ECONOMIC
LAWS
PRACTICE
ADVOCATES & SOLICITORS

LEGAL ISSUES IN INDIA'S ENERGY SECTOR

Table of Contents

Preface

> 'If it weren't for electricity, we'd all be watching television by candlelight '- George Gobel

When you enter a dark room, you dispel the darkness by a flip of a switch. A small reflex action-which comes as second nature to us. One fails to realise how much electricity is taken for granted.

As a nation, we are witness to a conflicting situation in our energy sector today- we might be the third largest producer of electricity in the world and indeed even a net power exporter- yet, this sector bears the weight of several stressed assets. With payable loans to the tune of USD 78 billion, about 66 GW of conventional energy is under various degrees of financial stress today.

A number of reasons including primarily the lack of coal supply, lack of long-term power purchase agreements, inability of promoters to infuse the equity and inordinate delays in regulatory orders and receivables from distribution companies added to the woes of the energy market in the country.

The silver lining though is the tide seems to be slowly changing for the better. The power developers are starting to look beyond the perils with the focus is shifting away from contracts with government-owned utilities to serving direct consumers. The Government's proposal to amend the Electricity Act, 2003, which amongst others include a focus on renewable energy, introduction of smart grids, more empowerment of state governments to divide the distribution and supply business and reduction of cross subsidy charges will provide a great impetus to this sector. The Indian Government's plan to shift towards electric mobility by 2030 also adds to that hope.

The underlying theme though, be it good or bad is the need for constantly evolving regulation. Good regulation is key to a stable energy policy; and good regulation alone properly balances the interests of government, consumers and industry.

It is against this challenging backdrop that we at ELP are delighted to bring you ELP's guide –Indian Legal Issues for the Energy Sector. Drawing upon our experience of over 18 years within the power and infrastructure sectors, the paper has been especially curated to address the pressing legal issues which are being faced by various stakeholders within the sector. Our team of specialists at ELP has endeavoured to simplify and cut through the complex legal language to put forth these issues in a reader friendly format. We do hope this makes for some interesting reading. We enjoy every reader's opinion and welcome your feedback.

Warm regards,

ELP's Energy & Infrastructure team

Power Sector in India: An Overview

Introduction

India is a growing economy and this has been achieved by development in various sectors, such as infrastructure, information technology, healthcare, telecom, and so on. Infrastructure is considered to be the one of the cornerstones of any developing society, as it contributes to trade and commerce, as well as to the living standards of any society.

Infrastructure covers areas such as power, roads, water projects, railways, and so on. India has the second largest population in the world and to support this huge population, India is constantly working its power sector to increase its power generating capacity, so that it can meet its power needs.

Power is one of the essential infrastructure components for all nations. India has one of the most diversified power sectors in the world. Sources of power generation in India include conventional sources, such as coal, natural gas, oil, nuclear power, and hydro to less mainstream sources, such as wind, solar, and agricultural and domestic waste.

With electricity demand in the country increasing rapidly, there is a great need for increasing the generation capacity of power plants in India. India ranked 26th in the World Bank's list of electricity accessibility in 2017. The Government of India (GOI) has made "Power for all" a priority. This has resulted in an acceleration of capacity addition in the country.

The total installed capacity of power stations in India stands at about 344,002.39 Megawatts (MW) as on March 2018. The Ministry of Power has set a target of 1265 billion units (BU) of electricity to be generated in the financial year 2018-19 i.e. growth of around 4.87% over actual conventional generation of 1206.306 BU for the previous year (2017-18).

The conventional generation during 2017-18 was 1206.306 BU as compared to 1160.141 BU generated during 2016-17, representing a growth of about 3.98%.

Under the 12th Five-Year-Plan, the GOI has added 93.5 Gigawatts (GW) of power generation capacity, which has surpassed its target of 88.5 GW during the period. India has the fifth largest power generation capacity in the world. Also, India ranks third globally in terms of electricity production. Renewable energy has emerged as a significant source of power generation in the country.
India's renewable energy sector attracted investments of over $42 billion over the past four years and green energy projects have created over 10 million man-days of employment per annum over the period (Source: Ministry of New and Renewable Energy (MNRE), June 2018).

Globally India stands

- 4th in wind power
- 5th in renewable power and
- 6th in solar power installed capacity.

Wind energy is the largest source of renewable energy in India. The ministry also said the country's renewable power installed capacity has already reached over 70 Gigawatt (GW) and over 40 GW of renewable capacity is under construction or has been tendered. *The country is poised to achieve 225 GW renewable energy capacity addition by March 2022, as against the current target of 175 GW. There are plans to double wind power generation capacity to 60 GW by 2022. Also, India plans to raise the solar power generation capacity to 100 GW by 2022. This is about five times the present solar power generation capacity.*

With many bilateral nuclear power agreements in place, India is poised to become a major hub for manufacturing nuclear reactors and associated components. With the GOI allowing 100 percent Foreign Direct Investment (FDI) in the power sector, foreign participation in this sector is likely to increase. This includes foreign participation in the development and financing of generation and transmission assets, engineering services, and equipment supply. Also, technology collaboration in nuclear and clean coal technologies is also likely to increase.

Relevant Laws Governing the Power Sector in India

There have always been laws in place to govern the power sector in India. The first central act on electricity came in the year 1910, then came the Electricity Act, 2003, which replaced the old law and introduced a legislation that addressed the needs of the changing times. After this there have been attempts to amend the Electricity Act, 2003, vide the the Electricity Amendment Bill, 2014 and the draft Electricity (Amendment) Act, 2018. In this section, we have discussed both the past laws and the present laws.

Past Laws

- **The Indian Electricity Act, 1910:** The Indian Electricity Act, 1910 (1910 Act) was the earliest statute to govern generation, supply and distribution of electricity. The 1910 Act provided for grant of license to any person to supply energy in a given area, as well as supply of energy by non-licensees with the sanction of the Government in certain cases. Provisions were made to facilitate laying down of electric supply lines and carrying out of works by such licensees.

- **The Electricity (Supply) Act, 1948:** The Electricity (Supply) Act, 1948 (1948 Act) provided for the rationalization of the production and supply of electricity and generally for taking measures conducive to electrical development. Under the 1948 Act, the Central Electricity Authority was constituted as a nodal authority for technical planning and development. State Electricity Boards were constituted and made responsible for arranging for supply of electricity within the State. The 1948 Act dealt with the statutory powers and functions of the Central Electricity Authority, State Electricity Boards, and Generating Companies.

- **The Electricity Regulatory Commissions Act, 1998:** The Electricity Regulatory Commissions Act, 1998 provided for the establishment of a Central Electricity Regulatory Commission (CERC) as well as State Electricity Regulatory Commissions (SERCs), with the objective of distancing State Governments from determination of tariffs. It also provided for the rationalization of electricity tariff, transparent policies

regarding subsidies, promotion of efficient and environmentally-benign policies, and matters connected thereof.

Present Laws

The Electricity Act, 2003

The need for the enactment of the Electricity Act, 2003 (Electricity Act) was felt by the Central Government, due to the ongoing economic reforms in the country and power sector reforms in the various states. The poor performance of the State Electricity Boards (SEBs), which were formed under the IEA, 1910, and the ESA, 1948, forced the GOI to bring out a uniform and unified law to take care of the current needs of the power sector, in the areas of the generation, transmission, trading, and distribution of electricity.

The Electricity Act is a single legislation that addresses all the key areas of electricity in the country and provides a road map for the overall and uniform development of the electricity sector in the country. The Electricity Act extends to the whole of India, except Jammu and Kashmir. The purpose of the Electricity Act is:

- To consolidate the laws relating to the generation, transmission, distribution, trading, and use of electricity;
- To take measures conducive to the development of the electricity sector;
- To promote competition in the sector;
- To protect the interests of consumers;
- To rationalize electricity tariffs;
- To establish Regulatory Commissions and an Appellate Tribunal for Electricity;
- To ensure the supply of electricity to all areas;
- To rationalize the tariff and lower the cross-subsidization levels;
- To delicense generation;
- To provide for new concepts such as power trading and open access in transmission and distribution.

The Electricity (Amendment) Bill, 2014

The Electricity (Amendment) Bill, 2014 (2014 Bill) was introduced in the Lok Sabha on December 19, 2014 by the Minister of Power with the objective of amending the Electricity Act. The 2014 Bill proposed a number of amendments to the Electricity Act, in various areas of the power sector. Amongst the various changes that the 2014 Bill proposed, the following were the major thrust areas:

- Introducing carriage and content separation, i.e. segregation of wires and the supply business;
- Further enabling open access, competition and the markets;
- Greater impetus for renewable energy;
- Greater accountability of regulatory institutions.

The 2014 Bill proposed a number of measures which aimed to promote generation of renewable energy in India, for example power being procured from such sources under open access not attracting any cross-subsidy. Changes such as this would have gone a long way in boosting the renewable energy market. The amendment also sought to impose an obligation upon generating companies establishing coal and lignite

based thermal power stations to establish renewable energy generation capacity of not less than 10% of the thermal power installed capacity.

Additionally, the 2014 Bill also proposed an amendment in the role of distribution companies. In the present scenario, the distribution company provides the service of last mile connectivity through the distribution system, as well as supply of power. The 2014 Bill proposed that this role should be broken down, giving the consumer the choice to choose his supplier. More than one supplier would be allowed to operate in a distribution area. The retail tariff set by the State Electricity Regulation Commission would be the maximum tariff, with the various suppliers being allowed to offer a lower than prescribed tariff. Although this move was aimed at increasing competition in the retail supply business, it was widely opposed and is being dubbed as a move to nationalize the losses in the distribution business while enabling private players to make profits in the supply business without incurring capital expenditure.

Last but not the least, the 2014 Bill proposed a very important change in the form of a penalty clause. The penalty for non-compliance with any provision of the Electricity Act was proposed to be raised to Rs.1 crore. Originally, this penalty was Rs. 1 lakh. For renewable energy generators, however, a reduced penalty of Rs.10 lakhs was proposed.
The Standing Committee on Energy has made certain recommendations with respect to the amendments proposed by the 2014 Bill. Some of the key issues raised by the Standing Committee were that segregation of consumers between multiple supply licensees should be on the basis of status of consumers, cross subsidies and technical and commercial losses; and that the percentage of renewable generation obligation upon thermal generating companies should be kept at 5% of the installed thermal generating capacity.

The Draft Electricity (Amendment) Act, 2018

Pursuant to the recommendations of the Standing Committee on Energy, the Ministry of Power introduced a draft Electricity (Amendment) Act, 2018 (2018 Bill) in September, 2018. We have dealt with certain significant aspects of the 2018 Bill below:

- Separation of Distribution and Supply: The 2014 Bill had mooted the idea of segregation of the distribution and supply business in order to promote competition and efficiency in the sector. In line with the 2014 Bill, the 2018 Bill has proposed significant changes to divide the distribution and supply business or the carriage and content as it is widely called. It is proposed that the State Governments would be empowered to determine a scheme for segregation of the carriage and content. The key idea behind the proposal is to ensure that the customer has the option of purchasing electricity from more than one supply licensee. Licensees would be required to supply 24x7 power to the consumers and tie-up their obligations in a manner so as to meet the average demand.

  The segregation of the carriage and content may prove to be extremely beneficial for the sector as it would promote competition amongst the stakeholders. However, it is important that the principles on the basis of which the State Governments are to determine the scheme for the segregation are laid down.

- Amendments regarding Renewable Energy**:** The current Government has been extremely focussed on promotion of renewable energy as a means of generation. The 2018 Bill proposed that a national renewable energy policy would be drafted. Furthermore, certain entities which are generating and

supplying electricity from renewable energy sources would be exempt from obtaining a license under the Electricity Act.

The 2018 Bill has introduced the concept of both a renewable purchase obligation (RPO) and a renewable generation obligation (RGO). The RPO is similar to the obligation as is presently prescribed by the States under their respective regulations. A key insertion is the provision of a specific penalty in respect of a failure to comply with the RPOs. The penalty has been tied to the per unit shortfall in meeting the RPO. As regards the RGO, coal or lignite based thermal generating stations are required to generate or procure and sell a specified amount of power which is generated from renewable energy. The quantum of the RGO would be notified by the Government.

Whilst the amendments with regard to renewable energy are a welcome move, it would be important for the Government to ensure that adequate checks and balances are in place so as to ensure that both the RPO and the RGO are enforced. As has been seen in the present scenario, despite having framed regulations in respect of RPOs, states have found it extremely difficult to enforce such obligations. Accordingly, adequate deterrents or incentives would be required to be in place in order to provide an impetus to generation of power from renewable energy sources.

- Reduction of Cross Subsidy Surcharge: One of the principal reasons for establishment of a captive generating plant would be to avail the exemption from payment of cross-subsidy charges. It is important to note that in order to qualify as a captive generating plant, users would have to meet the conditions as laid down in the Electricity Act and the rules framed thereunder. However, the 2018 Bill proposed to do away with the cross subsidisation of tariff gradually. The proposal is to progressively reduce the tariff and ensure that it is eliminated within 3 years. The Appropriate Commission would be obligated to safeguard that the cross subsidisation of tariff to the consumers within the distribution area does not exceed 20%. The trajectory for reduction of the cross subsidisation of tariff and the category of consumers would be as determined by the Appropriate Commission. The 2018 Bill proposes that there should be a minimum reduction of 6% in one year in cross subsidy.

  We understand that the intention behind reduction and elimination of cross subsidy surcharges is to promote competition. However, given that this would be a major incentive for captive generating plants, the manner in which the elimination of the surcharge is implemented would be crucial. The interests of all stakeholders would have to be borne in mind in this regard.

- **Power Purchase Agreements:** The 2018 Bill mandates that all sale and purchase of power should be through power purchase agreements, whether long-term, medium-term or short-term. The Central Electricity Authority would prescribe the format for such power purchase agreements which is to be approved by the Central Government. A failure to comply with the obligations under the power purchase agreement would attract a penalty as high as INR 1 crore. Further, the 2018 Bill also moots that licenses may be suspended or cancelled if they fail to meet their obligations under power purchase agreements. Consumers having a connected load of 1 MW or more are entitled to sell or purchase electricity from any such person on such terms as they deem fit. Such consumers are also entitled to procure electricity from open access under contractual agreements.

The requirement of seeking consent form the electricity regulatory commission for cancellation of power purchase agreements may lead to further delays and disputes, in a sector that is already languishing.

- **Smart Grids:** The 2018 Bill specifies that Central Commission and State Commissions are to take steps for promotion and development of smart grids. A smart grid would be an electricity network that uses information and communication technology to gather information and act intelligently in an automated manner to improve the efficiency, reliability, economics, and sustainability of generation, transmission and distribution of electricity as may be specified by the Central Electricity Authority. The idea behind a smart grid is to ensure efficiency in terms of generation, transmission and distribution of electricity.

  The development of a smart grid would help cut down losses in the sector to a large extent. The Government would have to ensure that adequate security measures are in place to avoid any breaches with regard to the data collected by smart grids.

  All things considered, the intent of the Amendment seems to be in the positive direction. The Governments actions will be a welcome reprieve for the power sector which has been beset with challenges.

Tariff Policy

Please refer to the section on Tariff below.

National Electricity Policy, 2005

Moving to a larger perspective, in order to understand the underlying objective of implementation of various measures, carrying out of actions, and the primary functioning of various authorities at the Central and State level, it may be advisable to look at the National Electricity Policy, 2005 (NEP). NEP acts akin to a mission statement to be paid heed to by various authorities and stakeholders in the electricity sector value chain.

Section 3(1) of the Electricity Act authorizes the Central Government to formulate, *inter alia*, the National Electricity Policy in consultation with the CEA and the State Governments.

Pursuant thereto, the Central Government issued the NEP aimed at achieving the following objectives:

- Access to electricity – to be available to all households in the next 5 years;
- Availability of power - demand to be fully met by 2012. To overcome energy and peaking shortages, and ensuring that adequate spinning reserve are available;
- Supply of reliable power of specified standards in an efficient manner and at reasonable rates;
- Per capita availability of electricity to be increased to over 1000 units by 2012;
- Minimum lifeline consumption of 1 unit/household/ day as a merit good by the year 2012;
- Financial turnaround and commercial viability of the electricity sector; and
- Protection of consumers' interests.

On August 10, 2017, the Standing Committee on Energy issued a report on the review of NEP. Certain key observations of the Standing Committee on Energy were as follows:

- Data indicated that, currently, 99.4% villages are electrified, but more than 4 crore households in the country still do not have an electricity connection;
- The report highlighted that the aggregate technical and commercial losses in the country were still high and this has led to the distressed condition of the distribution companies;
- In recent years, the generation capacity in the country has increased. However, the share of hydro power in the total energy mix has decreased from 25% in 2007-08 to 14%. The hydro capacity that was harnessed as of March 2017 was 30% of the hydro power potential in the country. It was recommended that states with hydro potential must focus on its maximum development at the earliest. Further, since renewable energy sources are intermittent in nature, hydro power can be used as a balance to support the grid and even out the fluctuations in supply;
- The total outstanding debt of the distribution companies was around Rs. 4 lakh crores in 2014-15.

The Ujjwal Discom Assurance Yojana (UDAY), launched in 2015, sought to achieve the financial turnaround of these distribution companies and recommended that necessary calibrations be made in the scheme as and when such need arose to address any new issues that may crop up during its implementation.

The National Electricity Plan, 2015

This plan was released under Section 3(4) of the Electricity Act, 2003. It requires the Central Electricity Authority (CEA) to prepare a National Electricity Plan and notify it once every five years. Following this, the draft National Electricity Plan was released for public comments and suggestions in December 2015. It not only prepares a short term framework of five years, but also gives a fifteen-year-long perspective.

Key Reforms brought in by the Electricity Act to boost generation

Delicensing of Generation

One of the biggest reforms brought in by the Electricity Act was to permit generation of power without licensing. Till the passing of the Electricity Act, it was mandatory to obtain techno-economic clearance by the Central Electricity Authority to set up a generating plant. This provision was to ensure correctness of technology, fairness of costs, and optimization of capacity additions. From the 1990s onwards, the Central Electricity Authority (CEA) had begun to relax this policy, with smaller projects not requiring the aforesaid clearance.

Sections 7 to 11 of the Electricity Act cover generation of power. Under the Electricity Act, generation (except in large-hydro, and nuclear energy projects) no longer requires a license under Section 9. Moreover, captive power plants were removed from the ambit of licensing and other permissions under the Electricity Act. Private entities are permitted to set up power stations using any type of fuel or power source such as gas, coal, wind, solar and biomass, except in the case of nuclear power projects, which may be undertaken only by a Government

of India entity or a government company, that is where the government holds a minimum of 51% of the shareholding.

Private players are also permitted to be engaged in transmission as well as distribution. However, they would need to procure licenses in order to undertake this. Further, companies are required to obtain licences for the trading of power.

The private sector presently contributes over 40% to the installed generation capacity in the country, outstripping even the Central and State power generators that held three times the generation capacity a decade back. De-licensing of generation and mandatory competitive bidding for power procurement attracted wide private participation, inflow of capital, and set new benchmarks for efficient project development. As such, the Electricity Act made big strides in the field of electricity generation across the nation with the relaxation of licensing policies regarding the same.

Unbundling of Roles of State Electricity Boards

Another key objective for enactment of the Electricity Act was to enable unbundling State Electricity Boards. Earlier, SEBs would perform all three functions in the power sector, generation, transmission and distribution. In the early 1990s, the Orissa Government decided to change the structure of its power sector. This reform initiative called the 'Orissa model' involved unbundling and privatization of their SEB. A new institution called known as the regulatory commission was formulated to determine tariffs and regulate the sector. This experiment was started in Orissa with the passage of the Orissa Electricity Reforms Act in 1996.

Unbundling of roles refers to the process of splitting the SEBs into separate organs or entities, to carry out the functions of transmission, generation, and distribution. This became necessary as a result of the high amounts of losses being incurred by most SEBs, owing to basic inefficiencies in their functioning. The restructuring of SEBs boards was aimed at promoting greater efficiency in the aforementioned functions of transmission, generation and distribution, along with promoting transparency and accountability. It was believed that competition was the best way to improve efficiency, and with the liberalisation of generation, there was a hope that unbundled generation companies would be more efficient.

The Electricity Act does not prescribe or mandate any particular number of companies for the functions of generation, transmission and distribution of power. Different States have, as such, opted for various different models in the process of unbundling. A majority of States have unbundled their electricity boards into three separate companies for the functions of power generation, transmission and distribution, while some states such as Tamil Nadu has just two separate companies, one handling generation and distribution (TANGEDCO) and one for transmission (TANTRANSCO).

However, the unbundling process has not brought about the expected changes in efficiency and restriction of losses. A majority of States produce commercial loss, with the sale of electricity to consumers causing the most losses to distribution companies (Discoms). A large ratio of the losses is also found in transmission and distribution, which are a major cause for the total commercial losses, caused mainly due to technological factors as well as pilferage.

Figure 1: Multi circuit towers conserving Right of Way: Eco –friendly outlook[1]

Transmission and distribution losses in India are far higher than the world average in this regard. Beyond the technical factors stemming from inadequate investment in transmission and distribution facilities, electricity theft and non-payment of dues have raised the losses even further. The problem persists particularly rural areas, for the following reasons:

- Meters are insufficiently set and maintained;
- State power utilities lack accurate and updated data on the number and capacity of electric irrigation pumps used as criteria to set flat rate tariffs;
- The formal procedures to connect to the electricity network are lengthy and time consuming;
- Farmers bear unstable electricity costs.

Even though the unbundling reforms may not have achieved all their aims as envisioned when they were first implemented by the relevant authorities, they definitely brought about some positive changes in the Indian power sector.

Open Access

Another important feature introduced by the Electricity Act was the permitting of open access, defined as the i.e. "Non-discriminatory provision for the use of transmission lines or distribution system or associated facilities with such lines or system by any licensee or consumer or a person engaged in generation in accordance with the regulations specified by the Appropriate Commission".

Literally speaking "open access" signifies making available transmission lines or the distribution system, as the case may be, for use by various players in the power sector.

Transmission licensees are required to provide 'non-discriminatory open access' for transmission of power, meaning that depending on capacity, transmission lines should be made available to whoever demands it for transferring power.

Depending on the nature of the transaction, i.e., whether power is to be supplied under a long-term power purchase agreement, or sold on the exchange, etc. open access can be availed on long-term, medium-term or short-term basis.

[1] Image sourced from Powergrid India

Recently, the CERC has issued detailed guidelines[2] for grant of long-term and medium-term open access to renewable energy plants, which were so far connected mainly to the State transmission networks. Access has been enabled for plants that have acquired more than 50% of their land requirement and have achieved financial closure. Simultaneously, the said guidelines seek to weed out squatting and under-utilisation of capacity. The move is expected to provide a much required fillip to serious merchant renewable energy plants.

Whereas, the concept of open access under the Electricity Act, particularly with respect to the distribution system, entails much more and essentially pertains to affording a choice to consumers to choose their power suppliers. Under the Electricity Act, SERCs may enable open access in the distribution system, which would allow large consumers, particularly those having a connected load of 1 MW and above, to buy power from any source other than the distribution utility licensed to supply in the concerned area.

The tariff payable to such power supplier is unregulated by the SERC unlike the tariff payable to a distribution licensee, and depends entirely upon the contract between the power supplier and the consumer. A consumer who has availed open access is required to pay wheeling charges to the distribution utility, towards carriage of electricity through the distribution system. In addition, such consumers are also required to pay cross subsidy surcharge and additional surcharge for the stranded capacity.

Cross subsidy surcharge relates to the tariff structure of a distribution utility. Simply put, a distribution licensee has a universal supply obligation, requiring it to supply to all categories of consumers, industrial, commercial, residential with different load etc.
The Electricity Act permits classification of tariffs on the basis of various factors relating to the profile and category of consumers and accordingly, large consumers pay higher tariffs to subsidise low-end categories of consumers so that the distribution utility is able to recover its cost of supply. Ordinarily, consumers seeking open access fall under categories of consumers that are 'subsidising'. Cross subsidy surcharge is a compensatory charge payable by consumers who have availed open access to compensate the distribution licensee for the element of cross subsidy that was built into the tariff of such consumer.

It is pertinent that one of the prime reasons for switching to open access is stability of supply rather than economic benefits. In this context, the Appellate Tribunal for Electricity (APTEL) has held that cross subsidy surcharge is not payable if a consumer avails open access on account of failure on the part of the distribution licensee to procure adequate power[3].

Additional surcharge is intended to compensate the distribution licensee for loss due to stranded capacity arising out of embedded consumers availing open access. The APTEL recently dealt with challenges raised by open access consumers to levy of additional surcharge on the ground that such surcharge hinders competition.

[2] Detailed procedure for "Grant of connectivity to projects based on renewable sources to inter-state transmission system" issued vide an order dated May 15, 2018 in respect of the matter regarding the approval of the detailed procedure made under Regulation 27 of the Central Electricity Regulatory Commission (Grant of Connectivity, Long-term Access and Medium-term Open Access in inter-State Transmission and related matters) Regulations, 2009.

[3] Steel Furnace Association of India v. Punjab State Power Corporation Limited & Anr., Appeal No. 38 of 2013 dated August 1, 2014.

The APTEL upheld such levy opining that if long term power purchase commitments of the distribution licensee get stranded when embedded consumers avail power from other sources, then it would be unfair to saddle other consumers with such cost[4].

The Ministry of Power has floated a consultation paper identifying some of the key issues and challenges pertaining to open access in August 2017. The following issues have been highlighted and are being deliberated upon[5]:

- ***Frequent shifting of Open Access Consumers*:**

  As per the prevailing framework, Discoms are required to provide their day ahead schedule to the State Load Despatch Centres[6]. It has been observed that open access consumers frequently switch between other sources of supply and Discoms depending upon their energy requirement and prices at which supply is made available in the market.

  This behaviour creates greater volatility in the load to be served by the Discom, which makes power procurement planning difficult for the Discom and can also lead to stranded generation capacity.As a result, Discoms are required to undertake considerable rescheduling and deviation on account of open access consumers, particularly short term open access consumers. Deviations from such schedules beyond permissible limits renders Discoms subject to penalties in the form of Deviation Settlement Mechanism charges. Further, regulatory commissions also disallow a large share of short term power purchase costs. Some State Commissions have mandated that open access consumers submit their day head schedule for 24 hours, in order to address this situation.

- ***Rationalization of charges:***

  The Electricity Act envisages levy of different kinds of charges on consumers availing open access: cross subsidy surcharge to compensate for loss of cross subsidy on account of consumers availing power through open access; additional surcharge to compensate for stranded power purchase agreements and stranded assets of the Discoms; and standby charges payable to Discoms towards cost incurred by Discoms for maintaining standby power for the open access consumers. The Ministry of Power seeks to rationalize these charges so as to reflect the actual costs incurred by the Discoms for enabling open access.

Figure 2: Discom in Rajasthan: Jaipur Vidyut Vitran Nigam Ltd

[4] Open Access Users Association & Ors. v. Haryana Electricity Regulatory Commission & Ors., Appeal Nos. 269, 204 of 2014, 216 of 2015 dated April 28, 2016.

[5]https://powermin.nic.in/sites/default/files/webform/notices/Seeking_Comments_on_Consultation_paper_on_issues_pertaining_to_Open_Access.pdf

[6] State Load Despatch Centres (SLDCs) are primarily responsible for scheduling and grid stability within the State.

Power exchanges

In addition to introduction of trading, the Electricity Act also enables a framework for power exchanges. Presently, there are two operational power exchanges in India, the Indian Energy Exchange and the Power Exchange India Limited. These exchanges are regulated by the CERC. The exchanges enable spot auctions, long term trading as well as trading in derivatives.

Relevant Bodies Governing the Generation, Transmission, and Distribution of Power

CENTRAL ELECTRICITY AUTHORITY OF INDIA (CEA)

- This is a statutory organization constituted under section 3(1) of Electricity Supply Act 1948, which has been superseded by section 70(1) of the Electricity Act. The CEA advises the government on policy matters and formulates plans for the development of electricity systems.

APPELLATE TRIBUNAL FOR ELECTRICITY (APTEL)

- By virtue of Section 110 of the Electricity Act, an APTEL having jurisdiction throughout India was set up to hear appeals or original petitions against the orders of the Adjudicating officer or the Central Regulatory Commission or State Regulatory Commission or Joint Commission constituted under Section 76(i) or 82 or 83 of the Electricity Act.

- The APTEL is conferred with original jurisdiction to hear petitions under Section 121 of the Electricity Act and issue directions to any Appropriate Commission for the performance of its statutory functions. However, the APTEL does not have jurisdiction to entertain challenges to the validity of regulations framed by the CERC or the SERCs[7].

CENTRAL ELECTRICITY REGULATORY COMMISSION (CERC)

- The CERC intends to promote competition, efficiency and economy in bulk power markets, improve the quality of supply, promote investments, and advise the government on the removal of institutional barriers to bridge the demand supply gap and thus foster the interests of consumers.

STATE ELECTRICITY REGULATORY COMMISSION (SERC)

- The concept of SERC as a statutory body responsible for determination of tariff and grant of licence at intra-State level was envisaged in the erstwhile Electricity Regulatory Commissions Act, 1998 and has been continued in the Electricity Act (which repealed *inter alia* the Electricity Regulatory Commissions Act, 1998). Main responsibilities of the SERC are to determine the tariff for generation, supply, transmission, and wheeling of electricity; wholesale, bulk or retail sale within the State; to issue licences for intra-State

[7] PTC India v Central Electricity Regulatory Commission, (2010) 4 SCC 603

transmission, distribution and trading; to promote co-generation and generation of electricity from renewal sources of energy, and so on.

- The Electricity Regulatory Commissions arguably play the most important role in the power sector. They formulate regulations on all aspects within their regulatory jurisdiction, determine tariff and adjudicate upon disputes. The regulatory jurisdiction of the CERC primarily extends to inter-state generation and transmission, whereas, distribution, generation and sale within the State and intra-State transmission fall within the domain of the SERCs.

CENTRAL TRANSMISSION UTILITY (CTU)

- CTU as a statutory body was conceived in section 27A of the erstwhile Indian Electricity Act, 1910 and has been retained in the Electricity Act (which repealed *inter alia* the Indian Electricity Act, 1910). The functions of the CTU are to undertake the transmission of energy through an inter-State transmission system and discharge all functions of planning and coordination relating to inter-State transmission system with State Transmission Utilities, Central Government, State Governments, generating companies, and so on. The Power Grid Corporation of India Limited will be the Central Transmission Utility.

STATE TRANSMISSION UTILITY (STU)

- The STU as a statutory body was conceived in section 27B of the erstwhile Indian Electricity Act, 1910 and has been retained in the Electricity Act. The functions of the State Transmission Utility are to undertake transmission of energy through intra-state transmission system and discharge all functions of planning and coordination relating to intra-State transmission system with Central Transmission Utility, State Governments, generating companies, and so on.

NATIONAL LOAD DESPATCH CENTRE (NLDC)

- The Electricity Act provided for constitution of the NLDC for optimum scheduling and despatch of electricity among the Regional Load Despatch Centres. The constitution and functions of NLDC are yet to be prescribed by the Central Government.

REGIONAL LOAD DESPATCH CENTRE (RLDC)

- Section 25 of the Electricity Act requires the Central Government to make regional demarcation of the country for the efficient, economical and integrated transmission and supply of electricity and in particular to facilitate voluntarily inter-connection and co-ordination of facilities for the inter-State, Regional and inter-regional generation and transmission of electricity.

- To ensure integrated and power system in each such region, the Regional Load Despatch Centre ((RLDC) has been envisaged as an apex body.

- The RLDC is responsible *inter alia* for the despatch of electricity within the regions, monitoring grid operations, and so on. The directions given by the RLDC for ensuring grid stability and so on, are required to be compiled with by the licensees, generating company, generating stations, sub-stations and any other person connected with the operation of the power system.

STATE LOAD DESPATCH CENTRE (SLDC)

- Corresponding to the RLDC which operates at the regional level, the State Load Despatch Centres (SLDCs) have been envisaged at the State level with the responsibility of ensuring integrated operations of the power system in each State.
- It also serves as a grievance redressal forum and ombudsman.
- The Electricity Act requires every distribution licensee to establish a forum for the Redressal of Grievances of consumers. Ombudsman is a statutory authority to be appointed or designated by the State Commission to hear and settle the non-redressal of grievances at the level of the Grievance Redressal Forum.

BUREAU OF ENERGY EFFICIENCY (BEE)

- The BEE has been set up by the Government of India on March 1, 2002 as a Statutory Body as per Section 3 of the Energy Conservation Act, 2001.
- The BEE is responsible for spearheading the improvement of energy efficiency of the economy through regulatory and promotional instruments.
- The mission of the BEE is to develop policies and strategies with a thrust on self-regulation and market principles within the overall frame work of the Energy Conservation Act 2001, with the primary objective of promoting energy saving measures and in turn reducing energy intensity (that is, energy consumed per unit product/services, practice and procedure) of the Indian economy.

DAMODAR VALLEY CORPORATION (DVC)

- The DVC, was established on July 7, 1948 by the Damodar Valley Corporation Act, 1948. It came into existence as the first multipurpose Integrated River valley project.
- It is committed to the economic and industrial growth of the Damodar Valley region extending over an area of 24,235 sq. km in the states of West Bengal and Jharkhand.
- The DVC is a government organization which operates several power stations in the Damodar River area of the West Bengal and Jharkhand states of India. The corporation operates both thermal power stations and hydel power stations under the Ministry of Power, GOI. The DVC is headquartered in the city of Kolkata, West Bengal, India.

BHAKRA BEAS MANAGEMENT BOARD (BBMD)

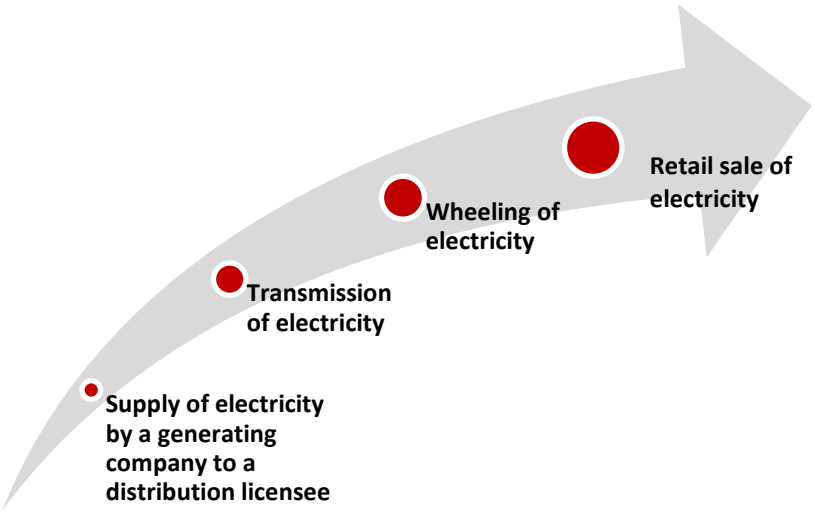
- The BBMB was constituted under section 79 of the Punjab Re-organization Act, 1966 for the administration, maintenance and operation of the Bhakra Nangal Project w.e.f. October 1, 1967.

- The Beas project works, on completion, were transferred by the GOI from the Beas Construction Board (BCB) to the Bhakra Management Board (BMB) as per Section 80 of the Punjab Re-organization Act, 1966 and the Bhakra Management Board was renamed as BBMB with effect from May 15, 1976. BBMB manages the facilities created for harnessing the waters impounded at Bhakra and Pong in addition to those diverted at Pandoh through the BSL Water Conductor System. It was also assigned the responsibility of delivering water and power to the beneficiary States in accordance with their due/entitled shares.

- BBMB is responsible for the administration, maintenance and operation works at the Bhakra Nangal Project, the Beas Project Unit I & Unit II including power houses and a network of transmission lines and grid sun-stations. The total installed capacity of BBMB power houses is 2793.65 MW.

Tariffs

The foundation of the regulatory framework around tariffs is found in the Electricity Act which states that the Appropriate Commission is required to specify the terms and conditions for the determination of tariffs based on certain principles set out therein.[8]
The Appropriate Commission is empowered to determine tariffs for:



[8] These principles are:
(a) the principles and methodologies specified by CERC for determination of the tariff applicable to generating companies and transmission licensees;
(b) the generation, transmission, distribution and supply of electricity are conducted on commercial principles;
(c) the factors which would encourage competition, efficiency, economical use of the resources, good performance and optimum investments;
(d) safeguarding of consumers' interest and at the same time, recovery of the cost of electricity in a reasonable manner;
(e) the principles rewarding efficiency in performance;
(f) multi year tariff principles;
(g) that the tariff progressively reflects the cost of supply of electricity and also, reduces cross-subsidies in the manner specified by the Appropriate Commission;
(h) the promotion of co-generation and generation of electricity from renewable sources of energy;
(i) the National Electricity Policy and tariff policy

Tariff determination

Tariff determination	
Under **Section 62** of the Electricity Act, as determined by the Appropriate Commission	Under **Section 63** of the Electricity Act, by way of a transparent competitive bidding process

- For the purpose of tariff determination under Section 62 of the Electricity Act, the Appropriate Commission takes into account several factors and components and determines tariffs for specified control periods.
- The tariff determination process to be undertaken varies subject to whether the tariff fixation is for thermal power, or renewable energy as given in the tables below:

Tariff determination for procurement of thermal power	
Fixed Costs	Variable Costs
▪ Interest on loans ▪ Returns on equity ▪ Depreciation ▪ Operation and maintenance expenses ▪ Insurance and ▪ Taxes and interest on working capital	▪ Fuel cost incurred in the procurement of coal and oil to be used in the process of generation of thermal power

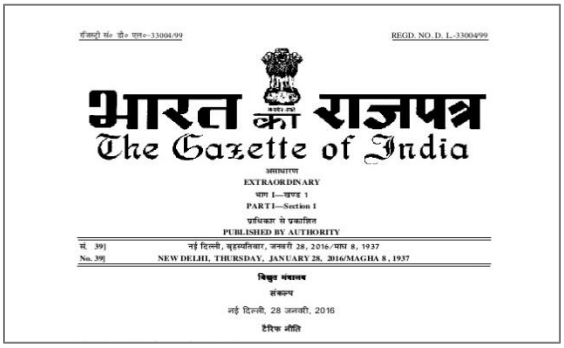
Tariff determination for power generated by renewable energy technologies
Single part fixed component
▪ Interest on loans ▪ Returns on equity ▪ Depreciation ▪ Interest on working capital ▪ Operating and maintenance expenses

However, in cases of renewable energy technologies, single part tariff is determined. Ordinarily, generic tariff orders are passed determining the tariff for each technology. Each tariff order is applicable for a specified control period and the tariff determined thereunder is applicable to power purchase agreements executed within the said control period, subject to commissioning of such projects within such specified control period. Where such renewable energy technologies have a fuel costs component, like biomass power projects, and non-

fossil fuel based cogeneration projects, tariff is determined through single part tariff with two components, consisting of a fixed cost component, and a fuel cost component.

Tariff Policy

Figure 3: Snapshot of Tariff Policy resolution by the Government of India: 28/01/2016


रजिस्ट्री सं० डी० एल०-33004/99 REGD. NO. D. L.-33004/99

भारत का राजपत्र
The Gazette of India

असाधारण
EXTRAORDINARY
भाग I—खण्ड 1
PART I—Section 1
प्राधिकार से प्रकाशित
PUBLISHED BY AUTHORITY

सं. 39] नई दिल्ली, बृहस्पतिवार, जनवरी 28, 2016/माघ 8, 1937
No. 39] NEW DELHI, THURSDAY, JANUARY 28, 2016/MAGHA 8, 1937

विद्युत मंत्रालय
अधिसूचना
नई दिल्ली, 28 जनवरी, 2016
दैनिक अधिसूचना

On January 20, 2016, the Ministry of Power issued the revised Tariff Policy (**Tariff Policy**) to *inter alia*, provide affordable power to consumers, ensure fair returns to companies engaged in generation, transmission and distribution of power, and facilitate development of markets and market instruments in the power sector.

The Tariff Policy was formulated keeping in view the objectives of the UDAY scheme launched by the Government for the financial turnaround and revival of the Discoms. Some of the notable highlights of the Tariff Policy were:

- **Access to electricity**
  - 24X7 supply to be ensured to all consumers and State Governments and regulators to devise a power supply trajectory to achieve this vision;
  - Power to be provided to remote unconnected villages through micro grids with provision for purchase of power into the grid as and when the grid reaches there; and
  - Affordable power for people near coal mines by enabling procurement of power from coal washery reject based plants.
- **Efficiency**
  - Reduction of power cost to consumers through expansion of existing power plants;
  - Benefit from sale of un-requisitioned power to be shared allowing for reduction in overall power cost;
  - Transmission projects to be developed through competitive bidding process to ensure faster completion at lower cost;
  - Faster installation of Smart meters to enable "Time of Day" metering, reduce theft and allow net-metering; and
  - Lower power cost by creating transmission capacity for accessing power from across India.
- **Environment**
  - Renewable Power Obligation: In order to promote renewable energy and energy security, 8% of electricity consumption excluding hydro power, shall be from solar energy by March 2022;
  - Renewable Generation Obligation: New coal/lignite based thermal plants after specified date to also establish/procure/purchase renewable capacity;
  - Renewable power to be made more affordable through bundling of renewable power with power from plants whose power purchase agreements (PPAs) have expired or completed their useful life;
  - No inter-State transmission charges and losses to be levied for solar and wind power;

- Swachh Bharat Mission to get a big boost with procurement of 100% power produced from Waste-to-Energy plants;
- To release clean drinking water for cities and reduce pollution of rivers like Ganga, thermal plants within 50 km of sewage treatment facilities to use treated sewage water;
- Promotion of Hydro projects through long term PPAs and exemption from competitive bidding till August 2022;
- Ancillary services to be undertaken to support grid operation for expansion of renewable energy.

- **Ease of doing business**
  - Generation of employment in coal rich Eastern states like Odisha, West Bengal, Jharkhand, Chhattisgarh etc. by encouraging investments. States were allowed to setup plants, with up to 35% of power procured by DISCOMs on regulated tariff;
  - Removal of market uncertainty by allowing pass through for impact of any change in domestic duties, levies, cess and taxes in competitive bid projects;
  - Provision of clarity on tariff setting authority for multi-State sales. Central Regulator to determine tariff for composite schemes where more than 10% power sold outside State.

Is the Tariff Policy binding?

Policies in general, are typically not binding in the same sense as statutes. It is to be noted that the Appellate Tribunal in:

- RVK Energy Limited v. Andhra Pradesh Commission[9] held that Tariff Policy formula as provided therein is mandatory and SERCs cannot deviate from the same.
- Maruti Suzuki India Limited v. Haryana Commission held that SERCs are to be guided by the provisions of the Tariff Policy. However, the Tariff Policy formula cannot interfere with the statutory functions of the SERCs.

Proposed Amendments to the Tariff Policy

The Ministry of Power vide its letter dated September 10, 2018, proposed amendments in the Tariff Policy. These proposals are pursuant to the draft amendments that were earlier released by the Ministry of Power for public comments on May 30, 2018. However, unlike the proposal on May 30, 2018, the amendments proposed vide the September 10, 2018 letter are limited to simplification of tariff categories and rationalisation of retail tariff. The Ministry of Power has proposed the amendments with a view to harmonise the tariff structure across all states which have become quite complex over the years.

The key amendments proposed to the Tariff Policy are as follows:

- The concept of having different tariff for usage by different categories of customers is proposed to be done away with in order to ensure a simplified tariff structure across all distribution companies. The

[9] Appeal No.169 of 2006.

tariff will be calculated on the load used and energy consumed as opposed to a differential tariff for usage in the domestic, commercial or industrial sectors. The Ministry of Power proposed to adopt the principle of paying a price for use of electricity as a commodity.

- The new tariff structure is proposed to be based on different slabs in the sanctioned load and units consumed. Maximum 5 (five) load categories would be created. Further, for each load bracket, the consumption slab would be considered with progressive rates. The State Commissions would be entitled to decide the slab range for load and energy consumption depending upon the consumption pattern of their respective states.

- It is further mooted that considering the vast socio-economic divide in India, the issue of subsidy and cross subsidy may be handled through different slabs in load and units consumed. The consumers having sanctioned load and unit consumption in lower brackets would be subsidised by consumers in the higher load bracket and consumption bracket.

- A systematic method will be adopted to revise the load automatically if average load of the preceding year exceeds the load sanctioned. This is with a view to prevent consumers from declaring lesser load. As a deterrent, a penalty will be imposed for exceeding the sanctioned load in a particular month.

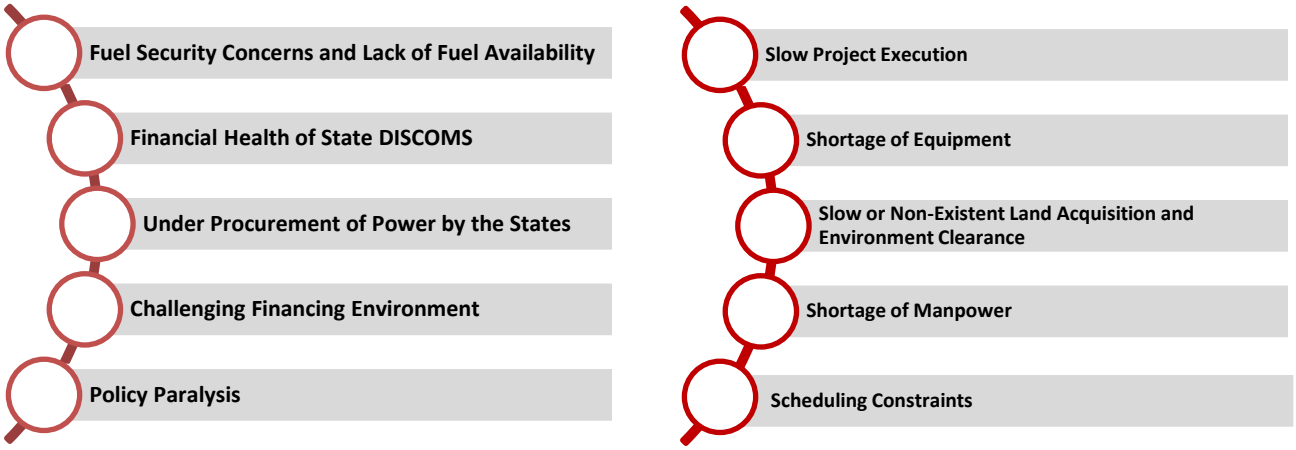
- It has also been suggested that appropriate rebates may be provided to bulk customers so as to incentivise them to take supply at a higher voltage category.

- The State Commissions may also be empowered to create a separate category for electric vehicle charging stations, if required.

- The states would also have the option of adopting kW or kWh or kVA and kVAh based tariff. However, the Ministry of Power letter states that it may be preferable to have load and units consumption in kVA and kVAh respectively for levels above 10kW to take care of the impact of the power factor.

The Government's intent to simplify and rationalise the tariff structure is a welcome move. However, given that the State Commissions still have discretionary powers under the proposed amendments, in terms of determination of tariffs, it would be important to ensure that the Government's intent of harmonising the tariff across all states is achieved. Further, given that the draft amendments propose to do away with different consumer categories (domestic, commercial, agricultural, industrial and institutional) in terms of tariff determination, it would be crucial to determine the manner in which different consumers would be provided incentives and subsidies. Moreover, with the amendments also being separately proposed to the Electricity Act, it would be necessary to ensure that the amendments are synchronised in order to obviate any ambiguity.

Key Challenges faced by the Power Sector in India



There are several challenges faced by the power sector in India. Some of them are:

1) Fuel Security Concerns and Lack of Fuel Availability

Due to a lack of fuel availability, there is slow thermal capacity addition. A significant gas-based capacity of more than 20,000 MW is idle due to non-availability of gas. There is an increased dependence on imported coal, leading to high power generation costs. While the import of imported coal has secured supply, it has thrown up other challenges. For example, Indonesia, which is the main international coal supply market to India, poses significant political and legal risks in the form of a changing regulatory framework for foreign companies. Similarly, coal evacuation from coal mines in South Africa is constrained by the limited railway capacity. Also, the capacity at ports in South Africa is controlled by a group of existing users, making it difficult for a new entrant to ensure reliable evacuation.

2) Financial Health of State DISCOMS

State DISCOMs in India are currently plagued by huge outstanding debts. This is because of years of populist tariff schemes, mounting losses, and operational inefficiencies.

3) Under Procurement of Power by the States

There is suppressed demand from State DISCOMS, due to increasing power generation costs. The latter are caused by limited fuel availability, poor financial health of state DISCOMS, and high aggregate technical and commercial losses.

4) Challenging Financing Environment

Over the last four to five years, the leading rates have increased significantly from the time of project appraisal. This results in project cost overrun, and therefore, higher end tariffs. Also, rapid build-up of generation capacity is being aided by the setting up of Ultra Mega Power Projects (UMPP), each of which is 4000 MW. The execution of UMPP projects poses a significant challenge, as India has not witnessed

the execution of such a large power project before. Also, each UMPP costs over Rs 16000 crores, so financing such a large project is a critical constraint for any developer.

5) Policy Paralysis

The micro-level policies, such as the fuel cost pass-through, the mega power policy, and competitive bidding guidelines are not in sync with the macro-level policies and framework, such as The Electricity Act and the National Electricity Policy.

6) Slow Project Execution

India has historically failed to meet its power sector targets by a significant margin. Various reasons have been identified for such slippage. Some of these are inadequate preparedness of projects, shortage of equipment, and delay in financial closure. The biggest indicator of a poor track record is India's inability to meet its targets on the power generation capacity additions. Variance with the target has been as high as 50 percent in the past.

7) Shortage of Equipment

Equipment shortage has been a significant reason for India missing its capacity addition targets. The shortage has been primarily in the core components of Boilers, Turbines, and Generators. However, there has also been a lack of adequate supply of Balance of Plant equipment as well. These include coal-handling plants, ash-handling plants, and so on. Apart from these, there is also a shortage of construction equipment.

8) Slow or Non-Existent Land Acquisition and Environment Clearance

Land acquisition poses a significant challenge for the power sector in India. Power plants and utilities face major constraints and delays regarding the availability of land and obtaining the requisite environment and other clearances for projects. Also, stakeholders or other land owners may also collectively object to the acquisition of their land.

9) Shortage of Manpower

There is a significant shortage of manpower in both the power and construction sectors. The flow of talent into the construction and power sectors has been drying up, as candidates have sought alternative and often more lucrative career options. The GOI has also not done enough to address this challenge. Also, the education system in India is not delivering the required number of specialists, in areas such as project management, engineering, estimating, surveying, and contract management. In order to address its talent shortage, the industry needs a genuine collaboration between project owners, contractors, and the government to attract more graduates. The industry should also invest much more in existing employees with a greater focus on training and higher salaries, where possible.

10) Scheduling Constraints

These constraints are due to a scheduling dependency on transmission lines. Additional capacity of transmission lines are likely to be in the North Eastern region, in Sikkim, and in Bhutan. All of these locations have difficult terrain, reducing the margin of error for project execution. Additional transmission capacity is required to evacuate power from surplus regions to supply to deficit regions.

This is essential to meet the ambitious target of "Power for All." Therefore, the criticality of implementing transmission projects cannot be ignored.

Case Laws

1. Hindustan Zinc Ltd. V. Rajasthan Electricity Regulatory Commission[10] (Before the Supreme Court of India)

Facts

- The Rajasthan Electricity Regulatory Commission (RERC) in conformity with the Electricity Act under Sections 51, 66, 86(1) (e) and 181 introduced notifications, that is, (Renewable Energy Obligations) Regulations, 2007 (2007 Regulations) and (Renewable Energy Certificate and Renewable Purchase Obligation Compliance Framework) Regulations, 2010 (2010 Regulations) (The 2007 Regulations and 2010 Regulations are hereinafter referred to as the Regulations.). According to these notifications all captive generation power plants and open access consumers were obligated to purchase a minimum energy from renewable sources and in case of non-observance of these Regulations they were to pay surcharge.
- Companies who are aggrieved by these notifications filed a petition to challenge the legality of the aforesaid Regulations. The appellants were companies involved in the production, manufacturing, and selling of non-ferrous metals, such as zinc as well as their by-products, for the purpose of which they had installed captive generation power plants.
- The High Court of Rajasthan has dismissed the writ petition and upheld the legality of the Regulations and also stated that the Regulations are in conformity to Article 14 and 19(1) (g), and so cannot be rendered as ultra vires. The present appeal is filed in the Supreme Court by a Special Leave Petition to challenge the High Court's order.

Issues

- Whether the regulations imposed by RERC regarding the fulfilment of Renewable Energy Obligation upon Captive Power Plants are ultra vires to the Electricity Act or repugnant to Article 14 and Article 19 (1) (g) of the Constitution of India.

Arguments

Appellants

- It was contended by the appellants that the Regulations were ultra vires to Sections 7, 9, 86 (1) (a) and 86 (1) (e) of the Electricity Act. It was further argued that the Regulations were against the constitutional provisions of Articles 14, 19 (1) (g) and 265 and that they also violate the NEP and the Tariff Policy. It was referred by the appellants that the Electricity Act promoted the participation of the private sector in electricity generation and also the electricity generation was de-licensed so as to promote captive generation.

[10] 2015 (6) SCALE 706

- The captive generating plant which was installed so as to aid in the manufacture of products by the companies cannot be said to be an act of distributions licensee.
- The Regulations made it mandatory that in case of non-compliance to the same, the defaulters would be liable to pay surcharge but the appellants contended that the said Regulations are not in accordance with Article 265 of the Constitution.
- The installation of captive power plants prescribed no statutory requirement of obtaining any license or approval from any authority and so the RERC had no authority to mandate such obligations over the appellants.

Respondent

- The counsel in response to the argument given by the appellants contended that the RPO under the Regulations are in discharge of the function of the RERC and not against Article 265 of the Constitution. It was argued that Section 86 (1) (e) of the Electricity Act clearly lays down that the State Commission can lay down such rules and so the Regulations are legal.
- It was argued that the Regulations are in correspondence to powers conferred to the State Commission under Section 86 (1) (e) of the Electricity Act. It was further referred that the Regulations are consistent with the National Action Plan on Climate Change and also the Preamble of the Electricity Act, which intends to promote the adoption of environmentally friendly policies so as to encourage green energy. The respondent stated that captive power consumers and open access consumers are consumers of electricity in the area of distribution licensee and are connected to such a distribution network. The distribution licensee is bound to make supply to them under Section 43 of the Electricity Act and so it would be discriminatory to only subject the regular consumers under RPO.
- It was also put forward in support of RERC that the appellants have installed captive power plants which are thermal power plants and so they contribute to the pollution of the environment. So, they should be subjected to such Regulations as it aims to promote renewable energy.
- The respondents have claimed that Section 86 (1) (e) of the Electricity Act and also the Electricity Policy provides that the Regulatory Commission has the authority to specify a certain portion of the total consumption of electricity in the area of a distribution licensee to be purchased from a renewable source. If the language used by the legislature is interpreted then it becomes clear that the total electricity consumption in an area of distribution licensee is to be taken into consideration and not by the distribution licensee. Therefore, if the language is interpreted then the appellants are also under an obligation to follow the Regulations.

Decision with Ratio

- The case was heard before a division bench of the Supreme Court and the bench decided the petition in favour of the respondent by placing reliance on the submission made by the RERC that such Regulations are framed by 21 other states in the country and those Regulations are also subjected on captive plants. The Regulations have been made in order to encourage the use of renewable energy so as to lessen the pollution level and this has been made in accordance with the NEP and the Tariff Policy. The obligations to be fulfilled under RPO is made in accordance with Article 21 and Article 51A (g) of the Constitution. Therefore, the court decided that the obligations under the Regulations are not ultra vires to the Electricity Act or any constitutional provisions.

Ratio: If the Regulations made by any authority are in conformity to the concerned Act and the Constitution then the same cannot be rendered illegal of ultra vires.

2. Energy Watchdog v. Central Electricity Regulatory Commission[11] (Before the Supreme Court of India)

Facts

- Gujarat Urja Vikas Nigam Limited (GUVNL) on February 1, 2006, issued notice for inviting bidders to supply power on a long-term basis. The bidders had to compete against each other and then quote the tariff. The bidders were given an option to quote escalable, non-escalable or partly non-escalable tariff so as to cover their risks if any arises in the future. Haryana Utilities on May 25, 2006 also issued notice inviting bidders to supply 2000 MW of power on a long-term basis. The bid documents and the process proposed by GUVNL and the Haryana Utilities was accepted by both the Gujarat Electricity Regulatory Commission (GERC) and the Haryana State Regulatory Commission (HSRC).
- Adani Enterprises Consortium submitted its bid for supply of 1000 MW of power to GUVNL in January 2007. The tariff rate determined by Adani Enterprises was Rs 1/kWh for the capacity charge and Rs 1.3495/kWh as non-escalable price, which sums up to Rs 2.3495/kWh. Adani Enterprises Consortium was selected as the successful bidder for the supply of 1000 MW of power.
- Accordingly, a PPA was entered into between GUVNL and Adani Power. Adani Power on November 24, 2007 submitted its bid for supply of 1425 MW of power to Haryana Utilities. The tariff determined by Adani Power was Rs 2.94/kWh (non-escalable). Adani Power entered into two PPAs with Haryana Utilities, each for 712/kWh. In 2010 and 2011, there was a change of law in Indonesia, which revised the export cost of coal from Indonesia. So, Adani Power filed a petition before the CERC under Section 79 of the Electricity Act so as to discharge the performance from the PPA or to revise the PPA in order to restore the same economic conditions.
- It was contended that there is a change in laws and so the PPAs should be revised and also force majeure should apply to the matter as the price change is making it impossible to abide by the agreement.

The appellate tribunal for electricity as well as the CERC allowed compensatory relief to the supplier but this order was challenged before the Supreme Court.

Issues

- Can frustration of an agreement be called upon if it becomes financially onerous to one of the parties?
- Will a change in foreign law constitute the change in law in India?
- The supplier themselves quoted a non-escalable price and the PPA does not mention that the coal has to be supplied from Indonesia. In such a case, can the PPA be revised so as to grant compensation to the suppliers if the price of coal in Indonesia rises?

Arguments

Appellants

[11] Civil Appeal Nos. 5399-5400 of 2016

- It was argued by the appellants that the issue of force majeure and change in law is not an admissible claim as the Central Commission has already rejected it. Further, in accordance with Section 56 of the Indian Contract Act, 1872, as well as the concerned clauses of the PPAs, it is clear that there must be an unforeseen event which wholly or partly affects the performance of the PPA so as to invoke the force majeure clause. Adani Power quoted a non-escalable price so as to make itself more competitive with regards to other bidders and so now they cannot convert it into an escalable tariff.
- The bid submitted by Adani Power was not dependent on the purchase of coal from Indonesia, but it was open to source coal from anywhere. The PPA was not premised on the purchase of imported coal from Indonesia.
- Clause 12.4 of the PPA states that if the price of raw material rises, then also the agreement does not get frustrated on the ground that it has become commercially onerous to one party.
- Section 63 of the Electricity Act, states that if the tariff is fixed by a transparent process of bidding as specified by the Central Government, then the appropriate commission would adopt it. So, the commission has no authority to determine the tariff and the tariff can only be revised by the intervention of the Central Government.
- It is also contended by the appellants that the change in law in Indonesia cannot result in amendment to the tariff policy in India.

Respondents

- It was argued by the respondents that under Section 86 of the Electricity Act, the State Commission has the authority to deal with the generation and sale of electricity in the state, so in case the generation and sale is to be done outside the state, then the Central Commission has jurisdiction.
- Section 63 starts with the words, "Notwithstanding anything contained in Section 62" and not with "Notwithstanding anything contained in the Act," so all the sections of the Electricity Act need to be construed harmoniously. So, Sections 61 and 79 of the Electricity Act would not cease to apply, when Section 63 applies. Section 79 of the Electricity Act has residuary powers of the Central Commission and therefore it also has the authority to fix or modify tariffs under Section 63 of the Electricity Act.
- The PPA reflected that the fuel supply agreement and imported coal constitutes the main element of the agreement and in case there is an unavailability of coal then the PPA has to be revised. It was further submitted that in case of a change in law or force majeure then the non-escalable tariff would also be revised so as to be in conformity with the provisions.
- The PPA deals with the supply of imported coal and so any change in foreign law would constitute a change in law under the mentioned PPA.
- The Government has already made it clear in several policy decisions that if there arises a case of unforeseen hardship in the supply of a raw material then the rise in cost should be compensated. It was contended that they have not been adequately compensated and so they should be granted relief on account of the change of law in addition to the force majeure clause.

Decision with Ratio

- The case was heard before a division bench of the Supreme Court and the judgement was delivered by Justice R.F. Nariman on April 11, 2017. The judgement overruled the decision of the Commission as well as the tribunal which allowed compensatory relief to the sellers. The Supreme Court held that no compensatory relief should be given to the sellers.
- It held that the agreement could not be done away with on account of frustration of the subject matter, as the PPAs did not make it mandatory that the coal has to be sourced from Indonesia. The contention of

change in law submitted by the respondent also stands defeated because a change in law in Indonesia does not hold good for giving relief in India and also the words "any change in law" in the PPA is restricted to the change in electricity laws in India and not foreign.

Ratio: An agreement cannot be covered under the frustration clause of Section 56 of the Indian Contract Act, 1872 if it becomes financially onerous on one of the parties.

Criticism

- The decision of the Supreme Court would adversely impact new power plants as the investors will not be ready to lend huge sums to the generators seeing the weak policies on which the PPAs run.
- The price of exported coal in India was fixed from the last 40 years and so the companies entered into a bid and quoted a non-escalable tariff. It was not expected that the laws will change and the price will increase.
- Further, the PPAs are entered into for a long period of approximately 20 to 25 years and so it is not possible for the companies to foresee the future economy of the concerned sector.

CUTS Debate: Sanctity of Contract v Sustainability of Business

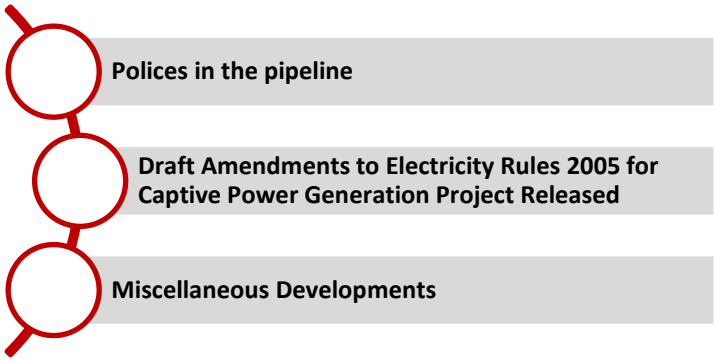
CUTS International and the CUTS Institute or Regulation & Competition works for promoting economic democracy in India. After this judgement dated April 11, 2017, a series of issues cropped up against the decision and also for the decision. An e-discussion was initiated in an online portal managed by CUTS. *Here, the main issue was the sustainability of business versus the sanctity of the contract.*

In favour of the sustainability of the business, it was said that the sellers have a fixed income from the generation and sale of power and any change in the cost of raw materials directly affects them. If the security of investors in the power sector is kept at stake, then it will lead to less investment in the future for such projects, which will ultimately dampen the entire power sector as well as the consumers. The CUTS debate on this issue also points out that private companies are not treated similar to the PSUs. Coal India Limited (CIL) is a defaulter in supply of an estimated quantity of coal but the government did not hold CIL responsible for the under supply of coal.

The other group which was in support of the decision referred that the terms of the contract was known by the companies and they voluntarily decided a fixed price for the contract and did not insert a price-variation clause. It was the companies who chose to bid low in order to favour their contention and now they should not be given a chance to revise the PPA as this would cause prejudice to other participants. The companies should be prevented from revising the contract once they have entered into it as no player can change the rules of a game once they start playing it. It is also submitted that according to Section 63 of the Electricity Act the bidding contract is regulated by the Central Government and the Central Commission is bound by it. The Central Commission cannot regulate such provisions.

The CUTS debate focuses very well on both aspects, that is, in support of the judgement, as well as against the judgement.

Policy Changes in the Near Future



1) Polices in the pipeline

In May 2017 the Union Cabinet cleared the proposal to construct 10 indigenous pressurised heavy water nuclear reactors with a total capacity of 7000 MW. This is done in the background of setbacks in various foreign deals. No clear timeline as well as action of implementation has been set down until now.

2) Draft Amendments to Electricity Rules 2005 for Captive Power Generation Project Released

In May 2018, the Ministry of Power proposed an amendment to the guidelines relating to captive generation projects in India vide the draft Electricity (Amendment) Rules, 2018.

The draft has set requirements for captive generation projects as follows:

- For a project to be considered captive, minimum 26% of the project ownership should be from the captive user, and at least 51% of power generated must be utilized for captive use.
- In such a scenario, aggregate energy generated will be computed as the total electricity generated in the power plant minus the auxiliary consumption (consumption of energy to keep the project running, by various components).
- In case of a hydro project, any free power supplied by the hydro generating station to the state government will be excluded from calculating the aggregate electricity generated.
- In case of renewable generators, banking of power which is redeemed for consumption for use by the captive users, will be included to determine aggregate electricity consumption on an annual basis. The redemption of banked energy will be permitted within the same financial year.
- Variation in consumption in proportion of shares in ownership of the solar and wind power project exceeding 15% and up to 30% will be agreed and allowed by the state government.
- In case of a generating station owned by a company formed as special purpose vehicle for such generating station, a unit or units of such generating station identified for captive use, electricity required to be consumed by captive users will be determined with reference to such generating unit or units in aggregate identified for captive use and not with reference to generating station as a whole, and share capital in the form of equity shares to be held by the captive users in the

generating station will not be less than 26% of the proportionate of the equity share capital of the company related to the generating unit or units identified as the captive generating project.

- It will be the obligation of the captive users to ensure that the consumption by the captive users at the above-mentioned percentages is maintained. In case the minimum percentage of captive use is not complied within any year, the entire electricity generated will be treated as if it is a supply of electricity by a generating company.
- The appropriate state commission will certify whether a generating station or power project is captive generating. The generating station or power project will file the annual statement of generation and consumption to the appropriate commission.
- DISCOMs where captive consumers are connected with the grid will collect the consumption data and submit it to the DISCOM where generating station or power project is located for compilation and submission to appropriate commission for approval of status of captive generating project.
- Any generating station setup as an Independent Power Project (IPP) will not be considered for benefits of a captive generating project on or after the commencement of Electricity (Amendment) Rules 2018.
- If a generating station, set up as an IPP, has been taken over by the lenders or its consortium due to non-performance and is likely to be declared as a non-performing asset (NPA), it may be considered for benefits as a captive generating project, if it is applied for by the developer.
- An IPP, not availing any benefit as an IPP and which does not have a PPA, can be considered for benefits as a captive generating project, if it satisfies the criteria for being a captive power project (CPP) as per the Electricity (Amendment) Rules 2018. Such conversion of status will be allowed only once.
- Group captive generating project will be allowed to claim the status of captive generating project up to the period during which the shareholding pattern by captive users is maintained with two changes only, during a financial year. The status of captive generating projects in such cases will cease to exist from the third change in the shareholding pattern in the financial year.
- In case of a captive generating project to be included as part of the integrated business of a company, the generating station will have to be carved out as an independent legal entity in the form of a special purpose vehicle (SPV) to qualify as a group captive generating project.

3) Miscellaneous Developments

There are certain developments in the recent past that also have the capacity to influence the power sector in the future. In 2015, the first Nuclear Insurance Pool was established. GIC now provides insurance cover to NPCIL. This seeks to provide much needed stability to Indian nuclear liability law which has been a major concern for foreign players looking to enter the Indian market.

The National Wind Solar Hybrid Policy was issued by the MNRE on May 14, 2018. The primary objective of the aforesaid policy is to provide a framework for promotion of large grid connected wind-solar PV hybrid systems for optimal and efficient utilization of transmission infrastructure and land, reducing the variability in renewable power generation and achieving better grid stability.

Guidelines on Cross Border Trade in Electricity, 2016

India has been trading in electricity with Bangladesh, Bhutan, and Nepal under bilateral MoUs/power trade agreements. Further, in order to give effect to the Framework Agreement for Energy Cooperation signed on November 27, 2014, amongst the South Asian Association for Regional Cooperation (SAARC) countries, the Ministry of Power in consultation with the Ministry of External Affairs has issued guidelines on cross border trade of electricity with the objective of facilitating cross border trade of electricity between India and its neighbours with greater transparency, consistency, and predictability, by evolving a dynamic and robust infrastructure.[12]

In order to achieve these objectives, the guidelines envisage that the Ministry should designate an authority that will coordinate with the nodal agencies of neighbouring countries for facilitating the process of approval and laying down procedures for cross border trade in electricity.[13] The guidelines also direct the CERC to frame guidelines for facilitating this.

Furthermore, the guideline lays down the eligibility to participate in cross border trade. Accordingly, electricity, which is generated outside India, can only be imported by Indian entities when such electricity is generated by an entity owned and funded by the GOI or by Indian Public Sector Units or by private companies with 51% or more Indian ownership or which is owned and controlled by the Government of a neighbouring country. Also, foreign private projects are also eligible importers; however, they must be licensed from the neighbouring country and must have 51% Indian ownership.

Any distribution licensees and PSUs can be an exporter if they have surplus capacity and the same is certified by the designated authority. However, these eligibility criteria are flexible as any other entity can also participate in cross border trade after obtaining the requisite approval from the designated authority.

It also gives guidelines as to tariff determination and states that if the cross border trade comes across from government negotiation then the tariff would be as determined during the negotiation. However, if the trade is happening in absence of a government contract the tariff for import would be determined through a process of compulsory bidding. In case of the import of hydroelectricity, the tariff would be determined by CERC as per its regulations after obtaining consensus from all participants. The tariff for export, though, could either be mutually agreed upon, or can be obtained through competitive bidding.

[12] Guidelines on Cross Border Trade of Electricity, Ministry of Power, Government of India
[13] Ibid

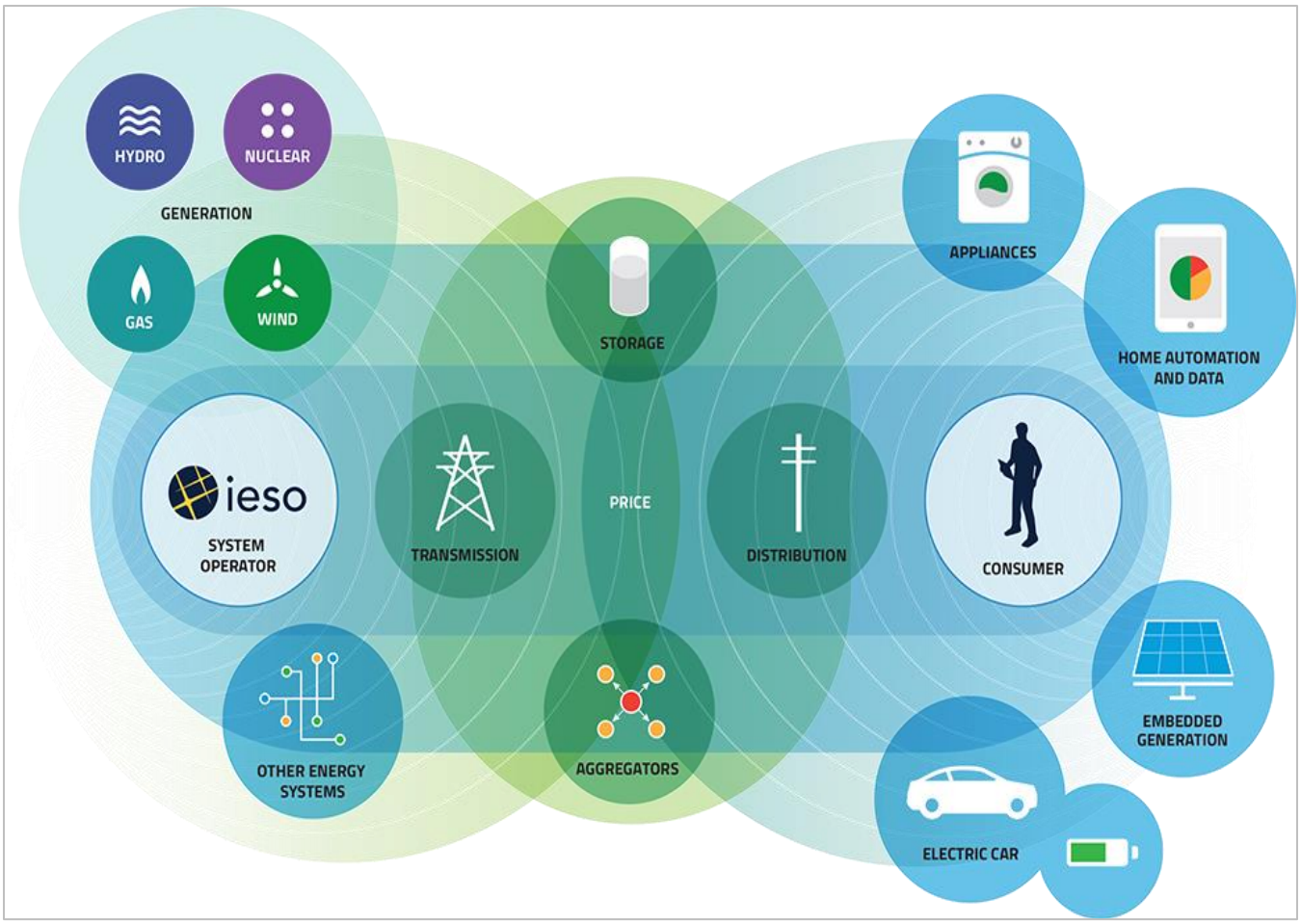


Figure 4: SAARC grid on trade of electric power[14]

[14] Sourced from http://econitynepal.com/saarc-grid-is-it-myth-or-reality/

Maintaining the Sanctity of PPAs

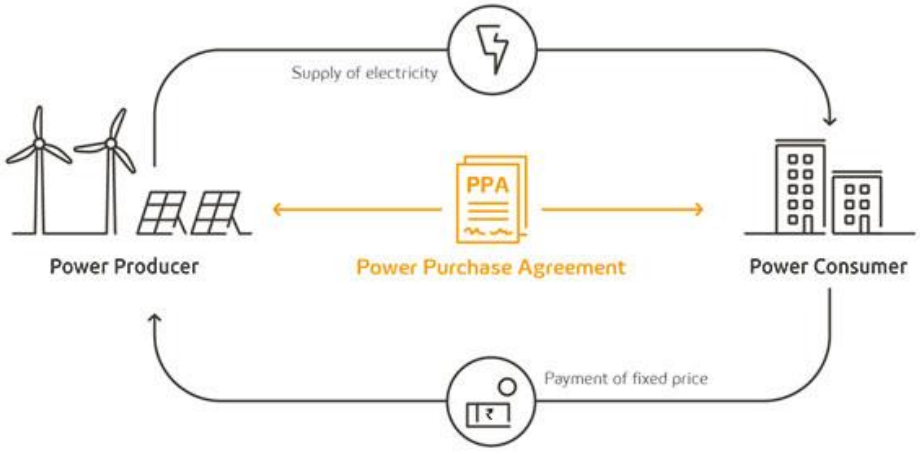
A power purchase agreement is an agreement entered into between a power producer, and a person willing to procure the power produced. The agreement could be for the purchase of a part of, or all the power produced by the power producer. A power purchase agreement could be entered into between private parties, public parties, or private and public parties.

For the purpose of this chapter, we will be looking at primarily the arrangements, outcomes, and the lessons learnt in regard to power purchase agreements between private producers and public procurers, the most contentious sub-set of power purchase arrangements.

The magnitude of such an issue could be seen to be particularly enlarged where a private party commits to set up a power plant on the basis of an offtake guarantee by a single distribution licensee for agreed upon tariffs, any change in which could potentially adversely impact the underlying financials and reciprocal third-party obligations of the concessionaire. While the issue is not new, it has troubled the rapidly evolving renewables sector in recent years.

It has increasingly been the practice of distribution licensees to strong-arm concessionaires into re-negotiating agreed upon tariffs contained in power purchase agreements between them. The requests for re-negotiation of tariffs is often after financial closure of the project, hence, any revised tariff would affect the viability of a project. *The requests are attributable to consistently falling prices of equipment used setting up solar and wind projects aiding in the tumbling tariffs quoted in subsequent projects, making tariffs agreed upon for older projects look costly.*

Another factor that is to be kept in mind is that even though the fall of equipment prices has plateaued in recent months, the general trend of quoted tariffs is at a continued downward trajectory. This has left the solar and wind industries vulnerable to marco-economic shocks in the short term and the functional life of the project. The government, in order to avoid uncertainty in the sector and uphold mutually agreed commitments, has urged distribution companies and SERCs to uphold the sanctity of power purchase agreements.



On the other hand, unforeseeable events that impact the power plant, equipment and fuel supply are not usually accounted for in power purchase agreements even though they have a significant impact on the financial viability of a power plant. Power generators may welcome renegotiations of tariffs in such cases as they may not otherwise be able to continue the supply of power.

This issue arose by reason of increase in fuel supply costs for imported coal from Indonesia due to change in Indonesian law that had an impact on several large players in the power sector. Adani Power, along with other power generators, had litigated the issue, claiming relief on the basis of force majeure, frustration and change in law and had been granted relief in the form of compensatory tariff at the APTEL. However, the Supreme Court reversed the decision upholding the sanctity of the power purchase agreements as such increase in fuel supply did not fall within the purview of any provisions thereof providing relief. This decision is discussed in more detail below.

APTEL ruled that it would not be prudent to open the contracts which have already been entered into with EPC contractors for inclusion of appropriate penalties covering consequential damages to be borne by contracts in the event of delay in commissioning of the project. APTEL took note of the differences in material factors arising from whether a contract had been entered into under Section 62 (tariff determination) or Section 63 (competitive bidding) of the Electricity Act.

For the purposes of this discussion, it is taken that in the case of power purchase agreements or EPC agreements, as is the general practice, provisions providing for liquidated damages alone are included as the mode of compensation. *On this assumption, it is clear that, in any scenario, costs will be passed onto the procurer, and consequently, the end-consumer, or at least the public exchequer. From this perspective, it is not difficult to understand why distribution companies would attempt to renegotiate agreed-upon tariffs, and SERCs would support the practice.*

However, whatever the underlying justification may be, even in cases where it may be contended that the additional costs could have been entirely avoided if not for a default on the part of the concessionaire, it must be taken that the terms of the agreement between the parties should act as the guiding force in the determination of all rights and liabilities of the parties.
The reasoning behind this statement being that, parties to an agreement, having had the ability to negotiate terms before their concretization, must have taken into account and analysed all possible scenarios before agreeing to the same. On adjudication of disputes of this nature, considerations such as public policy, and the intent to avoid difficulty, do inevitably creep in. However, the principle that the sanctity of contracts must be respected by all parties is to be construed supreme. It is with this understanding that we delve into the detailed discussion of this topic.

In this section we will be looking into the issue of sanctity of contracts, especially of power purchase agreements, specific rulings and disputes in this regard, the role of statutory and judicial bodies including electricity regulatory commissions, and other conjunctive issues.

The subject of respecting the sanctity of contracts/ rule of law is relevant while looking into agreements involving the combination of both, (i) a public procurer and a public generator, and a (ii) a public procurer and a private generator, as parties. The topic currently assumes more relevance and importance, attributable to the increasing number of disputes in this sphere arising as a consequence of increased private participation in the sector.

Disputes challenging the sanctity of contracts that may arise between generators and procurers, the parties to a power purchase agreement, are more often than not, on one or both of the following issues:

- Re-negotiation of tariff; and
- Scheduling and offtake of power generated

Tariff Determination and Re-negotiation of Tariff

Through the Electricity Act, generation was de-licensed, except in large hydro and nuclear. This made it simpler for private persons to set up power plants through procurement of the necessary statutory clearances, while eliminating the requirement for obtaining a license.

For private persons to set up power plants - for sale of power - to government distribution licensees through private public partnerships, Sections 62 and 63 of the Electricity Act are relevant. The tariff for a power plant set up under Section 62 of the Act is to be determined by the Appropriate Commission. Section 63 of the Electricity Act mandates that the Appropriate Commission adopt tariff determined through a transparent bidding process in accordance with the Guidelines issued by the Appropriate Commission.

The CERC[15] has laid down the three principles of Section 63 of the Electricity Act as follows:

- Firstly, tariff should have been determined through transparent process of bidding;
- Secondly, the transparent bidding should be in accordance with the guidelines issued by the Central Government; and
- Lastly, the tariff so determined should be adopted by the Appropriate Commission.

A power plant set up under Section 63 of the Electricity Act could be as a case 1 or a case 2 project. The key differences between a case 1 and a case 2 project are as follows:

	Case 1	Case 2
Particular	Generator is to decide the location of setting up the project, the technology and fuel to be used, etc.	Distribution licensee is to specify the location for setting up the project, the technology and fuel to be used, etc.
Fuel Procurement	The manner of procurement of fuel and procurement is to be carried out by the generator.	The distribution licensee will specify the manner of procurement of fuel, and arrange for the fuel except where imported fuel is involved.

[15] Godawari Green Energy Limited and Ors. v. NTPC Vidyut Vyapar Nigam Limited and Ors., Petition no. 304/MP/2013

Requests for renegotiation of the tariff agreed upon in the power purchase agreements may arise from either the generator or the procurer. On refusal by other party, the requesting party by and large contests or claims relief under a clause in the power purchase agreement. Typically, tariff revision in power purchase agreements is permitted only in two cases, change in law, and *force majeure*.

The issue of whether, and in what cases tariff decided under power purchase agreements can be regulated has been a space of constant jurisprudential evolution.

Tariff related disputes that have arisen are primarily of two kinds:

- The first kind is where the PPA provides for adoption of generic tariff determined by a Regulatory Commission. In this regard, disputes have arisen with respect to the exact tariff order that will be applicable. These disputes have arisen in the context of renewable energy projects, where State Commissions pass generic tariff orders applicable for different technologies. Generally, a tariff order in force at the time of execution of the PPA and commissioning of a power project is adopted under the PPA. However, delays in commissioning have led to disputes as to whether a subsequent tariff order would be applicable. In this context, the Supreme Court has followed a positivist and determinist approach of strictly adhering to the terms of the PPA and the regulations and discouraging exercise of inherent regulatory power by the Commission after a PPA has been executed.

Two cases in point are Gujarat Urja Vikas Nigam Limited v Emco Limited & Anr.[16], and Gujarat Urja Vikas Nigam Limited v. Solar Semiconductor Power Company (India) Private Limited[17]. The power purchase agreements in both cases provided that on the basis of the commissioning date of the project, the tariff applicable to the project will be in accordance with the tariff order as specified or the subsequent tariff order in force, whichever is lower. In both cases, the commissioning stood delayed beyond the cut-off date specified in the tariff order, which was made applicable under the PPA.

- In Emco, the generator claimed benefit of the tariff applicable at the time of commissioning of the project. The Supreme Court strictly enforced the terms of the PPA, and held that the lower of the tariff applicable at the time of execution of the PPA and that applicable at the time of commissioning would be the tariff under the PPA.

- In Solar Semiconductor, the generating company sought extension of the control period so as to render the tariff prevailing at the time of execution of the PPA to be applicable for the project, notwithstanding

[16] AIR 2016 SC 698
[17] AIR 2017 SC 5372

that at the time of commissioning, the subsequent tariff order had come into force. The plea was rejected by the Supreme Court, in light of the clear provisions of the PPA. Interestingly however, the Supreme Court rejected the argument on the inherent power of the Regulatory Commission to re-determine tariff on the ground that inherent powers of the Regulatory Commission could not be exercised de hors the statute. The Supreme Court noted that Section 62 read with Section 64 of the Electricity Act provided for review and revision of tariff and prescribed the procedure for the same, which had to be adhered to. It was thus held that while generic tariff adopted under a PPA could be amended, the procedure prescribed under the statute, which included public hearing to safeguard the interests of consumers, had to be followed.

- The second kind of cases is where due to extraneous circumstances, one of the parties to the PPA seeks re-determination of the tariff finding the tariff agreed under the PPA to be unviable. *In this context, judicial precedents indicate that some distinction exists between PPAs providing for tariff determined by the Commission under Section 62, and PPAs concluded pursuant to competitive bidding under Section 63 of the Electricity Act.*

The Supreme Court in Tarini Infrastructure[18] held that in the case of projects issued under Section 62 of the Electricity Act, it cannot be said that (i) the parties to the power purchase agreement determined the tariff as an act of volition, and (ii) it cannot be altered except by mutual consent. It was interpreted by the Court that the determination of tariff was made in exercise of statutory powers which got incorporated in a mutual agreement between the parties. It was further stated that when the tariff order itself was subject to periodic review it was difficult to see how incorporation of a particular tariff as applicable at that point could be understood to bind the power producer for the entire duration of the project.

It is pertinent to note however, that the Supreme Court was careful to distinguish PPAs where tariff was to be determined by the Commission under Section 62 from cases of competitive bidding under Section 63 of the Electricity Act. The court also distinguished the decision in the Emco case on facts. The Supreme Court also distinguished a previous decision in Bangalore Electricity Supply Company Limited v Konark Power Projects Limited & Anr. (2016) 13 SCC 515, where the Supreme Court rejected a plea for redetermination of tariff under a PPA, in light of such redetermination being inconsistent with specific regulations of the Commission.

Whereas, in cases of PPAs executed pursuant to competitive bidding under Section 63 of the Electricity Act, the Supreme Court has consistently rejected pleas seeking redetermination of tariff.

In Energy Watchdog v. Central Electricity Regulatory Commission and Ors. Etc.[19], the Supreme Court discussed and ruled on a multitude of questions primarily regarding the issue of sanctity of power purchase agreements. The facts of the case, in a nutshell were that, in view of a potentially back-breaking and unexpected rise prices of Indonesian coal necessary for the production of power, the power producers in the matter sought compensatory tariff. The decisions of the Supreme Court in the case, which are of relevance to the discussion at hand, and of importance to the jurisprudence of the sector have been summarised below:

- On contentions of performance of obligations under the PPA becoming difficult, and whether 'change in law' only includes change of law in India, the Supreme Court held that, *"changes in the cost of fuel, or the*

[18] Gujarat Urja Vikas Nigam Limited v. Tarini Infrastructure Limited and Ors., (2016) 8 SCC 743
[19] Civil Appeal nos. 5399-5400 of 2016

agreement becoming onerous to perform, are not treated as force majeure events under the PPA (power purchase agreement) itself... It is clear that the definition of 'law' speaks of all laws including electricity laws in force in India. Electricity laws, as has been seen from the definition, means the Electricity Act, rules and regulations made thereunder from time to time, and any other law pertaining to electricity."

- The Supreme Court on use of regulatory powers held that, *"It is clear that in a situation where the guidelines issued by the Central Government under Section 63 cover the situation, the Central Commission is bound by those guidelines and must exercise its regulatory functions, albeit under Section 79(1)(b), only in accordance with those guidelines. As has been stated above, it is only in a situation where there are no guidelines framed at all or where the guidelines do not deal with a given situation that the Commission's general regulatory powers under Section 79(1)(b) can then be used."* Hence, since the power purchase agreement and the bidding guidelines clearly defined the circumstances and the manner in which the quoted tariff can be changed, the commission could not, in use of its regulatory powers, overrule such provisions.

- The Supreme Court rejecting contentions relating to change in law and force majeure held that, *"This clause* [Force Majeure Exclusions] *makes it clear that changes in the cost of fuel, or the agreement becoming onerous to perform, are not treated as force majeure events under the PPA itself."* The judgement re-affirmed a generally accepted principle in stating, *"It is clear that an unexpected rise in the price of coal will not absolve the generating companies from performing their part of the contract for the very good reason that when they submitted their bids, this was a risk they knowingly took."*

In its recent judgement in Nabha Power Limited v. PSPCL and Anr. [20], the Supreme Court dealt with a dispute arising out of interpretation of provisions in a PPA as to whether costs pertaining to washing of coal and transportation may constitute components of energy charge and whether the relevant calorific value of coal ought to be considered at the mine or at the Project site. The Court examined Indian and English precedents on reading implied terms into agreements including the business efficacy test. Accordingly, the court analysed the nature of sharing of responsibilities under the PPA to opine on the basis for cost sharing. It noted that the PPA pertained to a Case-2 project, where responsibility for fuel lay with the procurer and the site was also pre-identified.

In this light, the formula for energy charge was interpreted from the perspective that all costs pertaining to ensuring the requisite quality of fuel and transportation to the site ought to form a component of energy charge. The Supreme Court however pointed out that terms of a contract are to be interpreted in accordance with their natural grammatical contour and reading implied terms into a PPA is generally not permissible. It stated that, to do so should be the last resort, exercised with abundant caution, while paying heed to the provisions of the agreement as a whole.

The decision of the Supreme Court in this matter was widely appreciated by the industry, as the Court came to its decision not taking into account factors such as the impact of its decision on the already dismal financial health of the relevant government instrumentality or the passing of such costs onto customers.

[20] (2018) 11 SCC 508

The Supreme Court in All India Power Engineer Association v. Sasan Power[21], looked into a dispute involving the determination of the commercial operations date of a project, which was contingent on the issue of a certificate in that regard by an independent engineer in terms of the power purchase agreement in that case. Several issues concerning the rights of the parties under that power purchase agreement were to depend on the commercial operations date of the project. At this juncture, it is to be noted that the project involved in the dispute was an 'Ultra Mega Power Project', generally considered to be of importance, almost vital in shaping the performance and the health of the distribution licensee and the state commission involved. In this case, when the actions of the independent engineer were in the nature of being commercially detrimental to the statutory distribution licensee procurer, the Court sided with the government instrumentality and held that:

"But it is important to note that waiver is an intentional relinquishment of a known right, and that, therefore, unless there is a clear intention to relinquish a right that is fully known to a party, a party cannot be said to waive it. But the matter does not end here. It is also clear that if any element of public interest is involved and a waiver takes place by one of the parties to an agreement, such waiver will not be given effect to if it is contrary to such public interest. This is clear from a reading of the following authorities."

In view of the decisions analyzed thus far, it would appear that questions relating to re-determination of tariff are decided on a case-to-case basis, although mostly, in cases of competitive bidding, courts are slower to interfere. The reason for lack of a clear-cut, positivist approach is the nature of the sector, consumer interest, and the need to balance the same vis-à-vis the protection of investments.

One such decision was given by APTEL[22] in a case involving a concessionaire to a power purchase agreement with the local transmission licensee who sought for increase in the agreed tariff for purchase of the power generated, in view of an unforeseen increase in the price of fuel to be used for the generation of power. It was noted that the power producer in the case was affected by the events to the extent that the project became unviable to be operated. APTEL in its decision ruled for the change in tariff taking the following view that,

- "The State Commission as indicated in the impugned order has power to modify the tariff for concluded PPA in larger public interest."
- The guiding principles laid down in Section 61 of the Electricity Act would indicate that the Commission has to maintain a balance so that the generators also may not suffer unnecessarily. In the context of prevailing power situation in the country, it would not be desirable to keep any generating unit out of service for want of 'just' tariff.

The other side of the coin is distribution licensees seeking to avoid purchasing power under existing PPAs, upon discovering options that may be economically beneficial to the Discom. This issue has arisen particularly in the context of renewable energy PPAs post discovery of lower prices in recent auctions.

[21] Civil Appeal No. 5881 of 2016
[22] Konark Power Projects Limited v. Bangalore Electric Supply Company Limited & Anr., Appeal no. 35 of 2011

It is of concern that upon lower prices being discovered during auctions for solar and wind energy, SERCs have also played a role in enabling distribution licensees to avoid off-taking power from renewable sources under existing PPAs.

One such example is that of the Madhya Pradesh Commission, which did away with the "must-run" status for renewable power plants and made procurement of power from renewable sources subject to scheduling and merit order dispatch principles. As a consequence, Discoms were legitimately in a position to refuse power under existing PPAs, as the merit order dispatch principles prioritize procurement of power from cheaper sources.

In other states like Uttar Pradesh, Andhra Pradesh and Karnataka, the State-owned utilities cancelled existing PPAs, which provided for more expensive power than prices discovered in the course of solar and wind energy auctions.

In the states of Tamil Nadu and Rajasthan, frequent back down instructions were issued by the concerned State Load Despatch Centres to renewable energy generators during peak season citing grid security reasons.

Another incident of relevance to the discussion at hand, was the dispute from 2017 involving the Karnataka Electricity Regulatory Commission (KERC) and the Government of Karnataka.

The Government of Karnataka invoked its powers to give directions in public interest under Section 108 of the Electricity Act to KERC. The dispute originated with the issue of a tariff order by KERC for purchase of wind power. The contentious decision in the tariff order was that, all wind projects signed with statutory distribution licensee procurers yet to be approved by the KERC would be passed under the new tariff (lower than the tariffs agreed to) as provided under the order. It was widely believed that the reason for the passing of this order was that the KERC felt that in view of the general trend of inordinate fall in wind power tariffs in recent months, it would be unjustified, and not be in the interest of the financial health of the statutory distribution licensee procurers to procure power under the previously agreed tariffs.

Ultimately however, on intervention of the Government of Karnataka, the KERC agreed to evaluate and approve cases on a "case-by-case basis".

This reflects the general trend of reluctance of government instrumentalities to honour agreed-to tariffs, especially in the solar power and wind power sectors. The problem was so rife that the Ministry of New and Renewable Energy in mid-2017 stated that, *"Denial of consent from SERCs has created an atmosphere of uncertainty in wind power sector"* and agreed that *"state governments should not go back on contractual agreements."*

Actions of this nature and its incorporation into policy, the unscrupulous practice of not respecting the sanctity of contracts and tariffs agreed to, as has been widely done by various state electricity regulatory commissions, do not induce confidence in investors. In the long term, as intermittent practice becomes the norm, the sector will be plagued by uncertainty and disillusion. Operational and policy changes are to be undertaken to enforce fairness and predictability in the electricity sector.

Figures 5 & 6: Abandoned power plant in Jharkhand[23]

[23] Picture sourced from Bloomberg

An Overview of the Renewable Purchase Obligations in India

The electricity sector is undergoing momentous expansion; there is a focus on sustainable energy access for all, auction and competitive bidding, energy efficiency and greater reliance on renewable energy (RE). In fact, the goal of achieving 175 GW of energy from RE sources by 2022, is underway. The sharp decline in the prices of wind and solar technologies in the recent years by about 60% and 52% respectively between 2010 and 2015 (in kWh terms), has led to a change in the relative importance of energy sources[24]. This transformation in the energy mix in India is a confluence of several factors constituting supportive government policies, incentives, investment promotion, infrastructure and technology development, and the successful transition to competitive bidding of solar energy. Over the years various regulations and policy measures such as the Jawaharlal Nehru National Solar Mission (JNNSM), feed-in-tariff, accelerated depreciation (AD), generation-based incentives (GBI), renewable purchase obligations (RPO), and renewable energy certificates (RECs) have helped tide over significant constraints in RE deployment in the country. This article provides a brief overview of the current regulatory framework in India that mandate RPO compliance.

Commitments and Policy Directives

Electricity Act

Under Section 86(1)(e) of the Electricity Act, the State Commission is required to, *inter alia*, discharge the following function, namely "*promote cogeneration and generation of electricity from renewable sources of energy by providing suitable measures for connectivity with the grid and sale of electricity to any person, and also, specify, for purchase of electricity from such sources, a percentage of the total consumption of electricity in the area of a distribution licensee.*" Additionally, under the extant Section 142 of the Electricity Act[25], a penalty has been prescribed for non-compliance with any provisions of the Electricity Act, rules or regulations *"…….such person shall pay, by way of penalty, which shall not exceed one lakh rupees for each contravention and in case of a continuing failure with an additional penalty which may extend to six thousand rupees for every day during which the failure continues after contravention of the first such direction."*

Tariff Policy

Under Paragraph 6.4 (*Renewable sources of energy generation including co-generation from renewable energy sources*) of the Tariff Policy (*as amended in 2016*) the following directions have been issued:

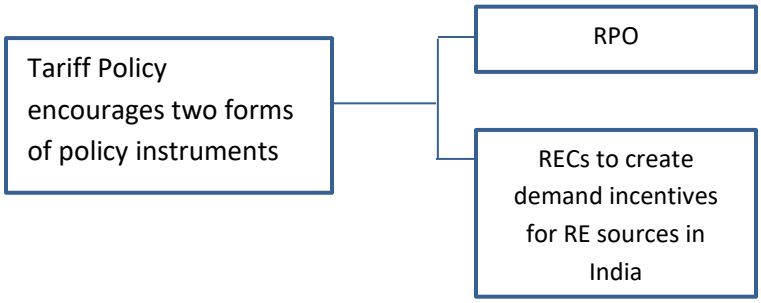
- The Appropriate Commission shall fix a minimum percentage of the total consumption of electricity in the area of a distribution licensee for purchase of energy from renewable energy sources, taking into account availability of such resources and its impact on retail tariffs.

[24] Draft national energy policy by Niti Ayog page 2.

[25] Electricity (Amendment) Bill, 2014 proposed certain changes to Section 142 by (i) specifically including 'or has not complied with the renewable purchase obligation or renewable generation obligation as specified' and (ii) increasing the penalty amount to a maximum of one crore rupees for each contravention, and one lakh rupees for each day of such continued contravention.

- Cost of purchase of renewable energy shall be taken into account while determining tariff by SERCs. Long term growth trajectory of RPOs will be prescribed by the Ministry of Power in consultation with MNRE.
- Cogeneration from sources other than renewable sources shall not be excluded from the applicability of RPOs.
- The SERCs shall reserve a minimum percentage for purchase of solar energy from the date of notification of this policy which shall be such that it reaches 8% of total consumption of energy, excluding Hydro Power, by March 2022 or as notified by the Central Government from time to time.
- Distribution Licensee(s) shall compulsorily procure 100% power produced from all the Waste-to-Energy plants in the State, in the ratio of their procurement of power from all sources including their own, at the tariff determined by the Appropriate Commission under Section 62 of the Electricity Act.
- The Appropriate Commission may also provide for a suitable regulatory framework for encouraging such other emerging renewable energy technologies by prescribing separate technology based REC multiplier (i.e. granting higher or lower number of RECs to such emerging technologies for the same level of generation). Similarly, considering the change in prices of renewable energy technologies with passage of time, the Appropriate Commission may prescribe vintage based REC multiplier (i.e. granting higher or lower number of RECs for the same level of generation based on year of commissioning of plant).
- The Central Commission should lay down guidelines for pricing intermittent power, especially from renewable energy sources, where such procurement is not through competitive bidding. The tariff stipulated by CERC shall act as a ceiling for that category.
- In order to promote renewable energy sources, any generating company proposing to establish a coal/lignite based thermal generating station after a specified date shall be required to establish such renewable energy generating capacity or procure and supply renewable energy equivalent to such capacity, as may be prescribed by the Central Government from time to time after due consultation with stakeholders. The renewable energy produced by each generator may be bundled with its thermal generation for the purpose of sale. In case an obligated entity[26] procures this renewable power, then the SERCs will consider the obligated entity to have met the RPO to the extent of power bought from such renewable energy generating stations.
- In order to further encourage renewable sources of energy, no inter-state transmission charges and losses may be levied till such period as may be notified by the Central Government on transmission of the electricity generated from solar and wind sources of energy through the inter-state transmission system for sale.

[26] The entities mandated to purchase a defined quantum of renewable energy of their overall consumption are obligated entities. In a State these may include Distribution Licensees, Captive Consumers, Open Access users etc. In Hindustan Zinc vs Rajasthan Electricity Regulatory Commission 2015 (6) ALLMR 432, the Supreme Court on May 13, 2015, on the applicability of RPO regulations has ruled that RPO on captive consumer is justified and interpreted it in the context of Article 51A (g) of the Constitution of India that cast a fundamental duty on the citizen to protect and improve the natural environment, and the mandate of Article 21 that guarantee right to live with healthy life. In August 2012, the Rajasthan High Court had dismissed an appeal by Hindustan Zinc Ltd., Ambuja Cements Ltd., Grasim Industries Ltd., and 14 other companies that challenged RPO regulations enacted by the Rajasthan Electricity Regulatory Commission (RERC) for put RPOs on captive power plants. It was contested that (i) RERC did not have the authority to pass the order of RPO and impose surcharge (penalty) as CPP and OA were completely de-licensed activities under the Electricity Act and (ii) the Electricity Act only allows RPO on the 'total consumption in the area of the distribution licensee' and therefore intends to apply RPO on distribution licensees only. Hindustan Zinc had appealed against this decision in the Supreme Court.



The REC mechanism was based on the premise that the RE generation entails reduction of certain environmental attributes like greenhouse gases, apart from electricity generation. Thus, RE generator can sell two different products on account of renewable energy generation, electricity and the associated environmental attributes, in the form of RE certificate. One REC would be issued to the RE generator for one Mega Watt hour (MWh) electrical energy[27] fed into the grid. The RE generator could sell electricity to the distribution company and associated RECs also to the distribution company or any other obligated entity within the State or outside the State. The REC mechanism would enable obligated entities in any State to procure RECs generated in any of the States in India and surrender the same to satisfy its RPO target. Thus, REC mechanism was supposed to address the issues of scarcity of RE sources in some States which had negligible RPO targets in view of the limited RE potential in the State[28].

National Action Plan for Climate Change

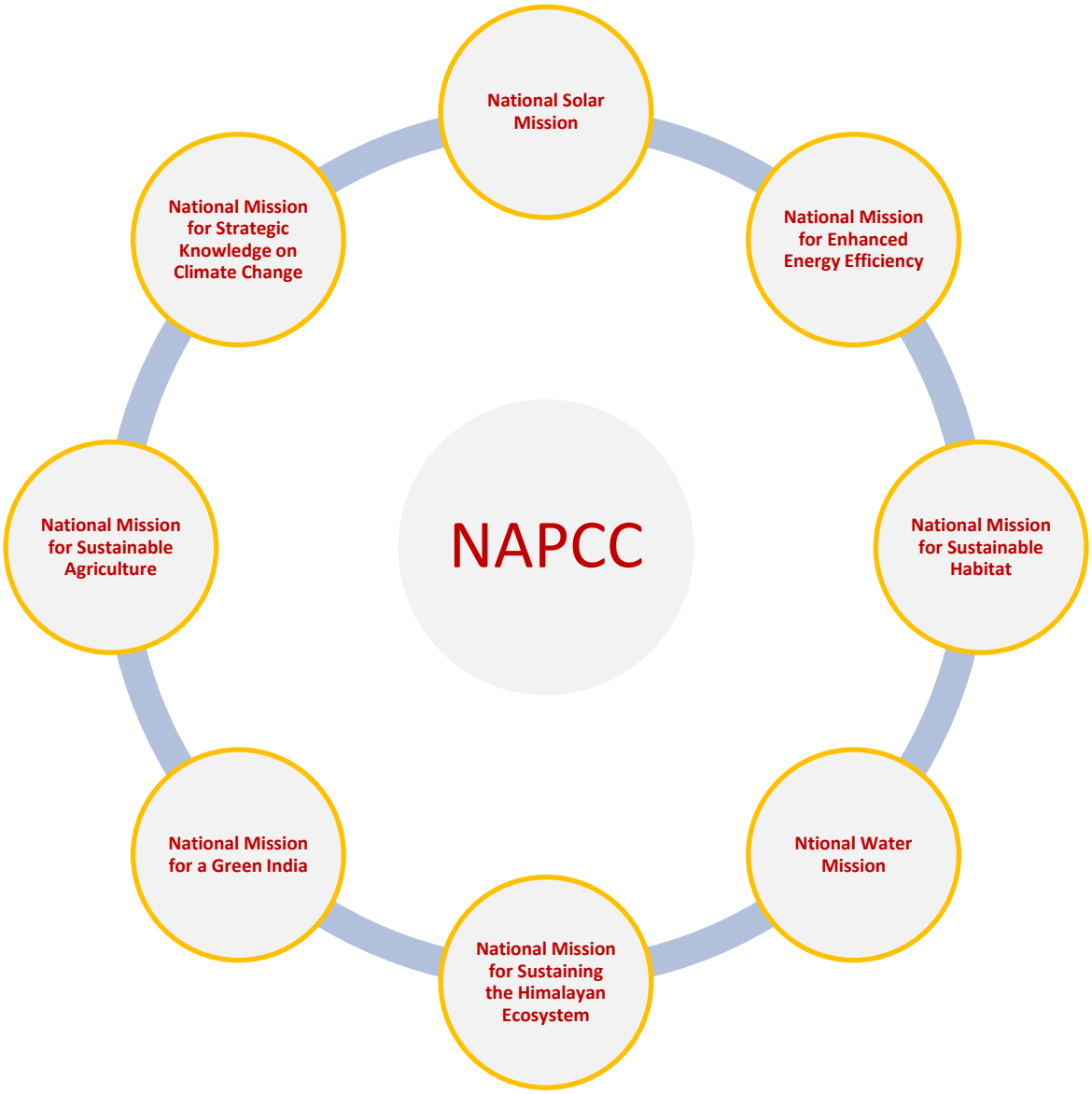
Additionally, based on the voluntary commitments made by India under the United Nations Framework Convention for Climate Change (UNFCCC) to reduce its carbon emissions intensity by 20-25 per cent by 2020 in comparison with 2005 levels, India launched the National Action Plan for Climate Change (NAPCC) in 2008 which had eight missions with a view to mitigate climate change. Some of the missions under NAPCC include (i) the National Solar Mission with an aim to install 1,00,000 MW solar power capacity by 2022 (*as amended by Union Cabinet on June 17, 2015*) and (ii) the National Mission for Enhanced Energy Efficiency which introduced the perform, achieve and trade scheme as a regulatory instrument to reduce specific energy consumption in energy intensive industries, with an associated market based mechanism to enhance the cost effectiveness through certification of excess energy saving which can be traded on the Indian Energy Exchange (IEX) and Power Exchange India Limited (PXIL) or bought by other units under PAT who can use them to meet their compliance requirements. Units that are unable to meet the targets either through their own actions or through purchase of energy saving certificates are liable to financial penalty under the Energy Conservation Act, 2001.

In light of the above, it can be observed that one of the important missives was increasing the share of RE in the total electricity consumption in the country. NAPCC set target of 5% for purchase of electricity generated from RE sources for 2009-10 against the then existing level of around 3.5%. This target was to increase by 1% per year

[27] The solar generating companies registered under REC framework prior to the date of effect of the Third REC Amendment Regulations (i.e. January 1, 2015) would be eligible for 2.66 REC for one MWh of electricity generated and fed into the grid and this dispensation would be available to such projects for the period upto March 31, 2017, after which the said projects would be eligible for one REC for one MWh of electricity generated.
[28] Report of the Comptroller and Auditor General of India on Renewable Energy Sector in India, Report No. 34 of 2015 (Performance Audit), available at: http://www.cag.gov.in/sites/default/files/audit_report_files/Union_Civil_Performance_Renewable_Energy_Report_34_2015.pdf

for next 10 years i.e. the NAPCC envisaged that RE would constitute 15% of the energy mix of India by 2020. National Solar Mission in 2011 further provided that "within the percentage so made applicable, to start with, the State Electricity Regulatory Commissions (SERCs) shall also reserve a minimum percentage for purchase of solar energy which will go up to 0.25 per cent by the end of 2012-2013 and further up to 3 per cent by 2022"[29].

Figure 7: Salient points: National Action Plan for climate change [30]



[29] Report of the Comptroller and Auditor General of India on Renewable Energy Sector in India, Report No. 34 of 2015 (Performance Audit), available at: http://www.cag.gov.in/sites/default/files/audit_report_files/Union_Civil_Performance_Renewable_Energy_Report_34_2015.pdf

[30] https://www.pmfias.com/national-action-plan-climate-change/

Current SERC RPO Framework: Snapshot of selected states

Andhra Pradesh[31] APERC Renewable Power Purchase Obligation (Compliance_by purchase of Renewable Energy/ Renewable Energy Certificates) Regulations, 2017				
Target	**Obligated Entities**	**Procurement[32]**	**Consequences of Default**	**Reporting Mechanism**
Non-solar: 2017-18: 6% 2018-19: 7% 2019-20:8% 2020-21: 9% 2021-22: 10% **Solar** For the year, 2017-18:3% 2018-19:4% 2019-20:5% 2020-21:6% 2021-22:7% **Total RPO Target:** 2017-18:9% 2018-19:11% 2019-20:13% 2020-21:15% 2021-22:17%	Distribution Licensee [33] Open Access Consumer Captive power plant owner of 1MW and above and connected to the grid Consumption met from hydro sources of power (not including mini hydel sources) shall not be considered under RPO compliance	Distribution licensee shall compulsorily procure 100% power generated from waste to energy plants in the state, in the ratio of their procurement of power from all sources including their own at the tariff determined by the Commission under Section 62 of the Electricity Act.	The Commission may direct the obligated entity to deposit into a separate fund: 1)Such amount as the Commission may determine on the basis of the shortfall in units of the RPO; and 2)Forbearance price The Commission may empower an officer of the State Agency to procure from the power exchange the required number of certificates to the extent of the short fall in the fulfillment of the obligations out of the amount of the fund. Such obligated entity will also be liable for penalty under Section 142 of the Electricity Act.	State Agency is required to submit quarterly report in respect of compliance of RPO by the obligated entities.

[31] Telangana has issued draft regulations wherein the RPO targets are 6% (2018-19), 6.5% (2019-20), 7% (2020-21) and 7.5% (2021-22) and roof top solar PV system under the net metering arrangements would also qualify towards meeting the RPO obligation of the distribution licensee. Additionally, distribution licensees shall compulsorily procure 100% power produced from all the waste to energy plants in the State.

[32] Procurement from Waste to Energy Plants

[33] Consumption of a rural electricity supply co-operative society shall be taken into account for calculating the consumption of a distribution licensee.

Bihar

Bihar Electricity Regulatory Commission (Renewable Purchase Obligation, its compliance and REC Framework Implementation) (2nd Amendment) Regulations, 2017[34]

Target	Obligated Entities	Procurement	Consequences of Default	Reporting Mechanism
Non-solar: 2016-17:5% 2017-18: 5.50% 2018-19: 6% 2019-20:6.75% 2020-21: 7.50% 2021-22: 9% **Solar:** 2016-17: 1.50% 2017-18: 2.25% 2018-19: 3.25% 2019-20: 4.75% 2020-21: 6.75% 2021-22: 8% **TOTAL:** 2016-17: 6.50% 2017-18: 7.75% 2018-19: 9.25% 2019-20: 11.50% 2020-21: 14.25%	Distribution Licensee Open Access Consumer Consumer owning captive power plants RE purchased through bundled power shall qualify for RPO compliance to the extent of RE content in the bundled power.	Distribution licensee shall compulsorily procure 100% power generated from waste to energy plants in the state	The Commission may direct the obligated entity to deposit into a separate fund: ▪ Such amount as the Commission may determine on the basis of the shortfall in units of the RPO; and ▪ Forbearance price The Commission may empower an officer of the State Agency to procure from the power exchange the required number of certificates to the extent of the shortfall in the fulfillment of the obligations out of the amount of the fund. Such obligated entity will also be liable for penalty under Section 142 of the Electricity Act.	The State Agency shall submit quarterly status to the Commission in respect of compliance of renewable purchase obligation by the obligated entities.

[34] The BERC (Terms and Conditions for Determination of Tariff) Regulations, 2007, the BERC (Terms and Conditions for Open Access) Regulations, 2006, the order dated May 21, 2009 and review order dated June 29, 2010 in respect of determination of Tariff for Bagasse based Cogen Plants and Biomass Power Plants, the terms and conditions stated therein and the BERC (terms and Conditions for Tariff Determination from Solar Energy Sources) Regulations 2010 and any other relevant regulations, notified by the Commission under section 181 of the Electricity Act will have overriding effect.

Chhattisgarh

Chhattisgarh State Regulatory Commission (Renewable Purchase Obligation and REC framework Implementation) Regulations, 2016

Target	Obligated Entities	Procurement	Consequences of Default	Reporting Mechanism	Pricing & Open Access Priority
Non-solar: 2016-17: 6.5% 2017-18: 7% 2018-19: 7.5% 2019-20: 8% 2020-21: 8.5% **Solar** 2016-17: 1.50% 2017-18: 2% 2018-19: 3.5% 2019-20: 5% 2020-21: 6.5% **TOTAL:** 2016-17:8% 2017-18:9% 2018-19:11% 2019-20:13% 2020-21:15%	Distribution Licensee. Captive user(s) - Co-located and non-co-located captive user(s) with connected load of 1 MW and above (or such other capacity as may be stipulated by order(s) of the Commission from time to time) shall be subjected to minimum percentage of Renewable Purchase Obligation (RPO) to the extent of its captive consumption met through captive generating plant[35]. Open Access Consumer, including a open access consumer meeting part of energy from distribution licencee and part through open access (non RE consumption) in the State of Chhattisgarh, of 1 MW and above (procuring non RE power) not having a supply agreement [36]	No obligation	The Commission may direct the obligated entity to deposit into a separate fund: ▪ Such amount as the Commission may determine on the basis of the shortfall in units of the RPO; and ▪ Forbearance price The Commission may empower an officer of the State Agency to procure from the power exchange the required number of certificates to the extent of the shortfall in the fulfillment of the obligations out of the amount of the fund. No penalty has been prescribed for such obligated entity.	The State Agency shall submit quarterly status by 15th of next month to the Commission in respect of compliance of renewable purchase obligation by the obligated entities.	*Priority* A person generating electricity from RE sources, irrespective of installed capacity shall have priority for open access, connectivity with distribution system or transmission system as the case may be. *Pricing* Tariff structure and other conditions as stipulated in the CSERC (Terms and conditions for determination of generation tariff and related matters for electricity generated by plant based renewable energy sources) Regulations, 2012 *Or* REC mechanism for pricing of the electricity generated from the project.

[35] Provided that the end users, who do not full fill the requirements as captive users as defined in Electricity Rules 2005 in a financial year, shall be subjected to minimum percentage of Renewable Purchase Obligation (RPO) to the extent of its consumption met through such power plant.

[36] Any excess purchase of RE or the REC procured by the captive user(s) and open access consumer(s) for meeting the RPO in any financial year shall be considered for meeting the RPO for the next financial year.

Delhi

Delhi Electricity Regulatory Commission (Renewable Purchase Obligation and Renewable Energy Certificate Framework Implementation) Regulations 2012 read with the following draft (i) Delhi Electricity Regulatory Commission (Renewable Purchase Obligation and Renewable Energy Certificate Framework Implementation) Regulations, 2017 and (ii) RPO Order 2017

Target	Obligated Entities	Procurement	Consequences of Default	Reporting Mechanism	Pricing & Open Access Priority
Solar 2016-17: 0.35% **Draft Order:** 2017-18: 4.75% 2018-19: 6.75% 2019-20: 8.75% **Total:** 2016-17: 9% **Draft Order:** 2017-18: 14.25% 2018-19: 17% 2019-20: 19.75%	Distribution Licensee Open Access Consumer Captive user, using other than renewable energy sources exceeding 1 MW.	Under the draft regulation, distribution licensee shall compulsorily procure 100% power generated from waste to energy plants in the state, in the ratio of their procurement of power from all sources including their own at the tariff determined by the Commission.	The Commission may direct the obligated entity to deposit into a separate fund: ▪ Such amount as the Commission may determine on the basis of the shortfall in units of the RPO; and ▪ Forbearance price. The Commission may empower an officer of the State Agency to procure from the power exchange the required number of certificates to the extent of the shortfall in the fulfillment of the obligations out of the amount of the fund. Such obligated entity will also be liable for penalty under Section 142 of the Electricity Act.	State Agency is required to submit quarterly report in respect of compliance of RPO by the obligated entities. Under the draft regulation, the State Agency is also required to, additionally, report on the capacity addition, generation and purchase of electricity from renewable energy sources and also post the progress report on its website.	*Priority* A person generating electricity from RE sources, irrespective of installed capacity shall have priority for open access, connectivity with distribution system or transmission system as the case may be. *Pricing* Option to follow either the tariff pricing structure, as may be stipulated in the relevant technology specific tariff regulations of the Commission, Or REC mechanism for pricing of the electricity generated from the project.

Gujarat Gujarat Electricity Regulatory Commission (Procurement of Energy from Renewable Sources) Regulations, 2010[37]				
Target	**Obligated Entities**	**Procurement**	**Consequences of Default**	**Reporting Mechanism**
-	Distribution Licensee Open Access Consumer Consumer owning captive power plants having a capacity of 5 MW.	No obligation.	The Commission may direct the obligated entity to deposit into a separate fund: ▪ Such amount as the Commission may determine on the basis of the shortfall in units of the RPO; and ▪ Forbearance price The Commission may empower an officer of the State Agency to procure from the power exchange the required number of certificates to the extent of the shortfall in the fulfillment of the obligations out of the amount of the fund.	The State Agency shall develop the formats for submission of quarterly progress report in respect of compliance of renewable purchase obligation by the obligated entities.

Figure 8: Mundra Power Plant, Gujarat[38]

[38] Sourced from Glassdoor.com

Maharashtra Maharashtra Electricity Regulatory Commission (Renewable Purchase Obligation, its Compliance and Implementation of Renewable Energy Certificate Framework) Regulations, 2016					
Target	**Obligated Entities**	**Procurement**	**Consequences of Default**	**Reporting Mechanism**	**Pricing & Open Access Priority**
Non-solar 2016-17: 10% 2017-18: 10.50% 2018-19: 11% 2019-20: 11.50% **Solar** 2016-17:1% 2017-18:2% 2018-19: 2.75% 2019-20: 3.50% **Total:** 2016-17: 11% 2017-18: 12.50% 2018-19: 13.75% 2019-20: 15%	Distribution Licensee Open Access Consumer Consumer owning captive power plants	No obligation	The Commission may direct the obligated entity to deposit into a separate fund: ▪ Such amount as the Commission may determine on the basis of the shortfall in units of the RPO, RPO Regulatory Charges separately in respect of solar and non-solar RPO; ▪ The fund may be created and maintained by the obligated entity. If the obligated entity is other than a distribution licensee, the fund is to be maintained and administered by the State Agency. The Commission may empower an officer of the State Agency to procure from the power exchange the required number of certificates to the extent of the shortfall in the fulfillment of the obligations out of the amount of the fund. Such obligated entity will also be liable for penalty under Section 142 of the Electricity Act.	The State Agency shall submit to the State Commission the quarterly status of compliance of RPO by the Obligated Entities.	*Pricing* Tariff structure and other conditions as stipulated in the CSERC (Terms and conditions for determination of generation tariff and related matters for electricity generated by plant based renewable energy sources) Regulations, 2012. Or REC mechanism for pricing of the electricity generated from the project.

Odisha Odisha Electricity Regulatory Commission (Procurement of Energy from Renewable Sources and its complaince) Regulations, 2015				
Target	**Obligated Entities**	**Procurement**	**Consequences of Default**	**Reporting Mechanism**
Non-solar 2017-18: 4.50% 2018-19: 5% 2019-20: 5.50% **Solar** 2017-18: 3% 2018-19: 4.50% 2019-20: 5.50% **Total:** 2017-18: 7.50% 2018-19: 9.50% 2019-20: 11%	Distribution Licensee Open Access Consumer Consumer owning captive power plants consuming electricity generated from conventional captive generating plant having a capacity of 5 MW	No obligation	The Commission may direct the obligated entity to deposit into a separate fund: ▪ Such amount as the Commission may determine on the basis of the shortfall in units of the RPO; and ▪ Forbearance price The Commission may empower an officer of the State Agency to procure from the power exchange the required number of certificates to the extent of the shortfall in the fulfillment of the obligations out of the amount of the fund. Such obligated entity will also be liable for penalty under Section 142 of the Electricity Act.	The State Agency shall submit quarterly status to the Commission in respect of compliance of RPO by the obligated entities.

Key Challenges & Actions Taken

The RPO mechanism has had a chequered past. According to the Report of the Comptroller and Auditor General of India on Renewable Energy Sector in India (CAG report)[39],

- *"It was observed that as against the NAPCC target of eight and nine per cent for the years 2012-13 and 2013-14, the national achievement was only 4.28 and 4.51 per cent, respectively;*
- *In none of the 24 sampled States, except Himachal Pradesh and Tamil Nadu, RPO were fixed in sync with the norms set under the National Action Plan on Climate Change.*
- *Direct purchase of electricity generated from RE sources was still the preferred option to meet RPO. Between 2010 and 2014, only 4.77 per cent of RPO compliance was through REC mode, whereas 95.23 per cent was through direct purchase of electricity from RE sources.*

[39] https://cag.gov.in/sites/default/files/audit_report_files/Union_Civil_Performance_Renewable_Energy_Report_34_2015.pdf

- *Uncertain policy environment and poor RPO enforcement led to a situation, where as of August 2014, 93,64,699 RECs, each valuing at least INR 1,500 were lying unredeemed, affecting the planned cash flow of the generators.*
- *The Ministry of New and Renewable Energy (MNRE) had not devised any mechanism for claiming of Clean Development Mechanism (CDM) benefits for the grid connected and offgrid RE projects. There was lack of awareness with respect to claiming CDM benefits."*

Given the RE potential of the country, overall compliance with RPO has not been encouraging. As observed in the table earlier, there's an urgent need for the SERCs and State agencies to build on the recent regulatory and judicial support for RPO monitoring and compliance by developing standardized RPO target formulations and undertaking effective monitoring and penal/compliance mechanism.

Figure 9: Kamuthi Solar Power Project, Tamil Nadu. Kamuthi Solar Power Project is the largest single location solar power plant in the world[40]

[40] Image sourced from TechRead

Regulation of Group Captive Arrangements in India

Post-independence, India has faced several challenges in the electricity sector. The acute power deficit coupled with the critical economic condition of the distribution companies and no private investment led to the Government making several key changes to the electricity sector. Buoyed by the liberalisation reforms in the early 90s, the Electricity Act brought in, *inter alia*, the following pressing reforms:

(i) Delicensing of generation and permission to undertake captive generation (*with certain conditions relating to compliance with technical standards relating to connectivity with the grid, and hydro-power projects*);
(ii) Open access in transmission with applicability of cross subsidy surcharge (*except for captive power plants*).
(iii) Mandatory establishment of state electricity regulatory commissions.

Captive power plants, i.e. power plants established by certain industries primarily for self-consumption, were encouraged by the Government in order to reduce the burden on the public sector for provision of electricity, and freeing up generation and transmission capacities. The growth of captive power plants has been broadly attributed to (a) need for backup power arrangements, (b) requirement of better quality supply, (c) the co-generation benefits of steam and electricity from production process of industries, and (d) need to generate electricity at costs lower than the high industrial tariffs set to cross subsidize other categories of consumers[41].

Legislative Framework

National Electricity Policy (NEP)

The NEP dated February 12, 2005, encouraged captive generation by emphasizing that setting up of captive power plant was liberalised with a view to securing reliable quality and cost-effective power and facilitating creation of employment opportunities through speedy and efficient growth of industry. The idea was to enable small and medium industries or other consumers that may not individually be in a position to set up a plant of optimal size in a cost-effective manner. Further, a large number of such captive and stand by generating stations, having surplus capacity, offered the potential to meet the demand for power. The policy directed such captive generators to have access to the licensees and customers who are allowed open access, on priority basis.

National Tariff Policy (Tariff Policy)

The Tariff Policy published on January 6, 2006, and further amended on January 20, 2016 also emphasized the role of captive power generation for buttressing the availability of power. Paragraph 6.3 of the Tariff Policy encapsulates the importance of harnessing captive generation by stating that (i) the captive plants could supply surplus power through grid subject to the same regulation as applicable to generating companies; (ii) firm supplies may be bought from captive plants by distribution licensees using the guidelines issued by the Central Government under section 63 of the Electricity Act; and (iii) grid connected captive plants could also supply

[41] Captive Generation in India: The Dilemma of Dualism available at http://www.idfc.com/pdf/report/Chapter-12.pdf

power to non-captive users connected to the grid through available transmission facilities based on negotiated tariffs. Such sale of electricity would be subject to relevant regulations for open access including compliance of relevant provisions of Rule 3 of the Electricity Rules, 2005.

Electricity Act and the Electricity Rules, 2005

Section 9 read with Section 2(8) regulates captive generating plants. A captive generating plant has been defined to mean "*a power plant set up by any person to generate electricity primarily for his own use and includes a power plant set up by any co-operative society or association of persons for generating electricity primarily for use of members of such cooperative society or association.*" No license is required for the construction, maintenance and operation of such plants (with the dedicated transmission lines, if any) and the power plant shall have the right to open access for the purposes of carrying the electricity to the captive user. No cross subsidy surcharge is payable for availing open access in case of captive consumption of electricity. However, supply of electricity by such plant through the grid will be regulated in the same manner as the generating station of a generating company and the consumer will be subject to the regulations made under sub-section (2) of section 42[42].

For a power plant to qualify as a captive generating plant, the captive user(s) is/are required to (i) hold not less than 26% of the ownership in the power plant, and (ii) consume not less than 51% of the aggregate electricity generated in such plant, determined on an annual basis. Ownership in relation to a generating station or power plant set up by a company or any other body corporate has been defined as the equity share capital with voting rights.

The requirements for a 'captive generating plant' was further clarified in Rule 3(1) of the Electricity Rules, 2005 (Electricity Rules).

In other cases, ownership shall mean proprietary interest and control over the generating station or power plant. Explanation 1(c) to Rule 3(2) of the Electricity Rules clarifies that the ownership of a captive power plant set up by a company, in the context of its holdings, shall be of, 'equity share capital with voting rights'. Therefore, any person that holds equity shares of a captive generating company with voting rights, could, if it availed electricity from such power plant be considered as a captive user, provided that, other requirements as necessary are also fulfilled.

It is also to be noted that holding of preference shares or equity shares without voting rights, would accordingly, not be considered as holding for the purpose of captive usage. Consumption has to be proportionate to shares owned by the captive user(s) in the power plant, within variation of 10%. *It has been held that a generating company can act as a captive generator for its own use, as well as for its shareholders who would qualify as captive users, if they satisfy the criteria for ownership and consumption*[43].

Thus, there is no impediment to being a captive user, under the extant law. In fact, the Electricity Rules simply define captive user as the end user of the electricity generated in a captive generating plant. The captive user,

[42] Fourth proviso to sub-section (2) of Section 42 states that *"Provided also that such surcharge shall not be leviable in case open access is provided to a person who has established a captive generating plant for carrying the electricity to the destination of his own use."*
[43] Chhattisgarh State Power Distribution Company Limited v. Hira Ferro Alloys Limited & Ors., Appeal No. 116 of 2009 dated May 18, 2010.

or users, as the case may be, are merely required to comply with the specific requirements under the Electricity Rules, i.e. on ownership and consumption.

Proposed Amendments

The Ministry of Power, on October 6, 2016, proposed amendments to certain provisions relating to captive generation plants. Additional amendments were proposed on May 22, 2018[44]. The key proposed amendments are as follows.

- Certain clarifications have been proposed to the definition of "aggregate electricity generated". The free power supplied by hydro generating stations is to stand excluded from the calculation of aggregate electricity generated. In the case of renewable energy generators, banked power that is redeemed for consumption or own use by the captive users (where redemption is within the same financial year as banking), shall be included for the purpose of calculating the aggregate electricity generated.

- A change in the definition of Ownership which now states that "Ownership" in relation to a generating station or power plant set up by a company or any other body corporate shall mean the *paid up share capital in the form of equity share capital with voting rights (excluding equity share capital with differential voting rights).* It is further proposed that to meet the "Ownership" a normative debt-equity funding ratio of 70:30 would be considered, and at least 26% of the equity base, i.e., 30% of the capital employed, will have to be invested by the captive user(s) in the form of equity share capital with voting rights (excluding differential voting rights). In other cases, ownership shall mean proprietary interest and control over the generating station or power plant. This change was proposed with an aim to remove ambiguity that ownership should be in terms of value of capital along with the voting rights, and not in terms of number of shares or extent of voting rights only. It was also with an aim of preventing misuse by issuing shares of small face value which actually do not actually represent the required equity share capital of the plant.

- *Another proposed amendment is that group captive generating plants may no longer be part of a company having other businesses. The generating station will have to be carved out and housed in a separate special purpose vehicle.* This amendment has been proposed in light of several cases where a generating company is itself a captive user and its shareholders are also captive user(s). [45]The amendment seems to indicate that henceforth, electricity from a captive generating plant would have to be consumed by the entity setting up the plant; or if there is to be more than one captive user, then a special purpose vehicle would have to be set up.

- The proposed amendments also state that it in addition to an association of persons, *a person*, *company, Special Purpose Vehicle, Partnership Firm, Body of Individuals, or Body Corporate,* the captive users shall also hold not less than 26% of the ownership of the plant in aggregate and such users shall not consume less than 51% of the electricity generated, determined on an annual basis, in proportion

[44] https://powermin.nic.in/sites/default/files/webform/notices/Draft_Amendments_in_the_provisions_relating_to_Captive_Generating_Plant_in_Electricity_Rules_2005_0.pdf

[45] Chhattisgarh State Power Distribution Company Limited v. Hira Ferro Alloys Limited & Ors., Appeal No. 116 of 2009 dated May 18,2010; JSW Steel Limited v. Karnataka Electricity Regulatory Commission & Ors., Appeal No. 136 of 2011 dated December 21, 2012.

to their shares in ownership of the power plant within a variation not exceeding 15%. The changes have been proposed in light of certain decisions of APTEL.

Kadodara Decision

In its judgment in the *Kadodara Decision*[46] the APTEL held that SPV should be considered as an association of person and thus, rule of proportionality is required to be followed by an SPV as well. The APTEL maintained that:

"The Electricity Rules 2005 have set down that not less than 51% of the aggregate electricity generated by a CGP, determined on an annual basis is consumed for captive use. However, in case there are more than one owner then there is a further rule of proportionality in consumption. In case the power plant is set up by a cooperative society the condition of use of 51% can be satisfied collectively by the members of the cooperative society. However, if it is an 'association of persons' then the captive users are required to hold not less than 26% of the ownership of the plant and such captive users are required to consume not less than 51% of electricity generated determined on an annual basis in proportion to the share of the ownership of the power plant within a variation not exceeding + 10%."

Thus, after the aforesaid decision, it was understood that the rule of proportionality applied in all cases where the captive user was not the generating company.

However, in the *Hira Ferro Alloys* case[47], APTEL distinguished the *Kadodara* decision to hold that the *Kadodara* decision was limited in its application to SPVs and the rule of proportionality had no application where the generating company was itself the captive user along with its shareholders. Although, the *Hira Ferro Alloys* case is not an authority for the proposition that the rule of proportionality is inapplicable in cases where corporate entities other than SPVs are generating companies, some clarity in the rules is sought to be introduced by way of the proposed amendments.

- *It is further proposed that electricity consumed by captive users from captive generating units, over and above 51% shall also be determined on an annual basis in proportion to their shareholding in the power plant within a variation not exceeding 15%.* Further, if any of the captive user(s) fail to comply with the proportionate consumption requirement, the plant itself is liable to lose the status of a captive generating plant and all users would be considered as non-captive users. This would immediately lead to the plant losing the benefits of captive generation, such as exemption from cross-subsidy surcharge etc. This amendment has been proposed in light of decisions of APTEL holding that the proportionality requirement has to be fulfilled only vis-à-vis the minimum consumption requirement of 51% of the aggregate electricity generated and further that if some of the captive user(s) do not comply with the proportionate consumption requirement, the plant itself does not lose captive generating status[48]. For captive user(s) of solar and wind power plants, it has been proposed that the State Government may, in consultation with the Appropriate Commission, relax the 15% variation limit to up to 30%.

[46] Kadodara Power Pvt. Ltd and others v. Gujarat Electricity Regulatory Commission, APTEL dated September 22, 2009 (Appeal no. 171 of 2008,Appeal no. 172 of 2008 & IA Nos. 233/08 and 234/08, Appeal no. 10 of 2008, and Appeal no. 117 of 2009).
[47] Chhattisgarh State Power Distribution Company Limited v. Hira Ferro Alloys Limited & Ors., Appeal No. 116 of 2009 dated May 18, 2010.
[48] Maharashtra State Electricity Distribution Company Limited v. Maharashtra Electricity Regulatory Commission & Anr., Appeal No. 252 of 2014 dated June 3, 2016; JSW Steel Limited v. Karnataka Electricity Regulatory Commission & Ors., Appeal No. 136 of 2011 dated December 21,2012.

- The proposed amendments also seek to restrict changes in the shareholding pattern by captive user(s) to twice in a financial year, exceeding which, the plant may not qualify as a captive generating plant.

- Consumption by the subsidiaries of a company setting up a captive power plant is also to be considered for the purpose of ascertaining consumption by the captive generating company.

- The proposed amendments seek to introduce requirements of certification by the Appropriate Commission of a plant meeting the criteria of a captive generating plant. Further, the captive generating plant as well as captive user(s) are required to report details of generation and consumption.

- Conversion of IPP into captive power plants is proposed to be restricted to cases where the IPP has not availed any benefits like coal linkages and does not have a PPA. Such conversion is proposed to be permitted only once.

State specific regulations

Some states such as Andhra Pradesh, Jharkhand, Kerala, Punjab, Rajasthan, Uttar Pradesh have in place, additionally, regulations governing captive power plants. Some of the regulations pertain to utilisation of excess power from captive power plants based on conventional fuel. Typically, these regulations pertain to the technical conditions that need to be adhered to for power evacuation, stand by support and start up power, banking of power, reactive power injection, metering, and accounting.

Structuring the group captive arrangement

A captive power generating plant project is typically structured like any other independent power project. Therefore, there usually is a power purchase agreement, with standard terms, to support the power producer's investment and financing. However, given that the captive power plant will be wholly or primarily, supplying or carrying the power to the captive user, who, *inter alia, (i) is also required to be the owner of the plant and/ or (ii) may be sourcing the fuel for the project and/or (iii) has existing power purchase agreements with third parties including the distribution licensee, the arrangement is likely to have several nuances structured within it that would need to be captured in other key agreements, including the investment agreement. Additionally, the project may have several captive users with differential power requirements.*

However, it is important to bear in mind certain fundamental requirements for any power plant to be considered as a captive generating plant when the investor/ power producer is considering entering into a group captive arrangement:

- Firstly, the captive user(s) should hold not less than 26% (twenty six) percent of the ownership of the power plant;|
- Secondly, not less than 51% (fifty one percent) of the aggregate electricity generated at the power plant should be consumed by the captive users.

These requirements read with the state regulations and other extant laws will form the foundation of any group captive arrangement.

There is no requirement for the captive user to completely off-take the power from the power plant, as seen from the usage of the word 'primarily' in Section 2(8) of the Electricity Act. The term 'primarily' has not been defined in the Electricity Act and hence must be understood in its ordinary sense; the APTEL has taken a similar view in several cases. Therefore, any person that holds equity shares of a company that has set up a power plant, could, if it availed of electricity from such power plant be considered as a captive user, provided that the other requirements are fulfilled.

If the proposed amendments to the Electricity Rules are notified, then the group captive arrangements may need to be structured accordingly, as discussed in the previous section. There appears to be no transition period contemplated for implementing such changes.

Figure 10: India's Power sector: Vignettes from everyday life [49]

[49] Pictures sourced from Google Images

Regulation of Nuclear Power

The world is moving towards harnessing energy from non-conventional energy sources, owing to finite reserves of fossil fuels and climate change concerns. India, however, has been promoting all sources of energy in the mix. On nuclear power, while several countries have recently had a rethink, India has steadfastly seen it as an important contributor to its energy basket[50]. Nuclear energy, being the only base load power source offering green energy, is being promoted with India indicating its intention to ramp up nuclear power capacity tenfold by 2030 to 63 GW in the recently concluded nationally determining contributions[51].

Figure 11: Kudankulam nuclear power plant[52]

India has an installed nuclear power capacity of 6,780 MW (2016-17), which contributes to over 3% of total electricity generated[53]. Construction of additional nine reactors is in progress, which will ramp up the nuclear capacity to 13,480 MWe of power[54]. In addition, the government has approved an additional 10 PHWR reactors of 700 MWe each, which will give a boost to the domestic nuclear industry[55]. Two more reactors of 1000 MWe

[50] Draft National Energy Policy by NITI Aayog available at http://niti.gov.in/writereaddata/files/new_initiatives/NEP-ID_27.06.2017.pdf
[51] Ibid
[52] Image sourced from World Nuclear Association
[53] Ibid
[54] Ibid
[55] Ibid

each have also been approved for construction at Kudankulam, thus taking the total capacity to 22,480 MWe by 2030[56].

International Engagement

Post-World War II, several countries interested in aggressively pursuing nuclear energy, began adopting legislations on the issue of liability; United States (*Price Anderson Nuclear Industries Indemnity Act, 1957*), Germany (*German Atomic Energy Act, 1959*), Switzerland (*Swiss Federal Law on the Exploitation of Nuclear Energy for Peaceful Purposes and Protection from Irradiation, 1959*), Japan (*Compensation for Nuclear Damage, 1961*) and United Kingdom (*Nuclear Installations (Licensing and Insurance) Act, 1959*).

Around the same time, the international community started developing a complex labyrinth of nuclear liability regime (*explained below*) which covered strict liability, legal channelling to the operator, limitation of liability in time and amount and financial security in the form of insurance, indemnity and guarantee. Each of these national laws and international laws afforded different degrees of protection to the public and exposed the nuclear industry to different degrees of risk for compensation and financial security.

- **The Organisation for Economic Cooperation and Development (OECD) launched**:
  - *The Convention on Third Party Liability in the Field of Nuclear Energy 1960* (Paris Convention), which established the nuclear liability regime for most of Western Europe;
  - *The 1963 Convention Supplementary to the Paris Convention of 29 July 1960* (Brussels Convention) provided for enhanced compensation, supplementing the Paris Convention;
  - *2004 Protocol to Amend the Paris Convention on third Party Liability in the Field of Nuclear Energy of 29 July 1960,* plugged the loopholes of geographic scope of accident, amount of compensation and definition of nuclear damage, thrown up by the Chernobyl Disaster.
- **The International Atomic Energy Agency (IAEA) sponsored:**
  - *The Vienna Convention on Civil Liability for Nuclear Damage* (Vienna Convention) in 1963, based largely on the principles laid down in the Paris Convention;
  - *Protocol to amend the 1963 Vienna Convention on Civil Liability for Nuclear Damage.*
- **Convention on Supplementary Compensation 1997 (CSC),** aligned the US domestic legislation – Price Anderson Act with international law, provided additional amounts through contributions by the State parties on the basis of installed capacity and required the State nuclear liability laws to mirror the CSC.
- **Joint Protocol Relating to the Application of the Vienna Convention and the Paris Convention** linked the Paris and the Vienna Convention[57].

The underlying feature in each of the international laws reflected the outdated need to subsidise the nuclear energy industry with exclusion of supplier liability and limited liability, thereby exposing the lack of adequate safeguards for the public or the government's exchequer. Arguments about the international laws pushing for

[56] Ibid
[57] Vide Supra note 11 at 4, 5 and 6.

highest standards of safety[58] or liability of the operator being limited are illusory in nature; at the end of the day there remains an uncertain risk of the amount of compensation to be paid.

Regulatory Framework in India

Atomic Energy Act, 1962

The Atomic Energy Act, 1962 (Atomic Energy Act) provides for the development, control and use of atomic energy for the welfare of the people of India and for other peaceful purposes.

Civil Liability for Nuclear Damage

Using the power granted to the Centre under entry 6 of the Union List, the Government promulgated the Indian nuclear liability regime; Civil Liability for Nuclear Damage Rules, 2011 (CLND Rules). Additionally, in 2010, India became a signatory to the CSC and on February 5, 2016, CSC was ratified. A synopsis of the CLND is as under:

- Channelled all liability for nuclear damage[59] to the (Government owned) operator (*section 4*)[60] with the right of recourse against the supplier (*section 17 read with rule 24 of the CLND Rules*)[61];
- Gave the victims the right to pursue remedies under tort law and left the operator exposed to any proceeding that may be instituted under the Indian law (*section 46*);
- Capped the maximum amount of liability, in respect of each nuclear incident, to the rupee equivalent of three hundred million special drawing rights or such higher amount as the Government may specify by notification (*section 6(1)*)[62];
- The Government may take additional measures, where necessary, if the compensation to be awarded under CNLD exceeds the amount specified (*proviso to section 6(1)*);
- The liability of an operator for each nuclear incident, in respect of nuclear reactors having thermal power equal to or above ten MW, shall be rupees one thousand five hundred crores (*section 6(2)*);
- The Government may review the amount of operator's liability, from time to time and specify, by notification, a higher amount (*Proviso to section 6(2)*);
- The government, and not the operator, shall be liable for any nuclear damage where such damage is caused by a nuclear incident directly due to -

[58] Fritz, Kathy J.S., Civil and State Liability for Nuclear Accidents: A proposal for Eastern European, International Legal Perspectives 6 (1994): 37, 60-61.
[59] The concept of "nuclear damage" as defined in the CLND, for the most part, mirrors the definition in the CSC.
[60] The concept of "liability of the operator" as set out in the CLND, for the most part, mirrors Article 3 of the CSC.
[61] The concept of "right of recourse" as set out in the CLND, for the most part, mirrors Article 10 of the CSC.
[62] The concept of "monetary compensation" as set out in the CLND, for the most part, mirrors Article 3 of the CSC.

- a grave natural disaster of an exceptional character; or
- an act of armed conflict, hostility, civil war, insurrection or terrorism (*section 5(1) read with 7(1)*)[63];

- The operator shall not be liable for any nuclear damage caused to the nuclear installation itself and any other nuclear installation including a nuclear installation under construction, on the site where such installation is located; and to any property on the same site which is used or to be used in connection with any such installation; or to the means of transport upon which the nuclear material involved was carried at the time of nuclear incident, unless the operator is liable under any other law for the time being in force (*section 5(1)*)[64];
- The Government may establish a fund to be called the Nuclear Liability Fund by charging such amount of levy from the operators to only meet its liability under 7(1)(c) (*Second tier of compensation*) and under 7(1)(c) (*force majeure events*) (*section 7(2)*)[65];

- The operator shall, before he begins operation of his nuclear installation, take out insurance policy or such other financial security or combination of both, covering his liability (*section 8*)[66];

- The right to claim compensation for nuclear damage shall extinguish, if such claim is not made within a period of :
  - 10 years, in the case of damage to property;
  - 20 years, in the case of personal injury to any person, from the date of occurrence of the incident (*section 18*)[67].

Impact of the Liability Regime

Under the CLND, therefore, liability for nuclear damage will be borne as follows:

- The operator shall bear the liability amount, wherever required under the law, and pay the compensation (*through insurance or such other financial security*);

- The operator shall have a right of recourse against such supplier (*pursuant to the payment of compensation*) when (a) there is a contract giving such a right, or (b) the nuclear incident has resulted as a consequence of an act of the supplier or his employee (*which includes supply of equipment or material with patent or latent defects or sub-standard services*), or (c) an individual causes nuclear damage with the intent to do so; and

- The Government shall step in with public funds from the Nuclear Liability Fund, and any additional measures, if the liability amount envisaged herein proves to be insufficient.

In order to address the liability concerns of Indian and foreign suppliers, M/s General Insurance Corporation of India, along with several other Indian insurance companies, launched the India Nuclear Insurance Pool (INIP)

[63] The concept of "exclusions for liability" as set out in the CLND, for the most part, mirrors Article 3 of the CSC.
[64] The concept of "exclusions for liability" as set out in the CLND, for the most part, mirrors Article 3 of the CSC.
[65] The concept of "public funds" as set out in the CLND, for the most part, mirrors Article 3 of the CSC.
[66] The concept of "insurance" as set out in the CLND, for the most part, mirrors Article 5 of the CSC.
[67] The concept of "time limit for compensation" as set out in the CLND, for the most part, mirrors Article 3 of the CSC.

with a capacity of Rs.1500 crore on 12th June, 2015, to provide insurance to cover the liability as prescribed under Civil Liability for Nuclear Damage (CLND) Act 2010.

Figure 12 : Nuclear Power plants in India: Operating & Under construction

Solar Power and India

In order to focus and support the development of the domestic industry in India and to promote manufacturing in the country, Government of India has come up with a number of initiatives in the solar and wind power sectors. One such initiative of the Government of India was the establishment of a program called the Jawaharlal Nehru National Solar Mission (JNNSM). The mission is one of the several initiatives that are part of the National Action Plan on Climate Change. The program was inaugurated by former Prime Minister Manmohan Singh on January 11, 2010 with a target to achieve capacity of 20GW by 2022 which was later increased to 100 GW by the present government in the 2015 Union budget of India. The objective of the National Solar Mission is to establish India as a global leader in solar energy, by creating the policy conditions for its diffusion across the country. The phases of this mission have been discussed briefly below:

The Jawaharlal Nehru National Solar Mission

JNNSM under the brand name "Solar India" set an ambitious target of adding 20GW of grid connected and 2GW of off-grid capacity by 2022 in three phases. Phase wise target of the mission as envisaged then is presented below:

Sl. No.	Segment	Target For Phase I (2010-13)	Cumulative Target For Phase II (2013-17)	Cumulative Target For Phase III (2017-22)
1	Utility Grid Power including rooftop	100MW	10000MW	20000MW
2	Off Grid Solar Applications	200MW	1000MW	2000MW
3	Solar Collectors	7 million sq. mt.	15 million sq. mt.	20 million sq. mt.

Phase I

Scheme adopted in Phase I (Rooftop PV & Small Solar Power Generation Programme):

The key scheme under Phase I of the JNNSM was bundling of solar power with conventional energy in order to mitigate the average cost of power given the high cost of solar power. NTPC Vidyut Vyapar Nigam (NVVN) was selected as the nodal agency to select bidders through reverse bidding, purchase solar power, bundle the same with conventional power from the unallocated quota of the Government of India (Ministry of Power) generated at NTPC coal based stations, which is relatively cheaper and sell it to the Distribution Utility at weighted average price.

In addition, the MNRE announced the Guidelines for Rooftop and other Small Solar Power Plants Connected to Distribution Network (Below 33 kV) in June 2010. This component of JNNSM was designed essentially as a State driven scheme to encourage States to develop grid connected projects focusing on the distribution network and to strengthen the tail-end of the grid. Another purpose of the scheme was to encourage as many States as possible to set up small solar grid connected projects. This would also help to create a database of performance

of solar plants under different climatic and grid conditions. This was considered necessary for large-scale replication in future, particularly for meeting rural needs in the next phase of the initiative.

Phase II

Unlike Phase-I, Phase-II was not entirely dependent on bundling scheme to bring the costs down, as the target capacity under Phase-II was high and without confirmation on availability of unallocated quota with central generating stations. Therefore, implementation of Phase-II had to be carried out through a combination of various schemes such as Generation Based Incentive (GBI), Viability Gap Funding (VGF) and Bundling with conventional power.

For implementation of the VGF Schemes in Phase II, Solar Energy Corporation of India (SECI) was selected as the nodal agency, working in close association with NVVN. Broadly, the VGF Schemes envisaged power purchase of solar power by SECI from generators for 25 years at a fixed levellised tariff for onward sale to the distribution utilities with a slight margin. The project developers were to be selected on the basis of reverse competitive bidding on the parameter of the extent of viability gap funding required so as to sell power at the fixed tariff. The guidelines also stipulate a payment security mechanism to cover any defaults in payments by Discoms to SECI, so that timely payment to the developers can be ensured. The VGF Scheme also envisages that the MNRE may stipulate a domestic content requirement. Domestic content requirement has been a major bone of contention in trade disputes between India and the United States of America.

Promotion of domestic manufacturing of equipment to be used for solar projects, and development of solar parks were two major initiatives that were initiated in this phase.

Customs Duties

This section gives an overview of customs duties and India's imposition and resultant impact of safeguard duties for solar panels and modules.

Earlier in September 2016, the Government Authorities sought to classify solar panels as "electrical motors and generators" (HS Code 8501) under the Customs Act. This led to lot of disputes as several project developers had challenged the move in court and had left several hundred containers of solar panels at the ports delaying the project for weeks. Items classified under HS Code 8501 attract higher Basic Custom duty rate of 7.5%.

Recently, by its circular dated 06.04.2018, The Central Board of Indirect Taxes and Customs (CBIC) has reclassified imported solar modules in order to provide exemption from Basic Customs duty.

Now, solar modules and panels with bypass diodes are classified under the code 8541 while modules and panels with blocking diodes or those with blocking and bypass diodes will be classified under the code 8501. Articles under code 8541 will not attract any import duties while articles under code 8501 will continue to attract import duty.

Concerns relating to climate change leading to global warming have contributed to the growth of the non-conventional or renewable energy sector market. Given that the renewable energy market is still at a nascent stage globally in terms of deployment, most forms of renewable power production require some form of government intervention or support as power has been one of the regulated sectors. This support has led to trade disputes, both at the World Trade Organization (WTO) and through domestic trade remedy channels.

WTO law

Typically, WTO Members bring disputes related to industrial policies of other Members which are designed to promote the use of domestic contents as inputs in the production of the final product. These local content requirements (LCR) are prone to be successfully challenged under WTO rules by other countries.

Till date, there have been two disputes at the WTO which have issued rulings with renewable energy: *Canada – Renewable Energy* and *India – Solar Cells and Modules*. In both these disputes, the WTO has categorically held that local content conditions to qualify for the respective governmental programmes were inconsistent with Article III:4 of GATT and Article 2 of TRIMs Agreement. Another on-going dispute in which India is raising a legal challenge against United States' renewable energy policy is the *United States – Renewable Energy*. This dispute is currently being deliberated at the WTO Panel stage and use of local content requirement is central to India's claim[68].

Figure 13 : Our firm is representing the Government of India in the above mentioned dispute at the WTO

The key legal provisions that are relevant for a potential legal challenge under existing WTO rules with respect to LCRs, depending upon facts of each case, are as follows:

- **Article III:4 of General Agreement on Tariff and Trade (GATT):** This article provides that imported products must be accorded "treatment no less favourable" than that accorded to "like products of national origin in respect of all laws, regulations and requirements affecting their internal sale, offering for sale, purchase, transportation, distribution or use".

[68] Economic Laws Practice is advising the Government of India in this dispute.

- **Article III:8(a) of GATT:** This article provides an exception to the national treatment disciplines applied through Article III:4 of GATT. It states that "[t]he provisions of this Article shall not apply to laws, regulations or requirements governing the procurement by governmental agencies of products purchased for governmental purposes and not with a view to commercial resale or with a view to use in the production of goods for commercial sale".

- **Article 2 of the Agreement on Trade Related Investment Measure (TRIMs Agreement):** This article provides that "no Member shall apply any TRIM [Trade-related Investment Measure] that is inconsistent with the provisions of Article III […] of GATT 1994". The TRIMs Agreement includes an "illustrative list" of trade related investment measures that are inconsistent with GATT Article III:4, including "which require […] the purchase or use by an enterprise of products of domestic origin or from any domestic source […]" to obtain an advantage.

- **Article 3.1 (b) of the Agreement on Subsidies and Countervailing Measures (SCM Agreement):** This article prohibits subsidies that are granted or maintained contingent upon the use of domestic over imported goods.

In view of the above legal provisions, it is unlikely that any governmental policy or scheme with a mandatory LCR component would succeed if challenged at the WTO Dispute Settlement Body.

Domestic trade remedies

According to WTO law, there are three kinds of trade remedies: (i.) anti-dumping measures; (ii.) countervailing measures; and (iii.) safeguard measures. Trade remedies are undertaken by governments at a domestic level. The renewable energy sector has attracted all three kinds of trade remedies for final products (for example bio-fuels) as well as inputs into the final products (for example solar cells and modules) in many global economies, including the European Union[69], India[70], and the United States[71].

Anti-dumping measures

Anti-dumping measures are frequently used trade remedies. These measures seek to counteract unfairly low prices. According to the WTO Agreement on Anti-Dumping, goods that are deemed to be "dumped" when they are exported by firms at lower prices than those sold in their home market. Dumping *per se* is not illegal. However, it can be challenged as soon as dumping of the goods results in injury to the local businesses in the country of import. In the past decade, there have been several anti-dumping investigations that have been initiated on energy technologies such as solar cells and modules in countries such as European Union, United States and India.

In India, anti-dumping duty investigations are carried out by Directorate General of Trade Remedies (DGTR) in accordance with the Customs Tariff (Identification, Assessment and Collection of Anti-Dumping Duty on Dumped Articles and for Determination of Injury) Rules 1995 framed under Customs Tariff Act, 1975. Preliminary or final

[69] For example, EU had imposed definitive anti-dumping and anti-subsidy duty on solar cells and modules originating from China in 2013. These duties were removed in 2016. See, Council Implementing Regulation (EU) 1238/2013

[70] For example, India has imposed safeguard duties on solar cell and modules originating from China and Malaysia in 2018. See, Notification No. 1/2018-Customs (SG) read with Notification No. 14/2018-Customs.

[71] For example, United States imposed definitive anti-dumping duty on solar cells and modules originating from China in 2018. See, Federal Register, 82 FR 17797, 2017-07491, pp. 17797-17798.

findings recommending duties, if any are issued by DGTR based on which the Ministry of Finance imposes provisional or definitive anti-dumping duties by way of customs notification.

Countervailing measures

Countervailing measures result in the imposition of a duty by the importing country to counteract subsidies that have provide an unfair advantage to firms to export at a lower price.

Countervailing duty investigations in India are carried out by DGTR in accordance with the Customs Tariff (Identification, Assessment and Collection of Countervailing Duty on Subsidized Articles and for Determination of Injury) Rules, 1995 framed under Customs Tariff Act, 1975.

Safeguard measures

Unlike anti-dumping measures and countervailing measures, safeguard measures do not counteract an unfair practice. Instead, it permits countries to temporarily suspend import surges so as to allow local businesses a time-frame to adjust their strategies to the increase in competition from foreign products in the domestic markets. Recently, United States, European Union and India have implemented safeguard duties on solar cells.

Safeguard investigations, like anti-dumping investigations and countervailing investigations, are also conducted by DGTR. These investigations are conducted as per the Customs Tariff (Identification and Assessment of Safeguard Duty) Rules, 1997. However, unlike the other two trade remedials, the approval of the Board of Safeguards is mandated for imposing the safeguard duties.

Summary of recent trade remedy cases in India

Solar cells and modules have attracted anti-dumping and safeguard investigations in India. In July 2017, an association of domestic producer of solar cells and modules ("petitioners") requested for the initiation of an anti-dumping investigation on solar cells and modules imported from China, Taiwan and Malaysia. However, the petitioners withdrew their petition in 2018. More recently, India imposed a safeguard duty on solar cells imported from China and Malaysia for two years. A levy of 25% (*ad valorem* minus anti-dumping duty) has been imposed on imports in the first year starting 30 July 2018, and 20% and 15% for two subsequent six-month periods, respectively, based on a notification from the Ministry of Finance.

Being mindful of international trade rules

In today's interconnected world, designing a business strategy in the power sector, be it from conventional or non-conventional sources, requires firms to account for WTO and international trade rules. Taking proactive initiatives at both individual and enterprise-wide level will help businesses effectively manoeuvre trade-related challenges.

Foreign Direct Investment in the Solar Power sector

Investments by non-resident Indian entities (Non-Resident Entities) in an Indian Company are governed by the Foreign Exchange Management Act, 1999 and the rules and regulations thereunder (FEMA). Investments by Non-Resident Entities can be made on a repatriation basis i.e. the investment (net of applicable taxes) can be remitted outside India. Two decades ago, the Government of India has liberalised FEMA for attracting foreign direct investment in India.

Under FEMA, 100% foreign direct investment by a Non-Resident Entity is permitted in an Indian Company engaged in the Solar sector. Subject to the above condition, such investments do not require any governmental approval in India. However, there are filing requirements to report such investments with the Reserve Bank of India. Key facets of FEMA are listed below.

Permissible Instrument for Investment

Non-Resident Entities can either make a primary investment in an Indian Company by subscribing to any permissible 'Capital Instruments' of such a company or make a secondary acquisition of the share capital of an Indian Company by purchasing the any permissible 'Capital Instruments' from the existing shareholders of the Indian company.

Permissible 'Capital Instrument' of an Indian Company include equity shares, convertible preference shares or convertible debentures which are compulsorily convertible into equity shares (Compulsorily Convertible Instrument).

If the investment is in the form or any other instrument, such investment is not considered as 'foreign direct investment' and instead considered as foreign debt, in which case separate regulations and conditions apply.

Pricing Requirements for Investment

The FEMA provides for two pricing requirements for foreign direct investment based on whether an Indian Company is listed or not.

In case of a listed Indian Company, if the investment is a primary investment in a permissible 'Capital Instrument', the pricing requirements issued by the Securities and Exchange Board of India apply:

- *Equity Shares*: The price per equity share *cannot be less* than average weekly high and low of the volume weighted average price for 26 weeks or 2 weeks prior to the relevant date[72] (whichever is higher) (SEBI Equity Pricing);

- *Compulsorily Convertible Instrument*: The price per Compulsorily Convertible Instrument *cannot be less* than average weekly high and low of the volume weighted average price for 26 weeks or 2 weeks prior to the relevant date[73] (whichever is higher) (SEBI CI Pricing).

In case of an unlisted Indian Company, if the investment is a primary investment in a permissible 'Capital Instrument', the following pricing requirements apply:

- *Equity Shares or Compulsorily Convertible Instrument:* The price per equity share or Compulsorily Convertible Instrument *cannot be less* than the price calculated as per any internationally accepted method for valuation on an arm's length basis duly certified by a chartered accountant or a registered merchant banker.

[72] Relevant date is a date which is 30 days prior to the date on which the shareholders have approved the issuance of the equity shares

[73] Relevant date is a date which is 30 days prior to the date on which the shareholders have approved the issuance of the instrument *or 30 days prior to the date of conversion*

- In case of Compulsorily Convertible Instrument, the price/conversion formula of the instrument should be determined upfront at the time of issuance of the instrument and the price at the time of conversion cannot be lower than the price determined at the time of issuance.

Pricing Requirements for Exit

Under FEMA, if the permissible 'Capital Instrument' is transferred by a Non-Resident Entity to a person resident in India then the following applies:

- In case of a listed Indian Company, the price per instrument *cannot exceed* the SEBI Equity Price or the SEBI CI Pricing (as the case may be).

- In case of an unlisted Indian Company, the price per instrument *cannot exceed* the price calculated as per any internationally accepted method for valuation on an arm's length basis duly certified by a chartered accountant or a registered merchant banker.

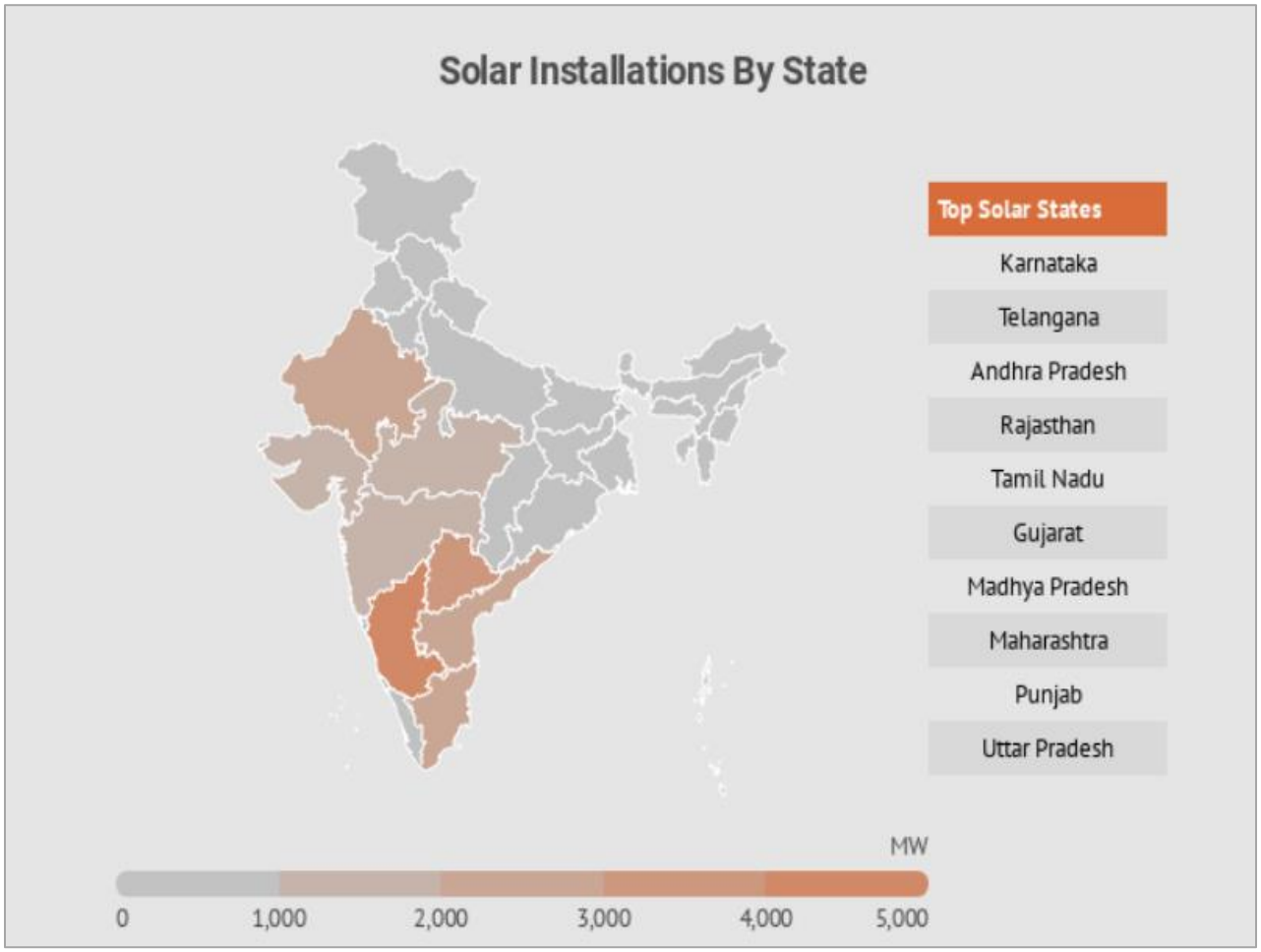


Figure 14: Solar installations by State: Source Mercom India

Competitive Bidding in Solar and Wind Power

Evolution of the renewable energy industry

The solar energy sector has undoubtedly come a long way from the FiT regime, to competitive bidding, to the introduction of the ultra-competitive e-reverse competitive bidding. The wind energy industry has developed at a much rapid rate than the solar energy industry, and has some inherent advantages over the solar energy industry to establish itself as a major support system for India's renewable energy ambitions. It has been noted that there has been an almost excessive fall in tariff rates bid for production of solar power. This is mostly attributable to increased efficiency in the sector, and the rapid fall in the prices of solar equipment. The wind energy sector seems to be following the same trajectory. As is the case for any industry in its infancy, over-leveraging and over-competition might not necessarily be in the best interests of the industry, and for the economy as a whole, in the long term. Such fall in prices and the subsequent fall in the return expectations of bidders has led to the withdrawal of many small players from the market. In recent times, the number of bidders competing for projects has decreased considerably due to fall in their expected returns. It is necessary for the industry to take corrective steps, and perhaps for the Government to intervene so as to ensure that the industry does not become consolidated with only a few competitors. In this scenario, it may also be difficult, perhaps even unsustainable, for concessionaires to sustain unforeseen shocks impacting in the industry.

Figure 15: Jaisalmer Wind Park : The largest operational wind farm in India[74]

[74] Image sourced from https://www.thehindu.com/sci-tech/energy-and-environment/the-bustard-and-the-windmill/article19608564.ece

The competitive bidding guidelines for procurement of solar and wind power

The Ministry of Power released the guidelines for Tariff Based Competitive Bidding Process for Procurement of Power from Grid Connected Solar PV Power Projects on August 3, 2017 (Solar Guidelines) and separate guidelines for Tariff Based Competitive Bidding Process for Procurement of Power from Grid Connected Wind Power Projects on December 8, 2017 (Wind Guidelines). The following table summarizes the highlights of these guidelines along with a brief of the points of differentiation between both the said guidelines.

Applicability of Electricity Act, 2003

Solar Guideline	Wind Guidelines
The clauses have been formulated under the provisions of Section 63 of the Electricity Act for long term procurement of electricity from grid-connected solar PV power projects.	Wind clauses also have been formulated as per the provisions of Section 63 of the Electricity Act for adoption of tariff transparent procedure for bidding.

Clearance by the procurer

Solar Guideline	Wind Guidelines
A clause regarding clearance by Procurer is added in the Solar Guidelines which talks about clearance to be done by relevant authority and a sub-clause pertaining to clearance by the agency developing Solar Parks.	No clause has been mentioned regarding clearance by Procurer in case of Wind Guidelines.

Land Acquisition

Solar Guideline	Wind Guidelines
The clause states that an identification of 100% land at the time of bid submission should be done and within 7 months of the execution of PPA, submission of documents/ agreement is to establish possession/ right to use 100% of land in name of Solar Generator/ its Affiliate. The breakup mentioned in Solar Guidelines states that possession of 90% of land shall be given within 1 month of execution of the PPA and the balance 10% shall be done within 2 months thereafter.	The clause states that an identification of 100% land at the time of bid submission should be done and within 7 months of the execution of the PPA, submission of documents/ agreement is to establish possession/ right to use 100% of land in name of Wind Power Generator (WPG)/ its Affiliate. No specific breakup has been provided in the Wind Guidelines.

Bid Structure

Solar Guideline	Wind Guidelines
The bids shall be designed in terms of a package, the minimum size of a package being 50MW with a view to have economies of scale.	A special provision for inter-state and intra-state projects has been mentioned which states that the bidder shall be allowed to bid for a minimum 25MW or at least 5MW (on-site) project in intra-state case and minimum 50MW in case of inter-state wind projects.

VGF as the bidding parameter

Solar Guideline	Wind Guidelines
A separate clause regarding using VGF based bidding being used as a bidding parameter has been specified in Solar Guidelines.	No such VGF based bidding clause has been mentioned in Wind Guidelines.

Term of power purchase agreements

Solar Guideline	Wind Guidelines
The PPA period should be not less than 25 years from the date of the Scheduled Commissioning Date (SCD) as it influences the tariff by determining the period over which the investment is returned to investor/ SPD. Thus, longer PPAs are favored for lower tariffs.	The PPA period should be not less than 25 years from the date of the SCD as it influences the tariff by determining the period over which the investment is returned to investor/ WPD. Thus, longer PPAs are favored for lower tariffs.

Capacity Utilization Factor (CUF)

Solar Guideline	Wind Guidelines
It is specified that where the project generates and supplies energy less than the energy corresponding to minimum CUF, the Solar Power Generator will be liable to pay a penalty to the Procurer in accordance with the terms of the PPA and such penalty shall be subject to a minimum of 25% of the cost of its shortfall in energy terms, calculated at PPA tariff.	It is mentioned that where the project generates and supplies energy less than the energy corresponding to minimum CUF, the WPG will be liable to pay a penalty to the Procurer in accordance with terms of the PPA and such penalty shall be subject to a minimum of 75% of the cost of its shortfall in energy terms, calculated at PPA tariff.

Force Majeure

Solar Guideline	Wind Guidelines
The PPA shall contain provisions with regard to force majeure definitions, exclusions, applicability and available relief on account of Force Majeure.	The PPA shall contain provisions with regard to force majeure definitions, exclusions, applicability and available relief on account of Force Majeure as per industry standards. Additionally, it is provided that the WPG shall intimate the Procurer of force majeure within 15 days of its start and the decision shall be taken by the Procurer within these 15 days intimation. Apart from this, there has been an explicit provision regarding waiver of inter-state transmission system (ISTS) charges and losses on transmission of wind power by Government of India. It states that where SCD of wind project is before the date till above ISTS waiver due to force majeure event, the liability of transmission charges and losses would be shared between WPG and Procurer in the ratio of 50:50.

Generation compensation for offtake constraints (due to transmission constraints)

Solar Guideline	Wind Guidelines
An explicit clause mentioning provisions regarding generation compensation in offtake constraints due to the transmission Infrastructure not being complete/ ready has been provided under the Solar Guidelines stating that, normative CUF of 19% or committed CUF (whichever is lower) shall be taken for the purposes of calculation of generation loss. Corresponding to this generation loss, the excess generation by SPD in succeeding 3 contract years shall be procured by the Procurer at PPA tariff so as to offset their loss. If the transmission delay is directly attributable to the organization building the transmission network and some penalty is imposed on him, then a part of that penalty may be utilized for compensating the generation loss.	No such provision regarding generation compensation for offtake constraints (transmission constraint) has been provided in Wind Guidelines.

Generation Compensation for offtake constraints (due to grid unavailability)

Solar Guideline	Wind Guidelines
Grid unavailability during the duration mentioned in a contract year would be as defined in the PPA (the period from 8 am to 6 pm). Provided, that as an alternative to the above mechanism, the Procurer may choose to provide generation compensation, in terms of PPA tariff for Grid unavailability beyond 50 hours in a Contract year as defined in PPA.	Duration mentioned for grid unavailability in contract year would be beyond 50 hours in a contract year as defined in PPA. Provided, that as an alternative to the above mechanism, the Procurer may choose to provide generation compensation, in terms of PPA tariff for Grid unavailability beyond 50 hours in a Contract year as defined in PPA. The duration of backdown is calculated as per hours of Backdown during a monthly billing cycle and the generation compensation (without trading margin) is to be paid as part of the energy bill for the successive month after receipt of Regional Energy Accounts (REA).

Generation compensation for offtake constraints (due to forced backdown)

Solar Guideline	Wind Guidelines
The duration of backdown is calculated as per hours of Backdown during a monthly billing cycle and the generation compensation (without trading margin) is to be paid as part of the energy bill for the successive month after receipt of Regional Energy Accounts (REA).	The duration of backdown is calculated as per hours of Backdown during a monthly billing cycle and the generation compensation (without trading margin) is to be paid as part of the energy bill for the successive month after receipt of REA.

Change in law

Solar Guideline	Wind Guidelines
It mentions that Change in Law shall refer to occurrence of any of the following events after the last date of bid submission, including the following: ▪ The enactment of any new law ▪ An amendment, modification or repeal of an existing law ▪ The requirements to obtain a new consent, permit or license, or ▪ Any modification to the prevailing conditions prescribed for obtaining a consent, permit or license, or ▪ Any change in the rates of any taxes which have a direct effect on the project. However, the provision regarding levying of custom duty is not mentioned in Solar Guidelines.	It is been mentioned that Change in Law shall refer to occurrence of any of the following events after the last date of bid submission, including the following: ▪ The enactment of any new law ▪ An amendment, modification or repeal of an existing law ▪ The requirements to obtain a new consent, permit or license, or ▪ Any modification to the prevailing conditions prescribed for obtaining a consent, permit or license, or ▪ Any change in the rates of any taxes which have a direct effect on the project. This clause states that custom duty is to be imposed on imported equipment.

Bid evaluation methodology

Solar Guideline	Wind Guidelines
It talks about two aspects of methodology including in case of bidding involving tariff as parameter which states that the comparison of bids shall be on the basis of the bidding criteria as specified in the RFS and in case of bidding involving VGF as the parameter where bids shall be evaluated on basis of VGF support quoted. It adopts simple competitive bidding method as well VGF as a methodology, but does not include e-reverse auction.	These clauses only talk about the comparison of bids on the basis of the bidding criteria as specified in request for selection document. It adopts the simple competitive bidding method and e-reverse auction. However, VGF is not included as a methodology unlike Solar Guidelines.

Financial Closure

Solar Guideline	Wind Guidelines
SPG shall attain financial closure in terms of the PPA, within 7 months from the date of execution of the PPA.	SPG shall attain financial closure in terms of the PPA, within 7 months from the date of execution of the PPA.

Part commissioning

Solar Guideline	Wind Guidelines
Part commissioning of a project shall be accepted by the Procurer subject to the condition that the minimum capacity for acceptance of the first and subsequent parts of commissioning shall be for at least 50 MW, without prejudice to the imposition of penalty, in terms of the PPA on the part which is not commissioned.	It mentions that part commissioning of project shall be accepted by the Procurer subject to the condition that the minimum capacity for acceptance of the first and subsequent parts commissioning shall be 50% of project capacity or 50 MW, whichever is lower, without prejudice to the imposition of penalty, in terms of the PPA on the part which is not commissioned

Commissioning schedule

Solar Guideline	Wind Guidelines
Projects shall be commissioned within a period of 13 months from the date of execution of the PPA. Additionally it is provided that projects with a capacity of 250MW and above, if being outside a solar park shall be commissioned within a period of 15 months from the date of execution of the PPA.	Projects shall be commissioned within a period of 18 months from the date of execution of the PPA.

Commercial Operation Date (COD)

Solar Guideline	Wind Guidelines
As per Solar Guidelines, COD shall be the date on which the commissioning certificate is issued upon successful commissioning of the full capacity of the project or the last part capacity of the project as the case maybe.	As per Wind Guidelines, COD shall be considered as the actual date of commissioning of the project as declared by the Commissioning Committee constituted by State Nodal Agencies (SNA).

Technical Specifications

Solar Guideline	Wind Guidelines
The detailed technical parameters for Solar PV Power Projects to be selected, shall be specified by MNRE.	Procurers shall promote commercially established and operational technologies to minimize technology risk and achieve timely commissioning of projects. Only type certified wind turbine models listed in Revised List of Models and Manufactures (RLMM) brought only out by MNRE, shall be allowed for deployment in the country.

Arbitration

Solar Guideline	Wind Guidelines
If the CERC is the appropriate commission, any dispute which arises claiming any change in, or regarding determination of tariff or any tariff related matters, or which partly or wholly could result in change in tariff, such dispute shall be adjudicated by the CERC. All other disputes shall be resolved by arbitration under the Indian Arbitration and Conciliation Act, 1996. If the SERC is the appropriate commission then all disputes shall be adjudicated by the SERC or shall be referred for arbitration by the SERC.	In the event the CERC is the appropriate commission, any dispute which arises claiming any change in, or regarding determination of tariff or any tariff related matters, or which partly or wholly could result in change in tariff, such dispute shall be adjudicated by the CERC. All other disputes shall be resolved by arbitration under the Indian Arbitration and Conciliation Act, 1996. In the event a SERC is the appropriate commission then all disputes shall be adjudicated by the SERC or shall be referred for arbitration by the SERC.

Deviation from process defined in the guidelines

Solar Guideline	Wind Guidelines
In case there is any deviation from these guidelines and/ or the Standard Bidding Documents (SBDs), the same shall be subject to approval by the Appropriate Commission. The Appropriate Commission shall approve or require modification to the bid documents within a reasonable time not exceeding 90 days.	In case there is any deviation from these guidelines and/ or the SBD, the same shall be subject to approval by the Appropriate Commission. The Appropriate Commission shall approve or require modification to the bid documents within a reasonable time not exceeding 60 days.

In a recent decision[75], the CERC opined that the guidelines for reverse bidding under the JNNSM Scheme are to be equally treated as guidelines under Section 63 of the Act. CERC, considering the issue of whether it has the jurisdiction to adjudicate and modify the tariff discovered under reverse competitive bidding relied upon a decision of the Supreme Court[76] where it was held that *"the general regulatory power of the Commission under section 79(1)(b) is the source of power to regulate, which includes the power to determine or adopt tariff. In fact, sections 62 and 63 deal with determination of tariff which is part of regulating tariff"*, and held that it had the jurisdiction "*to regulate the tariff discovered under the Reverse Competitive Bidding for PPAs concluded under the JNNSM Scheme and adjudicate the disputes arising under the PPA*".

In the context of renewable energy, this could be seen as opening the door for renegotiation of tariff even in cases where the tariff was earlier determined through competitive bidding.

[75] Godawari Green Energy Limited and Ors. v. NTPC Vidyut Vyapar Nigam Limited and Ors., Petition no. 304/MP/2013
[76] Energy Watchdog & Ors. v. Central Electricity Regulatory Commission & Ors., 2017 (4) SCALE 580

Future of Coal Fired Plants in India

Coal forms a major part of the energy mix in India; traditionally, thermal power plants have fueled the electricity needs of the country. Approximately 7% of the world's proven coal reserves are located in India[77], and it has been stated that coal use in India will continue to rise with its share of world coal consumption growing from 8% in 2012 to 14% in 2040. However, as with most commodities which display a cyclical nature, the coal industry is now facing turbulent times. Technological changes, change in environmental and regulatory regimes, decarbonization and digitalization, global trade and economic ambiguity have, together, created an uncertainty in the energy markets. Some of these global and domestic drivers are:

- Developments in renewable energy and energy storage technologies;
- Overcapacity and weak demand growth;
- Decarbonization and COP21 commitments by India;
- Power for all programme in order to provide electricity quality and reliable electricity 24/7 to all consumers;
- Apparent shrinkage in global fossil fuel (including coal) consumption due to increased focus on energy efficiency and investments in nuclear and renewable energy;
- Response to recent tranches of coal block auctions;
- 10% reduction in oil and gas imports by 2022;
- Non-performing asset crises, especially in the iron and steel, and power sectors, two major consumers; of coal and important sectors linked to economic growth;
- Changes in various policies pertaining to the domestic energy sector.

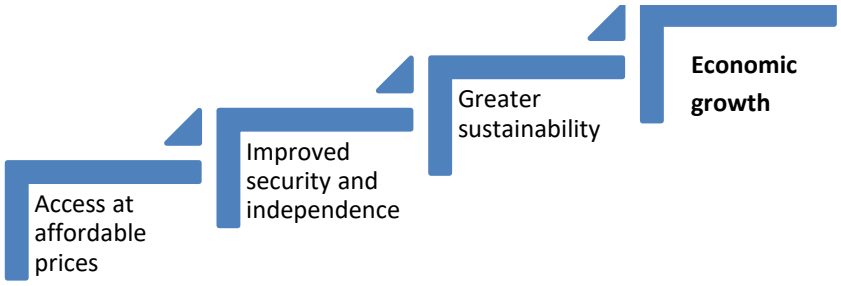
The impact of such changes on the coal industry, in India, appears to be far-fetched. Considering the vast amount of coal reserves that remain untapped, India is in the midst of a massive overhaul of its energy ecosystem; one that encourages development of cutting edge technology in all forms of energy sources, thereby continuing to provide access to energy at affordable rates and yet promoting energy efficiency and clean energy sources to reduce the dependency on fossil and imported energy sources. Standing in the midst of this change, it would be difficult to predict the inflexion point. It is an inevitable reality that cleaner sources of energy will take precedence over coal sometime in the future. However, given that the key influencers and players in the coal industry are routinely bringing about changes to the policies governing the coal mining industry, it seems that coal (and coal fired power plants) could have a longer life in India than is being apprehended.

Policy Drivers

While energy – and the coal sector, did not get much attention in the 2018 Budget, the Government, Niti Aayog, Coal India Limited and the Energy Research Institute and other key influencers have released their status reports and proposed policy drivers to encourage the optimum utilisation of coal in India's energy mix.

The draft National Energy Policy (Energy Policy) and the three-year action agenda (Action Agenda) by Niti Aayog has encouraged the retention of coal in the energy mix of India and suggested key policy drivers to reform and revitalise the coal sector.

[77] NITI Aayog, draft National Energy Policy, available at: http://niti.gov.in/writereaddata/files/new_initiatives/NEP-ID_27.06.2017.pdf



The four objectives propounded by the Energy Policy

The Energy Policy focuses on two kinds of time horizons, a short-term horizon going up to 2022 and a medium term going all the way up to 2040.

Figure 16: Coal powered plants in India

Action Agenda: Focused on increasing coal production and improving the efficiency of its distribution

- By 2019, the government will explore 25% of the untapped 5,100 sq km balance coal bearing area to ensure availability of more coal mining blocks.
- The government will step up the efforts to convert 25% of the 139.15 billion tonnes of coal reserves as on 31st March, 2016 in the 'Indicated' category into 'Proved' category by engaging top exploration companies with attractive contractual provisions.
- Coal India Limited (CIL) has to raise its production from the current level of 536.5 million tonnes (MTs) in 2015-16 to 1 billion Tonnes by 2019-20, depending on coal demand.
- Similarly, the current annual production level of Singareni Collieries Company Limited (SCCL) is envisaged to increase from 60.40 MTs to 80 MTs by 2019-20.
- At the institutional level, an independent organisation will be created to develop and maintain the repository of all coal related geological information in the country. The proposal to set up a Coal Regulator for fostering competition in the coal sector apart from advising Central Government on the formulation of the principles and methodologies for determination of price of raw coal and washed coal will be implemented.

- Market mechanisms shall be used to open the coal-mining sector for commercial mining.
- The practice of allocating subsidy by segmenting coal markets should be wound up and direct benefit transfer should be used to allocate the subsidy to the intended beneficiary.
- The implementation of the proposal to spin-off the subsidiaries of CIL as separate public-sector entities must also be implemented so that they may independently develop their own strategies and business models.
- Efforts must be made to improve labour productivity, increase coal production and enhance efficiency of distribution.
- Role of railways has been emphasized and completion of three critical railway lines namely Tori-Shivpur, Jharsuguda-Barpalli and Mand-Raigarh to significantly augment coal evacuation has been urged.
- The government must employ more Coal-Handling and Preparation Plants (CHPP) that wash coal before shipping. This process removes ash and debris, thereby increasing the energy content per tonne by 10-20%. Thus, 15 new Coal Washeries, including 6 Coking Coal washeries with a capacity of 18.60 MTPA and 9 non-coking Coal washeries with a capacity of 94 MTPA should be commissioned to meet the Ministry of Environment, Forest and Climate Change (MoEFF & CC) Guidelines. This objective can be met more efficiently if we permit commercial mining of coal with foreign investors allowed to participate so that the state-of-the-art technologies are introduced.
- On the lines of China, the Indian government must take steps to reduce the use of low quality coal. The quality used in India has high ash content and low energy content. Based on this quality, India uses 650 grams coal per kWh. Whereas, in 2015 China reported use of 308 grams coal per kWh and further targets less than 300 gms coal per kWh under 2014-2020 State Council Energy Action Agenda.
- Steps need to be taken to adopt clean-coal technologies including coal gasification.
- To boost production, the on-going auction process and transfer of mining lease and other related activities of captive mines to the new successful bidders should be expedited by 2018. The production from captive blocks has been targeted at 400 MT by 2020; the yearly targets should be devised and, where required, coalmines should be re-allocated to achieve the above target.

The Coal Vision 2030 released by Coal India Limited in January 2018 for stakeholders' comments[78] has effectively highlighted the constraints in the coal sector to ensure there is no supply deficit in the short term or stranded capacities in the long term.

- Demand for coal in India has increased nearly one-third in the last five years. The power sector and non-regulated sector, both, have driven the increase in demand;
- The domestic coal production has witnessed a significant increase in the last five years. CIL's production alone increased by more than 100MT, a 25 per cent increase from that of FY11–12. SCCL's coal production also increased 10MT in the same period, approximately 20 per cent increase;
- The regulatory scenario is in a state of flux since 2015, when the Supreme Court, through its order, de-allocated all captive coal blocks (except a select few). Subsequently, the government changed the captive coal allocation from 'First Come First Serve' basis to 'Auction' whereby eligible end consumers were required to bid for the coal blocks;

[78] Coal Vision 2030, available at: https://www.coalindia.in/DesktopModules/DocumentList/documents/Coal_Vision_2030_document_for_Coal_Sector_Stakeholders_Consultation_27012018.pdf

- There is significant policy push from the government towards increasing capacity and improving competitiveness in the overall renewables sector. The Government has set the target for renewable sources to reach 175GW by FY22. This is more than threefold increase from the current base. It underlines the significant commitment of the government and developers towards renewables in India. Additionally, battery storage cost has reduced substantially from over USD1,000 per kWh to about USD250 per kWh over the last few years. With increasing supply and advances in technology, battery cost is expected to go down further to approximately USD50 per kWh by 2030;
- Based on the changes in the power market structure, the coal market structure could also undergo changes. This could include renegotiation of the fuel supply agreements, evolution of spot markets and execution of fuel supply agreements with no long term power purchase agreements.

On February 20, 2018, the Cabinet Committee on Economic Affairs, approved the methodology for auction of coal mines / blocks for sale of coal under the Coal Mines (Special Provisions) Act, 2015 and the Mines and Minerals (Development and Regulation) Act, 1957 for commercial purposes. The auction will be an ascending forward auction and there shall be no restriction on the sale and/ or utilization of coal from the coal mine. It is anticipated that this reform will ensure assured coal supply, accountable allocation of coal and affordable power prices due to affordable coal. It is to be noted that since the entire revenue from the auction of coal mines for sale of coal would accrue to the coal bearing States, it is anticipated that the increased revenues can be utilised for the growth and development of backward areas and their inhabitants including tribals.

Financing of the Power Sector

The power sector in India is akin to a 'whirlpool' and the lenders are trying very hard to not get sucked into it. There have been various reports and discussions on the stress in the power sector having a rippling affect. From a lender's perspective, the primary issue qua power sector lending has been cash-flow management of the borrower, whether at the time of construction or at the time of generation.

Nature of lending to the power sector

It is important to highlight that in India, lending to the power generators has deviated from conventional concepts of 'project finance'. The borrower is mostly a special purpose vehicle that has acquired or is in the process of acquiring the rights to set up and operate a power plant. The borrower also ties up a power purchase arrangement for the power it is to generate. While the lenders help in financial closure, the equity contribution is brought in by the promoters. Most of the lenders are providing 'project finance' to such entities with the relevant comfort and security from the promoters. There usually is a corporate guarantee, pledge of shares of the borrower or a promoter undertaking. Additionally, the lenders try to take security over all tangible assets of the Borrower, whether or not they form part of the immediate project, the justification being that, considering it is a special purpose vehicle set up for the project, all assets should be under the lender's control. Sometimes the lenders also take third party security to further secure themselves. Even after having such onerous conditions, lenders to the power sector have not fared well on recovery.

Impact of issues on the lending

The situation of the power sector has definitely reduced the number of financial institutions that are willing and capable of taking any further risk in this sector. New projects in the power sector are mostly those in the renewable space. The approach of lenders qua such projects have completely transformed and the lenders are implementing all the learnings from their earlier mistakes. This section will highlight the changes in the approach of the lenders as a result of the issues in the power sector.

(i) *Construction and Commissioning issues*

One of the largest problems has been the time taken and obstacles faced during construction and commissioning of plants. This may be due to :

(a) the time lag for approvals and consents from authorities;
(b) inability to get clear title to the land or arrange for right of access to the land;
(c) modifications required by authorities which lead to change in plans and thereby change in costs;
(d) considering the unexpected time taken for clearance, the promoter's share/contribution is utilized in other projects and is therefore leading to a shortage of funds;
(e) the additional time taken also increases the cost of funding and the borrower keeps incurring interest during construction;
(f) the introduction of goods and services tax has definitely altered the analysis of cash flow management.

Lenders' Approach:

The lenders have increased their level of diligence and are conducting an in-depth analysis on the project before considering lending. Some lenders are appointing external consultants to conduct legal, financial and compliance diligence. Some compliance consultants are ones with the local expertise who

not only study the proposed project but also provide an understanding and clarity on the timelines and difficulties to be faced while procuring approvals.
Separately, the lenders have been trying to stipulate mechanisms by which the entire promoter contributions are set aside and the lenders have control over the same. While trying to have such structures, the financial institutions increase the dependence over the parent/ promoter entities and can no longer restrict their interest over the project.

Normal lending practice has been that the cashflows of the borrower from the project were being monitored by the lenders either through an escrow mechanism or through a trust and retention account mechanism. Some of the lenders have increased their oversight on the operations of such accounts. They are trying to ensure that there is a considerable reserve created within such accounts and that the money is first used for all project purposes and debt servicing before any money is available for general corporate purposes. Some term loan lenders even ensure that all surplus is first used for prepayment of the loans and then made accessible to the borrower and the promoters.

(ii) *Security creation issues*

(a) As indicated, lenders lend on the security of immovable property. In most cases where plants have been sanctioned, the authorities have either not yet completed acquisition of the land or there are certain issues to the title to the land.
(b) Separately, in a lot of cases, the security creation and perfection are subject to approval and consent from the power purchase arrangement.

Lenders' Approach:

Lenders have tried to retain the disbursement of maximum amount of the loan until creation and perfection of all security including the mortgages. Lenders are also seeking upfront approvals from the power purchasers for creation of security, for enforcement of security and for all other actions that may be required in relation to the loan arrangements. Wherever possible, lenders are trying to suggest and approve the draft of the power purchase agreement before the same is being entered into by the borrower. The lenders are also ensuring that the approvals are sought with regard to the amount of debt and not restricted to any particular lender. This would mean that the approvals are lender agnostic and would therefore help in sell down of the loans or in re-financing.

Considering the pricing of loans and as risk assessment is dynamic, lenders are moving towards syndicatable arrangements where the lender can be easily replaced without affecting too much change to the documentation. Increasingly, lenders are moving away from bilateral arrangements and instead have the security and the comforts created either in favour of the security trustee or the facility agent, even if at the time of origination there is only one lender.

Lenders are also insisting on pledge of shares of the borrower, assignment by way of security of the rights under the project documents and the right to step into the shoes of the borrower in case of an event of default. In effect, the lenders intend to keep a right to take over the project in case of a default. However, this has hardly been tested in the Indian market. Primarily because lenders are not eager to take on the business of running power companies. These rights are created in a manner that the lender can have a nominee takeover on its behalf. Considering the myriad of approvals and governmental and regulatory interventions, eventual takeover is lot more complicated. In pursuance to certain market experiences, the lenders also procure a power of attorney from the borrower to act on the borrower's

behalf and interact with all authorities to help them change/modify approvals and enforce a step-in right. Another important restriction is that banks in India are restricted to have a pledge of more than 30% (thirty percent) shareholding of a company under section 19(2) of the Banking Regulation Act, 1949. Accordingly, they are never able to take a pledge over the entire shareholding of the borrower. They usually seek a partial pledge and a non-disposal undertaking over the remaining shares. Such a restriction is not applicable for other financial institutions (like non-banking financial institutions etc).

(iii) *Power purchaser and distribution company issues*

(a) Most state-owned distribution companies lack funds and are therefore unable to perform their obligations under the power purchase agreements.

(b) Under several arrangements, distribution companies are either pushing for reduction of tariffs agreed under the power purchase agreements or trying to cancel the power purchase agreements.

Lenders' Approach:

The situation of the distribution companies have been one of the primary reasons that financial institutions are no longer looking at a long term exposure into power projects. The uncertainty of long-term revenues has affected the underwriting being done on such debt. This has resulted in new loans during the construction stage being more expensive than general market rates.
The lenders are also analyzing power purchase agreements to check whether distribution companies have retained a right to terminate without cause. In case existent, the particular matter is tagged to contain higher risk.

The Ujjwal DISCOM Arogya Yojna (UDAY) Scheme was introduced by the Government of India in 2015 to provide a revival package for the debt-ridden state-owned distribution companies. It was for each state to voluntarily subscribe to such schemes. Though UDAY had provided interim relief, it has not been able to resurrect the distribution companies. There were some lenders like the Power Finance Corporation and the Rural Electrification Corporation that had continued to lend to the loss-making distribution companies. The Ministry of Power of the Government of India has now issued directives to these lenders to stop lending without clear basis of repayment.

Lenders have also been concerned with the series of legal proceedings around power tariffs between the power generators and the distribution companies. Firstly, these proceedings take considerable amount of time. Secondly, even in case these proceedings are determined in favour of the power generator, the recovery of such overdue amounts from the distribution companies have been taking months.

The New Insolvency Regime

It is important to clarify that the process under the Insolvency and Bankruptcy Code, 2016 and its associated regulations (IBC) is not a recovery process but a process to try and bring a resolution to the distressed company. In case such an attempt of resolution fails, the company is immediately and mandatorily liquidated.

At this juncture, it is important to provide a brief snapshot of the restructuring regime in India. Until February 12, 2018, the RBI had provided for various schemes and structures under which there could be restructuring of a stressed asset. The lenders could form a joint lenders forum and could decide on a corrective action plan, they

could undertake a strategic debt restructuring etc. As per the circular released on February 12, 2018 in relation to stressed assets, the RBI removed all the schemes and structures and the concept of joint lenders' forum. It simply suggested that in case of a stressed asset, all lenders need to agree on a restructuring plan. In case the same is not agreed upon, then the company should be referred to the corporate insolvency process under IBC.

Lenders have various reasons why they don't wish to automatically opt for initiating a corporate insolvency process. Primarily, the RBI has mandated that as soon as a corporate insolvency process is admitted against a borrower, the lenders will have to provision for 50% (fifty percent) of their exposure. The requirement of provisioning is 100% (one hundred percent) in case the resolution process fails and an order of liquidation is passed against the borrower. Lenders are also aware that in most situations, they would not be in a position to recover their overdue amounts under the resolution process and would be required to accept a reduction on their full and final amount.

Also, lenders believe that it would not be easy to arrive at resolutions for power companies very easily. This is because the issues are being faced by the industry as a whole. Accordingly, other than a few established private players, the stressed assets will mostly not draw too much interest. In such a scenario, once the insolvency process is started, liquidation would be inevitable. Mere assets of the borrower (being a special purpose vehicle) will not be adequate to repay the existing dues, even under the liquidation process.

The Way forward and Alternative Sources of Financing

We cannot run away from the fact that there is and there will be a continuous demand for power in India. Most estimates also suggest that this demand will only increase. The issues being faced are industry-wide. Accordingly, this problem is one that can no longer continue unaddressed. The Government of India along with the state governments are trying to form policies and take steps. It is something that is taking time and with elections proposed in 2019, proper implementation of changes may take even longer.

However, it is important to recognize how the industry and various players are innovating and adapting to the requirements. The country has definitely seen a huge interest in renewable energy. In fact, renewable energy has been able to attract foreign investment and private equity investment as alternate sources of funding. There are several international players who have directly set up their business in India and not opted for any joint venture. Financial institutions like International Finance Corporation (IFC) have invested green bonds in companies like Tata Cleantech Capital Limited in order to provide funding to the renewable sector.

Separately, financial institutions are moving away from traditional means of financing. Some institutions are looking to finance a portfolio of roof top solar projects (rather than individual projects). They then propose to securitise such a portfolio and issue pass through instruments to immediately recover the amounts advanced. There are other institutions that are only looking at factoring of invoices for purchase of solar panels. They have formulated a policy and assessed a risk profile qua certain vendors and are happy to provide factoring or invoice discounting facilities.

Though certain alternatives are available, this does not address the systemic issue qua the loans already provided, neither does it address the stress being faced by distribution companies.

Land: Due Diligence

Given the support and push of the Government for increasing the capacity of Renewable Energy in India there are many projects/investments in pipeline. One of the most important requirements for any power project specially wind and solar is land acquisition.

For setting up any power project, the first step is identification and acquisition of land. Land is a state subject under the constitution and in India. Land being a topic covered under the concurrent list under the Constitution of India, there are both central laws and various state laws applicable to each state in the country which are required to be adhered to in relation to the lands in each respective state in India. These lead to complexities and compliances for acquisition of lands in India.

In order to ensure that the title of the proposed seller in the land is valid, clear and marketable and to ensure that the land may be used for the proposed project a thorough legal land due diligence/title due diligence in relation to the land are required to be conducted in order to ensure that any future complexities are avoided. It must be ensured that the land is free from any litigations and/or encumbrances. This can be ensured by conducting a due diligence in relation to the land and tracing the title for 30 (thirty) plus past years. The reason for conducting searches for 30 (thirty) plus past years is that any suit filed after 30 years shall be barred by limitation under Indian laws.
Generally, searches for the purpose of land due diligences are conducted with the offices of sub-registrar and with the office of revenue authorities.

Revenue Records and Documents in Vernacular language

Mostly the revenue records and certain other documents in each state are in vernacular language of such state. This presents a challenge for the parties involved to understand the documents. Translation of the same may be done but given the huge volumes of the documents, costs of translation and the time constraints the same is not practically feasible. It is necessary to ensure that the team conducting the due diligence has a member conversant in such language.

Incomplete Records and Documentation

At times it is observed that the old revenue records and other documents in relation to the property are missing and the same are not unavailable with the parties or the authorities or the old records are mutilated with time. Although the Government in states are moving towards digitisation of the records, at times the old records are not available with the authorities and the same may have been destroyed due to accidents and natural calamities. This must be reported in the Legal Due Diligence Report clearly and corrective actions or precautions may be taken to avoid any future complexities. These may be achieved at times by filing a Non-cognizable Police Report about the missing document and providing public notice (in local language and in English) in the local newspapers about the same thereby inviting any objections from the public at large and providing around a fortnight's time for the same.

Permissible Land Usage

The societal heritage of India being agrarian in nature it is a presumption that unless there is a document proving otherwise the permitted use of a land is agricultural. In most cases land procurement is done through local land aggregators who are responsible for coordinating with the local land owners and ensure that the documentation is completed smoothly as per the requirements of the acquirer. It is to be borne in mind that the conversion of the permitted use of land must be done from agricultural to non-agricultural prior to acquisition of the land since many states do not permit agricultural land to be acquired by non-agriculturists. Certain states like Maharashtra have policies that if the land is acquired for certain renewable projects such as solar project the conversion of land need not be done with payment of fees to the authorities and the land is deemed converted. This however is to be skillfully captured in the documents and the acquirer must bear in mind the conditions for retaining such deemed conversion status which may include timelines for completion of the relevant projects on land. Conversion also has a positive bearing on the valuation of the land which is helpful in raising finance from banks and financial institutions for the project.

Tenure of Land

The tenure of the land is an important to be considered while conducting a due diligence. If the land is a leasehold land and the balance tenure of lease is short without any specific provision for renewal of the lease, there would be uncertainty on the lease and also the lease rent (if the lease is continued) payable upon expiry of the tenure. Most of the lease documents do not have a specific renewal clause owing to higher stamp duty that may be levied if the same is mentioned in the lease document.

Possession of Land

There are various examples in India where people have made oral arrangement for family partition, settlement etc. or have executed unregistered documents with third parties thereby promising the transfer of land to a third party. Given the absence of a registered document in such cases it is not possible to take care of such circumstances and one has to rely on the representations of the seller. Also there would be circumstances where the title of the property have devolved unto the seller by way of succession and there are no will or probate available for proving the same. This is common in the rural areas in India and it becomes very difficult to move ahead in absence of documents. However, keeping in view the Limitation Act, 1963 it is customary and relatively safer to infer that the tile is clear if the possession and cultivation of land is proved for the last 30 (thirty) years. For this the family tree of last 30 (thirty) years is to be prepared coupled with the searches with the revenue departments in addition to the searches with the office of sub-registrar of assurances.

Right of Way

The land proposed to be acquired where the plants, panels, windmills (as the case may be) etc. are to be installed may or may not have a road access to them. Further there is a requirement to lay down power lines for transmission of energy. This requires the project companies to obtain easementary right of way on adjoining lands for laying down underground cables or setting up poles for overhead cabling for transmission of power. It is pertinent that due diligence of such land parcels is done to ensure that the rights are obtained from correct person and that there is no restriction in using such lands for the aforesaid purpose. Most of the times the documents relating to right of way are not registered by the project proponents. It is advisable that the same

are registered to ensure that the rights of project proponent in this regard is safeguarded from the counterparties and their legal heirs.

Contiguity of Land

It is not possible to make out from the separate land documents if the total land aggregated for the purpose of a project are contiguous in nature or not and if there is a fragment of land within the overall land that may not be forming part of the land parcels for which the documents are provided. It is important prior to any acquisition that the village maps of the land are viewed alongwith the DAG number/Survey number/Khasra number (as the case may be) and it is ensured that the total land being acquired are contiguous in nature and that there are no land parcels that is being missed within the total land. These create a practical difficulty in implementation of the project and also gives rise to instances where the owners of the such missing fragments or parcels of land try to leverage the situation of the project proponents by asking consideration much higher than the market price.

Classification of Land and Protected Tenants

The knowledge of local laws is an important factor in the due diligence of land parcels and for ensuring compliance for acquisitions. States such as Assam, Himachal Pradesh etc. do not permit sale of any land to a person/entity not having a domicile in that State. Further there are provisions in other states which prohibit sale and purchase of certain categories of land e.g. Class II lands in Maharashtra (which can be sold/purchased only with the collector's permission), tribal lands (which can be sold only to tribals) in various states.

The real estate and land laws in India are quite complex but the risks can be mitigated by a thorough legal due diligence of the land and title by an expert law firm. Such due diligence reports are also helpful in presenting the same to investors and financiers for raising finance at any time.

Figure 17: An advertisement for land available for installation of a solar power plant[79]

[79] solarXchange.in

Stressed Assets: A rocky road ahead

Loans and Bad Debts

Stressed power companies are becoming an increasing source of anxiety for the country. Under great duress for a number of reasons including primarily the lack of coal supply, lack of long-term power purchase agreements, inability of promoters to infuse the equity and inordinate delays in regulatory orders and receivables from distribution companies, the power sector is a currently a stressed sector of the Indian economy.

The total outstanding loans of scheduled commercial bank to the power sector (including renewables) stood at Rs. 5.65 lac crore (as on March 2018). Nearly 80 per cent of this amount is accounted for by the public sector banks (PSBs) and almost a fifth of this exposure is stressed on account of various structural factors plaguing the power sector[80].

A snapshot of the debt which is plaguing the sector is provided below[81]:

S. No	Developer	Project	State	Funds (Rs. In Crs.)		Total Investment/ Exp. (Rs. In Crores)
				Debt (Out Standing)	Equity	
1	Adani	Korba West	Chhattisgarh	3099	1830	4929
2	Adhunik Power & Natural Resources	Mahadev Prasad TPP Ph-I	Jharkhand	2473.63	903.5	3377
3	East Coast Energy	Bhavanpa du	AP	2834.09	836.3	3670.39
4	Athena Chattisgarh Power	Singhitarai	Chhattisgarh	5256	968	6224
5	Avantha Power (Jhabua)	Seoni Jhabua	MP	3488	1348	4806
6	Essar Power (Mahaan)	Mahan	MP	5951	2266	7173
7	Essar Power (Jharkand)	Tori	Jharkhand	3112	1719	4831
8	GMR Energy	EMCO Warora	Maharashtra	2905	1063	4250
9	GMR Chhattisgarh Energy	Raikheda	Chhattisgarh	8173.9	3368	11542
10	GMR Kamlanga Energy	Kamalnga	Odisha	4100	2250	6519
11	GVK Industries	(Goindwal Saheb)	Punjab	3523	1250	4773
12	Ind Bharath Energy	Utkal	Odisha	3046.22	1172	4360 (up to 09/17)
13	Jaypee Power Ventures	Bara	U.P	11493.5	4044	15537
14	Jaypee Power Ventures	Nigrie	M.P	6211	3812	10023
15	Jaypee Power Ventures	Bina	M.P	2253.85	1264	3518
16	Jindal India Thermal Power	Derang	Odisha	5381	1494	6875
17	KSK Mahanadi Power Company	Akaltara	Chhattisgarh	17194	3234	20428

[80] Report of the Standing Committee on Energy on the Impact of the RBI's Revised Framework for Resolution of Stressed Assets on NPAs in the Electricity Sector presented on August 7, 2018.

[81] 37th Report on Stressed/ Non Performing assets in the Electricity sector : Ministry of Power

S. No	Developer	Project	State	Funds (Rs. In Crs.)		Total Investment/ Exp. (Rs. In Crores)
18	KVK Nilachal Power	Nilachal	Odisha	1071.85	1116	1339.11 (up 7/16)
19	Lanco	Lanco Amarkantak	Chhattisgarh	8782	1533	10315
20	Lanco	Lanco Anpara	U.P	3071	969.2	4845
21	Lanco	Lanco Vidarbha	Maharashtra	4762	1079	5841 (upto 09/17)
22	Lanco	Lanco Babandh	Odisha	6976	1123	8275 (up to 9/17)
23	Madhucon	Simhapuri Energy	A.P	2206.38	1035	3510.05
24	Monnet Power Company	Malibrahmani	Odisha	5300	1273	6700
25	RattanIndia Nasik Power	Nasik TPP Ph I	Maharashtra	7107.6	2455	9302.88 (up to 08/17)
26	RKM Powergen Private	Uchpinda TPP	Chhattisgarh	9145.51	2586	11219
27	SKS Power Generation	Binjkote TPP	Chhattisgarh	4801	862	5663
28	Vandana Vidyut	Salora TPP	Chhattisgarh	1488.67	541	1949
29	Visa Power	Deveri TPP	Chhattisgarh	1481.15	427	2046.55 (up to 03/17)
30	Damodar Valley Corporation	Raghunat hpur TPP	W.B	2317.84	2626	
31	Kanti Bijlee Utpadan Nigam	Muzzaffar pur TPP	Bihar	2506.28	1277	3783.53
32	Adani Power Maharashtra	Tirora TPP Ph I & II	Maharashtra	11765	4947	19788
33	Coastal Energen Private	Mutiara TPP	T.N	6132	1574	
34	DB Power	Baradhra	Chhattisgarh	6721	2244	8965

Decreasing Capacity Utilisation of Private power plants

The gap between the capacity utilisation levels of India's state-owned and private power plants continues to widen, with the plant load factor (PLF) of state-owned thermal plants rising by three percentage points to 77% in April 2018 (year-on-year) even as the PLF of private producers slipped nearly seven percentage points to 55.2%. Rampant power capacity addition in recent years coupled with less-than-expected growth in demand too has contributed to the situation.

The RBI adding to the pressure

In February 2018, the Reserve Bank of India (RBI) withdrew its Strategic Debt Restructuring (SDR) and Scheme for Sustainable Structuring of Stressed Assets (S4A) schemes. On February 12th 2018, the RBI issued a circular (Stressed Assets Circular) which essentially repealed all forms of statutory restructuring and left it open to the concerned lenders to agree upon and finalise the plan for restructuring the concerned assets. The primary stipulation was that all lenders would have to agree on the restructuring proposal for the same to be implemented. This was considered to be a draconian measure. In the previous regime RBI had specifically reduced the approval threshold from 75% to 50 % owing to the fact that it was becoming difficult to receive

approval of 75% lenders by value for certain proposals. For accounts with cumulative debt of INR 20 billion or more, lenders were to ensure that a resolution plan was in place within 180 days after a 'default'. If the resolution failed in that six month period, banks had to move National Company Law Tribunal (NCLT) for proceedings under the Insolvency and Bankruptcy Code, 2016, within 15 days of expiry of such timelines.

'The revised framework is also likely to lead to a debt haircut of about 35% (varying between 20% to 70% across the entities) for such affected thermal capacity based on ICRA estimates, given the issues arising out of cost over-run, unviable tariffs & lack of PPAs'- Sabyasachi Majumdar, Group Head & Senior Vice President at ICRA Ratings.

Source: Economic Times

For the accounts which were already in default and those having a cumulative debt of over INR 20 billion the time for resolution was 180 days post March 1st, 2018.

The Association of Power Producers has requested the government to relax timelines of the new rules for the sector.

Challenges to the Stressed Assets Circular by the Power Sector

The Stressed Assets Circular issued by the RBI was challenged by certain power associations before the Allahabad High Court. The petitioners filed a writ petition seeking that the Stressed Assets Circular be quashed. In the petitioner's view, power companies were to be treated differently with respect to resolution of the stressed assets. In its judgement dated August 27, 2018, the Allahabad High Court denied interim relief to the petitioners. The Allahabad High Court also ruled that the petitioners may approach the court in case urgent interim relief is required by placing the requisite facts on record.

The order clarifies that it would not curtail the rights or powers of: (i) a financial creditor to initiate corporate insolvency resolution process under the IBC, or (ii) the RBI in issuing directions in specific cases under Section 35AA of the Banking Regulation Act, 1949 to initiate corporate insolvency resolution process under the IBC.

Supreme Court pronounces Status Quo Order

In August, 2018, the RBI had filed a transfer petition in the Supreme Court in order to transfer all petitions challenging the Stressed Assets Circular which were pending before various high courts. Vide its order dated September 11, 2018, whereby the Supreme Court allowed the cases pending before the various high courts to be transferred to itself. An interim relief was granted to the stressed companies by pronouncing a status quo order. The matter would be next heard on November 14, 2018 for final disposal of the same.

Considering that power companies have been severely impacted by various commercial and legal challenges, including increases in fuel price and deallocation of coal blocks, there are several stressed power companies that would be caught within the ambit of the Stressed Assets Circular. The order of the Supreme Court would have wide-ranging repercussions on the power sector. An order that permits the Stressed Assets Circular as is, would put a dampener on existing resolution process and potentially wrest control away from existing promoters. It may also result in new investments being channelled into the sector and make available for acquisition existing operating assets, provided the investors are willing to deal with the volatility in the sector.

The Samadhan Scheme (Scheme of Asset Management & Debt Change Structure)

A consortium of bankers led by the State Bank of India shortlisted 11 stressed power plants with a combined capacity of 12,640 megawatts. These would be offered to new owners under SBI's Scheme of Asset Management and Debt Change Structure, or Samadhan, which proposes sale or takeover of the stressed assets to prevent their liquidation. Under this scheme, the unsustainable portion of the debt will be converted into equity and the existing promoters will not be allowed to hold more than 24.5% in the project.

Stressed assets include those where deadlines for loan repayment have been breached and in some cases, debt restructuring has been undertaken. The main reasons for stress in power sector are lack of power purchase agreements, shortage of coal, issues of funding and regulatory clearances.

Completed or near-completion power plants with partial or full power purchase agreements and locational advantage have been considered for the scheme. The projects include Lanco Infratech's 1,200 MW Anpara project in Uttar Pradesh, Jaypee Power Ventures' 1,320 MW Nigrie project in Madhya Pradesh, the 2,400 MW KSK Mahanadi plant in Chhattisgarh, KSK Mahanadi Power, Jindal India Thermal Power, Ind Barath Power, and others.

The lenders sought to complete the Samadhan process in 120 days. The Stressed Assets Circular mandated banks to classify even a one day delay in debt servicing as default and find a resolution in 180 days.

After 180 days, the projects were to be referred to the insolvency tribunal. The Samadhan Scheme didn't serve its purpose and the NLCT route was preferred for the selected power plants.

Shakti Scheme

The SHAKTI (Scheme for Harnessing and Allocating Koyla (Coal) Transparently in India) agreement was announced by the Government in May 2017 aimed at bringing in transparency in the allocation of coal to the power sector. In accordance with the Shakti scheme, the Thermal Power Plants (TPP) which have LoA's (Letter of Assurance) can sign the FSA (Fuel Supply Agreement) after meeting all the specified conditions of the LoA within a given time-frame. The TPP also needs to start producing before the 31st of March, 2022, to avail the benefits of this scheme.

The industry perception is that till the time power demand revives in the country, Shakti (Scheme to Harness and Allocate Koyla Coal Transparently) will provide little benefit to power plants which do not have a fuel supply agreement (FSA) with state-run Coal India.

Another angle is that a crucial clause in Shakti, states that unless the power plants are able to turn the letters of assurance (LoA) into PPAs with the Discoms, the actual supply of coal to these plants may not commence even if the producer signs an FSA with state-run Coal India. The overall picture, therefore, is not as optimistic as it was projected to be.

It was widely perceived that the immediate relief from Shakti would be to those power plants which have been completed and have signed PPAs with Discoms but lack fuel security. However, even for those power plants which have already signed PPA's it is an arduous task due to time delays to clear policy bottlenecks. It has also been reported that TPPs that did opt for Shakti have faced several issues in terms of coal supply.

Vetting of bids by the ASCI...further delaying the process

In September 2017, Coal India's board approved the winning bids of a set of power producers including Adani Power, GMR Energy and KSK Energy, that quoted the highest discount in electricity tariffs to receive coal from the mining company. However, CIL's board referred the process for final vetting to the Admin Staff College of India (ASCI), a Hyderabad-based consultancy set up jointly by the government and industry. Power plants have to amend their power purchase agreements with distribution companies to factor in the discount in tariffs offered by them during the auction. As per the scheme, Coal India has to issue letters of intent to the power companies within 15 days of the conclusion of the auction and the power companies have 45 days to amend the PPAs and get approval of the Electricity Regulatory Commission. CIL will then have 30 days to convert the letters of intent into fuel supply agreements. Though it is a standard practice for the coal ministry to consult the agency, power companies strongly felt that the delay in coal supplies to them could result in further debt to coal starved plants and result in shutdowns. Finally, after a long delay of 6 months, Coal India started supplying coal to some of the 10 power plants that won long-term coal allocation at the first in March 2018.

..Out of turn coal allocation to have a direct bearing on Shakti

In a jolt to private power producers, the government has ordered Coal India Ltd to make 'out-of-turn' allotment of scarce coal to central and state electricity generation companies. The order follows a Coal Ministry directive earlier this year that instructed companies like Mahanadi Coalfields Ltd to deploy rakes of coal only for power plants and not other users like captive power plants of private industries. In order to avoid possible shortage of coal at thermal power plants it has been decided that wherever it is operationally feasible based on various factors like coal stock availability, where suitable transport arrangements are in place etc., out of turn coal allotment may be made to state and central PSU (electricity) generation companies (Gencos) to meet the surged coal requirement for power generation. Out of turn allocation would have a direct bearing on coal allocation under the SHAKTI, as well as that done through e-auction. The move to divert fuel from coal starved power projects would take a heavy toll on the already ailing sector. The Government's continued support to the PSUs at the cost of independent power producers may not offer a level playing field to private entities in the sector.

The Road Ahead

In this scenario, the Power Ministry decided to consider the option of operating the stressed coal-fired plants (capacity of about 40 gigawatts) through state-run power companies.

The Power ministry announced a proposal to run the distressed projects through a special-purpose vehicle formed by state-run NTPC Ltd., Power Finance Corp. and Rural Electrification Corp. to operationalise stressed assets of 25,000 MW in the first tranche. The ultimate objective being to make them economically viable for eventual sale.

There were several apprehensions that the assets may be sold for value much less than what they should ideally be sold for. The Power Ministry has set the assurance that lenders may have an option that should the asset not attract fair bid, then the SPV can run it till they can realise value.

The SPVs will have to enter into power purchase agreements with the central public sector units (CPSUs). The Power Ministry is hopeful that it will get PPAs to cover 40-50 % of the capacity whilst the remaining power can be sold on merchant power basis.

Grant of loans to the Electricity sector: Modifying the process

The Standing Committee on Energy presented a report on 'Stressed/Non-performing Assets in Electricity Sector' to the Parliament on March 7, 2018.

The Standing Committee noted that credit related issues are de-regulated and banks are required to take credit related decisions based on their internal assessment of the commercial viability of loan within their approved policies and relevant regulatory guidelines. The Standing Committee further noted that while credit related issues are not regulated, the RBI and Department of Banking Supervision check the implementation and enforcement of guidelines at various stages. Despite this however, it was felt that due prudence has not been observed by the banks while considering the loan. The Standing Committee, therefore, recommended that the process of grant of loan, supervisory mechanism and its subsequent monitoring should be given a relook to make it more realistic and productive.

The Committee noted that Section 35A of the Banking Regulation Act, 1949 empowers RBI to issue directions to banking companies regarding conduct of their affairs. All such exercises are triggered only by the non-fulfillment or non-payment of the credit repayment obligation. Centrality of the entire exercise revolves around the safe recovery of the loans granted to the project rather than resolving the issue of stress and making the asset productive. Therefore, providing finances, though vital, to the project is only one of the several factors essential for the commissioning of the project. Various other reasons also affect their viability. The Committee recommended that the RBI should advise all commercial banks to follow the credit rating system proposed by the Government for assessing the credit risk of infrastructure companies and prescribe risk weight accordingly.

Trading of electricity and pricing of RECs

In 2017, trading in renewable energy certificates (RECs) was suspended on account of a Supreme Court order arising due to a dispute regarding change in the price regime by the CERC. Whilst trading in non-solar RECs was subsequently allowed, trading in solar RECs was prohibited until earlier this year.

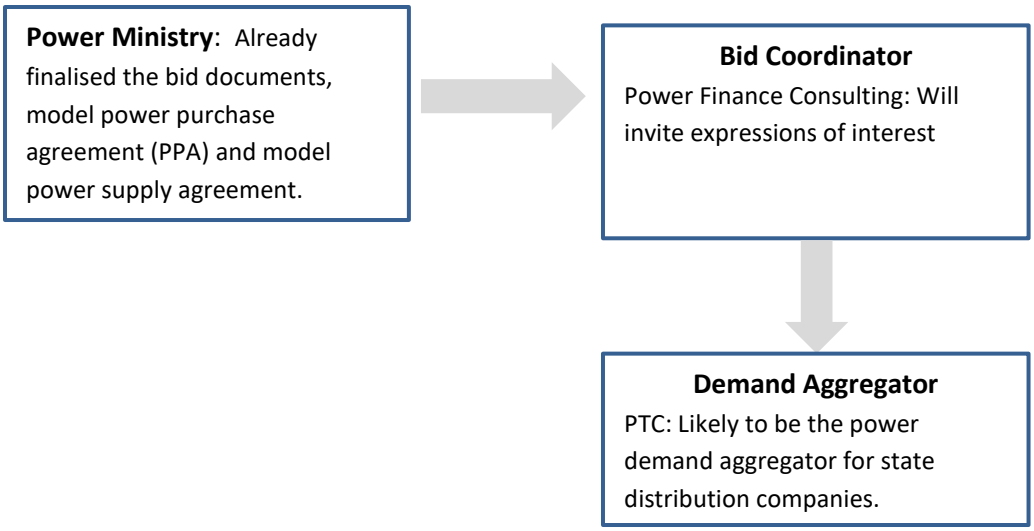
In May, 2018, the CERC, clarified that pursuant to an order from the Supreme Court, trading in solar and non-solar RECs may be carried out in accordance with the floor price and forbearance price as determined by the CERC. The floor price (minimum price) and forbearance price (ceiling price) are determined by the CERC in accordance with the principles laid down in the regulations notified by the CERC.

Auctioning of Power Purchase Pacts

In April 2018, the GoI announced that it will soon initiate a pilot auction of medium-term power purchase agreements for 2,500 MW of electricity. This ends a 6 year long spell of state governments restricting electricity procurement from power plants. Electricity distribution companies have not called long-term contracts in the past few years. Industry experts cite low demand, subdued spot power prices and falling prices of renewable energy as the reasons for lack of PPAs.

The proposed auction aims at helping idling power projects tie up medium-term contracts and service debt, the official said. At present, thermal power projects in the country are operating at about 62%. The move will help power projects with no or limited PPAs such as Adani's Korba West in Chhattisgarh, Coastal Energen's Mutiara in Tamil Nadu, Jaypee's Bina plant in Madhya Pradesh, Abhijeet Power's Mata Shri in Jharkhand, Lanco's

Vidharbha and Athena's Bhavanapadu project. The maximum capacity that be contracted from a bidder is 600MW.



An indicative list of the pros and cons of such a move by the Government is listed below:

Advantages

- **Aims at helping idling power projects tie up medium-term contracts and service debt.**
- **The auction, however, mandates state distribution companies to pick up a minimum 55% capacity of electricity from the plants.**

Disadvantages

- **The proposed auction could result in higher tariffs to the states, as the auctioned power purchase agreements for three years will be signed with zero escalation clauses.**
- **The bidding documents comfort the discoms by almost waiving fixed cost payment when they do not offtake power from such power plants. The fixed cost for the 2,500-mw PPA auction has been kept at 1paisa per unit.**
- **The fixed charge of Rs. 0.01 (one paisa only)/ kWh and a variable charge comprising of the entire cost of production and supply of electricity from the power station up to the delivery point, including but not limited to the transmission charges and transmission losses, shall constitute the lump sum tariff for the power station**

A Due Diligence Legal Checklist

Set out below is the preliminary list of information that may be sought in respect of a diligence of a company which is engaged in the power business.

Sr. No.	Information Required	(✓/x)
A.	**Corporate**	
1.	Details of the corporate structure of the company.	
2.	Details of the shareholders of the company.	
3.	Minutes of the meetings of the board of directors of the company and the committees thereof.	
4.	Minutes of the meetings of the members of the company.	
5.	Corporate records maintained by the company.	
6.	Forms filed by the company with the Registrar of Companies and/or the Reserve Bank of India.	
7.	Reports of the auditors and the directors of the company.	
8.	Details of any encumbrance created on the shares of the company.	
9.	Copies of any agreement in respect of the rights to the shares of the company.	
B.	**Permits and Consents**	
10.	Copies of permits, consents, licenses and other authorizations: (i) required for the purpose of constructing/developing the power plant under local legislation; and (ii) material to the conduct of operations of the power business, including the following: (a) Permits under local land laws for the use (or conversion) of the land for the purpose of the power business; (b) Approvals under the Electricity Act, 2003 and the policies framed thereunder; (c) License to work the factory (i.e., power plant); (d) Approvals for laying of the transmission lines; (e) Interconnection and transmission approvals; (f) Environmental clearances such as consent to operate, consent to establish, environmental impact assessment clearance. (g) Coal linkage or supply related approvals, including permission for railway sidings, fuel transport and mining plan; (h) Labour registrations; (i) Miscellaneous permits such as fire safety clearance, shops and establishments registration, tax registrations, importer exporter code, approvals for storage and transport of petroleum products, boilers, construction approvals, etc.	
C.	**Material Contracts**	
11.	Copies of EPC contracts, fuel supply agreements, power purchase agreements, coal linkage documents, open access agreements / agreements for wheeling power / interconnection agreement as may have been executed by the company.	
12.	Copies of consulting agreements, agreements with major contractors and other agreements in relation to the power business.	

Sr. No.	Information Required	(✓/x)
13.	Copies of all subsisting contracts (including memoranda of understanding) executed with any Governmental agencies/utility companies in respect of power and electricity supply, water supply, export or import of goods etc. that relate to the power business.	
14.	Copies of any joint venture, partnership, profit sharing or similar agreements.	
15.	Copies of any agreements in respect of the fixed assets and equipment of the plant/factory including creation of charges, sale, lease and hire.	
16.	Details pertaining to insurance contracts/policies relating to the power business or the employees engaged therein.	
D.	**Legal Proceedings**	
17.	Details of all complaints, pleadings and legal proceedings filed by or against the company and all correspondence relating thereto that directly or indirectly has bearing on the power business.	
E.	**Indebtedness**	
18.	A general overview and assessment of the total value of secured interest compared with loans, guarantees and other liabilities computed as a percentage of the total liability, and, further, all provisions made for such liabilities. Please also specify the details of any outstanding conversion exercisable by lenders and potential amounts of shares which may be issued in case of exercise of such option.	
19.	Details of all loans, debentures, debenture stock, or other financing arrangements for the power business and others that have cross defaults or indirectly a bearing on the power business, along with copies of all agreements and other security documents in relation thereto.	
20.	List of all guarantees, comfort letters or indemnities of any kind stating principals, beneficiaries, amounts involved, credit rating and security (including estimate of current value of the security) provided or obtained.	
F.	**Employment**	
21.	Details of the number of workers at each location in respect of the power business, in various categories, along with the standard terms and conditions of employment of such workers.	
22.	Details of personnel policies applicable to the power business.	
23.	Employment contracts for senior management and key management personnel.	
24.	Details regarding employee benefits and schemes for labour and employees relating to the power business.	
G.	**Real Estate**	
25.	A complete and exhaustive list of all immoveable properties held by the company on ownership and/or leasehold basis along with the complete description of the property and the registrations obtained and the documents executed in this regard.	
H.	**Intellectual Property Rights**	
26.	Copies of, applications for registration filed with, or certificates of registration granted by, the relevant authorities for the intellectual property owned or used in the power business of or by the company.	
27.	A summary of any know-how, copyright or other intellectual property which is of material importance to the power business or the assets relating thereto together with details of any licensing agreements, including amendments / supplemental agreements.	

Power Sector: GST

With effect from July 1, 2017, the indirect tax landscape of the country has been completely overhauled, with multifarious indirect taxes such as Central Excise, Service tax, Value Added Tax (VAT), Central Sales Tax (CST), Countervailing Duty (CVD) and several cesses, being replaced and subsumed into a singular levy in the form of the Goods and Services Tax (GST).

India follows a dual structure of the GST, with both the Centre and the State been empowered to levy GST, on equal measure, in every transaction of a 'supply'. To effectuate GST in the country, the Central Goods and Services Act, 2017 (CGST Act), the State Goods and Services Act, 2017 (SGST Act), the Union Territory Goods and Services Tax Act, 2017 (UTGST Act) and the Integrated Goods and Services Act, 2017 (IGST Act) have been enacted, and the resultant rules and notifications notified.

The following are the key aspects of the new tax regime:

Concept of supply

GST is to be levied on a 'supply', which is defined under Section 7 of the CGST Act as *"all forms of supply of goods or services or both such as sale, transfer, barter, exchange, licence, rental, lease or disposal made or agreed to be made for a consideration by a person in the course or furtherance of business".* Intra-State Supplies are leviable to Central Goods and Services Tax (CGST) and State Goods and Services Tax (SGST) [in equal part], whereas inter-State supplies are leviable to Integrated Goods and Services Tax (IGST). What qualifies as inter-State supply and intra-State supply depends on two factors –the location of the supplier and the place of supply (determined in terms of the place of supply provisions). If both these factors occur in the same State, then CGST and SGST would be leviable, and if in different States, then IGST becomes applicable.

Certain supplies when made even without consideration are liable to GST. Relevantly, this includes a supply made between "distinct persons" and "related persons". "Distinct persons" is defined as units of the same entity located in different States and having separate registrations. "Related persons" is defined to *inter alia* include entities having common parent or where one entity has direct/ indirect control over the other entity and thus includes group companies.

Certain supplies are deemed to be either "goods" or "service". This classification gains relevance primarily owing to differentiation in rates and place of supply provisions for goods and services. It is noteworthy that "works contract"[82] is deemed to be a service, thus not giving room to further controversy or litigation on this issue as existing in the pre-GST era[83]. Agreeing to the obligation to refrain from an act, or to tolerate an act or a situation, or to do an act is also deemed to be a supply of service. Further, when a contract involves supply of services, continuously or on recurrent basis, for a period exceeding three months with periodic payment obligations, then such supply will be treated as 'continuous supply of service'. For continuous supply of service, separate rules

[82] In terms of Section 2(119) of the CGST Act, "works contract" means a contract for building, construction, fabrication, completion, erection, installation, fitting out, improvement, modification, repair, maintenance, renovation, alteration or commissioning of any immovable property wherein transfer of property in goods (whether as goods or in some other form) is involved in the execution of such contract;

[83] See Kone Elevator India Pvt. Ltd. vs. State of Tamil Nadu and Ors. [2014 (304) E.L.T. 161 (SC)], Kerala v/s. Larsen & Toubro Ltd. [2015 (39) STR 913 (SC)]

are prescribed for issuance of tax invoice and to determine the time of supply, when the liability to pay tax arises[84].

Place of supply

For goods, the place of supply, where such supply involves movement of goods is location of the goods at the time at which the movement of goods terminates for delivery to the recipient. The place of supply in a case where there is no movement of goods, is the location of such goods at the time of delivery to the recipient.

For services, the default rule is the location of the recipient. Further, separate provisions are prescribed for specified instances. For instance, the place of supply for services in relation to immovable property is the location of the immovable property itself. Hence construction services in relation to immovable property typically suffer CGST and SGST, since both the location of the supplier and the place of supply are in the same State i.e. where the immovable property is located. Where the immovable property is located in more than one State or Union territory (e.g. roads spreading across), the supply of services shall be treated as made in each of the respective States or Union territories, in proportion to the value for services separately collected or determined in terms of the contract or agreement entered into in this regard.

Input Tax Credits

A critical aspect of the GST system is the seamless flow of Input tax credit to avoid cascading of taxes. However certain credits remain restricted. Credit of goods or services or both received by a taxable person for construction of an immovable property (other than plant or machinery) on his own account including when such goods or services or both are used in the course or furtherance of business is not available. The term 'construction' includes re-construction, renovation, additions or alterations or repairs, to the extent of capitalization, to the said immovable property. Credit in relation to works contract services when supplied for construction of an immovable property (other than plant and machinery) is also restricted, except where it is an input service for further supply of works contract service. Further, there is also a restriction of credits in relation to *"goods lost, stolen, destroyed, written off or disposed of by way of gift or free samples"* – this has been interpreted to include instances of free supplies.

Classification of goods and services

Goods have been classified in terms of the Harmonized System of Nomenclature (HSN) – which is aligned to the system of classification adopted under Customs law. Services have been classified in terms of Service Codes (SAC). Categorization of goods and services in terms of the HSN or SAC becomes relevant, since different rates are prescribed to different headings of HSN and SAC. For instance, construction service and works contract services are classifiable under the SAC 9954 and are liable to GST at the rate of 18% (12%/5% if provided to government).

84 In such cases, tax invoices are to be raised on or before the date of completion of such events. Further, the liability to pay tax shall arise earliest of the following events: date of issue of invoice, if invoice is issued within prescribed period; or provision of service, if invoice is not issued within prescribed period; or date of receipt of payment i.e. earlier of the date on which payment is entered into books of accounts of the supplier or the date on which payment is credited in his bank account.

Person liable to pay GST

A "taxable person", who becomes liable to discharge GST, has been defined to mean a person who is registered or liable to be registered under the Act. The GST law also recognizes the concepts of a "casual taxable person"[85] and a "non-resident taxable person"[86]. Special registration and return filing requirements have been prescribed for a "casual taxable person" and a "non-resident taxable person". From the perspective of contractors coming to India for a shorter duration, these concepts would become relevant.

Valuation

GST is ordinarily payable on the transaction value i.e. the price that is actually paid or payable for the supply. Certain elements are specifically included in the price for computing GST. These include: taxes separately charged in invoice other than taxes levied under the GST enactments, any amount paid by the recipient on behalf of supplier in relation to supply of goods/services not included in price, interest or late fee or penalty for delay in payment of consideration, subsidies directly linked to price excluding subsidy granted by State or Central Government, and, incidental expenses such as packing, commission incurred by supplier before or at the time of delivery of goods or supply of services.

The transaction value test becomes inapplicable in cases where price is not the sole consideration for the supply or where the parties are related; in these cases, value is to be determined in terms of the specified valuation rules. In case of supply to related parties or units of the same entity located in different States, the value of the supply of goods or services is prescribed to be the open market value of such supply. Relevantly, in such cases, if the recipient entity/ unit is eligible for full input tax credit, the value declared in the invoice will be deemed to be the open market value of the goods or services and adopted for computing GST. Further, where the goods are intended for further supply as such by the recipient, the value shall, at the option of the supplier, be an amount equivalent to 90% of the price charged for the supply of goods of like kind and quality by the recipient to his customer not being a related person. Further, the carve-out for pure agent as existing under Service tax law is continued even under GST.

On import of goods, the importer would be liable to discharge IGST on imported goods and the value of such goods shall be determined in accordance with the Customs Act, 1962[87].

Composite Supply and Mixed Supply

The GST law has introduced the concepts of 'composite supply' and 'mixed supply'. A "composite supply" is defined to mean a supply consisting of two or more taxable supplies of goods or services or both, or any combination thereof, which are naturally bundled and supplied in conjunction with each other in the ordinary course of business, one of which is a principal supply. A "mixed supply" is defined to mean two or more individual

[85] A "casual taxable person" is defined to mean a person who occasionally undertakes transactions involving supply of goods or services or both in the course or furtherance of business, whether as principal, agent or in any other capacity, in a State or a Union territory where he has no fixed place of business.

[86] A "non-resident taxable person" is defined to mean any person who occasionally undertakes transactions involving supply of goods or services or both, whether as principal or agent or in any other capacity, but who has no fixed place of business or residence in India.

[87] Section 5(1) of the IGST Act states that for the purpose of determining the value for levy of IGST, reference has to be made to the provisions of Customs Tariff Act, 1975 ("CTA"). In terms of sub Section (7) of Section 3 of CTA, the value on which IGST is applicable when an article is imported into India has to be determined in the manner prescribed under sub-section 8 of Section 3 of CTA.

supplies of goods or services, or any combination thereof, made in conjunction with each other by a taxable person for a single price where such supply does not constitute a composite supply. A composite supply shall be treated (and taxed accordingly) as the supply of the principal supply, whereas a mixed supply shall be treated as a supply of that particular supply which attracts the highest rate of tax. Hence when two or more supplies of goods or services are involved in a single contract, it becomes crucial to see if these are classifiable as a "composite supply" or a "mixed supply"; their taxability would be determined accordingly.

Matching concept

GST law functions on the concept of matching of records. Hence, only the taxes reflected to have been paid by the supplier in its return will qualify as credits for the recipient of the supply. The Goods and Service Tax Network (GSTN) would enable such a matching of details. It therefore becomes crucial for recipients to make sure that the suppliers have entered correct details in the GST returns, enabling the recipient to avail the credit. At present, the return which enables this matching of details has not been made effective. Presently the details in relation to output liability, and summary of output liability and credits availed are required to be disclosed in GSTR-1 and GSTR-3B respectively.

Documentation

GST law prescribes the particulars that are to be disclosed in the tax invoice, debit note, credit note etc. It is also pertinent that the dealer of the previous leg of the transaction discloses such details accurately so that dealer at the next leg is enabled to avail credits. It thus becomes relevant that the agreement casts such obligations on the parties to ensure smooth flow of credits. The tax clause in the contract should obligate that each party takes GST registration, remit GST, upload necessary returns and undertake necessary steps, within the prescribed timeline, to enable the other party to avail input tax credits.

Key issues and aspects specific to the power sector

- **Electricity not liable to GST:** Transmission or distribution of electricity by an electricity transmission or distribution utility is exempt from the levy of GST. For such "exempt supply", a "bill of supply" will be required to be issued, as opposed to a tax invoice. Electricity continues to be subjected to the levy of Electricity Duty, which is not subsumed under GST.

- **State-wise registrations:** Separate registrations would be required under GST in every State where power plants are operated.

- **Restriction of credits:** Since transmission of electricity is an exempt supply, credits of capital goods, inputs and input services used for providing this supply would be restricted.

- **Taxability of Renewable Energy Certificate:** While electricity is kept outside the purview of GST, an issue that arises is whether RECs are liable to GST. It has been clarified by the CBEC, GST (Policy Wing), *vide* its letter dated January 4, 2018 issued to Indian Energy Exchange that sale of RECs cannot be considered as sale and purchase of electricity and, will thus be liable to GST. However, there continues to exist ambiguity as regards the applicable rate and HSN/ SAC for such supply.

- **Taxability of other charges:** Various charges are presently recovered for distribution of electricity such as cross subsidy charge, wheeling charge and street light maintenance. As regards receipt and payment of charges (e.g. Unscheduled Interchange charges) payable when there is a deficiency or excess of generation of electricity, again it is not clear if the said charges may be said to be directly in relation to sale of electricity and on this basis, GST may not be applicable. Under service tax, there were disputes as regards liability to pay Service tax on such charges is concerned.

  Under GST, it has been clarified by the CBIC[88] that other services connected to transmission of electricity such as application fee for releasing connection of electricity, rental Charges against metering equipment, Testing fee for meters/ transformers, capacitors etc., labour charges from customers for shifting of meters or shifting of service lines and charges for duplicate bill provided by DISCOMS to consumer are liable to GST. Some DISCOMS have approached the Writ Court challenging the validity of the Circular. A final resolution on this issue is awaited.

- **Various issues as regards procurement of coal:**

  - **Captive consumption within State:** Captive consumption within the same State would typically not attract GST and GST Compensation Cess, since the transaction would be carried out without consideration and between units operating under a common GST registration. For instance, in a case where one Company manufactures and supplies coal from its captive mine to its Power Plant which is located within the same State, such transaction, being made without consideration may not qualify as a 'supply' to attract GST. Since the coal mine and the power plant are in the same State and ordinarily operating under a single GST registration, these would not be treated as 'distinct persons', and thus, in the absence of consideration, the transaction may not be deemed to be a 'supply' in terms of Schedule I to the CGST Act.
  - **Captive consumption in a different State:** In the event that the coal mine and the power plant are in different States, the two entities would be treated as 'distinct persons' and thus the transaction, even if without a consideration, would be deemed to be a supply, in terms of Schedule I to the CGST Act. Thus, inter-State movement of inputs such as coal between units of the same Company, would be deemed to be supply (even though made without consideration). Such transaction would be liable to IGST and GST Compensation Cess which would not be available as Input tax credit to the power plant.
  - **Procurement of coal from third parties:** In respect of the goods manufactured but pending removal from the factory as on June 30, 2017, exemption from Central Excise duty was available as a transitional measure so as to avoid the dual levy (i.e. Central Excise on goods manufactured and GST on goods subsequently supplied).
  - Prior to GST, 'Clean Energy Cess' was payable on the manufacture / import of coal. (Post GST, this cess was abolished and Compensation Cess was introduced on the supply of coal). Pertinently there is no such exemption of Clean Energy Cess, on coal already extracted from mines and pending removal as on June 30, 2017.
  - **Compensation Cess on coal:**
    - Under GST, a Compensation Cess is levied *vide* the Goods and Services Tax (Compensation to States) Act, 2017 *inter alia* on supply of coal. Since transmission and distribution of electricity is exempt from GST, and since credit of compensation cess can be utilized only against

[88] Circular No. 34/8/2018-GST dated 1st March, 2018

payment of compensation cess, the power entity will be unable to utilize credit of Compensation Cess paid while procuring coal. Therefore, this cess remains a cost in the system. In the event that such power is in turn used for manufacturing goods/ providing services which are ultimately exported, the refund would available for the Compensation Cess on coal, since it is ultimately used for export purposes.

- Issue arises as regards treatment of stock of coal as existing at the time of introduction of GST on which Clean Energy Cess has already been paid. The Hon'ble Supreme Court in Union of India vs. Mohit Mineral Pvt. Ltd[89] has held that since the Clean Energy Cess was levied and collected for a wholly different purpose (financing and promoting clean energy initiatives, funding research in the area of clean energy or for any other purpose relating thereto), set off of payments made towards Clean Energy Cess would not be available for payment of Compensations to States Cess.

- **Issues as regards inputs which are outside GST: Issuance of C-Form:** Five products viz. petroleum crude, HSD, motor spirit / petrol, natural gas and aviation turbine fuel would remain outside the purview of GST, till the notified date[90]. These will however continue to suffer the applicable Central Excise duty, VAT and CST. Post introduction of GST, various States disallowed the issuance of Form C for the supply of such products, which enables the concessional levy of CST at the rate of 2%. The Hon'ble Punjab and Haryana High Court[91] has held that Form C can be issued for these products even post the introduction of GST and the said judgement has been upheld by the Hon'ble Supreme Court[92]. It is noteworthy that the Goa Bench of the Hon'ble Bombay High Court[93] has granted interim relief directing the Department to not discontinue issuance of Form C in respect of petroleum products after introduction of GST, whereas the Hon'ble Orissa High Court[94] has not accorded any such interim relief to the parties.

Conclusion

The introduction of GST is a watershed reform in relation to the indirect tax regime existing in the country. While such change is bound to have teething problems and cause concern to businesses in its initial stages, it is expected to simplify and smoothen overall tax payer experience over a period. This in turn is expected to encourage larger investments, both domestic and foreign, especially in the infrastructure sector, wherein the tax related complexity and uncertainty was a cause of concern.

[89] Final Order dated October 3, 2018 (Special Leave to Appeal (C) No. 25415/2017).
[90] In terms of Section 5(2) of the IGST Act and 9(2) of the CGST Act.
[91] In Carpo Power Ltd. vs. State of Haryana (2018 (12) G.S.T.L. 248).
[92] In State of Haryana vs. Carpo Power Ltd (SLP(C) No. 20572/2018), wherein the Special Leave Petition filed against the judgement of the Hon'ble Punjab and Haryana High Court was dismissed.
[93] In Vedanta Limited vs. Union of India (Writ Petition No. 876 of 2017).
[94] In Vedanta Limited vs. Commissioner of Sales Tax (W.P.(C) No. 21330 of 2017).

Competition Law Issues

The power sector in India, specifically in terms of electricity, is characterized by three major functions, namely, generation, transmission and supply/distribution as governed by the Electricity Act.[95] In terms of power generation, electricity consumed in India is generated by thermal power plants, hydroelectric power plants, nuclear power plants and other alternate renewable energy sources. The conventional source of power i.e. thermal power plants predominantly use coal for generation of electricity. The Competition Commission of India (CCI) has, *inter alia*, dealt with competition issues in the coal sector and the electricity sector under the Competition Act, 2002 (Competition Act). The CCI has also assessed competition concerns in the renewable energy sector, specifically with respect to wind energy. For the purposes of this booklet, we analyse competition issues in the power sector specifically focusing on coal, electricity and renewable energy.

Anti-competitive conduct in the power sector

Anti-competitive conduct can be in the form of an agreement (e.g. cartel or other types of vertical agreements having an appreciable adverse effect on competition) or in the form of unilateral conduct (e.g. abuse of dominant position by an enterprise in the relevant market). While cartels and other types of anti-competitive agreements are in contravention of Section 3 of the Competition Act, abuse of dominance falls foul of Section 4.

Under the Competition Act, the term "dominant position" has been defined as a “position of strength” enjoyed by an enterprise in the relevant market in India which enables it to:

- *Operate independently of competitive forces prevailing in the relevant market; or*
- *Affect its competitors or consumers or the relevant market in its favour.*

An enterprise can enjoy dominant position due to, *inter alia*, its market share, economic power, vertical integration of enterprises or sale or service network of such enterprises or by virtue of monopoly status accorded under a statute.[96] In this section, we will discuss certain key cases involving issues of overlap of regulatory jurisdiction, abusive conduct in coal sector, and open access to transmission.

Figure 18: The Competition Commission of India headquarters

[95] *HPCL-Mittal Pipelines Limited (‘HMPL’)* v. *Gujarat Energy Transmission Corporation Limited & Ors.* (Case No. 39 of 2017) January 31, 2018 (HMPL Case). Preamble to the Electricity Act.
[96] Section 19(4) of the Competition Act.

Competition Act and Electricity Act: Regulatory overlap

In several cases pertaining to electricity sector, one or more parties have argued that the CCI does not have jurisdictions over matters pertaining to electricity as the same is regulated under the Electricity Act[97]. The CCI has time and again held that there is no conflict between the Competition Act and the Electricity Act. It has noted that the CCI's mandate is

> "to eliminate practices having adverse effect on competition, promote and sustain competition, protect the interests of consumers and ensure freedom of trade carried on by other participants, in markets in India. Sectoral regulators have necessary technical expertise to determine access, maintain standard, ensure safety and determine tariff. The issues relating to entry conditions, technical details, tariff, safety standards have direct control on prices, quantity and quality primarily seems to be within the exclusive ambit of sectoral regulators. Thus, sectoral regulators focus on the dynamics of specific sectors, whereas the Commission focuses on functioning of the markets by way of increasing efficiency through competition. In fact, the role played by the Commission and the sectoral regulators are complementary and supplementary to each other as they share the common objective of obtaining maximum benefit for the consumers."[98]

In cases where the information dealt purely with tariff fixation issues, the CCI has itself restrained from intervening in those cases.[99]

CCI imposed penalty on Coal India for abuse of its dominant position

Power producers i.e. Electricity Boards of Gujarat, Madhya Pradesh, Maharashtra and West Bengal filed a spate of cases, with the CCI, against Coal India Limited (CIL) and its subsidiaries for abuse of dominant position.[100] The power producers alleged that CIL and its subsidiaries were abusing their dominance in the market of production and sale of non-coking coal to thermal power generators in India and thereby impacting the price of electricity produced and sold by them.

The CCI passed an order in favour of the power producers penalizing CIL to the tune of INR 1773.05 crore. However, in appeal, the then Competition Appellate Tribunal (COMPAT) remanding the matter back to the CCI for fresh hearing on grounds of violation of the principles of natural justice.

After hearing the parties afresh, CCI held that CIL through its subsidiaries "*operates independently of market forces*" and enjoys dominance in the relevant market of production and supply of non-coking coal in India. CIL's

[97] See, *HPCL Case*; *Open Access Users Association v Tata Power Delhi Distribution Ltd.* (Case 99 of 2014) September 29, 2015; *Arun Mishra v. State of UP* (Case NO 43 of 2017) 24 January 2018

[98] *Open Access Users Association v Tata Power Delhi Distribution Ltd.* (Case 99 of 2014) September 29, 2015.

[99] See e.g., *Anand Prakash Agarwal v Dakshin Haryana Bijli Vitran Nigam Limited* (Case No. 1 of 2016) February 10, 2016 (also approved by COMPAT).

[100] *Maharashtra State Power Generation Company Ltd.* v. *Coal India & Anr.*; *Gujarat State Electricity Corporation Limited* v. *Coal India & Anr.* (Case Nos. 03, 11 & 59 of 2012) March 24, 2017. *Madhya Pradesh Power Generating Company Limited* v. *Coal India & Anr.*; *West Bengal Power Development Corporation Ltd.* v. *Coal India & Ors.*; *Sponge Iron Manufactures Association* v. *Coal India & Ors.* (Case Nos. 05, 07, 37 & 44 of 2013) April 21, 2017.

abuse of dominance according to the CCI was on account of the one-sided nature of the Fuel Supply Agreements (FSAs) imposed on power producers for supply of non-coking coal. Therefore, the CCI found the unilateral conduct of CIL and its subsidiaries to be in contravention of Section 4(2)(a)(i) of the Competition Act for imposing unfair/discriminatory conditions in FSAs on the power producers.

Accordingly, the CCI directed CIL and its subsidiaries to cease and desist their anti-competitive conduct. The CCI also directed CIL to consult all stakeholders and modify its FSAs so as to remove the unfair/discriminatory terms and conditions related to sampling and testing procedure, charging transportation and other expenses for supply of ungraded coal from the buyers, capping compensation for supply of stones etc. Some of these clauses even discriminated between old and new power producers as well as between private and PSU power producers. Therefore, CIL was further directed to ensure uniformity between all power producers.

In light of the above, CCI imposed a reduced penalty of INR 591.01 crore on CIL for its abusive conduct as CIL had taken steps to improve its sampling procedure in the interim. However, the CCI found that the sampling procedure could be further improvised in consultation with power producers and adopting international best practices.

Competition concerns with respect to "open access" to transmission

The CCI has recently caused an investigation with respect to allegations of denial of open access by state transmission utilities[101]. In *HMPL Case*, the Informant, an industrial consumer of electricity, was aggrieved since it was disallowed open access permission by the State Load Dispatch Centre (which was a wholly-owned subsidiary of the Transmission Corporation) to use transmission infrastructure for sourcing electricity from a source other than the distribution licensee. The Electricity Act defines the terms distribution licensee and open access as follows:

> *(17) "distribution licensee" means a licensee authorised to operate and maintain a distribution system for supplying electricity to the consumers in his area of supply;*
> *(47) "open access" means the non-discriminatory provision for the use of transmission lines or distribution system or associated facilities with such lines or system by any licensee or consumer or a person engaged in generation in accordance with the regulations specified by the Appropriate Commission;*

The CCI, while passing its order causing investigation under Section 26(1), defined the relevant market to be market for "*services relating to use of transmission facility for availing open access electricity in the State of Gujarat*" as defined by the CCI. On the issue of dominance, the CCI noted that the statute bestows the State Load Dispatch Centre with absolute power to decide on open access applications and therefore it, *prima facie*, enjoys a dominant position.[102]
On the question of whether denial of open access to power producers, limits and restricts the provision and supply of open access electricity, the CCI held that by denying open access to the Informant and possibly other consumers, State Load Dispatch Centre appears to have curtailed or discouraged the demand for open access

[101] *HPCL-Mittal Pipelines Limited ('HMPL') v. Gujarat Energy Transmission Corporation Limited & Ors*, (Case No. 39 of 2017), 31 January 2018.
[102] *Ibid* at paras 56 and 62.

electricity. Thus, the CCI, *prima facie*, found that the supply of open access electricity to the Informant was limited and restricted in contravention of Section 4(2)(b)(i) of the Competition Act.[103]

The Informant applied for open access on 12 different occasions, however, most of these requests were denied citing upstream network constraints. The CCI noted that despite the enabling provisions of the Electricity Act indicating the intention of the legislature to facilitate competition and trading of electricity in a smooth and non-discriminatory manner, the open access regime has not been adopted in the right spirit. The CCI referred to Clause 5.3.3 of the National Electricity Policy, 2005 which states that:

> *"Open Access in transmission has been introduced to promote competition amongst the generating companies who can now sell to different distribution licensees across the country. This should lead to availability of cheaper power. The Act mandates non-discriminatory open access in transmission from the very beginning. When open access to distribution networks is introduced by the respective State Commissions for enabling bulk consumers to buy directly from competing generators, competition in the market would increase the availability of cheaper and reliable power supply."*[104]

The CCI observed that the case before it highlights instances of continuous denial of the open access by incumbent state utilities to alternative electricity suppliers. The CCI pointed out that state utilities have a conflict of interest in denying open access to alternative suppliers due to their structural linkages and vertical integration. Therefore, the CCI, *prima facie,* found that State Load Dispatch Centre denied market access to the Informant's potential electricity supplier in violation of Section 4(2)(c) of the Competition Act. Based on these observations, the CCI directed the DG to carry out a detailed investigation into the matter under Section 26(1) of the Competition Act.[105]

Figure 19: Transmission lines across a mountainous region[106]

[103] *Ibid* at para 65.
[104] *Ibid* at para 65.
[105] *Ibid* at para 72.
[106] Wired magazine

CCI's limited intervention in renewable energy sector

There has been limited opportunities for the CCI to intervene in renewable energy sector both on behavioural and structural fronts. Recently, the CCI had an opportunity to investigate anti-competitive conduct in renewable energy sector; however, the facts presented little evidence and accordingly the CCI closed the matter at the *prima facie* stage without ordering for further investigation.

In *Swarna Properties v. Vestas Wind Technology India Pvt*., the Informant approached the CCI on the basis of an agreement with the Opposite Party (OP) i.e. Vestas Wind Technology India Pvt. Ltd. who was engaged in the business of manufacture, sales, marketing and maintenance of wind power systems in India.[107] The Informant alleged that the agreement restricted its freedom by imposing the condition that the OP would supply its equipment only if the servicing of the same will be done by them.

The CCI observed that the amount of electricity produced by a wind turbine depends upon the wind speed, wind density and the size of the blades in the machine.[108] Generation of wind energy also varies depending on weather conditions. Accordingly, the CCI found that wind turbines cannot be substituted with any other form of power generating equipment. Therefore, the CCI delineated the market for supply of wind turbines in India as the relevant market.

However, with respect to the conduct, the CCI found no case of contravention of the Competition Act since the CCI found the OP was not in dominant position in the relevant market. The CCI reasoned that there were many players in the market with comparable or larger market shares. Therefore, the Informant was not dependant on the OP and had the option of procuring equipment from other vendors.

Combinations in the Power Sector

A merger, acquisition or amalgamation is termed as a combination under Section 5 of the Competition Act subject to such transactions meeting certain asset and turnover thresholds. Pursuant to Section 6 of the Competition Act, the CCI conducts an *ex ante* assessment of whether the proposed combination causes or is likely to cause appreciable adverse effect on competition (AAEC) within the relevant market in India. Subject to such an assessment, the CCI approves, disapproves or suggests modifications to the proposed combination to ensure that no AAEC is caused or is likely to be caused in the relevant market in India.

The CCI has approved all combinations proposed in the electricity and renewable energy sector, so far due to either insignificant market share of the individual or combined entity, or due to the absence of horizontal overlap/vertical relationship between the parties. A list of these combinations has been set out in **Annexure I**.

[107] *Swarna Properties v. Vestas Wind Technology India Pvt. Ltd.* (Case No. 24 of 2018) August 7, 2018

[108] National Institute of Wind Energy, GoI http://niwe.res.in/information gi.php

The most significant combinations approved by the CCI was based on a notice received from *General Electric Company, GE Industrial France SAS, Alstom, and Alstom Holdings* (the Parties).[109] The proposed combination primarily related to the acquisition of Alstom's thermal power, renewable power and grid businesses by GE and its group companies. Within the thermal power business, Parties submitted that they have overlapping activities in the supply of certain equipment to and services for the power plants. The CCI noted that there are primarily two types of thermal power plants to which the Parties supply equipment (globally as well as in India). These are (a) gas-based power plants which use natural gas for generating electricity and (b) steam-based power plants which primarily use fossil fuel such as coal for generating electricity. In the market of gas-based power plants the CCI noted Alstom is not a close competitor of GE. For steam-based power plants, the CCI based on bidding data noted that GE and Alstom do not compete with each other at all.

Even in the renewable energy market the CCI noted that there is no overlap between the products or services offered by GE and Alstom in the solar energy, wind energy and hydro energy segments in India. Therefore, the CCI approved the proposed acquisition of Alstom's thermal and renewable power business by GE as there was no AAEC likely to be caused by the acquisition.

Conclusions

Based on the limited intervention of the CCI in electricity sector, the following points emerge:

- The CCI is unlikely to entertain complaints pertaining to issues such as entry conditions, technical details, tariff, safety standards which fall exclusively within the domain of sectoral regulators.

- Studies suggest that the provisions of "open access" and unbundling of vertically-integrated services as envisaged under the EA03 still remain to be fully implemented.[110] Given the issues of open access and unbundling of services directly relate to market access and fair competition, the CCI would investigate into these issues in appropriate cases.

[109] *General Electric Company, GE Industrial France SAS, Alstom, and Alstom Holdings* (Combination Registration No. C-2015/01/241) May 5, 2015.

[110] Retail Competition in Electricity – Opportunities and Challenges (October 2016), available here.

Electric Vehicles: Regulatory Impact

The overall electricity demand from large-scale adoption of electric vehicles (EVs) in India is projected to touch 69.6 terawatt hours by 2030, helping power utilities earn an additional revenue of USD 11 billion. EVs across India will be instrumental in transforming the country's power sector and reduce emissions by 40-50 per cent, helping the country in achieving carbon emission reduction targets[111].

With the EV sector being a critical factor to providing a fillip to India's power sector, this chapter gives an overview of the EV landscape in the country and potential regulatory landscape which will evolve.

Figure 19: The EV landscape in India

The share of electric vehicles (EVs) in the Indian transport sector is increasing with the facilitation of the National Electric Mobility Mission Plan (NEMMP), 2013, and the Faster Adoption and Manufacturing of Hybrid & Electric Vehicles (FAME) scheme, 2015. The NEMMP aims to achieve national fuel security by promoting hybrid and electric vehicles in India. It has set the target of sales of 6-7 million hybrid vehicles and EVs yearly, from 2020 onwards. FAME aims to support development of a market and a manufacturing eco-system for hybrid/electric vehicles by focusing on technology development, demand creation, pilot projects, and charging infrastructure. Together, the aforementioned schemes aimed to increase the share of EVs in India's total vehicle sales to 40% by 2030.

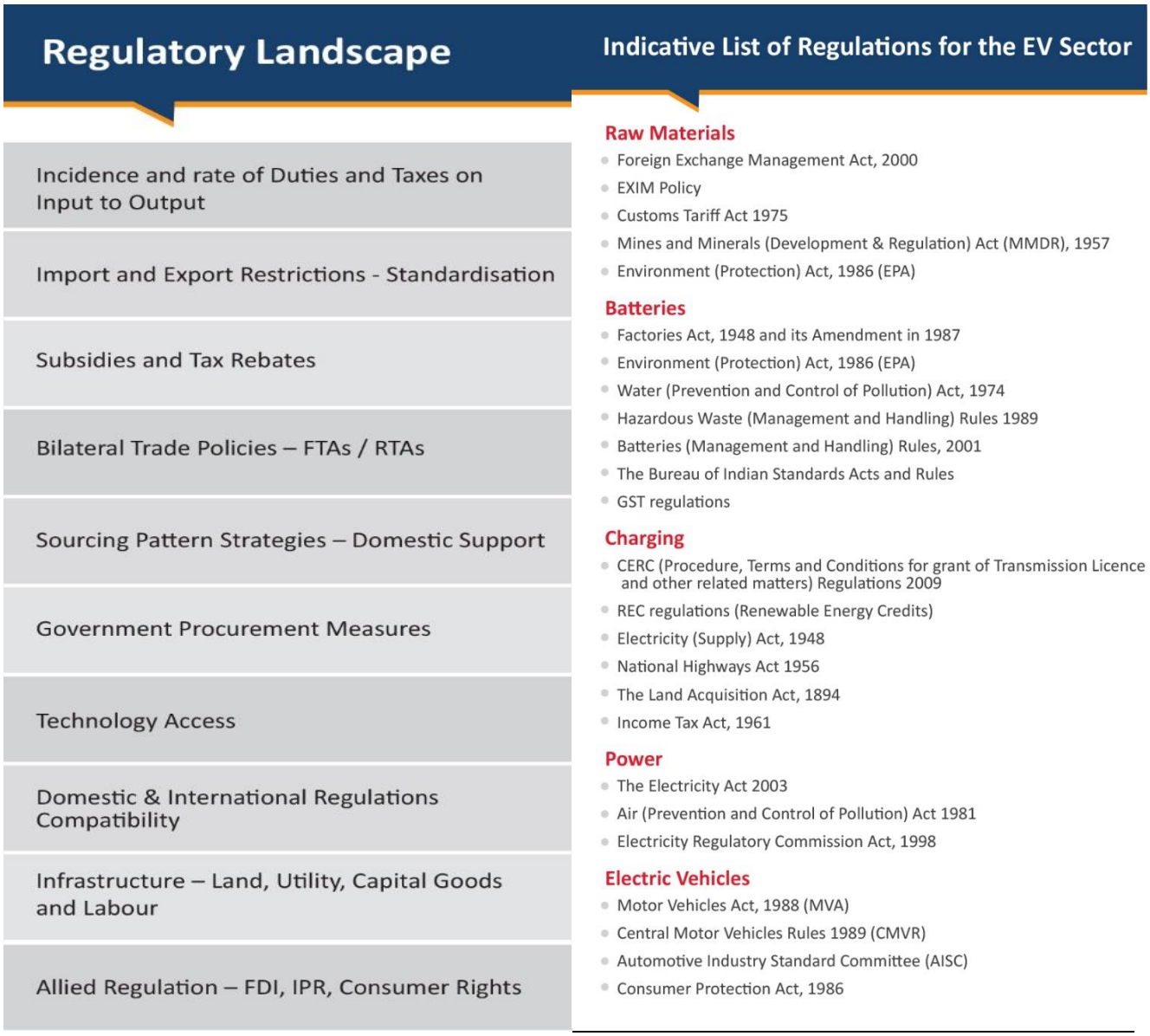
Unfortunately, the growth has been at a slower rate than foreseen initially, largely due to anxiety about charging given the lack of sufficient charging stations at present. Private players are also reluctant to invest in creating and operating such stations because they do not predict much revenue due to the low EV usage in the current scenario.

[111] A joint report by Assocham and Ernst & Young LLP

The EV market in India was about 25,000 units at the end of 2016-17. Of the total EVs sold, nearly 92% were two-wheelers, while electric cars and four-wheelers accounted for less than 8% of total sales, according to Society of Manufacturers of the Electric Vehicles. A study conducted by the group showed that 4,330 EVs were sold in Gujarat, 2,846 in West Bengal, 2,467 in Uttar Pradesh and 2,388 in Rajasthan during the fiscal year. In the light of this burgeoning development and growth, especially in the EV sector, it is absolutely essential for an erudite Indian policy that reflects internationally and domestically compatible regulations and legislation.

Regulatory Landscape

Several regulatory developments are key for the growth of the EV Market in India. The potential Regulatory Landscape in the nation pursuant to the growth of the EV Market is given in the figure below:



Policy Issues: Power Sector

There are several policy issues in the Power Sector that need to be addressed in order to facilitate the smooth and successful shift to EVs in the Indian automobile market:

- The use and kind of Renewable energy in charging stations, if any, is a matter of contention. The reason for this is that the output of power generated or produced via renewable resources is significantly less both in quantity and consistent levels than their non-renewable counterparts. As such, this leaves far too much scope for volatility in the amounts of power being supplied to charging stations, which would severely hamper the growth of EVs in the market. If such issues are circumvented also, or renewable energy is partially used to supply charging stations, it is important to decide what incentives would be provided to the renewable energy sector in this regard.
- At present, electricity distribution grid assets are currently unable to handle large-scale EV energy requirements. Strengthening of Grid infrastructure is essential in order to accommodate EVs on a large scale.
- The influx of EVs would result in a fresh demand for electricity, keeping in mind the added load that charging of such vehicles would add to the power grid. As such, this would have new implications for the numerous stressed assets in the power sector.
- As per the regulations for electricity sales in the country, under The Electricity Act, 2003, a distribution licence is required to distribute power from respective SERCs. Given the number of regulators involved with the influx of EVs in India, a pan-India license would make sense. However, such a change would require a lot of heavy lifting including a comprehensive review of existing laws and regulations.
- There are certain regulatory pieces which need to be fine-tuned. At present, as per the CERC regulations, only a distribution licensee can sell power. As a result, we currently have distribution networks which are owned by the Discoms primarily. In some cities, it is privately owned and as such, some sort of a protocol would be required to establish how a private player can involve itself in the same.
- Increasing reliability on renewable sources of energy leads to increased volatility, as wind and solar energy production depend on natural factors which cannot provide guaranteed levels of output. As a result, this could lead to varied production.
- New power infrastructure must anticipate increasing load requirements to avoid costly upgrades (in the context of smart cities, electrification of villages, and so on).
- Policies for advanced demand side management to manage fluctuation in electricity demand caused by user charging patterns must be formulated. Tariffication of electricity prices in real time and installation of smart-meters to communicate these tariffs and collect usage data is required. Smart meters are already being installed in India to reduce losses associated with distribution and transmission.
- Policies for grid automation and infrastructure for load shifting and storage of excess power to handle new supply and demand fluctuations as a result of EVs are a must. EVs plugged into the grid can act as buffers and storage units by utilising idle battery capacities.
- India has lower power production and consumption levels than most developed countries that have witnessed rapid EV adoption (Per capita electricity consumption in India is only about 800 units, while in the United States, it is 12,000 units). As a result, EV adoption faces greater challenges in India due to the massive amount of incremental power increase per capita.

Policy Issues: Charging

Certain policy issues must be looked into when it comes to the charging aspect with respect to EVs, which is fundamental in their functioning. Such issues are as follows:

- Creation of charging infrastructure is the primary challenge that must be addressed by the authorities. To address this, the Central government proposed that the Union ministry of Power, in consultation with the Niti Aayog and State Governments, create a 'minimum skeleton network' of charging infrastructure across the country. This aims to encourage the use of EVs and create enough demand to attract private players to set up charging stations, thus helping to create a larger market for EVs in the future.
- Whether to go for AC (alternating current) or DC (direct current) chargers. While an AC charger takes around six hours to charge an EV, DC chargers are faster and take around 40 minutes to one hour to fully charge a vehicle. Having multiple charging protocols is a pain point in the electric vehicle industry. The world is spending more money than necessary to support multiple charging protocols. Large amounts of funds could be spent building a proprietary charging network that can only be used by owners of a certain company's EVs, while at the same time the charging network operators are spending huge sums to build fast charging for the other protocols. It would be far more efficient to utilise all these funds in the development of a standardised charging protocol prescribed by the Government.
- Electricity rates play a vital role in fostering the adoption of EVs and encouraging existing EV customers to charge their vehicles in an environmentally and economically efficient manner. However, standard electricity rates do little to encourage EV adoption or optimal charging times. As the EV market begins to grow in India, the resulting effects in electricity demand will cause EV charging to become a significant enough load to warrant special tariffs. Other than this, time-of-us pricing or variable hourly pricing could also be looked into as feasible policies.
- NITI Aayog has suggested a fee – rebate model where efficient vehicles are rewarded with rebates through a surcharge on inefficient vehicles. The Government could develop a policy to provide a subsidy to vehicle owners as an incentive for the conversion of petrol/diesel vehicles with more fuel efficient vehicles such as hybrid vehicles. Such policies must be formulated effectively in order to facilitate the switch to EVs.
- Involving private charging companies could greatly assist the authorities in meeting the requirements of providing charging facilities to the large number of EVs envisaged on Indian roads. The implications of such involvement must be looked into, particularly with regard to quality standardisation of governmental and private charging stations as well as the incentives to be provided to the private players entering.
- Station placement is a strategic aspect that needs to be looked into. Given that one of the major contentious issues regarding EVs worldwide is the range provided by such vehicles, it is essential that charging stations are places strategically along the national and state highways at first, and once the market begins to expand, such stations must also be prevalent in the less accessible areas. This is key in order to convince the general populous about the viability of making the switch to EVs.
- The pros and cons of an ownership model over swapping model of battery must be weighed up. Significant consideration has been given by the government on battery swapping as a mechanism to mitigate the issues of both the cost of ownership and the range anxiety faced with electric vehicles. However, such a mechanism has historically had its downsides, such as commercial failures globally,

additional costs, an absence of battery standardisation in the EV industry, as well as practical and safety issues.

- If a swapping model of battery is preferred, the question as to whether aligned industries such as car rental companies would consider manufacturing such batteries.
- Not all cars can utilise the same plugs, producing compatibility issues when it comes to charging EVs. Regulation of plug outlet types in public chargers by the Government is necessary to mitigate such an issue.
- In order to attain standardisation of charging infrastructure in India, the government has proposed that Energy Efficiency Services Limited (EESL) should be designated as the aggregator for bulk procurement of public chargers, and other entities act as nodal agencies responsible for setting up and maintaining them using a capital grant by the Central government, which is available under FAME-II. Nodal agencies are to submit their EV charging infrastructure deployment plan, inclusive of the location of charging stations for their respective cities/highways, to the Centre. The Central Sanctioning & Monitoring Committee (CSMC) and State-Level Monitoring Committees (SLMC) are also proposed to facilitate the implementation and post-implementation phases of the scheme. Such proposed charging stations would consist of:
    - One fast DC high-power charging point (50 kW) to comply with the Combined Charging System (CCS), which is an open and universal standard.
    - One CHAdeMO connector (50 kW), which is a Japanese standard for high-power DC charging.
    - Two Type-2 AC charging points (22 and 43 kW).
    - One AC-001 (3.3 kW, slow charging) and DC-001 (15 kW) charging point as per Bharat EV charger specifications (currently being implemented by EESL).

  Such standardisation is key in order to facilitate a large scale shift to EVs across the nation.

Conclusion

The EV landscape in India will slowly evolve over time. In keeping with this completely new paradigm – there will necessarily be a mindset shift – both within industry and government. Regulation will necessarily have to keep pace with changing scenarios.

Power sector & Insurance

'Risk & uncertainty', mitigated *by influencing their financial outcome* via risk management & insurance
ANVITI Insurance Brokers

The growing global demand for energy in a background of increasing environmental awareness is creating conflicting challenges for the power sector. Technological options, innovations and efficiencies driving upgradations, and new investments in generation & distribution present the Indian power industry with increasingly complex evolving mix of contractual and physical risks exposures. These require specific expertise in the structuring of risk engineering and insurance programs.

Insurance and the Power sector

The insurance industry Specialty Practice has kept in step with the dynamic landscape of the power industry. Decisions weighing the extent to which a risk exposure is to be retained or transferred, are today supported by specialist insurance intermediaries deploying analytics built off global experience and information (covering the entire value-chain) relating to governmental, regulatory, political, social, technology-specific issues and loss events, costs and their consequential impact on business continuity and reputation.
Risk exposures vary with the life cycle of a business – a broad mapping starting at the drawing-board would aid ready appreciation:

Activity	Exposures associated	Some Insurance solutions
Planning & Investment	Technology & Design Legal & Regulatory Financing & Acquisitions Contracting	Professional Indemnity / Errors & Omissions Statutory / General liability Warranties & Indemnity / Tax liability / Title
Construction	Sourcing & transportation Pre-fabrication On-site Erection Testing & Commissioning	Marine (Transits / Storage / Delay-in-start up) Construction / Erection All Risks (works / third party liabilities / design / advance-loss-of-profits) Inherent Defects/ Decennial Liability ('civil structures') Workers compensation
Operations	Commercial operation Maintenance & renewals Expansions & upgrades	Property / Machinery Business Income (including exposures from suppliers/ customers / interdependencies) Crime Statutory / General Liability Employees compensation Cyber Directors & Officers

Some covers explained (for a complete understanding of the scope of cover and its limitations, review policy wordings with your insurance intermediary)

Professional Indemnity insurance

Your architects, designers, engineers and other expert resources (of every tier) contracted by you need to carry adequate 'PI' insurance for professional errors and negligence ('civil liability arising out of their conduct of professional business'). Ideally your contracted professional advisors should be required to procure separate insurance for your project – such 'project PI' will be your first recourse to indemnity in addition to any similar insurance already availed by them. Remember, your EPC contractor should also be included, even if 'design' is not within scope.

Warranty & Indemnity Insurance & Tax Liability Insurance

In acquisitions, W&I and Tax Insurance are sleep-easy solutions offering transactional comfort for both parties. A W&I insurance policy covers financial losses arising from unknown breaches of the representations and warranties in a share purchase agreement. A Tax Liability Insurance protects against ambiguity of capital gains taxation when involving DTAA jurisdictions (such as Mauritius, in the case of India).

Title Insurance

Protects the enterprise (and lenders) as 'property owner' for financial losses due to defect in the title of land/ property acquired. This exposure has gained prominence with RERA (which States are progressively notifying) mandating insurance of 'real estate projects'.

Inherent Defects / Decennial Liability Insurance

Builders (architects / engineers / contractors of every tier) must compensate for any 'structural defects' (in design / materials / workmanship) that results in collapse or threatens the stability of the construction. The exposure is covered up to 10 years from the handover and the insured values cater to 'total rebuilding cost'. This cover requires Insurers and independent 'technical inspection services' (TIS) to be engaged right from the time a building/ structure is on the 'drawing board' and through the entire duration of its construction.

Marine DSU / Construction ALOP

Covers (associated with Marine transit and Construction/ Erection works insurance) 'Delay in Start-Up' / 'Advanced Loss of Profits' i.e. the loss of projected income (associated with the delay or reduction in planned revenues) following an insured loss during a marine transit or during the works period.

Commercial General Liability (CGL)

Caters to indemnity for legal liability incurred toward third parties (for bodily injury/ death or property damage) arising out of premises or business operations of an enterprise. (Third Party liability arising out of construction/ erection activities are inbuilt in standard construction risks policies).

The cover can be extended to including 'property under care/ custody/ control', 'products & completed operations', employers liability and other pertinent exposures. Evaluating exposures, territorial scope and applicable 'legal jurisdictions' of the insurance and purchasing an adequate limit of indemnity for 'any one event/ occurrence' and for the 'aggregate of all events during one period of insurance' are of critical relevance to the enterprise.

And more…
'Weather' insurance products cater to financial losses from extreme weather conditions/ catastrophes;
'Terrorism' insurance indemnifies property damage and business income loss following your facilities being targeted;
'Kidnap & Ransom' to cover your key personnel at exposed locations;
'Solar performance' to cover losses associated with degradation of installed panels;
'Cyber' insurance recognises the interconnectivity and embedded digital technology that risks cyber-attacks and covers material damage and business interruption losses caused by hackers/ viruses/ malware.

Insurers frequently agree on 'bespoke' wordings and comprehensive 'multi-line' insurance programs developed by specialist insurance intermediaries that holistically address the many and varied, immediate and consequential, risk exposures of a large business.
The expertise of your Risk & Insurance intermediary in evaluating and mapping exposures, in every phase and aspect of the business, into an 'insurance solution' is critical for ensuring successful delivery of a project and to the financial stability of an operating enterprise. The typical large and complex exposure also requires 'insurer selection' and the sourcing necessary 'consortium capacity' from international specialist markets – this expertise in direct and reinsurance 'placement' is equally critical.

.

Anviti is a composite insurance & reinsurance broker (IRDAI Licence No.624 valid till 15 Oct 2020) with dedicated experienced energy specialists supporting risk management and insurance needs in the power generation & distribution sector in India. Our expertise spans the spectrum, from fossil fuels to clean / renewables including solar and wind.
Anviti's worldwide partnerships with leading resources in the energy industry and insurance enables it to deliver cutting-edge bespoke solutions to the power sector to cost-effectively manage risk.
Anviti is promoted by **Catamaran Ventures**,
the proprietary investment firm of Mr N.R. Narayana Murthy and Mrs Sudha Murthy.

Abbreviations

Term	Meaning
AAEC	Appreciable Adverse Effect on Competition.
ABFPL	Alstom Bharat Forge Power Limited.
AC	Alternating Current.
Action Agenda	The three-year action agenda by Niti Aayog.
AD	Accelerated Depreciation.
APTEL	Appellate Tribunal for Electricity.
ASCI	Admin Staff College of India.
Atomic Energy Act	Atomic Energy Act, 1962.
BBMD	Bhakra Beas Management Board.
BCB	Beas Construction Board.
BEE	Bureau of Energy Efficiency.
BMB	Bhakra Management Board.
BP Holdings	BP Alternative Energy Holdings Limited.
BPSL	Bina Power Supply Limited.
BU	Billion Units.
CAG Report	Report of the Comptroller and Auditor General of India on Renewable Energy Sector in India.
CCI	Competition Commission of India.
CCS	Combined Charging System.
CDM	Clean Development Mechanism.
CEA	Central Electricity Authority of India.
CERC	Central Electricity Regulatory Commission.
CGL	Commercial General Liability.
CGST	Central Goods and Services Tax.
CGST Act	Central Goods and Services Act, 2017.
CHPP	Coal Handling and Preparation Plants.
CIL	Coal India Limited.
CLND	Civil Liability for Nuclear Damage.
CLND Rules	Civil Liability for Nuclear Damage Rules, 2011.
COD	Commercial Operation Date.
COMPAT	Competition Appellate Tribunal.
Competition Act	Competition Act, 2002.
Compulsorily Convertible Instrument	Equity shares, convertible preference shares or convertible debentures which are compulsorily convertible into equity shares.
CPP	Captive Power Project.
CPSUs	Central Public Sector Units.
CSC	Convention on Supplementary Compensation 1997.
CSMC	Central Sanctioning & Monitoring Committee.
CST	Central Sales Tax.

Term	Meaning
CTA	Customs Tariff Act, 1975.
CTU	Central Transmission Utility.
CUF	Central Utilization Factor.
CVD	Countervailing Duty.
DC	Direct Current.
DGTR	Directorate General of Trade Remedies.
Discoms	Distribution Companies.
DVC	Damodar Valley Corporation.
EESL	Energy Efficiency Services Limited.
Electricity Act	Electricity Act, 2003.
Electricity Rules	Electricity Rules, 2005.
Energy Policy	National Energy Policy.
EVs	Electric Vehicles.
FAME	Faster Adoption and Manufacturing of Hybrid & Electric Vehicles.
FDI	Foreign Direct Investment.
FEMA	Foreign Exchange Management Act, 1999.
FSA	Fuel Supply Agreement.
GATT	General Agreement on Tariff and Trade.
GBI	Generation Based Incentive.
GEL	GMR Energy Limited.
Gencos	Generation Companies.
GERC	Gujarat Electricity Regulatory Commission.
GOI	Government of India.
GST	Goods and Services Tax.
GSTN	Goods and Service Tax Network.
GUVNL	Gujarat Urja Vikas Nigam Limited.
GW	Gigawatts.
HSN	Harmonized System of Nomenclature.
HSRC	Haryana State Regulatory Commission.
IAEA	International Atomic Energy Agency.
IBC	Insolvency and Bankruptcy Code, 2016
IFC	International Finance Corporation
IEX	Indian Energy Exchange.
IGST	Integrated Goods and Services Tax.
IGST Act	Integrated Goods and Services Act, 2017.
INIP	Indian Nuclear Insurance Pool.
IPP	Independent Power Project.
ISTS	Inter-State Transmission System.
JNNSM	Jawaharlal Nehru National Solar Mission.
JPL	Jindal Power Limited.
JPVL	Jaiprakash Power Ventures Limited.
JSWEL	JSW Energy Limited.
KAPL	Kalyani Alstom Power Limited.

Term	Meaning
KERC	Karnataka Electricity Regulatory Commission.
LCR	Local Content Requirements.
LoA	Letter of Assurance.
MNRE	Ministry of New and Renewable Energy.
MoEFF & CC	Ministry of Environment, Forest and Climate Change.
MTs	Million Tonnes.
MW	Megawatts.
MWh	Mega Watt hour.
NAPCC	National Action Plan for Climate Change.
NCLT	National Company Law Tribunal.
NEMMP	National Electric Mobility Mission Plan.
NEP	National Electricity Policy, 2005.
NLDC	National Load Dispatch Centre.
Non-Resident Entities	Non-resident Indian entities
NPA	Non-Performing Assets.
NVVN	NTPC Vidyut Vyapar Nigam.
OECD	Organisation for Economic Cooperation and Development.
PIL	Power and Energy International (Mauritius) Limited.
PLF	Plant Load Factor.
PPA	Power Purchase Agreement.
PSBs	Public Sector Banks.
PXIL	Power Exchange India Limited.
RBI	Reserve Bank of India.
RE	Renewable Energy.
REA	Regional Energy Accounts.
RECs	Renewable Energy Certificates.
RERC	Rajasthan Electricity Regulatory Commission.
RGO	Renewable Generation Obligation.
RLDC	Regional Load Dispatch Centre.
RLMM	Revised List of Models and Manufactures.
RPO	Renewable Purchase Obligation.
SAARC	South Asian Association for Regional Cooperation.
SAC	Services Codes.
Samadhan Scheme	Scheme of Asset Management and Debt Change Structure
SBDs	Standard Bidding Documents.
SCCL	Singareni Collieries Company Limited.
SCD	Scheduled Commissioning Date.
SCM Agreement	Agreement on Subsidies and Countervailing Measures.
SDR	Strategic Debt Restructuring.
SEB	State Electricity Board.
SEBI CI Pricing	The price per Compulsorily Convertible Instrument *cannot be less* than average weekly high and low of the volume weighted average price for 26 weeks or 2 weeks prior to the relevant date (whichever is higher).

Term	Meaning
SEBI Equity Pricing	The price per Compulsorily Convertible Instrument *cannot be less* than average weekly high and low of the volume weighted average price for 26 weeks or 2 weeks prior to the relevant date (whichever is higher).
SECI	Solar Energy Corporation of India.
SERC	State Electricity Regulatory Commission.
SGST	State Goods and Services Tax
SGST Act	State Goods and Services Tax, 2017.
Shakti	Scheme for Harnessing and Allocating Koyla (Coal) Transparently in India.
SLDC	State Load Dispatch Centre.
SLMC	State-Level Monitoring Committees.
SNA	State Nodal Agencies.
Solar Guidelines	Guidelines for Tariff Based Competitive Bidding Process for Procurement of Power from Grid Connected Solar PV Power Projects issued on August 3, 2017.
SPA	Securities Purchase Agreement.
SPV	Special Purpose Vehicle.
Stressed Assets Circular	Circular dated February 12, 2018, issued by the RBI on 'Resolution of Stressed Assets – Revised Framework'.
STU	State Transmission Utility.
S4A	Scheme for Sustainable Structuring of Stressed Assets.
Tariff Policy	National Tariff Policy.
TBSL	Tata BP Solar India Limited.
TIS	Technical Inspection Services.
TPCL	Tata Power Company Limited.
TPP	Thermal Power Plant.
TRIMs Agreement	Agreement on Trade Related Investment Measure.
UDAY	Ujjwal Discom Assurance Yojana.
UMPP	Ultra Mega Power Projects.
UNFCCC	United Nations Framework Convention for Climate Change.
UTGST Act	Union Territory Goods and Services Tax Act, 2017.
VAT	Value Added Tax.
VGF	Viability Gap Funding.
Wind Guidelines	Guidelines for Tariff Based Competitive Bidding Process for Procurement of Power from Grid Connected Wind Power Projects issued on December 8, 2017.
WPG	Wind Power Generator.
WTO	World Trade Organization.
1910 Act	Indian Electricity Act, 1910
1948 Act	Electricity (Supply) Act, 1948
2014 Bill	Electricity (Amendment) Bill, 2014
2018 Bill	Electricity (Amendment) Act, 2018

Annexure

Notifying Party	Business	Trigger Event	Remarks
Power and Energy International (Mauritius) Ltd. (PIL) C-2016/06/404	Development, ownership and operation of power projects; power generation, transmission, distribution and trading of electricity in India; power generation for sale to off-takers in India; and captive mining for power plants in India	Acquisition of 30% of equity shares of GMR Energy Limited (GEL/Target) by PIL, pursuant to the execution of the Subscription Agreement the Share Holder Agreement on May 9, 2016. PIL also acquired certain affirmative rights in GEL which amounted to control over GEL.	The CCI found no horizontal overlap between the parties or no possibility of vertical foreclosure post combination.
JSW Energy Limited (JSWEL) C-2016/05/399	Generation of power in India	Transfer of a 1000 MW operational coal fired thermal power plant at Tamnar, Chhattisgarh (Target Asset), owned by Jindal Power Ltd. (JPL) to Everbest Steel and Mining Holdings Limited (SPV) on a going concern basis pursuant to a Securities Purchase Agreement (SPA) dated May 3, 2016 amongst JPL, SPV and Jindal Steel and Power Limited. The transfer was followed by a subsequent acquisition of 100% stake in the SPV by JSWEL.	The CCI noted horizontal overlap between the parties but their combined market share was insignificant to cause any AAEC.
JSWEL C-2016/08/420	Generation of power in India	Transfer of a 500 MW operational coal fired thermal power plant at BPSL, Madhya Pradesh (Target Asset) owned by Jaiprakash Power Ventures Limited (JPVL), to Bina Power Supply Limited (BPSL) on a going concern basis pursuant to SPA dated July 18, 2016. The transfer was followed by a subsequent acquisition of 100% stake in the BPSL by JSWEL.	The CCI noted that horizontal overlap between the parties but their combined market share was insignificant to cause any AAEC.
JSWEL C-2014/12/230	Generation of power in India	Acquisition of two power projects located in Himachal Pradesh (Target Assets)	The CCI noted that the parties had insignificant

		transferred to a SPV by JPVL, pursuant to a SPA dated November 16, 2014 together with an acquisition of 100% stake in the SPV by JSW from JPVL and Jaypee Group Employees Welfare Trust, a minority shareholder in the SPV.	vertical relationship and insignificant combined market share to cause any AAEC.
Tata Power Company Limited (TPCL) C-2012/01/26	Generation of power in India	Share Purchase Agreement executed on December 27, 2011 between TPCL, Tata BP Solar India Ltd. (TBSL) and BP Alternative Energy Holdings Limited (BP Holdings) for a further acquisition by TPCL of 51% of equity share capital of TBSL held by BP Holdings. TPCL to also acquire other securities issued by TBSL to BP Holdings, if any.	The CCI found no horizontal overlap and noted that the parties' combined share would be insignificant to cause any AAEC.
Alstom Bharat Forge Power Limited (ABFPL); and Kalyani Alstom Power Limited (KAPL) C-2013/11/139	Setting up of turbine islands for sub-critical and super-critical technology based power plants.	Approval by the Board of Directors of ABFPL and KAPL of the Scheme of Amalgamation dated October 22, 2013 pursuant to which KAPL will merge into ABFPL. Post combination, ABFPL will be the surviving entity.	The CCI found no horizontal overlaps between the parties.
Adani Power Limited C-2014/08/205	Generation of power in India	Acquisition of 100% share capital of Udupi Power Corporation Limited by Adani Power from Lanco Infratech Limited, Lanco Thermal Power Limited, Portia Properties Private Limited and certain individual shareholders of UPCL (collectively referred to as "sellers") pursuant to the execution of a Share Purchase Agreement dated August 14, 2014.	The CCI found no vertical relationship between the parties and noted that the parties' combined share would be insignificant.

References

1) http://powermin.nic.in/en/content/power-sector-glance-all-india
2) https://www.ibef.org/industry/power-sector-india.aspx
3) https://www.ibef.org/industry/indian-power-industry-analysis-presentation
4) http://www.livemint.com/Opinion/SZAi8vdmvddKR3N2NMANQJ/An-evolving-risk-paradigm-in-the-power-sector.html
5) http://www.livemint.com/Industry/A7B7HQgfrhM4LVCk5hkTUL/India-plans-legal-route-for-power-sector-reforms.html
6) http://indiapowertrading.info/the-road-ahead-for-the-power-sector/
7) https://energy.economictimes.indiatimes.com/news/power/affordability-access-driving-indias-energy-policies-piyush-goyal/51912824
8) https://energy.economictimes.indiatimes.com/energy-speak/the-road-ahead-for-the-solar-power-story-gripping-india/2492
9) http://www.powersector.in/market-dynamics
10) http://www.hindustanpowerprojects.com/media/media-coverage/indias-power-sector-five-key-challenges-solutions/
11) https://www.kpmg.de/docs/PowerSector_2010.pdf
12) http://www.delhi.gov.in/wps/wcm/connect/doit_labour/Labour/Home/Acts+Implemented/Summary+of+the+Acts+Implemented/The+Indian+Electricity+Act%2C+1910
13) https://www.slideshare.net/sanketsamantray/electricity-act-2003
14) http://powermin.nic.in/en/statutory-bodies
15) http://aptel.gov.in/index.htm
16) http://www.cercind.gov.in/index.html

ECONOMIC LAWS PRACTICE
ADVOCATES & SOLICITORS

MUMBAI
109 A 1st Floor, Dalamal Towers,
Free Press Journal Road, Nariman Point
Mumbai 400 0 21
T: +91 22 6636 7000

DELHI
801 A, 8th Floor Konnectus Tower,
Bhavbhuti Marg,
New Delhi 110 001
T: +91 1 1 4152 8400

AHMEDABAD
801 8th Floor, Abhijeet III
Mithakali Six Road, Ellisbridge
Ahmedabad 380 006
T: +9 79 6605 4480/1

PUNE
202 2nd Floor, Vascon Eco Tower,
BanerPashan Road
Pune 411 045
T: +91 20 4912 7400

BENGALURU
6th Floor, Rockline Centre
54, Richmond Road
Bangalore 560 025
T: +91 80 4168 5530/1

CHENNAI
No. 6, 4th Lane
Nungambakkam High Road
Chennai 600 034
T: +91 44 4210 4863

elplaw@elp-in.com

elplaw.in /elplaw.in /ELPIndia /company/economic-law-practice