanctioned limit (whichever is lower) and gross metering for rooftop project with capacity above 500 kilowatts.

Climate change

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

India has ratified the United Nations Framework Convention on Climate Change and the Kyoto Protocol (but with no binding obligations) to reduce its greenhouse gas emissions. Consequently, the government of India launched the National Action Plan on Climate Change (NAPCC), under which major initiatives such as the NSM have been introduced, and the Wind Energy Mission and Waste to Energy Mission are proposed. Additionally, sharing of Clean Development Mechanism benefits (between the developer and the consumer, usually a state-owned distribution utility) is present across most states. India has also ratified

the Paris agreement. The Paris agreement requires its signatories to devise a national plan to limit global temperature rise, and as part of its plan, India has set a goal of producing 40 per cent of its electricity with non-fossil fuel sources by 2030.

The government of India, under the NAPCC, formulated a National Mission for Enhanced Energy Efficiency (NMEEE), among other such policy measures. The NMEE comprises four initiatives, namely:

- Perform Achieve Trade (PAT);
- the Energy Efficiency Financing Platform (EEFP);
- Market Transformation for Energy Efficiency (MTEE); and
- the Framework for Energy Efficient Economic Development (FEEED).

PAT aims to reduce energy consumption in specific energy intensive industries with the issuance of tradable energy savings certificates (ESC) to those participants who achieved their saving targets. In PAT cycle I, which ended in 2015, 38,50,000 ESCs were issued. PAT cycle VI commenced on 1 April 2020, under which 135 designated consumers from six sectors are participating.

Another measure taken by the government of India was the Street Lighting National Programme, which started in 2015 and is aimed at replacing India's 14 million conventional streetlamps with smart light-emitting diode (LED) variants by 2019. By January 2020, the programme installed 10.3 million smart LED streetlights. The government of India also launched the Unnat Jyoti by Affordable LEDs for All scheme, intending to distribute 770 million LEDs across India by March 2019. To date, roughly 360 million such LEDs have been distributed. Both these policies are examples of the government of India's initiatives to make India energy efficient.

To reduce the carbon footprint of thermal power generation, the Power Ministry has recently decided to set up a National Mission on the use of Biomass in coal-based thermal power plants. One of the objectives of the mission is to increase the level of co-firing from the present 5 per cent to higher levels to have a larger share of carbon-neutral power generation from thermal power plants.

However, owing to the effects of the covid-19 pandemic, and to mitigate it, the government has leaned towards supporting economic development. The Ministry of Environment has allowed companies operating in several industries (other than renewable energy generation projects that are categorised as white category and do not require the prior consent of the pollution board), to expand capacities based on a self-certification that such an expansion will not 'increase the pollution load'. However, this may result in wrongful declarations being made by companies.

While the government of India has been promoting the development of India's renewable energy capacity and capability through various policy measures, the decision by the Directorate General of Trade Remedies in July 2018 to impose a safeguard duty on the importation of solar cells and modules from Malaysia and China and the MNRE's decision to increase the basic customs duty on imported solar modules or cells is likely to adversely impact solar tariffs. A recent review investigation has extended the safeguard duty. A 14.90 per cent duty will be imposed from 30 July 2020 to 29 January 2021, followed by a 14.50 per cent duty from 30 January 2021 to 29 July 2021. The imposition of the safeguard duty has, however, been met with a legal challenge. In 2018, the Supreme Court stayed the ban on the imposition of the safeguard duty on solar panels (in the context of proceedings where high courts had stayed the implementation of the safeguard duty). Recently, the MNRE announced the imposition of a basic customs duty on imported solar modules and cells at a rate of 40 per cent and 25 per cent respectively, with effect from April 2022.

Storage

7 Does the regulatory framework support electricity storage including research and development of storage solutions?

Currently, there is no regulatory framework governing electricity storage in India. The MNRE constituted an expert committee to propose a draft policy to establish a National Energy Storage Mission (NESM) for India and the committee submitted the draft policy to the MNRE. The NESM aims to establish a regulatory framework that promotes the manufacturing and deployment of battery storage systems. Before this, in January 2017, CERC issued a consultation paper setting out a broad framework for the introduction of battery energy storage systems (BESS). The consultation paper discusses models of tariff determination for multiple users of BESS, the commercial viability of BESS and policy changes that may be required to deploy bulk storage facilities in the country. Further, media reports mention that the government is also working on a policy framework to introduce on-site storage integration for wind and solar power projects, but the same is yet to be announced.

While the government of India has previously floated tenders for renewable energy capacity with storage systems, most of these systems have been suspended or withdrawn for various reasons. There have been several tenders for storage-linked renewable generation capacity in various parts of the country, such as Andhra Pradesh and Karnataka, which are currently underway. Media reports mention that SECI is planning a 2,000 megawatt-hours standalone energy storage system to be set up and the tender will be floated in late 2021. The MNRE has also recently announced that 1,000 megawatt hours tenders for energy storage will be floated across each of the four RLDCs. The government had also launched the National Smart Grid Mission, through which it introduced incentives such as a 30 per cent capital grant towards a project's cost, and a 100 per cent grant for select components such as training and capacity building.

The government of India gives many incentives for electricity storage. Interstate transmission charges have been waived for BESS projects that would be commissioned before 30 June 2025. Energy storage also plays an important part in combating one of the biggest concerns with renewable energy, which is the lack of round-the-clock supply. In May 2020, India issued its first round-the-clock supply contract aimed at supplying power with a combination of solar, wind power and energy storage systems. Later in 2020, the Power Ministry introduced the guidelines for a tariff-based competitive bidding process for the procurement of round-the-clock power from grid-connected renewable energy power projects, complemented with power from coal-based thermal power projects to enable such procurement.

The regulatory framework also aims to support the research and development of storage solutions. On 12 May 2021, the proposal for a Production Linked Incentive Scheme 'National Programme on Advanced Chemistry Cell (ACC) Battery Storage' was approved by the cabinet. ACCs are the new generation of advanced storage technologies that can store electric energy either as electrochemical or as chemical energy and convert it back to electric energy as and when required.

Government policy

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

While the government is positive about setting up power stations based on nuclear energy (it has already installed 6,780 megawatts of capacity from 22 operational nuclear reactors and projects with an aggregate capacity of approximately 15,700 megawatts are currently under construction), currently only a government of India entity or a government company can own and operate a nuclear power plant. Private ownership of nuclear power generation assets is not allowed.

A major issue that hampered private investment in other areas of nuclear power generation was the interpretation of a provision of the Civil Liability for Nuclear Damage Act 2010 (CLND Act) as mandating a civil nuclear liability clause in supply contracts, therefore dissuading foreign equipment suppliers from supplying Indian nuclear power projects. However, the government of India has clarified that while the legislation would not be amended, it is not mandatory to include a civil liability clause in the contractual arrangements between the foreign supplier and the Indian operator. This clarification has been provided as a part of responses to certain 'frequently asked questions' issued by the government of India and has therefore led to concerns that such a stance may not be legally binding. While it is highly unlikely, it remains to be seen whether the Nuclear Power Corporation of India (a government company and operator of nuclear power plants) will agree to undertake such liability. India has also ratified the Convention on Supplementary Compensation for Nuclear Damage (CSC) that has been hailed as an important step towards creating a global nuclear liability regime. It is important to note that ratification of the treaty requires national law to comply with article 10 of the CSC, which states that national law may provide that an operator may have a right of recourse to the supplier only if this is expressly provided for in writing or if the nuclear incident results from an act or incident done with an intent to cause damage. However, section 17(b) of the CLND Act in India adds another instance where an operator may have recourse to the supplier and that is if the nuclear incident occurred owing to an act of the supplier, which includes supplying parts with a latent or patent defect. The government of India has also issued a clarificatory response concerning section 17 (b) of the CLND Act stating that while the language of section 17(b) is in addition to the provisions of article 10 of the CSC, it relates to actions and matters such as conditions of service and contract. The government of India is of the view that these are in any case ordinarily a part of the contract and are not a new method of tracing liability back to the supplier. India is also a part of the limited group of countries with a Nuclear Insurance Pool, which provides insurance cover to operators of nuclear power plants and suppliers. India's nuclear insurance pool has a corpus of 15 billion Indian rupees.

REGULATION OF ELECTRICITY UTILITIES – TRANSMISSION

Authorisations to construct and operate transmission networks

9 What authorisations are required to construct and operate transmission networks?

Owning and operating transmission assets requires a licence from the Central Electricity Regulatory Commission (CERC) for interstate transmission facilities and the relevant state electricity regulatory commissions (SERCs) for intra-state transmission facilities. The Electricity Act 2003 (the Electricity Act) allows the appropriate electricity regulatory commission to specify any general or specific conditions that a licensee must comply with. The appropriate electricity regulatory commission may, on the recommendation of the government and in the public interest, even permit any local authority, cooperative society, government institution, etc to transmit (and distribute) electricity, subject to certain terms and conditions, without a licence.

Transmission licensees also require right of way from landowners for construction of transmission lines, approvals under the Electricity Act for installation of overhead lines and installation of transmission towers, apart from other applicable clearances such as those from the Environment Ministry. Alternatively, the Electricity Act also enables a transmission licensee to place and maintain a transmission line on any immovable property, upon being authorised by the government. The government authorisation entitles the transmission licensee to enter any privately owned or occupied land without the notice or consent of the owner or occupier to carry out the works required for setting up the transmission project. The central government on 16 July 2020 issued 'Guidelines for Payment of Compensation concerning Right of Way for Transmission Lines in Urban Areas'. The guidelines provide for compensation to landowners for obtaining the right of way for the construction of transmission lines of a voltage of 66 kilovolts and above. The guidelines state that compensation of an amount equal to 85 per cent of the market value of the land should be paid to landowners for the land required for the construction of the tower base area. Further, these guidelines also state that compensation of up to 15 per cent of the land value should be paid to landowners for the diminution in the width of a right of way corridor owing to the construction of transmission lines. In addition to the above, the licensee also needs to comply with regulations issued by the Central Electricity Authority and CERC concerning grid and technical standards upon grant of the transmission licence.

Eligibility to obtain transmission services

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

The open-access regulations issued by the relevant electricity regulatory commissions permit usage of transmission lines by any generating company, distribution licensee, any consumer with a requirement of over 1 megawatt of electricity and electricity traders, provided they comply with the requirements of obtaining connectivity and open access to the transmission system. The regulations also cast an obligation on the transmission licensees to provide non-discriminatory access to their transmission lines upon application for such access. The applicant is required to pay transmission charges and other charges as applicable, which may include a cross-subsidy surcharge, wheeling charges and open-access charges.

Government transmission policy

11 Are there any government measures to encourage or otherwise require the expansion of the transmission grid?

The government is looking to increase private participation to strengthen transmission networks and has introduced a string of measures such as the introduction of electronic competitive bidding for transmission projects and a viability gap funding model on a public-private partnership (PPP) structure for setting up intra-state transmission networks. The interstate transmission system is mainly owned and operated by Power Grid Corporation of India Ltd (PGCIL), a state-owned company, which has become the first public sector company in the country to launch its infrastructure investment trust. PGCIL is monetising transmission assets such as high voltage transmission lines and substations to utilise the funds for new and under-construction projects. The intra-state transmission system is owned and maintained by state transmission utilities. The government is increasingly preferring the PPP structure for setting up the interstate and intra-state transmission networks.

Additionally, major steps are being taken to strengthen the transmission network such as the commissioning of India's first ultra-mega transmission project, the setting up of a green energy corridor project (facilitating the transmission of electricity produced through renewable energy sources) and the connection of the southern grid to the national grid, leading to synchronisation of all regional grids.

It is generally seen that impetus is specifically being given to the transmission sector through various measures including:

- the introduction of the National Smart Grid Mission to implement a smart electrical grid based on technology for automation, communication and IT systems, to monitor and control power flows from points of generation to points of consumption;

- the setting up of a National Transmission Asset Management Centre;
- the creation of the Power System Development Fund drawing from congestion charges, deviation settlement charges and reactive energy charges, for primarily relieving congestion in government transmission systems of strategic importance; and
- the renovation and modernisation of government transmission systems for relieving congestion.

The various state governments have begun to implement feeder separation systems to augment power supply to rural areas and for strengthening sub-transmission and distribution systems.

Rates and terms for transmission services

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

The rates and terms for the provision of transmission services are determined by the appropriate electricity regulatory commission (CERC in the case of interstate transmission and the relevant SERC in the case of intra-state transmission). For transmission schemes implemented through the negotiated route, transmission charges are determined by the relevant electricity regulatory commission in line with tariff regulations issued by it, which consider factors such as return on equity, interest on loan capital and working capital, depreciation, operation and maintenance expenses and allowance for any renovation and modernisation. Under the competitive bidding route, transmission charges discovered through a competitive bidding process are required to be adopted by the relevant electricity regulatory commission.

Once the charges for a transmission network are determined or discovered, CERC adopts a point-of-connection method for calculating charges payable by each user in the transmission system based on its actual usage and develops a transmission charge-sharing mechanism among grid constituents. The point-of-connection method is, however, not adopted for intra-state transmission for entities not connected to the interstate transmission system. The CERC has amended its regulations governing sharing of transmission charges and losses, making them applicable to intra-state entities with medium-term open access or long-term access to the interstate transmission network and introducing a reliability service charge, charge for using high-voltage direct current transmission lines and provisions for misdeclaration. Further, through another amendment, CERC has waived the payment of transmission charges and transmission losses for incremental gas-based generation from the re-gasified liquefied natural gas e-bid auctions.

Entities responsible for grid reliability

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

The CERC (Indian Electricity Grid Code) Regulations 2010 (Grid Code) brings together a single set of technical and commercial rules that facilitate planning and development of reliable national and state grids, encompassing all the utilities connected to or using the interstate transmission system. One of the key aspects of the Grid Code is to facilitate the planning and development of economic and reliable national and regional grids. Further, states have also issued their respective grid code regulations, for regulating the intra-state transmission grid network.

The key entities responsible for ensuring the reliability of the transmission grid include the National Load Despatch Centre (NLDC), the Regional Load Despatch Centre (RLDC) (established for five regions in India), and State Load Despatch Centres (SLDC) (established for each state). They ensure optimum scheduling and despatch and integrated operation of the power system in their respective jurisdiction. Additionally, the central transmission utility (CTU) and various state transmission utilities are responsible for planning and coordination of interstate and intra-state transmission systems respectively. Under the Proposed Electricity Act Amendments, the functions of the NLDCs and SLDCs have been proposed to be included in the Electricity Act instead of being prescribed by the governments. Directions issued by the NLDC would have to necessarily be followed by every RLDC, SLDC, licensee, generating company, generating station, sub-station and any other person connected with the operation of the power system.

On 9 March 2021, the government of India notified the establishment of an independent CTU called the Central Transmission Utility of India Ltd, to undertake and discharge all functions of CTU. The PGCIL that was declared as the CTU in 2003, shall continue to be a deemed transmission licensee and discharge functions incidental and connected therewith.

The CERC has recently issued a draft (CERC (Ancillary Services) Regulations, 2021) to be provided by power generators to improve the reliability of the grid. Ancillary services are the services that are necessary to support the grid operation in maintaining power quality, reliability and security of the grid. These regulations aim to provide mechanisms for procurement, through administered as well as market-based mechanisms, deployment and payment of ancillary services for maintaining the grid frequency close to 50 hertz and restoring the grid frequency within the allowable band as specified in the Grid Code. The provisions of the regulations would also be useful in relieving congestion in the transmission network, to ensure smooth operation of the power system, and safety and security of the grid.

Additionally, CERC amended the Grid Code in December 2019, to provide a procedure and mechanism for declaration of commercial operation of interstate generating stations. Under this procedure, generators are required to make such a declaration after demonstrating the unit capacity after a trial run and after obtaining the relevant clearance from NLDC, RLDC or SLDC. Through the amendment, CERC has clarified the procedure for such declaration of the commercial operations date for thermal and hydro-generating stations and interstate transmission systems. The procedure involves successful completion of all tests that are required under the Grid Code, issuing notice to power procurers, if any, and successful completion of trial runs for the equipment or generating units to be commissioned.

Concerning renewable sources of energy, several states in India have, over the years, adopted norms for computation of deviations in actual injections of power as against scheduled injections to the state and national grids. These regulations also set out the charges payable towards deviations in quantum and frequency of power injected.

REGULATION OF ELECTRICITY UTILITIES – DISTRIBUTION

Authorisation to construct and operate distribution networks

14 | What authorisations are required to construct and operate distribution networks?

The Proposed Electricity Act Amendments proposes to delicence distribution activities and replace the requirement of a licence with registration provisions. However, until the same is approved by the parliament, a licence is required to construct and operate a distribution network. Electricity distribution activities (except for distribution of electricity in rural areas notified by the relevant state government and distribution by notified exempted entities such as local authorities and non-governmental organisations) require a licence from the relevant SERC.

For obtaining a distribution licence, the entity is required to make an application to the SERC as prescribed in the Electricity Act along with

the requisite fees. Additional clearances may be required from relevant authorities. To promote open access and competition in distribution activities, the Electricity Act permits two or more distribution licensees to operate within the same area of supply through their own distribution network and also permits applicants to file petitions for obtaining a distribution licence in the same area and for the same purpose, as previously granted to another distribution licensee, so long as they comply with additional requirements concerning capital adequacy, creditworthiness and code of conduct as may be prescribed by the government of India.

Access to the distribution grid

15 | Who is eligible to obtain access to the distribution network and what requirements must be met to obtain access?

Distribution licensees are obliged to provide a non-discriminatory supply of electricity to any person situated in the licensee's area, under the regulations made by the relevant electricity regulatory commission.

Every person whose premises are situated within the distribution licensee's area and who has given notice for wheeling electricity is eligible to receive electricity from:

- the distribution licensee: or
- from any other supplier through the distribution licensee's network, by seeking open access.

Under the first option, the distribution licensee operating in a particular area is required to lay down its network, if required, to supply electricity itself to a consumer seeking supply. Under the second option, ie, through open access, a consumer has the right to require a distribution licensee to make its network available for wheeling electricity to such consumer from a third-party supplier upon payment of wheeling charges and an additional surcharge (eg, a cross-subsidy surcharge) as determined by the SERC to meet such distribution licensee's fixed costs arising out of its obligation to supply. The cross-subsidy charge is payable irrespective of whether the distribution licensee's network is used, in the case of third-party supply.

Government distribution network policy

16 | Are there any governmental measures to encourage or otherwise require the expansion of the distribution network?

Electricity distribution has largely been controlled by government distribution utilities, with minimal privatisation on account of significant historic liabilities of the state distribution companies. However, few examples of privatisation in certain areas (eg, Delhi, Odisha, Ahmedabad, Mumbai and Jamshedpur) have met with success. The government of India has commenced the privatisation of the distribution networks situated in union territories. The Power Ministry issued draft standard bidding documents to select bidders that can acquire a majority stake in distribution licensees. Torrent Power has emerged as the highest bidder for a 51 per cent equity stake in the distribution company for the union territory of Dadra Nagar Haveli and Daman and Diu. The Bombay High Court suspended the tender process in a public interest litigation case; however, this was stayed by the Supreme Court and the matter is currently listed for hearing before the Supreme Court. The Supreme Court has also stayed an order of the Punjab and Haryana High Court, which intended to prevent the privatisation of Chandigarh's Electricity Distribution Company. Thus, it is clear that the Supreme Court is inclining towards the removal of obstacles for the privatisation of distribution companies.

A tariff for electricity distribution, comprising wheeling charges and cost of supply, is levelled and determined on a cost-plus basis by the relevant SERC. The proposed amendments to the Tariff Policy 2016 (Tariff Policy) address distribution as well. To ensure the burden of distribution licensees' inefficiencies are not passed on to the consumers, the SERCs and joint commissions (constituted solely for tariff setting) are required to not consider AT and C losses exceeding 15 per cent for determination of tariff after 31 March 2019. Further, the AT and C losses are required to be lowered to 10 per cent within three years of achieving AT and C loss levels of 15 per cent. The appropriate electricity regulatory commission is also required to determine the tariff without considering any subsidy components.

In recent years, the government has taken many measures to encourage and improve the distribution network and infrastructure in the country. An additional fund of 3 trillion Indian rupees over five years was allocated to the power distribution companies to make them more efficient and reduce the widening financial losses. However, one of the major problems plaguing the distribution sector is the abysmal credit ratings of the state distribution utilities and their persistent or extensive delays in making payments to generators under power purchase agreements. Distribution utilities have borrowed heavily to finance losses in their businesses and are facing major hurdles in repaying their debt. The Power Ministry released data that at the end of June 2021, distribution companies owed 121.91 billion Indian rupees to renewable energy generators in overdue payments. The government launched the Ujwal Discom Assurance Yojana Scheme (UDAY Scheme) intending to improve the operational and financial efficiency of state-owned distribution utilities. Some 27 states and five union territories had signed up for the UDAY Scheme. One of the major features of the UDAY Scheme involved requiring participating states to take over 75 per cent of the debt of distribution licensees by way of a grant over two years. Such states may then issue non-statutory liquidity ratio bonds, including state development loan bonds for subscription by pension funds, insurance companies and other institutional investors. Under the UDAY Scheme, lenders and financial institutions were to not levy prepayment charges on distribution licensee's debt and waive unpaid overdue interest, including penal interest. For financing losses and working capital of distribution utilities, state governments took over and funded losses in a graded manner until the financial year 2020–2021. One of the much-praised aspects of the UDAY Scheme was its greater acceptability by the respective state governments as the debt proposed to be absorbed would not have affected their fiscal deficit and in turn, would not have affected their budgetary allocation from the central government. This aimed to distribute utilities, significantly increasing their procurement of power that was constrained on account of their financial distress. However, the UDAY scheme has been criticised in some quarters for a perceived lack of explicit central government support as part of the transitional financing mechanisms and a lack of operational control measures in terms of automatic fuel and power purchase price adjustments.

It has become apparent, however, based on data supplied by various states, that the UDAY Scheme has not achieved the intended results. Many states have failed to reduce their AT and C losses and to narrow the gap between their distribution licensees' cost of power supply and revenue realised to the earmarked levels for the year (average cost of supply-average revenue realised gap (ACS-ARR)).

On 20 July 2021, the Power Ministry issued detailed guidelines for a 'Revamped Distribution Sector Scheme: A Reforms-Based and Results-Linked Scheme' (Revamped Distribution Scheme) that will be applied over the next five years. The programme's scope is in two parts: the first covers the financial support for up-gradation of distribution infrastructure, prepaid smart metering and system metering; the second covers training, capacity building, and other enabling and supporting activities. Every eligible distribution company, if it meets the pre-qualifying criteria, will prepare an action plan to avail funding under the programme and would be evaluated based on the result evaluation matrix. The plan is to reduce AT and C losses across India to 12 to 15 per cent and eliminate

the ACC-ARR gap by 2024–2025. The outlay for the programme is 3.03 trillion Indian rupees, with budgetary support of 976.31 billion Indian rupees from the government of India. Artificial intelligence, machine learning, and blockchain technology would be used to help distribution companies to make decisions on loss reduction, demand forecasting, asset management, time of day tariff, renewable energy integration, and other predictive analysis. To reap the benefits of the programme, the states and the distribution companies would have to sign a tripartite agreement with the government of India.

Rates and terms for distribution services

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

The tariff for electricity distribution, comprising wheeling charges and cost of supply, is levelled and determined on a cost-plus basis by the relevant SERC. In this regard, SERCs are also competent to formulate regulations that set out the terms and conditions for the distribution of electricity. While determining the rates and terms, the SERCs are guided by factors mentioned in the Electricity Act, which include promotion of competition, safeguard of consumers' interest and, at the same time, recovery of the cost of electricity. The rates so determined are usually notified by the relevant SERCs by passing tariff orders. The SERCs have an obligation under the Electricity Act for timely issuance of tariff orders and in May 2021, the Power Ministry had issued a notice to various SERCs, to ensure that distribution tariff is revised on regular and timely bases and orders in this regard are issued promptly. If tariff has been determined through a transparent process of bidding then the same would have to be adopted by the appropriate electricity regulatory commission (ie, CERC in the case of inter-state transmission and the respective SERC in the case of intra-state transmission). The Proposed Electricity Act Amendments also prescribe a time limit within which the tariff needs to be adopted and states that it cannot be later than 90 days from the date of application of tariff approval before the appropriate electricity regulatory commission. If there is a delay from the side of the electricity regulatory commission, then the tariff shall deem to have been adopted on the expiry of 90 days from the receipt of such application.

Concerning cross-subsidies, the Tariff Policy provides that the cross-subsidy charge shall be an aggregate of weighted average cost of power; transmission and distribution losses, transmission, distribution and wheeling charges and per-unit cost of carrying regulatory assets, if applicable. However, the Tariff Policy recognises that the methodology for calculating cross-subsidy may not be suitable to all distribution licensees and therefore has given the SERCs the power to review and vary the same taking into consideration different circumstances prevailing in the area of relevant distribution licensee. The proposed amendments to the Tariff Policy provide for the deployment of smart pre-paid meters, as it is felt that the shift to such a pre-paid system will remove problems such as meter reading, billing, collection and disconnection in the case of non-payment of bills by consumers. Additionally, proposed amendments to the Tariff Policy require all subsidies to be extended in the form of a direct benefit transfer and the gradual reduction of cross-subsidies by the appropriate electricity regulatory commission. Finally, the amendments propose a framework for the simplification and rationalisation of tariffs, as well as, ensuring a consistent system across all states.

SERCs may also consider distribution and supply margins while arriving at returns for the distribution business, and the possibility of capping prices. Additionally, flexibility in the adoption of a surcharge formula and capping of surcharge at 20 per cent of tariff applicable to a consumer has been introduced.

The Power Ministry has recently issued Electricity (Late Payment Surcharge) Rules 2021, concerning the late payment surcharge payable in respect of the outstanding payment to be made by the distribution company beyond the relevant due dates. According to the new rules, all payments from a distribution company to a generating company for power procurement or by a user of a transmission system to a transmission licensee should be first adjusted towards late payment surcharge due and payable and thereafter, towards monthly charges, starting from the longest overdue bill.

REGULATION OF ELECTRICITY UTILITIES – SALES OF POWER

Approval to sell power

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

Sale and distribution of power are bundled activities and hence, if a developer has obtained a distribution licence for the distribution of electricity for a certain area, it has the approval to sell power as well to both commercial and domestic consumers, and no specific authorisations are required.

Further, generating companies can also sell power directly to a bulk consumer using open access or through dedicated transmission lines. The consumer, however, is not allowed to further sell the power to other consumers. Licensed traders are also authorised to supply and trade in power.

Power sales tariffs

19 | Is there any tariff or other regulation regarding power sales?

The state electricity regulatory commissions (SERCs) issue multi-year tariff regulations to regulate the procedure for determination of a power sales tariff (comprising fixed charges and energy charges, which are usage-based) of distribution licensees for various classes of consumers, the categorisation of which depends on the type of entities that require the electricity and the voltage levels at which the electricity is to be distributed. For instance, a separate tariff is determined for low-tension (LT) consumers (which includes domestic, residential and commercial units) and high-tension (HT) consumers (which includes industries and railways). The HT and LT classes of consumers are further subdivided depending on the type of entity to which electricity is to be supplied (for instance, HT 1A consumers include all manufacturing, industrial establishments and registered factories, while HT 1B tariff is determined for railways). The components and factors to be considered while determining a tariff are similar to the components of a generation tariff and include return on equity capital, interest on debt, interest on working capital, depreciation, power purchase cost and operation and maintenance expenses, albeit concerning the distribution business. The proposed amendments to the Tariff Policy 2016 envision a two-part tariff with capital costs being reflected in the fixed charges and the energy charges reflecting the average purchase price of power with administrative margins.

To promote competition and also to bolster the segregation of content and carriage philosophy, the Proposed Electricity Act Amendments contemplate that while the tariff to be charged by the distribution licensee will be determined by the SERC, the tariff to be charged by a supplier will be market-determined, subject to a SERC-specified ceiling. That being said, the Proposed Electricity Act Amendments also enable the supplier to charge a tariff higher than the specified ceiling after obtaining regulatory approval.

On 15 February 2021, the Central Electricity Regulatory Commission (CERC) approved CERC (Power Market) Regulations, 2021 to regulate power sales through power exchanges, market participants other than power exchange, and over the counter markets. The regulations apply to delivery-based electricity contracts, contracts relating to renewable

energy certificates, contracts relating to energy saving certificates, and any other contracts, as may be approved by the appropriate electricity regulatory commission.

Rates for wholesale of power

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

In furtherance of the multi-year tariff orders issued by each SERC for distribution tariff for various types of HT and LT consumers, distribution licensees file their respective petitions before the SERC for their area of supply. Such tariff petitions typically include true-up of the tariff based on the previous year (ie, the specific adjustment required on a case-by-case basis concerning units sold, aggregate technical and commercial losses, etc), review of the current year's performance and approval of the aggregate revenue requirement of the distribution licensee for the upcoming year. In reviewing the aggregate revenue requirement, the SERC takes into consideration factors such as cost of procurement of electricity (through long-term contracts or short-term procurement from the open market, in the case of shortage) and, based on such review, the commission may alter the tariff mentioned in the multi-year tariff order for such distribution licensee.

Public service obligations

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

The Electricity Act 2003 (the Electricity Act) sets out various obligations and duties of a distribution licensee, which include the obligation to provide open access to any applicant (subject to system constraints), the duty to develop and maintain a distribution system and commence supply within one month of request in the distribution licensee's area of supply. The Supreme Court has stated in various judgments that there is no exemption from the universal service obligation of any distribution licensee under the Electricity Act and the licensee has a statutory duty to supply electricity upon application to any premises located in the distribution licensee's area. One of the key reasons for the government's decision to reform debt-ridden distribution licensees under the Ujwal Discom Assurance Yojana Scheme and now through the Revamped Distribution Scheme is to ensure that the distribution licensees can fulfil and perform their roles and functions under the Electricity Act effectively.

REGULATORY AUTHORITIES

Policy setting

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

The power sector is governed by the government of India primarily through the Ministry of Power (the Power Ministry) and the Ministry of New and Renewable Energy (MNRE). The Department of Atomic Energy of the government of India governs the development of nuclear energy.

Other regulatory policies and technical and performance standards are determined by the Central Electricity Regulatory Commission (CERC), the state electricity regulatory commissions (SERCs), NITI Aayog and the Central Electricity Authority (CEA).

Scope of authority

23 | What is the scope of each regulator's authority?

The CERC and the SERCs exercise jurisdiction over all interstate and intra-state electricity regulatory issues respectively (except issues relating to nuclear energy, which are regulated by the Atomic Energy Regulatory Board) and are entrusted with the function of notifying regulations and acting as the independent regulators for their respective jurisdictions. Some of their key functions and responsibilities include preparing their respective grid codes, issuance of licences, determination of tariffs, adjudicating disputes, and aiding and advising the government on any matter referred to them. The Proposed Electricity Act Amendments provides for the establishment of monitoring cells by CERCs and SERCs with the approval of the appropriate government, especially to ascertain the compliance by licensees, generating companies and the distribution companies of the provisions of the Electricity Act 2003 (the Electricity Act) and the rules and regulations made thereunder and the directions and orders issued under it.

The Power Ministry and the MNRE act as the legislating bodies and are mainly responsible for evolving general policies (including the National Electricity Policy 2005 (NEP), the Tariff Policy 2016 (Tariff Policy) and the Rural Electrification Policy) for the development of the electricity sector, in consultation with the state governments and the CEA.

The CEA, not a regulator in the electricity sector, primarily serves as the technical advisory body to the government of India, advising on all technical matters related to transmission, generation and distribution (including specifying technical standards for construction, and prescribing grid standards for operation and maintenance of transmission lines and safety requirements).

Establishment of regulators

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

The CERC and SERCs are statutory bodies under the Electricity Act, which also sets out their powers and functions. The CERC was established by the central government under the Electricity Act and the Electricity Regulatory Commissions Act 1998 where members of CERC are appointed by a committee that is appointed by the central government. Similarly, SERCs are also established by the respective state governments under the Electricity Act and the Electricity Regulatory Commissions Act 1998. Being autonomous bodies, they independently perform their functions without any government interference. However, regulatory authorities are required to be guided by policy directions of the government of India issued under the Electricity Act. That said, the Proposed Electricity Act Amendments require the SERCs and CERC to mandatorily comply with the provisions of the Tariff Policy (as opposed to being merely guided). The amendments also provide that if the SERC is unable to perform its function on account of vacancies, then the government of India may, in consultation with the concerned state government, entrust the functions of said SERC to another SERC or a Joint Commission.

The CEA was established by the central government under the Electricity Act. The CEA's functions include advising the central and state governments on matters relating to NEP, and all technical matters relating to generation, transmission and distribution of electricity, specify the technical and safety standards for construction of electrical plants, connectivity to the grid, etc.

Challenge and appeal of decisions

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

Under the Electricity Act, CERC and SERCs (and adjudicating officers of such commissions) have the power to hold inquiries and adjudicate disputes relating to interstate matters for CERC and intra-state

matters for the respective SERCs. Under section 79 of the Electricity Act, CERC is empowered to adjudicate upon disputes involving generating companies, either owned or controlled by the central government or generating companies who have entered into a composite scheme for generation and sale of electricity in one or more states, or transmission licensees concerning the interstate transmission of electricity and regulation of tariff. The Proposed Electricity Act Amendments proposes to add a clarification that disputes dealt with by CERC would be regarding the performance of obligations under a contract of sale, purchase or transmission of electricity. It also proposes that CERC would adjudicate upon disputes involving National Load Despatch Centre and Regional Load Despatch Centres regarding the quality of electricity or safe, secure and integrated operation of the grid.

Section 86 of the Electricity Act authorises the respective SERCs to adjudicate disputes between licensees and generating companies. Both CERC and the SERCs also reserve the power to refer any dispute to arbitration. In this regard, the Proposed Electricity Act Amendments also include that any order of CERC or SERC will be executable as a decree of a civil court and the commissions have all the powers of a civil court including but not limited to powers of attachment and sale of property, arrest and detention in prison and appointment of a receiver.

The Appellate Tribunal for Electricity (APTEL) has the power to entertain appeals arising out of decisions of CERC, the SERCs or adjudicating officers if filed within 45 days from the date of receipt of the impugned order. APTEL is also conferred with suo motu jurisdiction to examine the validity of any order made by an adjudicating officer, CERC or SERC, concerning any proceeding. Additionally, any person aggrieved by the order of any electricity regulatory commission may approach the relevant high court of the state for adjudicating on any question of law.

APTEL is required to decide appeals as expeditiously as possible and endeavour to dispose of the appeal within 180 days of the filing of the appeal. Further, appeals against the decisions of APTEL may be filed before the Supreme Court within 60 days of receipt of such decision. Recently, the Supreme Court has stated in its order that if there is any matter pending before the appropriate commission, the APTEL under section 121 is not allowed to hear such cases.

ACQUISITION AND MERGER CONTROL – COMPETITION

Responsible bodies

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

Under the Electricity Act 2003 (the Electricity Act) every transmission and distribution licensee must seek the prior approval of the relevant electricity regulatory commission, without which it cannot undertake any transaction to acquire, or merge its utility with, the utility of another licensee; or assign its licence or transfer the whole or a part of its utility.

Additionally, the Competition Commission of India (CCI), established under the Competition Act 2002 (Competition Act) has, under the merger control provisions, the authority to block a combination (a merger or acquisition beyond specified assets or turnover thresholds) in the electricity sector if it believes that such merger or acquisition will have an appreciable adverse effect on competition (AAEC) on the relevant market, such as the electricity sector in India.

The regulations relating to connectivity issued by Central Electricity Regulatory Commission (CERC) allow for the transfer of connectivity only in limited circumstances, between the parent company and a wholly owned subsidiary. This provision becomes a bottleneck for change in shareholdings allowed under most power purchase agreements, where companies are allowed to transfer shares of the special purpose vehicle, as long as the parent company maintains 51 per cent of the shareholdings up until one year after the date of commissioning of a project. The Ministry of Power has directed CERC to allow transfer of connectivity from a parent company to a subsidiary that is not wholly owned, with a condition that the shareholding of the parent company in such subsidiary/affiliate company should not fall below 51 per cent at any time before 1 year from the date of commissioning of the relevant project. However, CERC has not amended the regulations under this direction, and until such an amendment occurs, the restriction on transfer of connectivity will continue to be only allowed in limited circumstances.

Review of transfers of control

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

The Competition Act prohibits any enterprise or person from entering into a combination that causes or is likely to cause an AAEC within the relevant market in India. The Competition Act also mandates that any person or enterprise proposing to enter into a combination obtains prior approval of the CCI before executing the transaction. If the CCI believes that the proposed combination will not have an AAEC on the relevant market in India, it approves the transaction, and if it subsequently finds that the combination may have an AAEC within the relevant market in India, it may prohibit the proposed combination or allow it subject to certain conditions meant to neutralise the adverse effects of such combination.

For determining the AAEC of any combination, the Competition Act sets out specific factors (such as the extent of entry barriers, degree of countervailing power in the market, the extent of effective competition likely to sustain in a market, nature and extent of vertical integration in the market, the possibility of a failing business, etc) and requires the CCI to decide within 210 days from a notice of combination being filed. If no order is passed by the CCI on the proposed combination within the prescribed period, it is deemed that the proposed combination has been approved by the CCI. By way of its regulations, the CCI has committed to 'endeavour' to pass an order within 180 days from a notice of combination being filed. In practice, the CCI usually gives its prima facie opinion approving the transaction within 60 working days in cases without any competition concerns. In case of competition concerns, the CCI can take up to six months to pass its final order.

While the Electricity Act does not set out any specific thresholds, the bidding documents entered into by entities in the power sector typically prescribe provisions for equity lock-in and change in control for a specified period (except for wind power procurement), which effectively block a merger or acquisition.

Other than competition law and sector-specific restrictions, provisions of the Companies Act 2013 and the Securities and Exchange Board of India (Substantial Acquisition of Shares and Takeovers) Regulations 2011 (applicable to listed companies) will also apply concerning change in shareholding through mergers and acquisitions.

Prevention and prosecution of anticompetitive practices

28 Which authorities have the power to prevent or prosecute anticompetitive or manipulative practices in the electricity sector?

The CERC and state electricity regulatory commissions (SERCs) are empowered to issue appropriate directions to a licensee or an electricity generating company if such licensee or generating company enters into any agreement or abuses its dominant position or enters into a combination that is likely to cause or causes an AAEC in the electricity sector.

The CCI has the authority to initiate an inquiry into alleged anticompetitive conduct, either suo motu based on information that it has or based on complaints received or on a reference made by the government or statutory authorities (eg, CERC and the SERCs). Further, the CCI can also make a reference to other statutory authorities (eg, CERC and SERC) for their non-binding opinion on issues on the sectors under their jurisdiction. Similarly, other statutory authorities can also make a reference to the CCI for issues on competition law. This enables electricity regulatory authorities to make their own assessment and also consult the CCI concerning alleged anticompetitive conduct.

Further, consumer forums established under the Consumer Protection Act 1986 also have the power to deal with malpractice affecting end consumers. Additionally, any consumer who is aggrieved by non-redressal of their grievances by a distribution licensee may approach the ombudsman appointed by the respective SERCs. Any non-compliance with an order made by the ombudsman is typically punishable with a monetary penalty.

Determination of anticompetitive conduct

29 | What substantive standards are applied to determine whether conduct is anticompetitive or manipulative?

Section 3 of the Competition Act prohibits agreements that cause or are likely to cause an AAEC in India. 'Agreement' includes an arrangement, understanding or actions in concert. Such agreements can be oral or written, formal contracts or informal arrangements, and need not be enforceable by law. While determining AAEC the CCI considers the following factors:

- the creation of barriers to new entrants in the market;
- driving existing competitors out of the market;
- the foreclosure of competition by hindering entry into the market;
- the accrual of benefits to consumers;
- improvements in production or distribution of goods or provision of services; and
- the promotion of technical, scientific and economic development through production or distribution of goods or provision of services.

Section 4 of the Competition Act prohibits abuse of dominant position. In the case of a section 4 investigation, the CCI must:

- define the relevant market;
- demonstrate dominance in such market; and
- establish abuse of dominance by the concerned enterprise.

Abuse of dominance is of two kinds: exploitative and exclusionary conduct. These cover predatory pricing, imposition of unfair terms and prices in one-sided contracts, leveraging, denial of market access, etc.

Preclusion and remedy of anticompetitive practices

30 | What authority does the regulator (or regulators) have to preclude or remedy anticompetitive or manipulative practices?

The CERC and SERCs are empowered to issue appropriate directions to a licensee or an electricity generating company. Further, the CCI also has the authority to initiate an inquiry into alleged anticompetitive conduct and make a reference to other statutory authorities (eg, CERC and SERC) for their non-binding opinion on issues on the sectors under their jurisdiction. Similarly, other statutory authorities can also make a reference to the CCI for issues on competition law. This enables electricity regulatory authorities to make their own assessment and also consult the CCI concerning alleged anticompetitive conduct.

Further, consumer forums established under the Consumer Protection Act 1986 also have the power to deal with malpractice affecting end consumers.

INTERNATIONAL

Acquisitions by foreign companies

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

It is permissible to have 100 per cent foreign direct investment (FDI) in generation (except nuclear power), transmission, distribution of electricity and power trading sectors. Up to 49 per cent foreign investment (26 per cent through FDI and 23 per cent through foreign institutional investment) in power exchanges without prior regulatory approval in the primary and secondary markets.

Recently, the government of India amended the FDI policy to curb the opportunistic takeovers or acquisitions of Indian companies owing to the current covid-19 pandemic. An entity of a country, which shares its land borders with India or where the beneficial owner of investment into India is situated in or is a citizen of any such country, then the investment can only be done under the government-approved route.

Further, while there are no special requirements or limitations on acquisitions of interest in the electricity sector by foreign companies, for competitively bid projects the standard bidding documents issued by the Ministry of Power (the Power Ministry) may specifically provide each distribution utility (that is procuring power) to evaluate the association of a foreign entity (with the bidder) from a national security or public interest perspective. To the extent such association is found to be detrimental to the national interest, the distribution utility can reject the associated bid.

Authorisation to construct and operate interconnectors

32 | What authorisations are required to construct and operate interconnectors?

Transmission licensees are required to abide by the regulations framed by the Central Electricity Regulatory Commission (CERC) and the Central Electricity Authority (CEA) concerning the construction and operation of transmission systems and connectivity to the grid. Under the Electricity Act 2003 (the Electricity Act) and associated Rules, the Chief Electrical Inspector is required to certify that any apparatus that is used for a transmission system meets the safety regulations and guidelines prescribed. Further, according to the CEA's regulations, any electrical installations and apparatus that are of a voltage exceeding 650 volts are required to be inspected and approved by the Chief Electrical Inspector before commissioning. Therefore, the construction and operation of an interconnector, or any other similar apparatus, will be governed by the regulations that have been issued by CERC and the CEA and where required, approval must be obtained from the Chief Electrical Inspector.

CEA initiated the National Level Data Registry System in early 2018 to register all generating units with a capacity above 0.5 megawatt to create a national-level data set. To implement the aggregation of the data, the CEA notified an amendment on 6 February 2019 to the CEA (Technical Standard for Connectivity to the Grid) Regulations. Through a recent notification, the Power Ministry has specified that all generating units of the country that have an installed capacity of 0.5 megawatt or above have to register on the e-portal effective from November 2020. The requirement of obtaining a unique registration number is mandatory, as for existing grid-connected electricity generating units and units that have already obtained grid connectivity, the number is required for injection of power in the grid and for under construction

electricity generating units, the number is required while applying for grid connectivity.

Interconnector access and cross-border electricity supply

33 What rules apply to access to interconnectors and to cross-border electricity supply, especially interconnection issues?

Until December 2016, there was no legal framework for governing and regulating cross-border electricity supply. In the absence of a regulatory framework governing cross-border electricity supply, Indian power trading companies have supplied and procured electricity to and from neighbouring countries including Bhutan, Bangladesh, Myanmar and Nepal by way of bilateral agreements that are generally government-to-government contracts. However, the past few years have seen significant regulatory developments in the area. Although the Electricity Act as it stands today is silent on cross-border electricity supply, the Proposed Electricity Act Amendments allow the central government to prescribe rules and issue guidelines for allowing and facilitating cross border trade of electricity.

On 18 December 2018, the Power Ministry issued Guidelines for Import/Export (Cross Border) of Electricity. According to these guidelines, in the case of cross-border transaction of electricity through arrangements other than government-to-government negotiations, any entity proposing to import or export electricity may do so only after taking the approval of the designated authority (the Power Ministry has notified the appointment of a Member (Power System) in the CEA, who will be the designated authority for functions prescribed under these guidelines), who in turn will have to take concurrence from the government of India. Coal-based generating plants may only be allowed to export electricity in cases where they utilise imported coal or spot e-auction coal or coal obtained from commercial mining. The tariff for the import of electricity by Indian entities from generating stations located outside India may be determined through a process of competitive bidding. On the other hand, the tariff for export of electricity to entities of neighbouring countries by Indian entities (through long-, medium- or short-term agreements) may be as mutually agreed or through competitive bidding, subject to payment of applicable transmission or wheeling charges. Transmission interconnection between India and a neighbouring country is envisaged to be planned jointly by transmission planning agencies of the two countries.

In February 2017, CERC issued draft regulations covering the cross-border trade of electricity for public consultation. The final version of these regulations was notified by CERC in March 2019. The regulations address key aspects of the cross-border trade of electricity such as connectivity, open access and system safety and set out the institutional framework for cross-border trade of electricity, such as the designated authorities and agencies for facilitation the approval process and procedures for import and export of electricity. They also envisage that a settlement nodal agency will be responsible for the settling of charges on grid operation (including deviation charges) concerning a particular neighbouring country and the National Load Despatch Centre will act as the system operator for cross-border trade. The Central Transmission Utility is responsible for grid access related requirements of cross-border trade. On 26 April 2018, the CEA issued Designated Authority (Conduct of Business Rules), 2018 to frame its own rules for the conduct of business for facilitating the process of approval and laying down the procedure for cross-border trade of electricity between India and neighbouring countries and other related matters

In February 2021, the CEA issued 'Procedure for Approval and Facilitating Import/Export (Cross Border) of Electricity'. The procedure aims to facilitate coordination with nodal agencies or authorities of neighbouring countries for transmission system planning, joint system studies, surveys, preparation of feasibility study reports, system development, construction, erection, monitoring, testing, commissioning, operation and maintenance of transmission system for import or export (cross border) of electricity in a transparent manner. It also lays down provisions for grant of approval to eligible entities to participate in cross-border exchange of electricity and the procedure for grant of approval to an Indian generating station supplying electricity exclusively to neighbouring countries for building a dedicated transmission line for connecting to the transmission system of a neighbouring country.

India, along with other members of the South Asian Association for Regional Cooperation (SAARC), has also signed the SAARC Framework Agreement for Energy Cooperation (Electricity) to enable cross-border trade of electricity, which provides a broad framework for data updating and sharing, planning of cross-border interconnections, transmission access, etc. Additionally, media reports suggest that steps for establishing a SAARC power grid have been initiated by SAARC member countries.

TRANSACTIONS BETWEEN AFFILIATES

Restrictions

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

Restrictions on transactions with affiliates are typically provided in licence conditions and regulations formulated by the relevant electricity regulatory commissions. Typically, such transactions should be undertaken on an arms-length basis and at a value that is fair and reasonable. Additionally, the Electricity Act 2003 (the Electricity Act) also allows transmission or distribution licensees to engage, with the prior approval of the relevant electricity regulatory commission, in other businesses for the optimum utilisation of their assets, if a specified proportion of revenues from such other business are used towards reducing wheeling charges, or wheeling and transmission, as the case may be. Further, in such a case, the transmission or distribution business of the licensee must not subsidise the other business undertaking, nor be encumbered by it.

Enforcement and sanctions

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

The appropriate electricity regulatory commission is the body responsible for enforcing such restrictions. These restrictions form part of the terms of the licence, therefore the appropriate electricity regulatory commission can ensure compliance, under the powers provided under the Electricity Act, and impose sanctions, which include the imposition of penalties and revocation of the licence.

UPDATE AND TRENDS

Key developments of the past year

36 Are there any emerging trends or hot topics in electricity regulation in your jurisdiction?

Some of the significant changes in the recent regulations in the electricity regime have been towards the encouragement of energy projects and domestic production in India, strengthening the power distribution sector, extension of safeguard duty and imposition of basics customs duty, a new scheme for a trans-national grid, and protection of the energy sector from the effects of the covid-19 pandemic.

In July 2018, the Directorate General of Trade Remedies decided to impose a safeguard duty on the import of solar cells and modules from Malaysia and China that impacted solar tariffs. A review investigation

was initiated recently that extended the safeguard duty. A 14.90 per cent duty was imposed from 30 July 2020 to 29 January 2021, followed by a 14.50 per cent duty from 30 January 2021 to 29 July 2021. There were, however, legal challenges to the imposition of the safeguard duty with two courts staying its implementation subject to the importer furnishing a bond against the same. The Ministry of Finance subsequently announced that the government will not insist on the safeguard duty payment until the courts have decided on the legality of the safeguard duty imposition. To finally resolve the matter, in 2018, the Supreme Court stayed the ban on the imposition of the safeguard duty on solar panels (in the context of proceedings before the Odisha High Court). The Ministry of New and Renewable Energy (MNRE), in a decision that is likely to affect tariffs, recently announced the imposition of a basic customs duty on imported solar modules and cells at a rate of 40 per cent and 25 per cent respectively, with effect from April 2022.

On 12 November 2020, the Ministry of Finance issued a notice to relax the performance securities for projects from the existing 5 per cent to 10 per cent down to 3 per cent, on account of the economic slowdown owing to the covid-19 pandemic. While this is a move in the positive direction, it is to be seen how states and union territories respond to the recommendations made by the government of India.

The government of India, through a discussion paper, has also brought to light the concept of market-based economic despatch. The proposed policy aims to transition to optimisation of electrical resources on a national level instead of siloed self-scheduling and balancing mechanisms that are being currently followed by state or regional boundaries. The proposal when implemented will lead to a radical transformation and has the potential of eliminating the gaps that result from a sector being bifurcated between the centre and the state.

On 28 June 2019, the Ministry of Power (the Power Ministry) issued an order regarding the opening and maintaining of a payment security mechanism (to secure tariff payments) as required under power purchase agreements between developers and distribution licensees (in the form of bank guarantees or letters of credit). The order directed that load despatch centres despatch power only from those projects for which a letter of credit had been opened under the power purchase agreements. An intimation is required to be provided to the load despatch centres in this regard with details such as the period of supply. Electricity will be despatched only up to the quantity for which payment security has been provided. To give effect to the order, the Power Ministry issued a detailed procedure for scheduling power on 17 July 2019, which was later revised on 25 February 2021. The procedure reiterates that an intimation of the opening of the letter of credit is to be provided to the load despatch centre along with details of the period of supply. The procedure also states that the payment security may be provided by the distribution company for a shorter duration of supply (eg, a week or fortnight) or advance payments may be made through direct deposits (corresponding to at least one day's purchase), irrespective of the period of the payment security opened under the power purchase agreement. The quantum of power scheduled will be limited to the quantum for which money has been deposited.

In the Indian context, while payment security is typically provided for in power purchase agreements, distribution licensees (as the offtaker) did not provide such payment security as a matter of practice. This came as a much-needed reform in the distribution sector, particularly given the poor financial health of the state-owned distribution licensees.

Further, in May 2020, the MNRE issued a proposal to hire consultants for the ambitious One Sun, One World, One Grid trans-national electricity grid mega plan. The plan aims to connect 140 countries through a common grid that will be used to transfer solar power. With India at its lead, the plan divides the countries into two zones: the East (Myanmar, Vietnam, Thailand, Lao, Cambodia); and the West (the Middle East and African region). Accordingly, the plan sets out three stages:

- the Indian grid will be connected to the Middle East, South Asia and South-East Asian grids to share solar and other renewable energy resources;
- the African region will be integrated into the system; and
- global interconnection.

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