ANNEXURE-I TO BOARD'S REPORT

MANAGEMENT DISCUSSION AND ANALYSIS REPORT

The Management of the Company is pleased to present its report on Industry Scenario including Company's performance during the financial year 2015-16.

1. BUSINESS ENVIRONMENT

Global economic recovery on the whole has shown signs of improvement but it may be too early to believe that the crisis period is over. The financial condition of major developed economies, though on the path of recovery, is still a major cause of concern. Among the developed economies, US is the only country which has attracted the interest of Investors. European economy is still reeling under pressure. To stave off spectre of subdued growth, Japan resorted to quantitative easing and China is facing the second year of declining economic activity.

The Commodity cycle which is an important indicator of economic activity has not picked up across the world. The industrialized nations have glut of stocks especially Steel, Coal and Ore. Owing to sluggish growth of major economies and huge inventories, the prices of these commodities have hit rock bottom. The existing meek external demand in these markets has posed challenges before emerging and developing economies. Protracted periods of credit expansion, coupled with high leverages during the good times, are now presenting the risk of exposing emerging and developing markets to financial vulnerabilities. India is no exception. Pushing the growth along with financial stability in the present scenario the world over would be a key challenge and test for the policymakers.

As far as India is concerned, the economy has for the second year in a row bucked the global trends and given a clear indication of consistent improvement in growth during the financial year 2015-16. As per Central Statistical Office data, the Indian economy grew at 7.6% in 2015-16 due to rebound in farm output, improvement in Electricity generation and Mining production. India has surpassed the growth of China for the first time in past few years. In fact the Indian Economy clocked the fastest growth rate in the world in the January - March 2016 quarter. Further, the economy is expected to grow at a rate of 7 - 7.75% in financial year 2016-17 subject to a normal monsoon. However, it is also expected that the growth in 2016-17 may not surpass that of 2015-16, owing to the adverse effect of Global slowdown which may persist for some time more.

The country at present is relatively better placed in terms of Current Account Deficit (CAD) and Balance of Payments (BoP). The levels of foreign reserves have been at an all-time high. A major reason for this has been a better and more robust Fiscal consolidation, low crude prices, though slightly higher than the previous year because of high levels of Shale gas production maintained by the US. One of the reasons of rise in foreign reserves has been the lower levels of import due to sluggish growth in manufacturing sector. With supplementation of Iran's crude production, the rise of crude price is expected to be limited. The oil prices at moderate levels have also helped to keep the inflation from rising. Other important determinants viz., signs of recovery in key economic indicators, stability in exchange rates and softening of inflation have resulted in reduction of Interest rates by 150 basis points since January 2015.

The tangible improvement in the overall growth of the Core sectors including growth in Coal, Mining and Electricity sectors during Fiscal 2016, is a positive indicator for development of Power Sector in the coming years. Also, the Government's steps to improve the operating business climate by taking various reforms initiatives coupled with a good monsoon are expected to push the otherwise subdued investment cycle and economy.

2. INDUSTRY STRUCTURE AND DEVELOPMENT

Industry Overview

The financial year 2015-16 saw the highest capacity addition of 23,976 MW of Conventional power in a financial year vis-à-vis addition of 22,566 MW in the previous fiscal, i.e. a 6% rise on year-on-year basis. The major contribution came from thermal stream having a share of 93% of the total Conventional power capacity addition. Of 23,976 MW, the private sector share was 55%; and around 57% of the total thermal capacity addition came from private developers. During the first four years of XII five year plan, 84,991 MW of Conventional power was added against the targeted capacity addition of 88,537 MW. Also, Renewable Energy has seen an unprecedented growth in the last two years. The Solar capacity rose by 4,132 MW in the last two years and 3,423 MW of Wind power was added in last fiscal itself. The share of Renewable energy has grown to around 43 Gigawatts, which is itself reflective of the paradigm shift imminent in the fuel mix for generation sources in the country.

The power generation grew at an overall growth rate of 5.60% during the year, higher than the achievement of 1,049 BUs in the year 2014-15. The actual electric energy generation during the Fiscal 2016 was 1,107 BUs against the generation of 1,049 BUs in the previous fiscal. The aggregate Power Supply Deficit for the fiscal 2016 was 2.1% whereas Peak Power Deficit stood at 3.2%. In Fiscal 2015, the aggregate Power Deficit was also 2.1% which was 4.3% and 8.7% in Fiscal 2014 and Fiscal 2013 respectively. Similarly, Peak Power Deficit in Fiscal 2015 was 3.2% compared to 4.5% in Fiscal 2014 and 9.0% in Fiscal 2013. Among all regions, the power supply deficit and peak power deficit was highest in North Eastern region, followed by Northern region. As on March 31, 2016, the total installed capacity of the country was 3,02,088 MW which was 12.8% higher than that at the end of the previous fiscal.

The capacity addition achievement barely crossed 50% mark vis-à-vis the targets upto the X plan. However, the generation capacity added post X plan has improved relatively. It was only in the XI plan that the capacity addition was 88% of the target of 62,374 MW. The XII plan targets for power envisage addition of 88,537 MW of Conventional capacity. The capacity added during the first four years constitutes 96% of the planned capacity addition in XII plan, of which the last two years alone have contributed 53% of the targeted plan capacity.

For the XIII five year plan period, NITI Aayog had earlier projected a capacity addition of 93,400 MW of Conventional power and Renewable power of 30,000 MW by 2022 at a GDP growth rate of 9% with matching expansion in transmission and distribution systems. However, the current scenario reflects a situation that the country may not need new extra capacity addition for next three years because the available capacity has operated at a PLF of around 64% only, owing to DISCOMs' incapacity to purchase power and sluggish manufacturing sector growth, around 30 GW is stranded for want of Power Purchase Agreements (PPAs) and another 50 GW is under various stages of construction. This implies that rise in demand in near future may be met by improvement in plants operation at optimum levels (around 85% PLF), signing of PPAs and commissioning of under construction plants which may add around 100 GW itself.

Industry Structure

Generation

The installed generation capacity in the country stood at 3,02,088 MW as on March 31, 2016 with 1,01,790 MW (33.7%) in the State Sector, 76,297 MW (25.2%) in the Central Sector and 1,24,001 MW (41.1%) in the Private Sector. The share of the Private sector has seen an increase over the last three years.

In terms of the generation capacity by type as on March 31, 2016, the installed thermal capacity was 2,10,675 MW (69.7%), 42,783 MW (14.1%) was in hydro and 42,849 MW (14.2%) was in renewable energy sources. The nuclear capacity witnessed no new addition during the financial year 2015-16 which stood at 5,780 MW (1.9%).

The Generation capacity installed in financial year 2015-16, has been the highest in any financial year and for the first time, Conventional energy capacity addition itself has added a record 46,543 MW of installed capacity during the last two years. The sector was passing through tough time till the year 2014 due to major bottlenecks viz., slippages of long-term coal linkages to the identified projects, failure to achieve planned targets from captive coal mine blocks, inability to ramp up indigenous coal and gas production, rising imported fuel prices, land acquisition, R & R and environmental issues etc.

A slew of proactive efforts and initiatives have been taken by the Government of India in the last two years viz., allocation of coal mines through a transparent auction route, domestic supply of gas to gas-based stranded projects and private sector projects operating at less than 30% PLF through subsidized imported gas supply supported by a Power System Development Fund (PSDF), efforts to takeover sick units under operation of State utilities and steps for augmenting indigenous coal production.

Other notable initiatives are special focus on clean energy with enhanced stress on development of solar energy capacity, effecting enablers for development of self-sustaining solar energy installation model on Government sites viz., Railways, Defence etc., Green Power Fund allocation, revision of Standard Bidding Guidelines pertaining to Case-I and Case-II bidding process, revisiting Electricity Act, facilitating developers for getting speedy clearances and fuel linkages, augmenting existing indigenous manufacturing capacity and encouraging latest technology interventions.

Further, in order to reduce the reliance on coal as primary fuel for Power Plant Generation, lower auxiliary consumption and losses, extract higher efficiency and improve carbon footprint, most of the projects in the XIII five year plan are planned to be based on supercritical technology.

The outcome is visible such that today the coal fired power plants have coal stocks of around 15 days, which were not having stocks of more than 3 days. Further with the increase in coal production, the quantum of imported coal has come down resulting in reduced effective coal prices and saving of valuable foreign currency outflow. The initiatives to supply 100% crushed and washed coal would add to efficiency of the plant operation in the time to come. Rationalization of coal allocation and shifting of coal linkages from inefficient to efficient plants, quality inspection of coal quality based on Gross Calorific Value (GCV) would help in efficient operation of plants and also mitigate the carbon emissions to a large extent.

In an attempt to tide over funding and Stressed Assets issues, steps for fast tracking the solution of issues obstructing the project progress as well as commissioning have been undertaken.

The average annual per capita consumption of the country is still very low (957 Kwh, *as per CEA Executive Summary of March 2016*) compared to the World average of 3,000 Kwh. Therefore, to raise the energy consumption level and support sustained economic growth in the coming years, India needs to increase its electricity generation and thus the need for capacity addition in future will always be there in the years to come.

Transmission and Distribution

Transmission

The transmission and distribution system in the country comprises of regional grids, state grids and distribution networks in a three-tier structure. Transmission system till recently was planned on the premise of establishing a power system capable of safely withstanding a contingency without generation rescheduling or load-shedding. However, due to various reasons such as spatial development of load in the network, non-commissioning of originally planned load center generating units and deficit in reactive compensation, certain pockets in the power system could not safely operate even under normal conditions which led to backing down and redundancy. The long term power perspective of transmission planning has therefore moved away from the evacuation system planning of generation adopted earlier to integrated system planning.

Developments in power sector stress the need for accelerated implementation of National Grid on priority to enable scheduled/ unscheduled exchange of power as well as for providing open access to support competition in the market. Powergrid is strengthening its transmission network to establish inter-state and inter-regional links for enhancing the capacity of National Grid in a time bound manner to ensure optimal utilization of uneven distribution of energy resources. The five regional

grids, configured on a geographical contiguity basis, enable transfer of power from a power surplus State to a power deficit State. The regional grids also facilitate the optimal scheduling of maintenance outages and better co-ordination between power plants. These regional grids are operating as an integrated unit of National Grid with an inter-regional transfer capacity of 59,550 MW (as on June 30, 2016) whereby surplus power from a region could be redirected to another region facing power deficits, thus allowing an optimal utilization of the national generating capacity. The inter-regional grid connectivity has lent flexibility and brought resilience to the system. The inter-regional power transfer capacity is planned to be augmented to about 68,050 MW by the end of the XII plan (2016-17). The National Grid in the country is now one of the largest operating synchronous grids in the world.

Providing unconstrained inter-regional power transfer, open access availability, maintaining the grid discipline without grid collapse are primary requirements and therefore putting proper checks and balances in place is the need of the hour. For this, special powers to Regional Load Dispatch Centres (RLDCs) and National Load Dispatch Centre (NLDC) for regulating the grid which may also include legal provisions for their empowerment are the need of the hour. The RLDCs would then have the power to disconnect load to States not adhering to grid discipline.

Major smart technology interventions have been taken up by Powergrid for making the System sturdier such as implementing Synchrophasor Technology in its Wide Area Measurement System (WAMS) project through installation of Phasor Measurement Units (PMUs) at different locations in all regions across the country for facilitating better visualization and situational awareness of the grid events such as grid robustness, oscillations, angle / voltage instability, system margin etc., as well as decision support tools. The ultimate aim is to build a robust integrated grid network that will allow large transfers of power from one part of the country to another.

At the end of Fiscal 2016, the total length of transmission lines aggregated to about 3.41 lakh cKm as compared to about 3.13 lakh cKm at the end of the previous year. A total of 28,114 cKm were added to the transmission capacity in the Fiscal 2016, which was around 27% higher than the transmission capacity added in the previous fiscal. The transmission capacity added during the past fiscal has been the highest ever.

At the end of Fiscal 2016, the aggregated substation transformation capacity at 765 kV, 400 kV and 220 kV level stood at 6.58 lakh MVA. The aggregated capacity was 5.95 lakh MVA at the end of Fiscal 2015. During the year, around 63,000 MVA has been added to the sub-station capacity. A total of 1.284 lakh MVA of sub-station capacity has been added in the last two years which has been the highest in any two consecutive years. Transmission Projects worth around ₹ 1 lakh crore have been initiated in FY 2015-16. Also the idea of setting up of a SAARC dedicated Transmission Grid for boosting the transmission capacity between the SAARC region is also being looked into actively.

Distribution

Distribution Sector, the revenue generating link in the Generation-Transmission-Distribution chain is the weakest link in the power sector value chain and is a threat to derail the entire process of power sector reforms. While the power generation sector has witnessed the lowest energy deficit in the country, the Distribution Sector is not robust and has been reeling under losses making it crucial for the policymakers to devise various measures to make the State DISCOMs/utilities viable.

The Distribution sector has different set of issues disparate from the issues akin to Generation and Transmission sectors. Distribution provides the crucial last mile connectivity to consumers belonging to varied economic spectrum. Though most of the SEBs have been unbundled, distribution is still largely under the control of Government utilities. Notwithstanding unbundling, operations on sound commercial principles under the regulatory supervision, the outcome has not been encouraging in the past few years. The ever widening gap between their Average Cost of Supply (ACS) and Average Revenue Realized (ARR) is resulting in further erosion of the net worth of these utilities.

In order to enable the turnaround of the State DISCOMs and ensure their long term viability, a financial restructuring scheme for the State owned DISCOMs viz., Transitional Finance Mechanism (TFM) was formulated by the Government of India and notified in October 2012. The mechanism included measures such as revision of tariff, release of subsidies only to State Government to be later adjusted in the ARR and posting of Audited Accounts on regular basis. The primary aim was their financial turnaround by restructuring their short term liabilities with support through TFM.

To help power utilities access funds, the policy of subsidizing the interest on loans taken by them for cutting distribution losses as well as to incentivize investment in improvement of distribution infrastructure in the country, National Electricity Fund (NEF) was launched in financial year 2012-13. Under this scheme, the utilities/DISCOMs both in public and private sector shall be eligible for discount on interest rates depending on their performance. The scheme basically covers improvement of the distribution network for areas not covered by Rajiv Gandhi Grameen Vidyutikaran Yojana (RGGVY) and Resturctured Accelerated Power Development and Reforms Programme (R-APDRP) project areas. The preconditions for eligibility are linked to certain reform measures taken by the States and the amount of interest subsidy is linked to the progress achieved in reforms linked parameters.

To strengthen the power supply and availability, improve reach and strengthen energy accounting in the rural and urban areas, the Government of India has recently introduced implementation of Deendayal Upadhyaya Gram Jyoti Yojana (DDUGJY) for rural areas; and Integrated Power Development Scheme (IPDS) for urban areas.

To make the DISCOMs/Utilites creditworthy once again, Government of India (GoI) has recently introduced a new scheme Ujwal DISCOM Assurance Yojana (UDAY) in November 2015, wherein the respective State Government shall take over DISCOMs/Utilites debts so that the DISCOMs/Utilities could take up their future capex programs.

These interventions once integrated would help to overcome the major challenges like exorbitantly high transmission and distribution losses, suboptimal internal functioning of regulatory institutions, tariffs mismatch etc., thereby paving way for turnaround of distribution sector.

To improve and turn around the power distribution sector in the country, the Company in coordination with MoP, GoI has taken up major initiatives by its involvement in programmes like NEF, DDUGJY, IPDS, UDAY, Smart Grid Task Force etc. Technical interventions such as implementation of Feeder Separation Scheme, High Voltage Distribution Systems (HVDS) in the distribution network, installation of Smart Energy Meters such as Automatic Meter Reading (AMRs) with 100% coverage having two-way real-time digital communication and facility of remote metering, usage of information technology in operation & maintenance coupled with harnessing best management practices would ensure safe and reliable delivery of power with minimal losses and at reduced costs. Deployment of Smart-grid technologies for providing two way communications between the consumer and the utility would completely change the way electricity is used and delivered. The initiative would go a long way in the GoI's resolve of providing power for all by 2019.

With all these major interventions, the Company is optimistic of a better and improved distribution scenario when the results and effect of these programmes in the States start trickling in and transform the entire landscape of distribution. Therefore, augmenting the Distribution system would require huge capital investments in future along with major stress on investments towards Demand Side Management (DSM) and energy efficiency for the sector.

Power Sector Policy Environment

In past few years, owing to persistent power shortages, coal availability crisis and given the estimated rate of increase in demand for electricity in India, the GoI has taken significant measures to restructure the power sector, increase capacity and improve transmission, sub-transmission & distribution network.

The advent of the Electricity Act, 2003 brought sweeping changes to legal framework governing the Electricity sector, enabling capital arrangement, thereby making possible to set up large power projects. The Act replaced the multiple legislations that previously governed the Indian electricity sector and introduced a multi-buyer and a multi-seller system.

Furthermore, it granted increased autonomy to the regulatory regime in determination of tariffs, without being constrained by rate-of-return regulations. This was followed by the notification of National Electricity Policy. Subsequently, National Tariff Policy, RE Policy, National Hydro Policy and Mega Power Policy were notified. However, the Electricity Act may require revisiting owing to the evolving business climate.

In order to bring the economies of scale to large generation capacities based at a single location, utilization of super critical technology for reducing emissions and tariff-based international competitive bidding process for developing large capacity power projects in India, the concept of Ultra Mega Power Projects (UMPPs) involving contracted capacity of 3,500 MW or above each, was introduced by creating Special Purpose Vehicles (SPVs).

A tariff based competitive bidding process is also in place for Independent Power Transmission Companies (IPTCs) for the development of inter-state and intra-state transmission systems on similar lines to that followed for UMPPs. The IPTCs aim to evacuate power from generating stations and transmit the power from pooling stations to other grid stations, resulting in system strengthening across India. A number of transmission projects have been transferred to the developers in last few years, including 17 transmission projects transfered to developers by RECTPCL, a Wholly-Owned Subsidiary of REC.

In a bid to attract private funds in the development of hydroelectric projects, the Hydro Power Policy was implemented in the year 2008. The policy aimed at attracting private funds by encouraging joint ventures with private developers and the use of IPP model, in addition to promoting power trading and speeding up the availability of statutory clearances. The policy provides guidelines for accelerated development of the hydropower industry in India, particularly in the Himalayan States. However, the country has not been able to exploit the huge potential of hydro power in the last few years as most of the hydro projects are stuck up owing to environmental issues and court rulings causing long delays and stoppage of work at site. Despite being the cheapest source of power, the traction has been relatively low as the investors in hydro power sector are keeping away because of uncertainties.

The GoI, in order to promote Hydro Power and address problems in development of hydro projects viz., higher capital costs, long gestation periods, R & R issues and geological bottlenecks, has taken many steps in the last two years. The notable ones are (i) hydro projects getting exempted from competitive bidding till 2022; (ii) to make hydro power more attractive, developers have been allowed flexibility in depreciation rates and Time of Day Tariff; and (iii) exclusion from Renewable Purchase Obligation (RPO). Further, to benefit States and consumers, the Distribution licensees have been allowed to extend the long term Power Purchase Agreements (PPAs) by additional 15 years beyond the normal allowed period of 35 years.

Renewable Energy Sources

With the depleting fossil fuels and the attendant environmental hazards associated with coal-fired Thermal Power Plants, priority is shifting towards harnessing Renewable Energy sources. Several initiatives to increase the uptake of renewable energy through policy initiatives including enactment of a National off shore Wind Energy Policy and throwing support behind generation-based incentives and accelerated depreciation are underway.

Besides the ongoing policies and programmes of the Government in Renewable Energy sector, several policy measures initiated recently by the Government to achieve this up-scaled target, *inter-alia,* include suitable amendments to the Electricity Act and Tariff Policy for strong enforcement of Renewable Purchase Obligation (RPO) and for providing Renewable Generation Obligation (RGO); setting up of exclusive solar parks; development of power transmission network through Green Energy Corridor project; identification of large government complexes / buildings for roof top projects; provision of roof top solar and 10 percent renewable energy as mandatory under Mission Statement and Guidelines for development of smart cities; amendments in building bye-laws for mandatory provision of roof top solar for new construction or higher FAR; infrastructure status for solar projects; raising tax free solar bonds; providing long tenor loans; making roof top solar a part

of housing loan by banks / NHB, incorporating measures in Integrated Power Development Scheme (IPDS) for encouraging distribution companies and making net-metering compulsory; and raising funds from bilateral and international donors as also the Green Climate Fund to achieve the target.

Mechanisms are being devised for utilizing Renewable Energy sources with special thrust on development of solar energy. A ₹ 38,000-crore Green Energy Corridor is planned to strengthen the transmission of Renewable Energy. The Green Energy Corridor project would enable the grid stability by way of evacuating Renewable Power from the generation points to load centers with creation of additional and adequate transmission capacity. The Union Budget plans for raising Renewable Energy capacity to 1,75,000 MW by 2022 are on the anvil, which is more than five times the present capacity. Of the said 1,75,000 MW capacity, the share of Solar, Wind, Biomass and Small Hydro projects are 100,000 MW, 60,000 MW, 10,000 MW and 5,000 MW respectively.

National Solar Mission

Development of clean energy through renewed thrust on solar capacity enhancement has lent a new dimension to the existing Jawaharlal Nehru National Solar Mission, by plans to scale up the solar capacity to 1,00,000 MW from the earlier envisaged target of 20,000 MW by the year 2022. The target will principally comprise of 40 GW roof top and 60 GW through large and medium scale grid connected Solar power projects. With this target, the country would become one of the largest Green Energy producers in the world. The total investment seen for setting up 100 GW capacity of Solar power is ₹ 6 lakh crore. A target of 4.46 GW capacity addition was set for financial year 2015-16. Efforts are on to establish an investor-friendly mechanism, providing an attractive, predictable and adequate tariff for growth of solar power.

Development of Solar Parks is an effort in this direction. To prioritize it, 25 Solar Parks of 500 MW each and above have been planned; and Ultra Mega Solar Power Projects are to be developed in next 5 years in various States with the GoI's financial support of ₹ 4,050 crore. These parks will be able to accommodate over 20,000 MW of solar power projects. Further, 27 parks with capacity of about 18,000 MW in 21 States have been sanctioned.

Also the "Off Grid and Decentralized Solar Applications" is seen as a huge area towards self-reliance. Roof top solar installation is being propagated in a big way and means of making it financially attractive are being explored. Also, large Government Installations viz., Railways, Defence etc. may be encouraged to harness their land for dedicated use of solar energy which could also reduce their dependence on grid for lighting loads locally. Also, promoting solar power by way of Renewable Purchase Obligation (RPO) with a specific solar component is one of the key drivers.

To discover the best tariff for Solar energy, e-Reverse auction mode has been adopted and today, the solar tariff has come down in the range of ₹ 4.50 – ₹ 5.00 per unit. Further, creation of an intra-state transmission system with total transformation capacity around 17,100 MVA in the seven States of Andhra Pradesh, Gujarat, Himachal Pradesh, Karnataka, Madhya Pradesh, Maharashtra and Rajasthan at an estimated cost of ₹ 8,548.68 crore with Government of India contribution from National Clean Energy Fund (NCEF) of ₹ 3,419.47 crore (40% of the total estimated cost of project) has been approved. Creation of an intra-state transmission system will facilitate evacuation of renewable power from generation stations to load centers. Also, 56 Solar Cities projects, against the target of 60 Solar Cities under the Development of Solar Cities Programme, have been approved.

The Government has implemented a scheme to install one lakh Solar Pumps for irrigation and drinking water through State Nodal agencies and NABARD. These pumps would help lakh of farmers to increase output, income and also provide drinking water. According to estimates, drinking water problems will be solved for more than 7.6 lakh families through Solar Pumps for drinking water. A capital subsidy of 30% to farmers for installation of Solar Pumps for irrigation purpose through State Nodal agencies shall be provided by MNRE. The State Governments can give additional subsidy through own funds. A total of 31,472 Solar Pumps have been installed in financial year 2015-16.

In addition, CPSUs and GoI organizations shall implement setting up 1000 MW of Grid Connected Solar PV power projects through Viability Gap Funding in three years period from 2015-16 to 2017-18. About 100 MW have been allocated to various CPSUs under the scheme.

Rural Electrification Policy

The Rural Electrification Policy was notified in August 2006, with the objective of improving access and quality of electricity supply in rural areas to ensure rapid economic development, by providing electricity as an input for productive uses in agriculture, rural industries etc.

Deendayal Upadhyaya Gram Jyoti Yojana

The Government of India approved the scheme "Deendayal Upadhyaya Gram Jyoti Yojana" vide Office Memorandum dated December 3, 2014. REC is the Nodal agency for DDUGJY scheme. The main objectives of DDUGJY scheme are to provide access to all rural households and reduction of AT&C losses as per trajectory (DISCOM-wise) finalized in consultation with States by the Ministry of Power, so as to achieve 24X7 power supply for non-agricultural consumers and adequate power supply for agricultural consumers through defined project components. For this purpose, the RGGVY scheme and its targets for XII & XIII plan have been subsumed in DDUGJY.

The scheme envisages 60% of the project cost from Government of India as grant to States other than special category States (85% for the Special Category States i.e., all North Eastern States including Sikkim and J&K, Himachal Pradesh, Uttarakhand) with a minimum 10% (5% for Special Category States) contribution from State Government/State Power utility through their own sources and the balance 30% (10% for Special Category States) may be arranged through loan by the State Government/

State Power utility. Additional grant upto 15% (5% in case of Special Category States) by conversion of 50% of loan component will be provided by Government of India on achievement of prescribed milestones such as timely completion, reduction in AT&C losses and upfront release of revenue subsidy based on metered consumption, if any, by State Government.

Out of the approved layout of ₹ 44,033 crore under DDUGJY scheme, Government of India shall provide a budgetary support of ₹ 33,453 crore. The Scheme of RGGVY as approved by CCEA for continuation in XII and XIII plans will get subsumed in this scheme as a separate rural electrification component for which CCEA has already approved the scheme cost of ₹ 39,275 crore including a budgetary support of ₹ 35,447 crore. This outlay will be carried forward to the new scheme of DDUGJY in addition to the outlay indicated above.

In the 69th Independence Day address to the nation on August 15, 2015, Hon'ble Prime Minister resolved that the 18,452 remaining Un-Electrified villages in the country would be electrified within a period of 1,000 days with the help of States and Local bodies. These 18,452 villages are located in distant, difficult hilly terrain and inaccessible areas with inclement weather facing Right of Way issues or areas plagued by insurgency etc. Ministry of Power has therefore undertaken on Mission Mode to electrify these 18,452 villages through REC - the Nodal agency for implementation of DDUGJY - and States / DISCOMs. REC developed an innovative monitoring mechanism by dividing the elctrification works into 12 milestones; deployed young Electrical Engineers viz. 'Gram Vidyut Abhiyantas (GVAs)' at block level in these villages and developed 'GARV App' Mobile Web Portal (http://garv.gov.in) for online monitoring of the progress of village electrification. In financial year 2015-16, a total of 7,108 villages (125%) were electrified against the target of 5,686 villages and till date, the total achievement is more than 10,000 villages.

Integrated Power Development Scheme

The Government of India approved a scheme called "Integrated Power Development Scheme" vide Office Memorandum dated December 3, 2014 which primarily aims at improvement in sub-distribution and distribution networks of urban areas comprising (i) Strengthening of sub-transmission and distribution networks (ii) Metering of Distribution Transformers / Feeders / Consumers and (iii) IT enablement of distribution sector and strengthening of distribution network for completion of the targets laid down under R-APDRP for XII and XIII plans by carrying forward the approved outlay for R-APDRP to IPDS programme as a separate component. For this purpose, the earlier scheme of R-APDRP and its targets have been subsumed in IPDS.

The financing pattern of the scheme is similar as that applicable for DDUGJY scheme and as stated above. In this regard, the earlier scheme of R-APDRP and its targets have been subsumed in IPDS as a separate component relating to IT enablement of Distribution sector and strengthening of distribution network (as (iii) above) at an approved scheme cost of ₹ 44,011 crore with a budgetary support of ₹ 22,727 crore, in addition to an estimated outlay of ₹ 32,612 crore including a budgetary support of ₹ 25,354 crore pertaining to R-APDRP for strengthening of sub-transmission & distribution networks in urban areas and Metering of Distribution Transformers / Feeders / Consumers in the urban areas.

The aim of implementing IPDS is to attain reliable and verifiable baseline data of revenue and energy over an IT platform in its project areas and AT&C loss reduction on a sustained basis, thus making it more financially attractive and performance oriented.

National Electricity Fund

National Electricity Fund (Interest Subsidy) scheme was set up by the Ministry of Power to promote capital investment in the distribution sector. The scheme provides interest subsidy on achievement of pre-defined reform linked parameters on loans disbursed to the State Power utilities, Distribution Companies (DISCOMs) - both in public and private sector. Your Company as Nodal agency is designated to operationalize the scheme for channelizing the interest subsidy amounts to the utilities in the entire country.

Ujwal DISCOM Assurance Yojana

The DISCOMs in the country have accumulated losses of approximately ₹ 3.8 lakh crore and outstanding debt of approximately ₹ 4.3 lakh crore upto 2014-15 (at interest rates upto 14 - 15%) as against outstanding debt of ₹ 2.4 lakh crore in 2011-12. In addition to heavy debt and interest burden, default on bank loans by financially stressed DISCOMs has the potential to seriously impact the banking sector and the economy at large.

The GoI in financial year 2015-16 announced Ujwal DISCOM Assurance Yojana (UDAY) which aims at financial turnaround and revival of Power Distribution Companies (DISCOMs), and also ensures a sustainable permanent solution to the problem. Through the launch of this scheme, DISCOMs are provided with the opportunity to break even in the next 2-3 years through four initiatives:-

(i) Improving operational efficiencies of DISCOMs

(ii) Reduction of cost of power

(iii) Reduction in interest cost of DISCOMs

(iv) Enforcing financial discipline on DISCOMs through alignment with State Finances.

The following key measures are proposed in the scheme:

(a) States shall take over 75% of DISCOM debt as on September 30, 2015 over two years - 50% of DISCOM debt shall be taken over in 2015-16 and 25% in 2016-17 with the enabler that such debt taken over by the States would not be a part of fiscal deficit of respective States in financial year 2015-16 and 2016-17. States will issue non-SLR including SDL bonds in the market or directly to the respective Banks / Financial Institutions (FIs) of long term tenor. DISCOM debt not taken

over by the State shall be converted by the Banks / FIs into loans or bonds with interest rate not more than the bank's base rate plus 0.1%. Alternately, this debt may be fully or partly issued by the DISCOM as State guaranteed DISCOM bonds at the prevailing market rates which shall be equal to or less than bank base rate plus 0.1%.

(b) It is also envisaged that States shall take over the future losses of DISCOMs in a graded manner over a period of 5 years starting from fiscal 2016 to 2021.

(c) State DISCOMs will comply with the Renewable Purchase Obligation (RPO) outstanding since 1st April, 2012, within a period to be decided in consultation with Ministry of Power.

(d) States accepting UDAY and performing as per operational milestones shall get additional / priority funding through DDUGJY, IPDS, PSDF or other such schemes of Ministry of Power and Ministry of New and Renewable Energy. Also, such States shall also be supported with additional coal at notified prices and, in case of availability through higher capacity utilization, low cost power from NTPC and other Central Public Sector Undertakings (CPSUs).

(e) States not meeting operational milestones will be liable to forfeit their claim on IPDS and DDUGJY grants.

(f) UDAY is optional for all States. However, States are encouraged to take the benefit at the earliest as benefits are dependent on the performance.

Besides the above policies/initiatives, some of the other initiatives by Government of India towards improving power sector are Demand Side Management initiatives like National Mission for Enhanced Energy Efficiency (NMEEE); Perform, Achieve and Trade (PAT) Scheme; and Energy Conservation Building Code (ECBC) etc.

Unnat Jyoti by Affordable LEDs for All

Unnat Jyoti by Affordable LEDs for All (UJALA) scheme has been launched in May 2015 {originally launched as Domestic Efficient Lighting Program (DELP) in January 2015} with a target of replacing 77 crore incandescent lamps with LED bulbs. Under the said scheme, Energy Efficiency Services Limited, a joint venture company of REC, would be providing LED bulbs to domestic consumers at low cost. This initiative is part of the Government's efforts to spread the message of energy efficiency in the country. Having relatively longer life and being highly energy efficient compared to incandescent bulbs and CFLs, LED bulbs would lead to both energy and cost savings in the medium term. So far, around 9 crore LED bulbs have been sold across the country under this scheme.

These major policy initiatives taken by Government of India in past two years would help in enabling and redefining the power sector, thus making it an attractive investment destination.

3. OPPORTUNITIES

The investments in the power sector were estimated at around ₹ 14 lakh crore in the XII five year plan period (2012-2017) with associated transmission and distribution network. Huge investment potential is seen in Transmission and especially Distribution sector in immediate future. Subject to good monsoons, demand is also expected to rise on the back of farm sector and rural economy growth. The Distribution sector is in flux and shall undergo a sea change as the primary aim of all major policies namely DDUGJY, IPDS, NEF, UDAY and UJALA is to bring efficiency in the ailing sector. Demand Side Management (DSM) is bound to play a vital role in Distribution sector in the years to come.

As per NITI Aayog's earlier estimations, 93,400 MW of capacity addition was envisaged in XIII plan. However, the XIII plan requirements are yet to be firmed up. Capacity addition of green energy has been further enhanced by planning to add 1,75,000 MW by the year 2022. The idea of creating a Green Corridor exclusively for green energy projects with major stress on promoting solar energy projects on a large scale throws a whole gamut of business opportunity in the near future. With the increasing stress on deploying clean energy in wake of ecological and environmental hazards from fossil fuels, the share of green energy is bound to increase, substantially diluting reliance on depleting fossil fuel resources. As a Nodal agency for monitoring and channelizing funds under the DDUGJY programme, the Company continues to take up the socio-economic responsibility of rural electrification. Thus, Power sector is expected to attract significant investment opportunities in future also.

4. THREATS, RISKS AND CONCERNS

The power sector financing industry has become increasingly competitive and broad based with entry of new players and banks giving tough challenge to the Company.

Financing infrastructure projects especially power is not bereft of risks, rather the risks are high as the time horizon associated are long and there are various policy aspects in the dynamic business environment. Despite the restructuring efforts taken, the condition of State Electricity Boards and State Power utilities across the country continue to present a grave picture on the financial front as most of them are reeling under severe financial stress, barring a few. The failure of the entities in meeting their debt related obligations may adversely impact the Company's profits due to rise in Non-Performing Assets (NPAs), thereby impacting the ability to mobilize low cost funds. Since the Company has significant exposure to the State Electricity Boards and State Power utilities, the risk perception for the Company is high.

The Company is concerned about prevailing exposure norms, limit constraint of raising money from Tax Saving Bonds, financial position of State Distribution utilities, entry of new players and competition from Banks / Multilateral Agencies, uncertain business environment, fluctuation in rupee and likely increase in cost of capital due to volatile market conditions / large requirement of funds.

The state of business and policy environment having cascading effect on interest-rate regime, statutory regulations and policies, cost and availability of raw materials, long gestation periods, large capital outlay, other key inputs and general economic conditions may also have a direct bearing on the projects' viability, which affects the borrowers' capacity of servicing the loans.

Therefore, raising of resources at a low cost and ensuring deployment of these funds in avenues offering best returns would be the key factor for the Company's sustainable growth and profitability.

5. SEGMENT WISE OR PRODUCT-WISE PERFORMANCE

The principal products of REC as a leading Public Financial Institution are interest bearing loans to SEBs, State Power utilities/ State Power Departments and Private sector for all segments of Power infrastructure. Your Company does not have any separate reportable segment.

During the financial year 2015-16, the Company sanctioned total loan assistance of ₹ 65,471.10 crore as against ₹ 61,421.37 crore during the financial year 2014-15 excluding sanctions under DDUGJY-RE component and DDG. This included sanctions of ₹ 27,828.44 crore for Generation Sector, sanctions of ₹ 2,965.72 crore for Renewable Energy Sector, sanctions of ₹ 23,627.61 crore for Transmission & Distribution Sector and sanctions of Short Term & other loans of ₹ 11,049.33 crore.

The aggregate disbursement achieved during the financial year 2015-16 was ₹ 46,025.83 crore, as against ₹ 42,818.46 crore in the previous year. This included ₹ 12,819.53 crore disbursed under Generation projects, ₹ 304.07 crore disbursed under Renewable Energy projects, ₹ 22,565.50 crore disbursed under T&D schemes, ₹ 2,200.00 crore disbursed under Short Term Loans and ₹ 7717.72 crore disbursed under other loans such as TFL and MTL. Further, an amount of ₹ 5,023.99 crore (subsidy of ₹ 4,541.44 crore under RE component of DDUGJY and subsidy of ₹ 63.54 crore under DDG and loan component of ₹ 419.01 crore) under DDUGJY has been disbursed.

6. OUTLOOK

Demand and consumption trends will be key in defining the future of the power sector and the current weak demand is expected to have short term overhang mainly arising from the industrial slowdown, poor traction in rural economy owing to two deficient monsoons back to back, lack of power procurement by utilities and seasonal fluctuations.

The Initiatives and steps taken would continue to drive the prospects of power sector in the country. Thrust in rural electrification, renewable energy with special focus on Solar Energy and Decentralized Distributed Generation (DDG) will *inter-alia*, increase the penetration of electricity in the country thereby driving the demand further. With the timely interventions by the Government of India in addressing the issues affecting the power industry adversely, the outlook for the sector is quite optimistic with ample market opportunities available for financial products.

The enormous capital expenditure, development of equally huge operational infrastructure combining ample potential for future expansion in the distribution sector creates a very optimistic business outlook for the Company. Also the performance orientation built into the DDUGJY, IPDS and UDAY is expected to attract and accelerate investments in distribution infrastructure, thus resulting in faster accomplishment of loss reduction, better realization of revenue and automation goals.

Average per capita consumption and state of economy are pointers to the long-term energy requirement of any country. Considering the low levels of per capita energy consumption vis-à-vis the World average, significant growth projections for the Indian economy over the long term and Government efforts to inch closer to developed economy, it is felt that the power infrastructure sector will be a significant beneficiary. The long-term outlook for power demand therefore is expected to remain strong.

7. MEMORANDUM OF UNDERSTANDING (MoU) RATING & AWARDS

The performance of your Company in terms of Memorandum of Understanding (MoU) signed with the Ministry of Power, Government of India for the financial year 2014-15 has been rated as "Excellent". This is the 22nd year in succession that REC has received "Excellent" rating since the year 1993-94 when the first MoU was signed with the Government. For the financial year 2015-16 also, the Company is poised to receive "Excellent" rating. During the year, your Company received "Fastest Growing Navratna PSU" award from India Today and CMD of your Company also received "Best CEO Award" in the category of Best CEO Award instituted by Business Today.

8. INTERNAL CONTROL SYSTEM AND THEIR ADEQUACY

The Company maintains an adequate system of Internal Control including suitable monitoring procedures to ensure accurate and timely financial reporting of various transactions, efficiency of operations and compliance with statutory laws, regulations and Company policies. Suitable delegation of power and guidelines for accounting has been issued for uniform compliance. In order to ensure that adequate checks and balances are in place and internal control systems are in order, regular and exhaustive Internal Audit of various Divisions/Offices are conducted by in-house Internal Audit Division/external professional audit firms. The Internal Audit covers all the major areas of operations including identified critical/risk areas as per the Annual Internal Audit Programme. The Audit Committee of Board of Directors periodically reviews the significant findings of different Audits as prescribed in the Companies Act and in the SEBI (Listing Obligations & Disclosure Requirements) Regulations, 2015.

9. FINANCIAL AND OPERATIONAL PERFORMANCE

The loans sanctioned during the financial year 2015-16 were ₹ 65,471.10 crore as compared to ₹ 61,421.37 crore during the previous financial year 2014-15, excluding sanctions under DDUGJY-RE component and DDG. The disbursement during

the financial year 2015-16 was ₹ 46,025.83 crore as against ₹ 42,818.46 crore in the previous year. Further, an amount of ₹ 5,023.99 crore (subsidy of ₹ 4,541.44 crore under RE component of DDUGJY and subsidy of ₹ 63.54 crore under DDG and loan component of ₹ 419.01 crore) under DDUGJY has been disbursed.

The amount due for recovery including interest for performing assets during the financial year 2015-16 was ₹ 48,278 crore as compared to ₹ 32,661 crore during the previous year. The overdues from defaulting borrowers pertaining to Performing Assets as on March 31, 2016 were ₹ 1,637 crore. Further, an amount of ₹ 1,280 crore was recovered during the financial year 2015-16 towards earlier year dues and NPAs as against ₹ 593.56 crore during the previous year. The Company recovered a total sum of ₹ 46,641 crore towards performing assets during the financial year 2015-16 as against ₹ 31,412 crore during the previous year. The Company achieved a recovery rate of 96.61% for the financial year 2015-16. Your Company's Non-Performing Assets (NPAs) continue to be at low levels. As on March 31, 2016, the Gross NPA of the Company was ₹ 4,243.57 crore {including loans classified as NPAs due to restructuring / non-achievement of DCCO amounting to ₹ 811.33 crore}. The percentage of NPA as a percentage of Gross Loan Assets stood at 2.11% as on March 31, 2016 as compared to 0.74% as on March 31, 2015. The net NPA as on March 31, 2016 was ₹ 3,230.30 crore, which is 1.60% of Gross Loan Assets. Further, no doubtful loans have been rescheduled by the Company during the financial year 2015-16.

During the financial year 2015-16, on standalone basis the Company registered an increase of 17% in Operating Income which went up to ₹ 23,638.35 crore, as compared to ₹ 20,229.53 crore in the previous year. Profit Before Tax in financial year 2015-16 was ₹ 8,045.21 crore, in comparison to ₹ 7,427.04 crore in financial year 2014-15. Net Profit of the Company for financial year 2015-16 was ₹ 5,627.66 crore, which is an increase of 7% over the previous year's Net Profit of ₹ 5,259.87 crore. Net Worth of the Company as on March 31, 2016 was ₹ 28,617.76 crore, i.e., an increase of 15% over the Net Worth of the Company as on March 31, 2015 at ₹ 24,857.03 crore.

10. HUMAN RESOURCES / INDUSTRIAL RELATIONS

In order to professionalize the Executive strength of the Company and also to infuse fresh blood, 44 Executives were appointed through open advertisement and 8 Executives were appointed through campus recruitment during the financial year.

The total manpower of the Company as on March 31, 2016 was 600 employees which includes 463 Executives and 137 Non-executives.

In order to equip the employees professionally, the Company sponsored 251 employees to various training programmes, workshops etc., within the country and abroad. In addition, 7 training programmes were conducted in-house which were attended by around 151 employees. Taken together, these initiatives enabled the Company to achieve 1,096 training man-days and also achieve the MoU target of "Excellent" rating for this parameter. Further, 19 Executives were deputed for programmes in countries like Japan, U.K, France and China.

11. CORPORATE SOCIAL RESPONSIBILITY & SUSTAINABLE DEVELOPMENT

Corporate Social Responsibility and Sustainable Development (CSR & SD) initiatives were pursued actively. Accordingly, CSR budget of ₹ 128.00 crore (i.e. @ 2% of average net profit of previous three financial years, as per the Companies Act, 2013) was allocated for the financial year 2015-16. During the year, the Company has undertaken various CSR initiatives in the fields of skill development programmes, education, environmental sustainability, promotion of health care including for old age and persons with disabilities, drinking water and sanitation facilities including participation in Swachh Vidyalaya Abhiyan, solar smart micro grid lights in select un-electrified / poorly electrified villages etc. During the financial year 2015-16, financial assistance aggregating to ₹ 163.17 crore was sanctioned for various projects under Corporate Social Responsibility and expenditure of ₹ 128.20 crore was incurred, including amount provided for in the books of accounts.

Cautionary Note

Certain statements in "Management Discussion and Analysis" section may be forward looking and are stated as required by applicable laws and regulations. Many factors may affect the actual results, which could be different from what the Management envisages in terms of future performance and outlook.