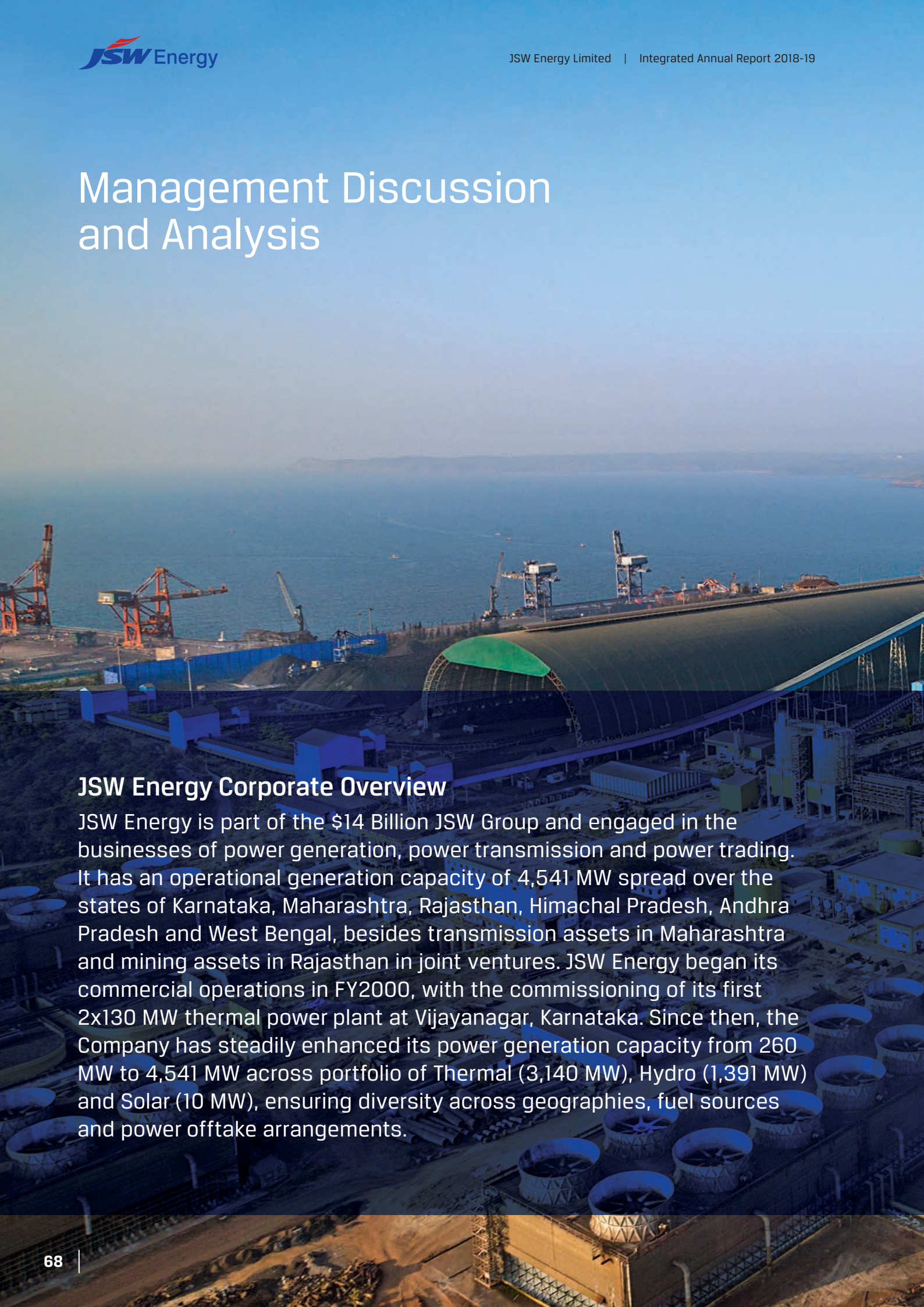
Management Discussion and Analysis



JSW Energy Corporate Overview

JSW Energy is part of the $14 Billion JSW Group and engaged in the businesses of power generation, power transmission and power trading. It has an operational generation capacity of 4,541 MW spread over the states of Karnataka, Maharashtra, Rajasthan, Himachal Pradesh, Andhra Pradesh and West Bengal, besides transmission assets in Maharashtra and mining assets in Rajasthan in joint ventures. JSW Energy began its commercial operations in FY2000, with the commissioning of its first 2x130 MW thermal power plant at Vijayanagar, Karnataka. Since then, the Company has steadily enhanced its power generation capacity from 260 MW to 4,541 MW across portfolio of Thermal (3,140 MW), Hydro (1,391 MW) and Solar (10 MW), ensuring diversity across geographies, fuel sources and power offtake arrangements.

In FY2019, JSW Energy reinforced its dominant position in the Indian power sector by further de-risking its business profile through higher long-term Power Purchase Agreement (PPA) proportion and stronger balance sheet. This has created a robust platform for the Company to pursue attractive growth opportunities in power and related businesses.

Competitive Advantages

I. **Efficient Capital Allocation**
JSW Energy's prudent capital allocation strategies have enabled it to balance the risk-return dynamics and navigate amidst various industry challenges, thereby protecting value for the Company's stakeholders.

II. **Robust Balance Sheet**
The Company's strong cash flow generation has enabled it to significantly deleverage its balance sheet and create headroom for embarking on strong growth opportunities.

III. **Efficient Operating Assets**
With consistent focus on operational excellence, JSW Energy has proven its project execution skills by optimising both time and costs. JSW Energy's plants are amongst the best thermal power assets in India. Through focused innovation and adoption of global best practices, it has achieved one of the lowest O&M costs in the industry.

Management Discussion and Analysis

Economic Overview

Global Economy

Since the beginning of CY2019, global economic activity has been losing momentum characterised by softer domestic demand in the US and China, uncertainty around Brexit and the US-China trade tensions. Further, crude oil prices have remained volatile, reflecting evolving demand-supply conditions and geo-political concerns.

According to the United Nations, global economic growth remained steady at 3.1% in CY2018, and is expected to be around 3% in CY2019. The growth in global industrial production and merchandise trade volumes has been tapering since the beginning of CY2018, especially in trade-intensive capital and intermediate goods sectors. The key factors impacting economic growth include escalating trade disputes, risks of financial stress and an undercurrent of geopolitical tensions. Several developed economies are facing capacity constraints which may also weigh on growth in the short term.

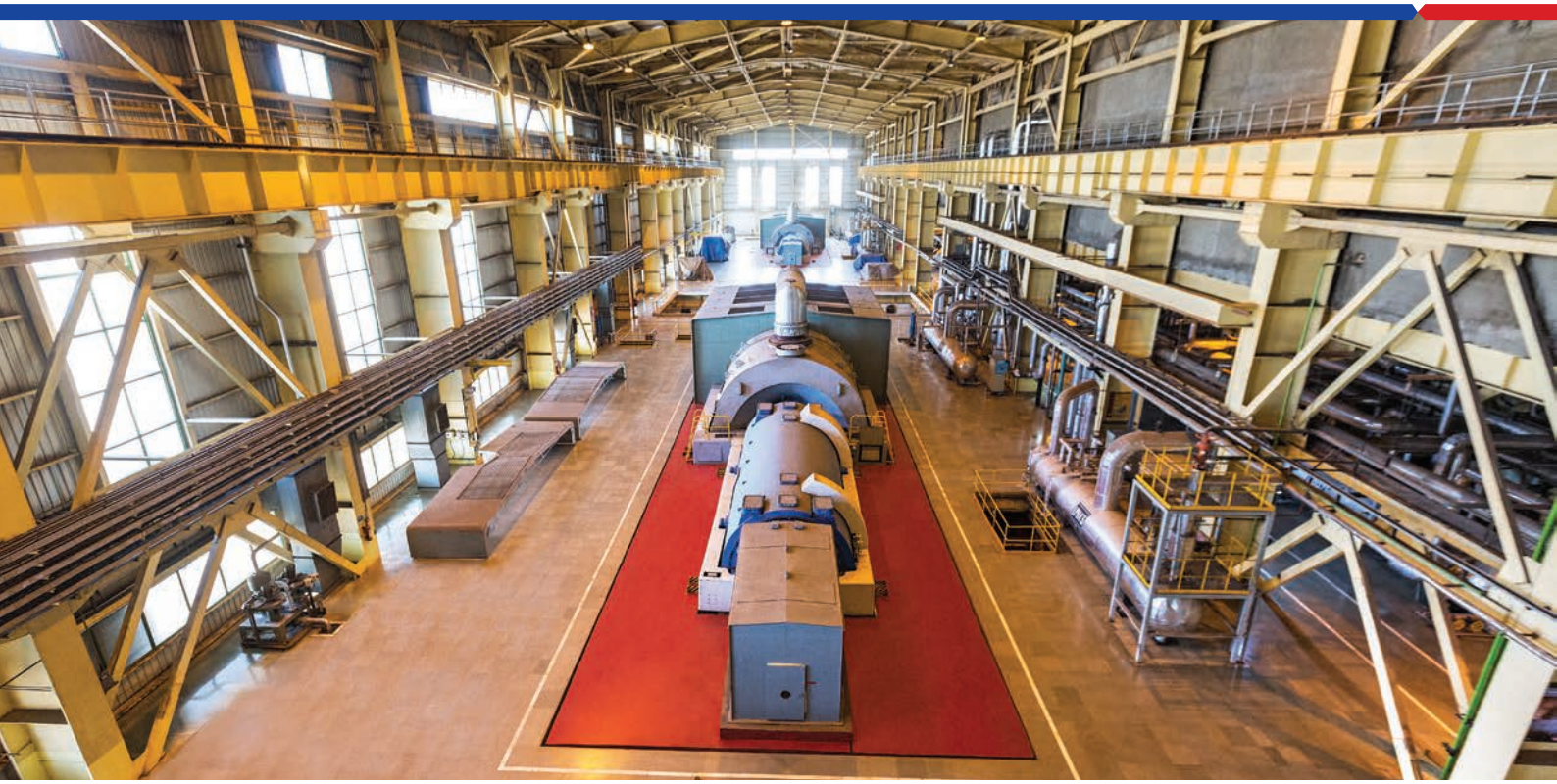
As per the International Monetary Fund (IMF), the world economic growth is expected to marginally slowdown in CY2019. The deceleration in growth reflects lower growth in several major economies including the Eurozone, Latin America, the US, the UK, Canada and Australia. In the US, the boost from fiscal stimulus is likely to fade and high interest rates may adversely impact consumer spending. In the Eurozone, uncertainty due to rising global tensions and Brexit will impact economic growth. China, in the meantime, will experience the twin pressures of the US tariffs and mounting debt levels. A strong US Dollar is likely to impact emerging market currencies, but this effect is likely to reduce later in FY2020 due to a slowdown of the US economy.

Indian Economy

In FY2019, India's GDP grew at a healthy 6.8%, primarily led by construction, manufacturing and power sectors. As per CARE Ratings, the capex spent by the Government in FY2019 has improved to ₹3.17 Lakh Crore vis-à-vis ₹2.63 Lakh Crore in FY2018; however, pick up in private investment has been slow.

During the year, India improved its position by 23 places in World Bank's latest 'Doing Business Report' to be at 77th rank among 190 countries. India's leap of 23 ranks in the Ease of Doing Business ranking is significant, considering that only in the previous year India had improved its rank by 30 places. As a result of continued efforts by the Government, India has improved its rank by 53 positions in the last two years and 65 positions in the last four years, a rare feat for any large and diverse country of the size of India.

Despite strong economic performance, the Banking sector has remained under tight liquidity for most of the fiscal year. Considering benign inflation, the Reserve Bank of India (RBI) has sequentially reduced its key policy rate three times in a row, since Monetary Policy Committee (MPC) meeting in February 2019. MPC has pegged the GDP growth at 7.0% in FY2020. In the year ahead, the Government of India is likely to prioritise infrastructure development, which may encourage private sector spending and boost investments.



Industry Review

Thermal Coal

Global Perspective

As per the BP Energy Outlook 2019, growth in global coal consumption in CY2018 stood relatively flat vis-à-vis a slowdown in the previous year. While Chinese and Organisation for Economic Co-operation and Development (OECD) consumption fell, this was partly offset by increased demand in India and other emerging Asian economies.

Going forward, as per the BP Energy Outlook 2019, global coal demand is expected to be largely flat, in sharp contrast to the past 20 years, during which coal was the largest source of energy growth. Much of the slowdown is driven by China and OECD, who have been steadily moving towards cleaner, lower-carbon fuels as an alternative to coal. Unsurprisingly, the key threat to coal comes from Renewable Energy.

India is perceived to be a key growth market for coal consumption wherein its market share is expected to more than double to around a quarter in 2040. The majority of the increase in coal consumption in India and other developing Asian countries stems from a high projected economic growth, which in turn leads to increased power demand.

Indian Perspective

Total coal consumption in India stood at ~980 million tonnes (MnT) in FY2019. The domestic coal production was 739 MnT and the balance 240 MnT was imported. Coal imports grew by ~13% on a y-o-y basis due to shortage in supply of domestic coal to captive and non-power coal consumers such as cement, metal and other power intensive industries. For FY2019, the total offtake of Coal India Limited (CIL) and Singareni Collieries Company Ltd. (SCCL) was ~676 MnT, a growth of 4.8% over FY2018 offtake. The supply to power sector was ~543 MnT in FY2019, a growth of 7.0% y-o-y. Going forward, CARE Ratings expects coal production to improve by 6-7% in FY2020, largely aided by miners focusing on surface mining of coal over underground mining, which significantly helps in containing cost and in improving productivity.

Indian Power Sector

India is one the fastest growing economies in the world. As the economy surges ahead with strong momentum, reliable, affordable and sustainable power supply becomes fundamental to growth. As per World Bank's Doing Business Report, India has made significant progress in Ease of Getting Electricity over the last four years. India's position improved by 113 places to 24 in CY2018 from 137 in CY2014, among 190 countries worldwide.

While coal dominates India's current energy mix, share of Renewable Energy has been rising over the last few years, underpinned by robust capacity additions. Simultaneously,

old and inefficient coal-based capacities have started retiring in a phased manner. While domestic coal availability under linkage has improved, availability under e-auction route continues to remain a concern, especially for the private sector. Constraints in domestic coal have been met by imports and during FY2019, growth in imported coal overtook domestic coal. Imported coal prices, on the other hand, remained elevated during most part of FY2019 and softened only during the last quarter. At an all-India level, financial health of power distribution companies worsened over FY2019, reversing the improving trend seen since Ujjwal DISCOM Assurance Yojana (UDAY). Overall ACS-ARR gap also deteriorated by ₹0.06 per kWh over FY2018. Although some states have shown improvement, broad-based recovery is still a few years away. Further, the power procurement structure seems to be pivoting to short- and medium-term PPAs, driven by low-cost Renewable Energy and lower merchant market tariffs.

Power demand in the country has been increasing gradually and is expected to remain healthy over the medium term, mainly attributable to rapid urbanisation and unlocking of strong rural demand. On the supply side, capacity additions have started shedding momentum over the last two years, along with retirement of old and inefficient thermal plants in a phased manner, which should result in demand-supply balancing in the medium term.

Management Discussion and Analysis

India's Overall Installed Capacity

356.1 GW

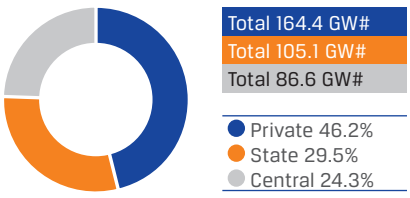
Capacity Review

The total generation capacity in the country increased to 356.1 GW during FY2019 from 344.0 GW a year ago. This net capacity addition of 12.1 GW was led by 8.6 GW increase in Renewable Energy segment (RES), with solar and wind contributing to 6.5 GW and 1.6 GW, respectively. Renewable Energy landscape in India has transformed significantly in the last three years, with renewable capacity growing at a CAGR of ~19%. However, momentum of capacity addition is slowing due to policy and project execution headwinds. During FY2019, RES added 8.6 GW against 11.8 GW capacity addition in FY2018 and 14.4 GW in FY2017. Also, the capacity addition fell short of the target of 21.8 GW set for FY2019.

Sector-wise Installed Capacity (%)

(as on 31st March, 2019)

356.1 GW

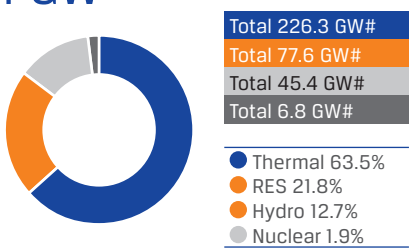


Source: CEA
Refers to total installed capacity of respective sectors

Segment-wise Installed Capacity (%)

(as on 31st March, 2019)

356.1 GW

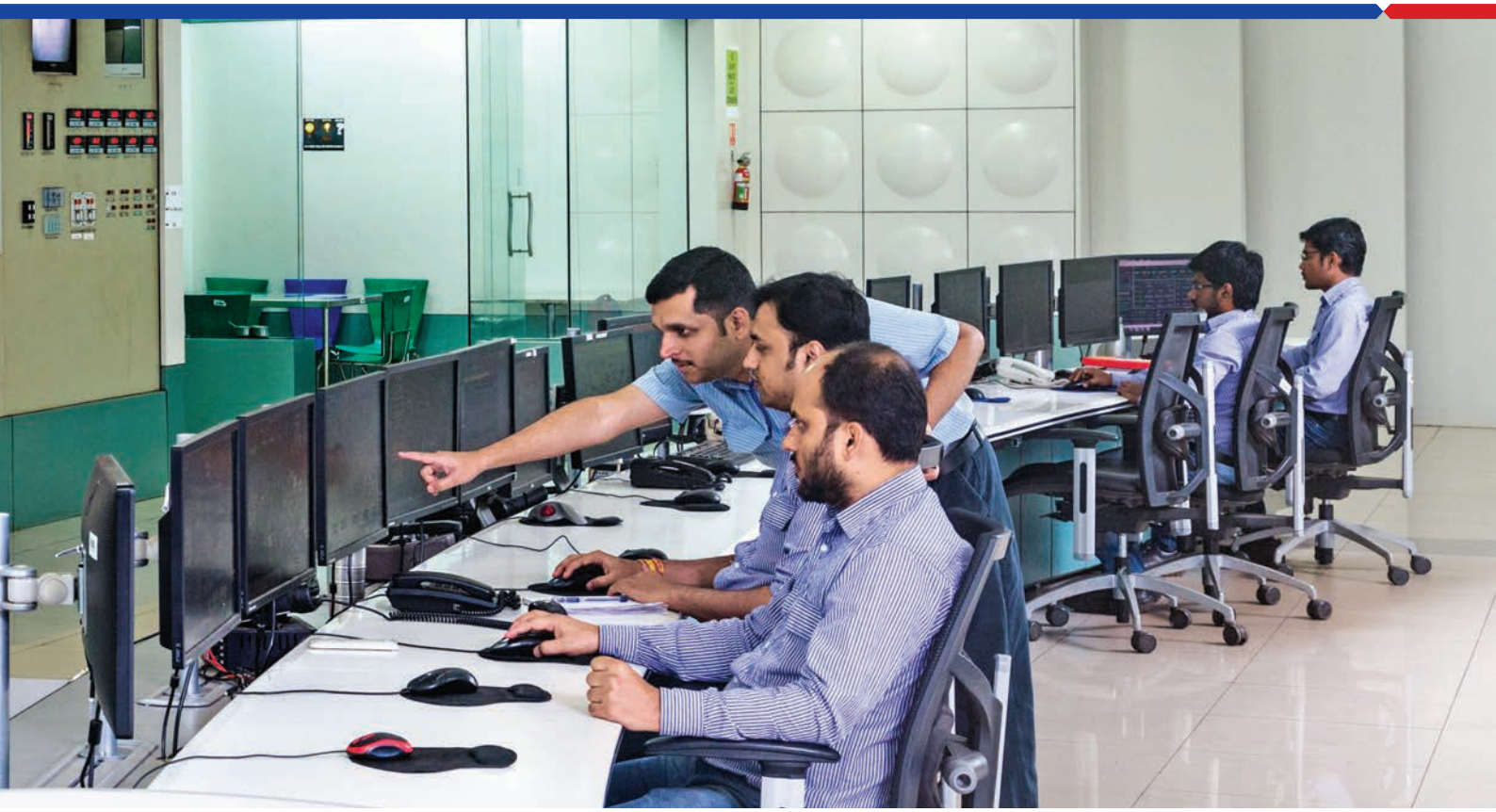


Source: CEA
Refers to total installed capacity of respective segments

Installed Capacity as on March 31, 2019

	Thermal	Nuclear	Hydro	RES	Total
State	72.8	0.0	29.9	2.3	105.1
Private	87.4	0.0	3,4	73.7	164.4
Central	66.1	6.8	12.1	1.6	86.6
Total	**226.3**	**6.8**	**45.4**	**77.6**	**356.1**

The pace of capacity addition in the thermal segment has also waned in the last few years. During FY2019, thermal segment, on a net basis, added 3.4 GW vis-à-vis 4.6 GW in FY2018 and 7.6 GW in FY2017. In the last fiscal, around



2.4 GW of thermal capacity retired, predominantly from the state sector, and this trend is likely to continue for the next few years. With limited capacity additions and retirement of old and inefficient thermal plants, existing thermal Plant Load Factor (PLF) are showing improving trends.

Thermal PLF

Period	FY2019	FY2018
All-India	61.0%	59.8%
- Central	72.6%	71.4%
- State	57.7%	55.1%
- Private	54.9%	55.0%

The All-India thermal PLF stood at 61.0% for FY2019, up from 59.8% in the corresponding period last year, primarily driven by State and Central sectors. While private sector PLF remained flat over this period, it is expected to firm up going forward with balance in demand-supply dynamics, aided by strong demand growth and slowdown in capacity addition.

All India Power Demand

The Government of India has made remarkable progress in providing access to electricity to all the villages in the last few years. In CY2018, the country achieved 100% electrification of its villages, and nearly completed universal household electrification by the end FY2019, thereby unlocking latent demand from the rural households in the country. Universal access to reliable and affordable power plays a crucial role in supporting a country's economic prospects. India is amongst the world's largest producers and consumers of power, however the per capita power consumption in the country is just a third of the world average at around ~1,180 kWh, providing enormous room for growth.

During FY2019, the overall power demand grew at a healthy rate of 5.0% y-o-y and stood at 1,275 BUs. Peak power demand touched an all-time high of 177 GW in FY2019, with an increase of 8.0% y-o-y. Rajasthan, Madhya Pradesh, Telangana, Andhra Pradesh, Bihar, Odisha and Jharkhand were some of the key states strongly driving demand growth during the fiscal year. Demand growth in South region improved by 6.0% y-o-y in FY2019 from 4.8% y-o-y in previous fiscal. In West region, growth partially moderated compared to previous fiscal but remained healthy at 6.0% y-o-y. East region sustained its momentum and grew at a robust rate of 6.7% y-o-y. North and North East regions witnessed significant slowdown in growth from last fiscal to 2.8% y-o-y and 2.9% y-o-y, respectively.

All India Power Generation

Commensurate with demand, power generation grew by 5.2% y-o-y during FY2019. Generation from RES remained robust at 24.5% y-o-y growth, underpinned by aggressive capacity additions during the year. While thermal power generation grew 3.4% y-o-y, it still constitutes about 80% of the overall generation.

Management Discussion and Analysis

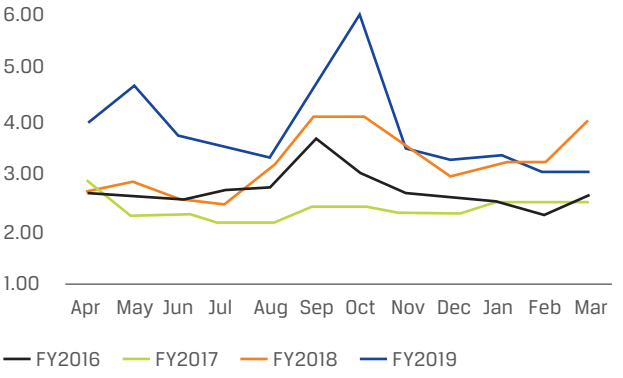
All India Power Generation

Period	FY2019 (BUs)	FY2018 (BUs)	y-o-y (%)
Thermal	1,072	1,037	3.4
Hydro	135	126	7.0
RES	127	102	24.5
Others	42	43	(2.3)
Total	**1,376**	**1,308**	**5.2**

Indian Merchant Power Market

On the backdrop of strong power demand, the merchant power market environment was also vibrant during the year. The volume traded at Indian Energy Exchange (IEX) witnessed ~12% y-o-y increase in FY2019, while the average merchant tariff rose ~18% y-o-y to ₹3.85 per kWh from ₹3.26 per kWh in previous fiscal. The average monthly prices in the month of October 2018 soared to ₹5.94 per kWh (highest in the last eight years) while the peak spot prices hit an all-time high of ₹19.99 per kWh during the month.

Monthly Merchant Tariff Trend (₹/kWh)



Particular in ₹/kWH	FY2019	FY2018	FY2017	FY2016
IEX Average Market Clearing Price (MCP)	3.85	3.26	2.42	2.73

Government Initiatives

UDAY

Ujjwal DISCOM Assurance Yojana (UDAY) was launched in 2015 for financial turnaround and operational improvement of State Distribution Companies (DISCOMs) that were beleaguered by high financial losses and significant operational inefficiencies. A total of 27 States and 5 Union Territories have adopted the Scheme and their performance is tracked on a total of 14 financial and operational parameters. At an aggregate level, 15 State Governments have issued bonds worth ₹2.32 Lakh Crore covering ~86% of the debt taken over by them. This has resulted in lower finance cost for the DISCOMs, thereby improving their financial performance over the last three years. Also, significant reduction in ACS-ARR gap has improved the financial viability of these DISCOMs, although the ACS-ARR gap worsened in FY2019 over FY2018. At the national level, Aggregate Technical & Commercial (AT&C) losses reduced to 18.3% in FY2019 as compared to 20.74% in FY2016. States like Gujarat, Punjab, Uttarakhand, Himachal Pradesh, Andhra Pradesh, Karnataka, Telangana, Tamil Nadu and Kerala have shown remarkable progress in lowering their AT&C losses below the 15% target while on the other hand, states such as Arunachal Pradesh (~65%), Mizoram (~57%), J&K (~50%), Jharkhand (~32%) and Madhya Pradesh (~32%) continue to exhibit high AT&C losses.

SHAKTI

Scheme for Harnessing and Allocating Koyala (Coal) Transparently in India (SHAKTI) was launched in May 2017, for allocation of coal linkages in a transparent manner and resolution of stressed power assets. Under the scheme, auction of coal linkages for Independent Power Producers (IPPs) with PPAs based on domestic coal was successfully conducted in FY2018. Subsequently, Fuel Supply Agreements of almost 27 MTPA were executed with various domestic coal-based projects with an aggregate capacity

IEX Average MCP (FY2019)

₹3.85 per kWh

of 11,549 MW. In March 2019, the Coal Ministry undertook another progressive measure by relaxing the eligibility norms for securing coal linkages and allowing IPPs without PPAs to participate in the auction, with a caveat that power generated from the coal is either sold on spot power exchanges or through the national e-bidding 'DEEP' portal.

SAUBHAGYA

In September 2017, the Government of India launched Pradhan Mantri Sahaj Bijli Har Ghar Yojana (SAUBHAGYA) to achieve the goal of universal household electrification in the country by March 2019. The total outlay of the scheme was pegged at ₹16,300 Crore, with rural share of ₹14,000 Crore and urban share of ₹2,300 Crore. Almost all of the 26.3 Million households have been electrified by the end of FY2019. Providing last mile connectivity through household electrification ensures inclusive growth, enhances the quality of life and helps unlock latent power demand in the country.

Pilot scheme for Procurement of 2,500 MW Power

In FY2019, the Ministry of Power introduced the concept of pilot scheme for procurement of power for a period of three years, based on competitive bidding, from IPPs that were under stress due to lack of PPAs. Two rounds of pilot schemes have been conducted till date with Power Finance Company acting as the nodal agency for both rounds of auction. Under Pilot Scheme-I, PTC India Ltd. acted as the aggregator and signed PPAs aggregating to 1,900 MW out of 2,500 MW with seven power projects, and power supply agreements with various state DISCOMs. PPAs were signed at a tariff of ₹4.24 per kWh, with no escalation in tariff clause, fixed cost component at ₹0.01 per kWh and a minimum power offtake guarantee of 55%. In the second round, termed as Pilot Scheme-II, National Hydroelectric Power Corporation (NHPC) was appointed as the aggregator and auction was conducted for a total of 2,500 MW three-year PPAs. The price discovered in this second tranche was ₹4.41 perkWh and the tariff structure included fuel cost escalation, along with a minimum power offtake guarantee of 85%. PPAs under this round are yet to be signed.

Sector Challenges

In a rapidly evolving developing economy, ensuring energy security for the nation is of paramount importance. Providing access to reliable and affordable power supply is crucial for inclusive and sustainable growth. While the Government has made some progress in recent years by introducing several reforms and schemes aimed at making the sector more transparent, competitive and efficient, several challenges still prevail in the power sector.

Saddled by financial losses and operating inefficiencies, DISCOMs continue to remain the weakest link in the power sector value chain. Under UDAY, lower finance cost has helped in improving DISCOM financials, however the pace of operational improvements has been slower than expected and implementation measures have lagged targets. Overall, states have displayed a mixed performance and according to CRISIL Research, the aggregate external debt of DISCOMs is likely to revert to pre-UDAY level. Hence, cost-reflective tariffs, which will help bridge ACS-ARR gap, and material reduction in AT&C losses using measures such as smart metering are critical for turnaround of DISCOMs.

Furthermore, ~34 thermal power projects (mostly in private sector) with a combined capacity of 40 GW are stressed. The stress primarily emanates from fuel supply constraints, lack of long-term PPAs, change-in-law issues, project cost-overruns, regulatory and contractual disputes and inability of promoter to infuse equity and service debt. These assets together account for ₹1.8 Lakh Crore in outstanding loans to the Indian Banking sector forming a large part of the banks' Non-Performing Assets (NPAs). Timely resolution of these stressed assets remains a key challenge for the sector.

In FY2019, total domestic coal despatch to power sector grew by 7.0% while coal imports rose 12.9% y-o-y. During Q3FY2019, thermal power plants were reeling under severe coal shortage and close to 30 power plants had critical/supercritical coal stock level. This shortage of coal was a key driver of the surge in spot power market tariffs in the month of October 2018. Hence, higher availability of domestic coal, primarily e-auction coal and strengthening of coal logistics infrastructure are key requirements for improving the health of the sector.

Management Discussion and Analysis

Outlook

With a growing population, and rapid urbanisation, the outlook for power demand is sanguine over the medium term. The successful implementation of village and household electrification drives should provide further impetus to power demand in the country.

Further, resolution of stressed assets and thus consolidation in the sector is likely to aid the demand-supply balance. With the release of new prudential framework for resolution of stressed assets by the RBI in May 2019, expeditious resolution of these assets is expected over the next two years.

On the supply-side, capacity additions will be driven by Renewable Energy, supported by Renewable Purchase Obligation (RPO) for solar as well as non-solar segment. Thermal capacity additions will be minimal and old, inefficient thermal capacities that cannot meet the new environment norms will continue to retire in a phased manner. This, along with strong power demand growth, will result in gradual improvement in Thermal PLFs. This may also provide more visibility on signing of new long-term PPAs. However, domestic coal and rake availability and imported coal prices, especially for private sector power plants, continue to remain key concerns to watch out for.

On the distribution front, UDAY implementation appears to be progressing, albeit at a sedate pace. Bringing down AT&C losses and reducing ACS-ARR gap will be key in financial turnaround of DISCOMs. Additionally, other measures such as smart-metering and feeder segregation should be implemented timely to improve operational efficiencies.

Further, reforms such as direct benefit transfer scheme for plugging leakages in power sector subsidies, separation of carriage of electricity (wires) and content (power supply), privatisation of distribution etc. will help in improving transparency in the system and enhancing sustainability of the power sector.

Renewable Energy

India has continued to make significant progress to combat climate change and build a low-carbon future, by increasing the share of non-fossil fuel based power generation capacity in the country over the last three years. Under the Nationally Determined Contributions of Paris Climate Agreement, India pledged to increase the share of non-fossil fuel based power generation capacity to 40% of overall installed capacity by the year 2030.

To accomplish this ambitious goal, the Government of India has set a target to achieve 175 GW of installed Renewable Energy capacity by FY2022. This includes 100 GW from solar power, 60 GW from wind power, 10 GW from bio-power and 5 GW from small hydro power. Additionally, the Government of India in March 2019 adopted a new set of hydropower policy measures, which will provide much needed fillip to the hydropower sector.

Policy thrust on renewables, improvement in technology and support from the industry has helped renewable capacity garner momentum in India. The share of non-fossil fuel based installed capacity has increased from ~28% in FY2016 to ~35% in FY2019, with share of renewable capacity increasing to ~22% from ~14% during the same period. Between FY2016 and FY2019, India added 34.8 GW of renewable and 2.6 GW of hydropower capacity.

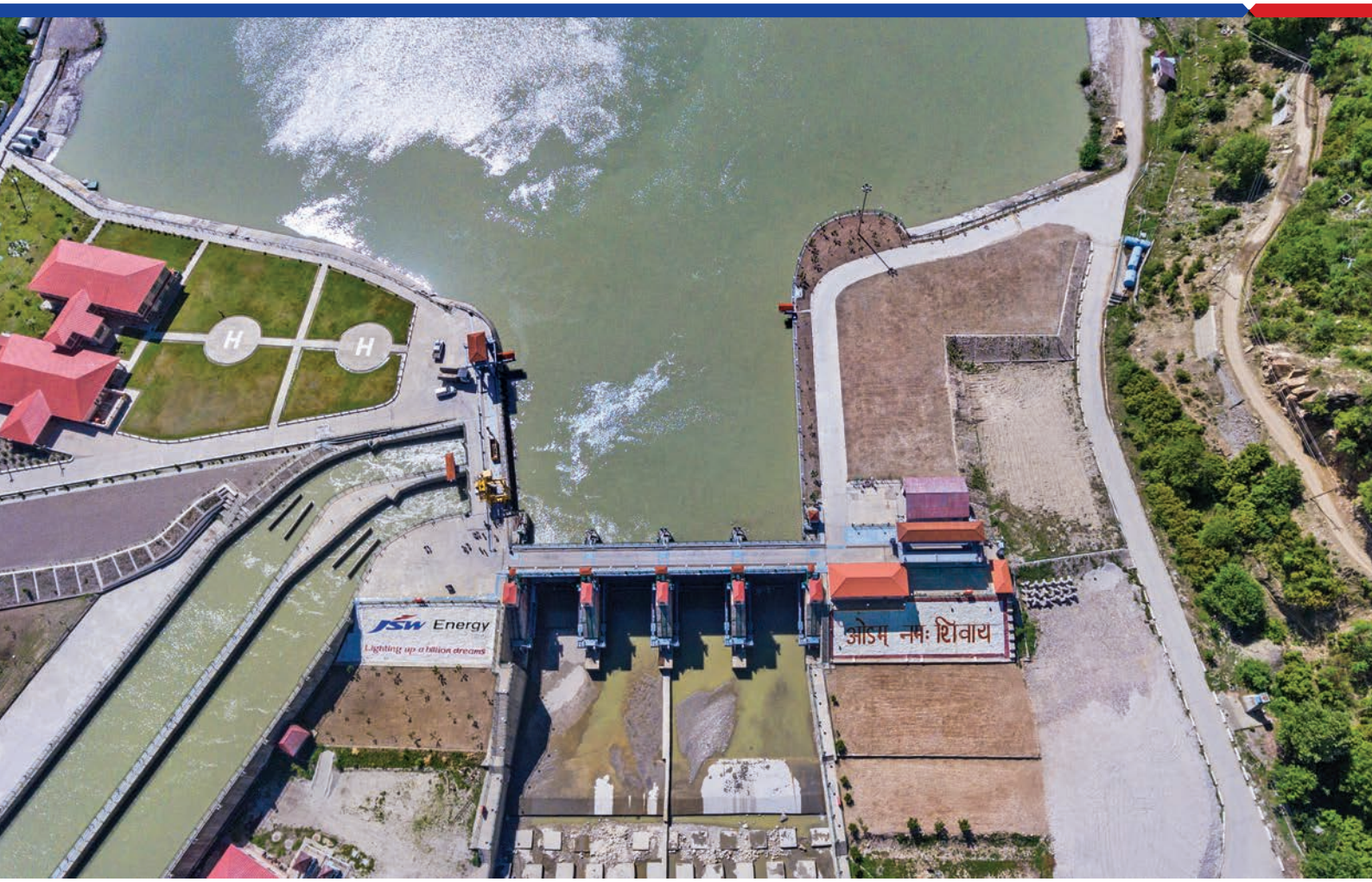
Solar energy has spearheaded the growth of Renewable Energy over the last few years. Solar power tariffs plunged to record low of ₹2.44 per kWh in Bhadla Phase-III solar park auction in Rajasthan in 2016. Since then, most tariff bids have remained range-bound between ₹2.5 to ₹3.0 per kWh. The imposition of safeguard duty on solar panels and modules, introduced in July 2018, impacted the solar tariffs and the bidding activity, albeit for a limited period. To meet the impending demand for solar panels, the Government has introduced various supportive policies and schemes. In line with the 'Make in India' mission, the Government issued a tender in May 2018 for setting up solar PV cell and module manufacturing capacities linked with assured offtake of 20 GW. Moreover, 47 solar parks with a cumulative capacity of ~27 GW have been approved in 21 states during FY2019, and aggregate projects of ~4 GW have been commissioned by the end of November 2018.

Implementation of Renewable Purchase Obligation (RPO) is another pivotal measure by the Government to promote Renewable Energy in India. The Ministry of Power, in June 2018, announced RPO targets for a three-year period FY2020 to FY2022, for all States/UTs. The targets (for Solar and Non-Solar RPOs combined) have been set at 17.5% for FY2020, 19.0% for FY2021 and 21.0% for FY2022.

To mitigate the associated infrastructure challenges and facilitate integration of RES projects, Intra State Transmission System (InSTS) project was launched under the National Green Corridor Programme in FY2016, with a total project outlay of ₹10,141 Crore. This project is being implemented by State Governments of eight renewable rich states of Tamil Nadu, Rajasthan, Karnataka, Andhra Pradesh, Maharashtra, Gujarat, Himachal Pradesh and Madhya Pradesh for building transmission lines (9,400 ckms) and sub-stations (approximately 19,000 MVA) and is set to complete by March 2020.

Hydropower Policy

According to the Indian Government, India's hydroelectric potential is about 145 GW, of which only ~34% or 50 GW is being commercially utilised. As per Central Electricity Authority (CEA), 13 hydropower projects aggregating to



5 GW are currently stalled due to various reasons, ranging from financial constraints to environmental issues. These projects represent ~40% of the current under-construction hydropower capacity in the country. Over the last decade, hydropower capacity has grown at a sluggish pace, with a CAGR of ~2%. Moreover, between FY2009 and FY2019, the share of hydropower in installed capacity has halved from ~25% to ~13%. At this juncture, comprehensive policy reforms are imperative for revival of the hydropower sector.

Therefore, to boost the hydropower sector, the Government announced several new measures in March 2019, which, inter alia, included all Large Hydropower Projects (LHPs), i.e., projects with more than 25 MW capacity, within the ambit of Renewable Energy. According to the CEA, India's Renewable Energy sector had an installed capacity of 77.6 GW at the end of FY2019. With the inclusion of LHPs, the Renewable Energy capacity would now be 123 GW. This will help India meet its 2030 non-fossil fuel based capacity target under Paris Accord on Climate Change.

The measures also introduced Hydropower Purchase Obligation (HPO) as a separate category within the non-solar Renewable Purchase Obligation (RPO). This HPO will cover all LHPs commissioned after March 8, 2019. The untied capacity of previously commissioned projects will also be able to avail this benefit.

Hydropower tariffs are higher in the initial years due to loading of costs of flood moderation and enabling infrastructure in the total project cost. With the new measure, funding support will be provided for enabling infrastructure like roads and bridges of ₹1.5 Crore per MW for projects up to 200 MW and ₹1 Crore per MW for projects above 200 MW. Additionally, budgetary support for funding flood moderation component of hydropower projects will be provided on case to case basis.

Further, the tariff rationalisation measures provide flexibility to developers to determine tariff by allowing back loading (reducing) of tariff after increasing project life to 40 years, increasing debt repayment period to 18 years and introducing escalation in tariff of 2% per annum.

Management Discussion and Analysis

Net Power Generation

22.09 Billion Units

JSW Energy – Operational Review

The Company's net generation in FY2019 stood at 22,088 MUs vis-à-vis 21,816 MUs in the previous year. It generated a total income of ₹9,506 Crore in the current fiscal compared to ₹8,514 Crore in the last fiscal. The deemed PLF was 65.18% for FY2019 as against 64.53% for FY2018.

Plant-wise PLF and net generation

Plant	FY2018		FY2019	
	PLF (%)	Net Generation (MUs)	PLF (%)	Net Generation (MUs)
Vijayanagar	53.27	3,703	50.42	3,515*
Ratnagiri (deemed PLF)	68.50	6,111	79.32	7,353
Barmer (deemed PLF)	84.32	6,140	84.28	6,017
Sholtu (hydro)	51.87	5,862	46.05	5,204
Total		**21,816**		**22,088**

* Includes 4 MUs generated from solar plants.

Future Growth Strategies

Inorganic Growth

The power sector is going through a consolidation wave with multiple assets being available for acquisition at attractive valuations. With a strong balance sheet and history of successful acquisition in the past, the Company aims to leverage on these opportunities in a calibrated manner. To ensure that the Company continues to deliver lucrative returns to its shareholders, the opportunity assessment framework involves key parameters such as security and proximity of fuel supply from domestic coal sources, visibility on power offtake by long-term power purchase agreements, and low cost of power generation. Ensuring low power generation cost is of prime importance as it places the tariffs in the lower strata of the state DISCOM's merit order dispatch, hence fending off the offtake risks and receivable risks. The Company expects the new prudential framework for resolution of stressed assets by the RBI, along with the Insolvency and Bankruptcy Code (IBC), and implementation of various Government schemes for bringing structural reforms in the power sector to significantly aid in the resolution of stressed assets over the next two years.

Renewable Energy Business

JSW Energy has been evaluating growth opportunities in the Renewable Energy segment. The Company firmly believes that Renewable Energy is at the core of India's future energy goals and, with significant impetus by the Government on adoption of clean energy, meaningful opportunities will emerge in the near future. Over the medium term, the Company looks forward to meaningfully expand its footprint in the Renewable Energy segments, both in solar and wind, by developing large-scale projects.

Organic Growth

JSW Energy is evaluating to revive the construction at its Kutehr plant, in Himachal Pradesh, for a 240 MW Hydropower plant and further enhance its presence in the non-fossil fuel segment. The Company's efforts to revive the project are further strengthened by the Government of India's steps to promote hydropower in the country by adopting measures such as declaring hydropower as Renewable Energy, introducing Hydro Purchase Obligations and providing budgetary support for building enabling infrastructure like roads and bridges etc. Additionally, amendment in the state hydropower policy of Himachal Pradesh that allows deferment of 12% free power obligation during the first 12 years to later periods in the allotted projects, is favourable for the Kutehr project.

Operational Performance during FY2019

Thermal Power Plants

Vijayanagar

PLF: The plant comprises two separate Business Units (SBUs) – SBU 1 and SBU 2. In FY2019, the plant achieved an average PLF of 50.42% as against 53.27% in the previous fiscal.

Total net power generated: 3,515 MUs

Power sales: Primarily to JSW Steel Limited, JSW Cement Limited, Power Exchanges in India and State Distribution Companies

Key strengths of the plant

- Located in southern region, which has traditionally seen higher demand for power
- Low-cost and operationally strong plant leading to high fuel efficiency, lower O&M cost and higher PLF efficiency.

Ratnagiri

PLF: In FY2019, the plant operated at an average deemed PLF of 79.32% as against an average deemed PLF of 68.50% in the previous year.

Total net power generated: 7353 MUs

Power sales: Primarily to Group Captive consumers, Maharashtra State Electricity Distribution Company Limited (MSEDCL), other Distribution Companies and Power Exchanges in India.

Key strengths of the plant

- Located near the Jaigad port thus saving on coal transportation cost
- Nearly 47% of the capacity has been tied up with Group Captive consumers with their share likely to increase going forward

Barmer

PLF: In FY2019, the plant achieved an average deemed PLF of 84.28% as against an average deemed PLF of 84.32% achieved in FY2018.

Total net power generated: 6,017 MUs

Power sales: Various Rajasthan DISCOMs

Key strengths of the plant

- Assured availability of fuel (lignite) being a pit head based power plant
- Full capacity tied up under long-term PPAs with DISCOMs

Hydro Power Plants

Baspa-II

PLF: The plant achieved an average PLF of 48.54% for FY2019 as against 50.86% in the previous year.

Total net power generated: 1,261 MUs

Power sales: Himachal Pradesh State Electricity Board (HPSEB)

Key strengths of the plant

- Full capacity tied up under long-term PPA with Himachal Pradesh State Electricity Board (HPSEB)
- Superior operating history with historically high PLFs and plant availability

Management Discussion and Analysis

Karcham Wangtoo

PLF: The plant achieved an average PLF of 45.30% for FY2019 as against 52.18% in the previous year.

Total net power generated: 3942.18 MUs

Power sales: Uttar Pradesh, Rajasthan, Haryana and Punjab DISCOMs through PTC India Ltd.

Key strengths of the plant

- Full capacity tied up under long-term PPAs with various DISCOMs through PTC India Ltd.
- India's largest private sector hydro plant

Solar Power Plants

JSW Energy has set a vision of meaningfully participating in the Renewable Energy segment and as a stepping stone, set up ~10 MW solar power plants in different locations of Group Companies as follows:

State	Location	Capacity (MW)
Maharashtra	Mumbai	0.05
Rajasthan	Barmer	0.45
Andhra Pradesh	Nandyal	5.45
West Bengal	Salboni	3.96

Financial Review

Standalone Financial Performance

EBITDA and Profit after Tax (PAT)

₹ Crore

Parameters	FY2018	FY2019	% Change
EBITDA before Exceptional Items	1,200.65	1,167.09	(3)
Profit/(Loss) after tax	(444.28)	251.45	NM

The Company's standalone PAT improved to ₹251.45 Crore in FY2019 vis-à-vis a net loss of ₹444.28 Crore in FY2018. The EBITDA before exceptional items marginally declined to ₹1,167.09 Crore in FY2019 from ₹1,200.65 Crore in the previous year.

Revenue from Operations

₹ Crore

Parameters	FY2018	FY2019	% Change
Sale of Power	3,986.43	4,884.38	23
Interest Income on Assets under Finance Lease	59.63	61.32	3
Sale of Services	163.24	169.58	4
Other Operating Revenue	2.75	3.05	11
Total	**4,212.05**	**5,118.33**	**22**

In FY2019, the sale of power increased to ₹4,884.38 Crore from ₹3,986.43 Crore in the previous year, due to better realisations and higher volumes. The finance lease income has increased from ₹59.63 Crore to ₹61.32 Crore. Revenue from sale of services has increased from ₹163.24 Crore in FY2018 to ₹169.58 Crore in FY2019, due to higher operator fees realised from O&M services.

Other Income

₹ Crore

Parameters	FY2018	FY2019	% Change
Interest Income	380.87	274.21	(28)
Dividend Income from Long-term Investments	61.55	32.59	(47)
Net Gain on Sale of Current Investments	17.43	4.48	(74)
Other Non-operating Income	33.86	51.50	52
Total	**493.71**	**362.78**	**(27)**

Other income reduced in the current fiscal, primarily on account of lower interest and dividend income.

Cost of Fuel

₹ Crore

Parameters	FY2018	FY2019	% Change
Cost of Fuel	3,149.31	3,959.67	(26)

Fuel cost increased compared to the previous year due to higher average international prices of coal and higher volumes.

Expenses

₹ Crore

Parameters	FY2018	FY2019	% Change
Employee Benefit Expense	107.00	130.84	22
Finance Costs	476.21	411.79	(14)
Depreciation and Amortisation Expense	364.21	365.02	-
Other Expenses	248.80	209.44	(16)

Employee Benefit Expense is higher on a y-o-y basis due to increase in overall headcount and normal wage inflation. The Company has been able to reduce finance costs due to debt repricing and net reduction in borrowings.

Ratios

Particular	FY2018	FY2019	Change	%Change
Debtors Turnover (number of days) *	57	37	(20)	(35)
Inventory Turnover (number of days) ^	41	28	(13)	(31)
Interest Coverage Ratio	1.76	1.95	0.19	11
Current Ratio	0.48	0.53	0.05	11
Debt Equity Ratio	0.32	0.28	(0.04)	(13)
Operating Profit Margin (%)	19.9	15.7	(4.2)	(21)
Net Profit Margin(%) $	(10.5)	4.9	15.5	146.6
Return on Net Worth (%) $	(4.5)	2.5	7.0	155.0

* Primarily on account of faster realisations from customers
^ Primarily on account of decrease in average inventory and increase in turnover
$ There was one-time exceptional items of ₹659.18 Crore in FY2018 towards loss allowance on loans/investments given/made by the Company

Consolidated Financial Performance

The Company's total Income from operations increased by 14% and stood at ₹9,137.59 Crore as against ₹8,048.96 Crore in the previous year. The Company has earned an EBITDA (before exceptional items) of ₹3,221.09 Crore, down by ₹6.47 Crore over the previous year due to increase in international coal prices and reduction in other income. The Company earned a Consolidated Profit of ₹695.13 Crore during the year as against ₹77.97 Crore in the previous year. Its Total Comprehensive Income for the year thus stood at ₹707.15 Crore as against ₹775.09 Crore in the previous year.

The Consolidated Net Worth and Consolidated Net Debt as on March 31, 2019 were ₹11,822.24 Crore and ₹10,050.33 Crore, respectively resulting in a Net Debt to Equity ratio of 0.85 times.

₹ Crore

Parameters	FY2018	FY2019	% Change
Revenue from Operations	8,048.96	9,137.59	14
Other Income	465.02	367.97	(21)
Fuel Cost	4,338.87	5,356.22	23
Purchase of Power	74.58	78.50	5
Employee Benefits Expense	215.09	243.58	13
Finance Costs	1,455.91	1,192.40	(18)
Depreciation and Amortisation Expense	966.08	1,163.69	20
Other Expenses	657.88	606.17	(8)

EBITDA and Profit after Tax

₹ Crore

Parameters	FY2 018	FY2019	% Change
EBITDA before Exceptional Items	3,227.56	3,221.09	-
Profit for the Year	77.97	695.13	791
Other Comprehensive Income	697.12	12.02	(98)
Total Comprehensive Income	**775.09**	**707.15**	**(9)**

Risk Management

JSW Energy Limited follows the globally recognised 'COSO' framework of Enterprise Risk Management and has a robust risk management framework that identifies and evaluates business risks and opportunities.

The Company recognises that the emerging and identified risks need to be managed and mitigated to

- Protect its shareholders' and other stakeholders' interest
- Achieve its business objectives
- Enable sustainable growth

Pursuant to the requirement of Regulation 21 of the Securities and Exchange Board of India (Listing Obligations and Disclosure Requirements) Regulations, 2015 and Clause 49 of the erstwhile Listing Agreement, the Company has constituted a sub-committee of Directors to oversee Enterprise Risk Management framework to ensure:

- Execution of decided strategies with focus on action
- Monitoring of risks arising out of unintended consequences of decisions or actions related to performance, operations, compliance, incidents, processes, systems, etc. and managing the same appropriately

Management Discussion and Analysis

Key Risks & Response Strategies

Type of Risk	Impact	Risk Response Strategies
Offtake risk	At present, ~20% of power is untied and being sold on day-ahead/short-term basis. Demand-supply dynamics, economic growth, sudden shifts in weather impact tariff rates	〉 Focus on enhancing power sales through long-term PPAs, including captive route 〉 Focus on ensuring an optimum mix of medium-, short- and long-term power purchase arrangements
Raw material availability & cost	Availability and cost of required grade of raw material (coal/lignite) are impacted by: 1) Global movement and parity of landed cost considering price, freight, tariff and exchange rates 2) Domestic demand-supply gap, constraints & vendor actions 3) Policies on mining, allocation and tariff	〉 Broaden the sources (countries/vendors) and employ prudent hedging strategies to mitigate the risks, which can affect the cost of coal 〉 Use various contract options like long-term contracts & monthly/quarterly/spot contracts for cost effectiveness 〉 Blend domestic coal by participating in coal e-auctions for Independent Power Producers (IPPs) & Captive Power Producers (CPPs)
Regulatory changes	Revised norms for SOx/NOx/SPM emissions leading to higher capex for environmental compliance	〉 Engage with Original Equipment Manufacturers (OEMs) for necessary modifications in different equipment such as boilers, Electrostatic Precipitators (ESPs), etc. 〉 Ensure that for long-term PPA customers, the capex cost for meeting environmental norm is a pass through
Cyber security	Cyber security risk could result in substantial reputation and financial loss arising from: 〉 Theft of corporate information 〉 Theft of financial information (e.g. financial results, bank details etc.) 〉 Ransomware – cyber extortion 〉 Unauthorised transactions 〉 Loss of business or contract 〉 Disruption to business (e.g. inability to carry out SAP transactions, online payments, etc.)	〉 Periodically assess the current state and prioritise the foundational components of cyber security 〉 Conduct periodic audits of security systems and procedures 〉 Develop new capabilities, technologies and processes to combat cyber-threats 〉 Incorporate cybersecurity and privacy into everyday business decisions and processes (like Information Security Awareness Programme) 〉 Assess readiness to adapt advanced technologies in IS domain 〉 Monitor threats and respond, investigate and remediate cybersecurity related incidents and data breaches
Ageing of plant & machinery	As the plants get older, the risk of wear & tear impacts: 〉 plant availability 〉 likely higher capex & operational expenditure (opex)	〉 Regularly monitor and adopt preventive maintenance 〉 Ensure strict adherence to maintenance schedule as recommended by OEM/industry practice 〉 Maintain adequate stock of critical spares
Foreign exchange risk	Foreign exchange fluctuations can affect cost of coal and in turn the Company's margins	Devise prudent hedging strategies to mitigate the risk of foreign exchange fluctuations

Human Resource (HR) Management

Creating new benchmarks every year with improved productivity as well as building capability to lead the organisation and attain competitive advantage, HR has always been at the fulcrum of business at JSW Energy Limited. FY2019 witnessed continued sustenance of the various HR initiatives taken in previous years. The year also witnessed increased emphasis on 'Diversity & Inclusion' at the workplace. Linking people, strategy and performance, Human Resources at JSW Energy embarked upon the following HR initiatives in FY2019.

Future Fit Leaders

JSW Energy has always laid emphasis on developing and grooming leaders in-house so that leadership roles and other critical positions are occupied by high-potential talent available within the organisation. Keeping this in view, the Company collaborated with Cornell University and ISB Hyderabad for imparting various Management Development Programmes against identified competencies key for leadership development. During the journey, JSW Energy groomed eight Future Fit Leaders to take up higher roles based on opportunities available within the Company from time to time.

Capability Development

Reskilling and redeploying internal talent to support the upcoming growth initiatives in Hydro and Renewable Energy space were some of the major HR interventions during the year. FY2019 also marked the development journey of Emerging Leaders and Accelerated Leaders where the identified participants underwent capability development programs from IIM Ahmedabad, IIM Bangalore and XLRI Jamshedpur. Senior leaders of JSW Energy also went to Brown University for honing leadership skills abreast with global standards. The practice of job rotation continued in FY2019 in order to meet talent requirements across location and functions. These were supported by several types of learning interventions viz. Finance for Non-Finance, Business Communication, Technology Awareness and Management Development Programmes (MDPs).

Umang

As in the previous years, JSW Energy continued with its efforts on fostering employee inclusion and engagement through various celebrations like month-end birthdays, LAMHE (Long Service Award), out-bound training programmes, sports and game activities for employees and their families, etc. In addition, there were regular town-hall meetings by senior leadership team with cross-section of employees in all the locations to strengthen two-way communication.

A quarterly in-house e-magazine was launched in FY2019, which received good response from all cross-sections of employees. The magazine covers events and happenings at all location as well as sectoral updates, along with outstanding contributions and innovations.

Diversity & Inclusion

In order to identify and address emerging issues that can promote Diversity & Inclusion across JSW Energy, Diversity and Inclusion (D&I) councils were formed this year both at corporate as well as plants locations. Under D&I, a flagship programme called 'Springboard' was launched during the year which among other things laid emphasis on nurturing leadership in women professionals in order to better prepare them for future and to create a significant difference.

Management Discussion and Analysis

The identified women employees underwent a training programme at IIM Bangalore.

Total Quality Management (TQM)

The drive towards the journey of attaining the prestigious Deming Prize has taken full swing in the entire organisation. With empowered teams undergoing the adoption of statistical tools and quality as a culture, the Company delivered more than 300 kaizens and 100 improvement projects across the organisation in FY2019. The adaption of TQM is an enormous and never-ending capability building exercise, preparing every employee for sustainable future of the organisation. The management diagnosis for TQM preparedness is scheduled in the 2nd quarter of FY2020 and all the employees are fully geared for the same.

Corporate Social Responsibility (CSR)

JSW Energy strongly believes in inclusive growth to facilitate equal social and economic opportunities to communities. The Company carries out social development activities through JSW Foundation, the social development arm of the JSW Group. JSW Foundation aims to provide the right opportunities to communities for holistic and inclusive development. With support from JSW Foundation, the Company works towards eradicating poverty and hunger, tackling malnutrition, promoting social development, addressing social inequalities by empowering the vulnerable sections of the society, addressing environmental issues, preserving national heritage and promoting sports training.

The Company strives to create a value-based and empowered society through continuous and purposeful engagement with the local communities.

On the CSR front, JSW Energy is committed to:

- Continue allocating at least 2% of its average three years' profits towards CSR interventions as per the categories specified in the Companies Act, 2013
- Concentrate on community needs and perceptions through social processes and related infrastructure development
- Focus on women empowerment through entrepreneurship programmes
- Integrated watershed development
- Promote arts, culture and sports and conserve cultural heritage
- Create a transparent and accountable system for social development and impact assessments through an external agency
- Spread the culture of volunteerism through the process of social engagement

CSR Framework

The JSW Foundation supports, plans and executes JSW Energy's CSR interventions. A separate body has been created for the Company, which is administered by a committee appointed by the Board. All the CSR initiatives are approved by the committee and are reviewed periodically at different levels.

JSW Energy is cognisant of the importance of synergy and interdependence at various levels throughout the organisation. It has therefore adopted a number of intervention strategies to optimise community and individual growth in a sustainable manner. The strategies adopted in this regard are as follows:

- Priority is given to the villages in the immediate vicinity of the plant location, defined as Direct Influence Zone (DIZ). The policy enables plants to define their own DIZ with the provision that this could be expanded as per the size of operations. However, certain programmes might be expanded beyond this geographical purview (Indirect Influence Zone or IIZ)

- All programmes are designed based on the need assessment using different quantitative and qualitative methods that lead to measurable impact. The programmes are implemented either directly or in partnership with the government and civil society groups at various levels
- Social mobilisation, advocacy at various levels, and/or appropriate policy changes form part of the interventions in each sector

Internal Control

The Company has a proper and adequate system of internal control commensurate with the size and nature of its business. Internal control systems are an integral part of JSW Energy's corporate governance structure. Some significant features of the internal control systems are:

- Adequate documentation of policies, guidelines, authority and approval procedures covering all the important functions of the Company
- Deployment of an ERP system which covers most of its operations and is supported by a clearly defined online authorisation protocol
- Ensuring complete compliance with laws, regulations, standards and internal procedures and systems
- De-risking the Company's assets and resources as well as protecting them from any loss
- Ensuring the integrity of the accounting systems as well as proper and authorised recording and reporting of all transactions
- Preparing and monitoring annual budgets for all operating and service functions
- Ensuring reliability of all financial and operational information
- The Audit Committee of the Board of Directors, comprising Independent Directors, regularly reviews audit plans, significant audit findings, adequacy of internal controls and compliance with Accounting Standards
- A comprehensive Information Security Policy and continuous upgradation of IT systems

The internal control systems and procedures are designed to assist in the identification and management of risks, procedure-led verification of all compliances as well as an enhanced control consciousness.

Internal Audit

JSW Energy has an internal audit function that inculcates best global standards and practices of international majors into its operations. The Company has a strong internal audit department that reports to the Audit Committee comprising Independent Directors who are experts in their respective fields. The Company successfully integrated the COSO framework with its audit process to enhance the quality of its financial reporting, compatible with business ethics, effective controls and governance. The Company extensively practices delegation of authority across its team, which creates effective checks and balances within the system to arrest all possible gaps. The internal audit team has access to all information in the organisation facilitated by the Enterprise Resource Planning (ERP) implementation across the organisation.

Audit Plan and Execution

The Internal Audit department prepares a risk-based Audit Plan and the frequency of audit is decided based on the risk ratings of the respective areas/functions. The audit plan is approved by the Audit Committee and executed by the Internal Audit team. It is reviewed periodically to include areas that have assumed significance in line with emerging industry trends and aggressive growth of the Company. In addition, the Audit Committee also places reliance on internal customer feedback and other external events for inclusion of additional areas into the audit plan.

Internal Financial Controls

As per Section 134(5)(e) of the Companies Act 2013, the Directors have an overall responsibility for ensuring that the Company has implemented a robust system and framework of Internal Financial Controls. This provides the Directors with reasonable assurance regarding the adequacy and operating effectiveness of controls with regards to reporting, and operational and compliance risks. The Company has devised appropriate systems and framework, including proper delegation of authority, policies and procedures, effective IT systems aligned to business requirements, risk-based internal audits, risk management framework and whistle-blower mechanism.

The Company had already developed and implemented a framework for ensuring internal controls over financial reporting. This framework includes entity-level policies, processes and operating level standard operating procedures.

The entity-level policies include anti-fraud policies (code of conduct, conflict of interest, confidentiality and whistle-blower policy) and other policies (organisation structure, insider trading policy, HR policy, IT security policy, treasury policy and business continuity and disaster recovery plan). The Company has also prepared Standard Operating Procedures (SOP) for each of its processes, such as procure to pay, order to cash, hire to retire, treasury, fixed assets, inventory, manufacturing operations, etc.