

## **ACTIVITIES REPORT OF ENERGY DEPARTMENT FOR THE YEAR 2010-11**

The Department of Energy was created on 24<sup>th</sup> April 1990 consequent upon bifurcation of the then Irrigation & Power Department. Electricity is one of the prime inputs for both the economic development as well as overall well being of the people. Increase in power generation has cascading effect on all sectors leading to increased growth particularly in industry, agriculture and other ancillary trade and business activities. The objective of the Government is to become self sufficient in Power Generation. The State of Orissa has the distinction of being the first state in the country for ushering in sweeping reforms in power sector. The objective of the power sector reforms is to provide consumers with reasonable, reliable and quality supply of power.

This demand for energy is met from the following sources.

(a)	Hydro Generation (OHPC)	-	Generation capacity	2085 MW
(b)	Thermal Power Station	-	Generation capacity	880 MW
(c)	Central allocation.	-		1069 MW
(d)	Small Hydro Electric Projects (3 nos)			<u>57 MW</u>
		<b>Total</b>	-	<b>4091 MW</b>

At present the Department of Energy is functioning with 3 Heads of Department i.e. E.IC (Elect)-cum-PCEI, Orissa, Bhubaneswar, CEI(T&D), Orissa, Bhubaneswar and CEI(P)-cum-CEI(G) as well as four Public Sector Undertakings like Orissa Hydro Power Corporation (OHPC), Orissa Power Generation Corporation (OPGC), Orissa Power Transmission Corporation (OPTCL) & GRIDCO Ltd.

The activities of the Department in respect different public sector undertakings as well as Heads of Department is presented briefly as under:-

### **DEVELOPMENT OF SMALL HYDRO ELECTRIC PROJECTS (SHEPS) / MEDIUM HYDRO ELECTRICAL PROJECTS (MHEPS)**

The development of Small/Mini /Micro Hydro Electric Project upto 25 MW is one of the important activities of this Department. Private Investors are invited to the State to set up small hydro projects which will enhance the generation capacity through renewable energy sources.

About 36 nos of Memorandum of Understanding have been signed with the private developers whose total project installed capacity would be around be 484 MW. Out of 36 nos of MoU signed, 3 Small Hydro Electric Projects (SHEPs), namely Middle Kolab (25 MW), Lower Kolab (12 MW) and Samal Barrage (20 MW) have been completed supplying 57 MW power to the State. The balance 33 nos are under process. Around 114 nos of applications of Private Developers are yet to be disposed in coming days.

### **REVENUE COLLECTION & REVENUE GENERATION MEASURES**

Collection of Electricity duty has become a major source for the Government exchequer. Collection of Revenue from various electricity consumers comes in the form of ED, inspection fees and by way of testing of equipments and issuing of electrical license to both supervisor and contractors. During the financial year 2009-10, this Department has achieved the revenue collection to the tune of Rs. 459.48 Crore against a target of Rs.490.00 Crore. During the financial year 2008-09 an amount Rs.365.03 Crores was collected.

During the Financial Year 2010-11, an amount of Rs.323.1632 crore has been collected by 31.12.2010 as against the target of Rs.600.00 Crore. Steps are being taken to achieve the target fixed for this year. Further a special measure has been taken by engaging IAPI auditors to audit distribution companies to detect the actual amount of revenue pending for collection under the direct supervision of CEI(T&D), Orissa, Bhubaneswar.

### **RURAL ELECTRIFICATION SCHEMES**

#### **(a) Biju Gram Jyoti Yojana:**

In order to ensure "electricity to all" the State Government have launched a mega scheme named Biju Gram Jyoti in the mid of 2007-08 for electrification of villages / habitations having less than 100 population as well as BPL Household Electrification which are not covered under RGGVY. There is a target to cover 10,000 villages/ habitations during the 11<sup>th</sup> Five Year Plan under the scheme. The budgetary allocation of funds are as follows:-

2007-08	Rs.157,00 Crore
2008-09	Rs.157,00 Crore
2009-10	Rs. 1.00 Crore
2010-11	<u>Rs. 50.00 Crore</u>
<b>Total</b>	<b>Rs. 365.00 Crore</b>

The above amounts have already been placed at the disposal of the District Collectors for execution of the work. As on 31.12.2010, electrification of 8401 nos. of villages has been completed.

**(b) Rajiv Gandhi Grameen Vidyutikaran Yojana:**

This is a flagship programme of Govt. of India launched in April,2005 for attainment of National Common Minimum Programme (NCMP) to provide access to electricity of villages having population of 100 or more within 5 years. The scheme envisages 90% capital subsidy and 10% as loan component for which the State Govt. makes provision in its budget regularly. The funds are released by REC to CPSUs such as NTPC,NHPC & PGCIL for execution of the work.

Financial assistance to the tune of Rs.2549.48 Crore has been released by Govt. of India through REC in favour of CPSUs for execution of the work under the scheme till 31.12.2010. An amount of Rs.2411.64 Crore has been utilised for electrification works by the CPSUs and 26,525 nos of villages / habitations have been completed and work for remaining villages / habitations is under progress.

There is a target to electrify 17386 un-electrified/ de-electrified villages, 29350 partially electrified villages, 40706 habitations and 3353008 BPL house hold in all 30 nos districts. Against this BPL kits have been installed in 1650433 nos of houses and 498269 nos of BPL houses have been electrified. Government have provided 97.60 Cr. during 2010-11 for payment of loan component under the scheme.

### **BIJU SAHARANCHALA VIDYUTIKARAN YOJANA(BSVY)**

For providing access to electricity to the people living in unelectrified areas of urban local bodies, the State Government have launched a flagship programme namely, Biju Saharanchala Vidyutikar Yojana (BSVY) during the year 2010-11. Under the scheme unelectrified villages/yards with minimum population of 100 along with BPL household electrification and system improvement will be taken up. Three(3) Municipal Corporations, 37 Municipalities and 63 NACs of the State have been covered under the Scheme. During the year 2010-11, a provision of Rs.40.40 crore was made and same has been disbursed to the district Collectors @ of Rs.1.00 crore per Municipal Corporation, Rs.50.00 lakh per Municipality and Rs.30.00 lakh per NAC. The maximum cost of electrification for unelectrified villages/yards/slums is Rs.3.50 lakh and Rs.2000/- is for a BPL household electrification. The work is now in progress.

### **STANDARD TESTING LABORATORY**

Standard Testing Laboratory is a third party Laboratory which is functioning under this Department for testing and calibration of electrical equipments. All vital testings are being carried out in STL. For procurement of materials for this Laboratory, an amount of 23.63 lakh has been spent till 31.12.2010 out of total budget provision of Rs. 92.00 Lakh in the year 2010-11. Steps have already been taken to utilize the full amount under the scheme during the current Financial Year.

### **Capital Expenditure (CAPEX) Programme for improvement of T&D System**

In the 10<sup>th</sup> State Cabinet meeting held on 05.10.2010 it has been approved for investment of Rs. 2400.00 Crore including 13<sup>th</sup> Finance Commission grant in distribution sector over a period of 5 years with an objective to improve T & D system and for improvement of quality power supply to the consumers of the State. State Govt. is to provide Rs.1200.00 Crore (including 13<sup>th</sup> Finance Commission Grant) to DISCOMs as loan through GRIDCO. DISCOMs have to arrange rest Rs. 1200.00 Crore as their own share. During 2010-11, Rs.205.00 Crore have been made provision under the scheme.

### **Special programme for KBK districts - Grid Up-gradation in Subarnapur district.**

Biramaharajpur & Charvata areas in Subarnapur district are facing low voltage in power supply during the Year especially in dry spell. With a view to

improve the power supply position in these areas, Government have made a provision of Rs.650.00 Lakh during Annual Plan 2010-11 under Special Programme for KBK District ( RLTAAP Scheme) for Grid Upgradation of Sonepur Districts. Under the scheme, the following works have been programmed to be taken up:-

- (i) Construction of 33 KV Line over River Mahanadi from Sonepur Grid Substation to Biramaharajpur Primary substation.
- (ii) Construction of 33/11 KV Substation at Charvata under Sonepur Sub-division.

An amount of Rs.420.00 Lakh has already been provided to the Collector, Subarnapur as on 31.12.2010 for execution of the work under the scheme. The work is now in progress.

#### **Shamuka Beach Project**

It was decided by Government that Energy Deptt. is to make necessary budgetary provision for electrification of Shamuka Beach Project, Puri. The tentative estimate received from OPTCL and CESU is of Rs. 44.61 Crore for construction of 132/33 K.V Sub Station and upgradation of 250 K.V line covering a period of 4 years. During 2010-11 Rs. 3.30 Crore has been provided to the executing authorities i.e. OPTCL & CESU.

#### **Electrification of IIT at Argul, Bhubaneswar**

Department of Energy have been entrusted with the task of electrification IIT, Argul, Bhubaneswar for which a budget provision of Rs.8.00 crore has been provided during the F.Y. 2010-11 and the amount is released in favour of executing agencies.

#### **ENERGY CONSERVATION**

Energy conserved is Energy generated. To Co-ordinate, Regulate and enforce provisions of the Energy Conservation Act,2001 , EIC (Electricity) as State Designated Agency (SDA) for Orissa, works as facilitator by coordinating with Bureau of Energy Efficiency (BEE), Government of India, Government of Orissa, Private Organisations and other Stake-holders and enforcing provision of the Energy Conservation Act, 2001 within the State. While formulating an Energy Conservation Five Year Plan, EIC(Electricity) as State Designated Agency (SDA) has taken up energy audit of 20 Government buildings. More than 14 MVA contract demand and more than 11 MW of connected load has been studied under Investment Grade Energy Audit (IGEA) and energy saving potential of more than 2 MW has been explored.

The LED village (Light Emitting Diodes) campaign launched by Bureau of Energy Efficiency (BEE) and Government of India 2 villages viz.; Raghurajpur (Craft village) and Satyabhamapur (birth place of Utkal Gourav Madhusudan Das) have been taken as a part of nationwide LED village campaign.

During 2010-11, Rs. 6.64 Cr. was made provision, out of which, 2.632 Cr. has been spent by 11/2010. Steps are being taken to utilize the full amount during this year.

**ORISSA HYDRO POWER CORPORATION LTD. (OHPC)**

Orissa Hydro Power Corporation (OHPC) Ltd. was set up on the 21<sup>st</sup> April 1995 consequent to the reform and restructuring of Power Sector in Orissa. Thereafter, all the Hydro Unit of erstwhile OSEB & Govt. of Orissa were transferred to OHPC on 01.04.1996. At present, OHPC has following six ongoing Hydro Electric Projects and one Joint Hydro Electric Project with an installed capacity of 2062 MW which is a distinct improvement over its initial capacity of 1272 MW at the time of incorporation.

The capacity augmentation is due to –

- (1) Operation of Upper Indravati Hydro Electric Project (600 MW), at Mukhiguda in 2001.
- (2) Renovation, Modernisation & Up-rating of units – 1,2,3 & 4 of HHEP, Burla thereby raising installed capacity to 40 MW.
- (3) Installation of two units of BHEP, Balimela of 150 MW (2 x 75) in January' 2009.

OHPC provides the cheapest power and peaking requirement to the State Grid. The present power generation, Sale of Power, Design energy and design energy for sale are given below:

**(i) Power Generation**

Sl. No	Name of the H. E. Project	Installed Capacity	Design Energy	Design Energy for Sale	Generation for the FY 2010-11 (upto Dec.'10)
		MW	MU	MU	MU
1	Burla	275.5	684	677.16	591.259
2	Chiplima	72	490	485.10	195.101
3	Balimela	510	1183	1171.17	923.584
4	Rengali	250	525	519.75	222.092
5	Upper Kolab	320	832	823.68	363.3068
6	Upper Indravati	600	1962	1942.38	1240.99
<b>Sub-Total</b>		<b>2027.50</b>	<b>5676</b>	<b>5619.24</b>	<b>3536.3328</b>
7	Machhkund Jt. Project (30% Orissa Share)	34.5	262.50	262.50	214.314
<b>Grand Total</b>		<b>2062</b>	<b>5938.50</b>	<b>5881.74</b>	<b>3750.6468</b>

Present upgradation Renovation, Modernisation and Life extension of R&M Unit-5&6 of (Burla PH) R&M Unit-III of Chiplima Power House, R&M Unit-I of rengali (50 MW) & R&M 6 nos. of Units of BHEP Balimela are being implemented by OHPC.

**(ii) Future Expansion of Projects:**

As Govt. of Orissa constituted the "Inter – Departmental Technical Co-ordination Committee" with the members from WR Dept. & Energy Dept. to sort out the issues of nine nos. of newly identified hydro projects. Power Potential Study as well as for preparation of DPR of Sindol-I & pre feasibility report of Sindol-II & III power project prepared / submitted by WAPCOs is being scrutinize by OHPC.

**ORISSA POWER GENERATION CORPORATION (OPGC)**

OPGC was incorporated as a separate Company on 14<sup>th</sup> November, 1984. As a part of Reform in Energy Sector, 49% of the Equity Share was divested during the Year 1998-99 in favour of AES, Trans-power, U.S.A. OPGC have established an excellent track record in achieving respectable

Plant Load factor (PLF). It is maximizing its generation year after year and providing power to the State Government at a cheaper rate. During the Year 2009-10, it has generated 2955 MU Power with PLF capacity of 83.57%. During 2010-11, it has generated 2109 MU (upto November, 2010) with PLF capacity of 85.75%. From 1996-97 to 2009-10 it has paid dividend amounting Rs.1205.00 Crore to the share holders out of which the State Govt. have received dividend amounting Rs.648.00 Crore. It has received many awards and distinctions for plant performance, effective pollution control measures and better safety performance. OPGC has emerged as a leader in the field of industrial safety and constant efforts is being made by OPGC to achieve improvement in safety measures by adopting different means.

OPGC have taken a decision for construction of 3<sup>rd</sup> & 4<sup>th</sup> Units with capacity 2 X660 MW with super critical technology in Banaharpali. The engineering, procurement and construction work will be undertaken by EPC contractor selected through competing bidding by OPGC. On completion & commissioning of the Plant, the operation and maintenance will be taken over by the O & M Team of OPTCL. The estimated cost of the project is about Rs.10269.00 Crore.

For better plant performance, effective pollution control measures as well as better safety performance OPGC have received many awards and distinctions. From 2003-04 to 2007-08 OPGC has been selected for Greentech Excellence Gold Award Prize each year in thermal sector, OSHAS 18001 and also received state based safety Award in 2006 from director of Factories and Boilers. OPGC is also Recipient of Greentech Safety Gold Award for the year 2007.

**ORISSA POWER TRANSMISSION CORPORATION LTD.(OPTCL)**

Orissa Power Transmission Corporation Limited (OPTCL) ensures development of an effective and economical system of Intra-state and Inter-state transmission lines for smooth flow of electricity from generating station to load center.

The infrastructure of OPTCL network is as follows.



- 97nos. of Grid Sub-Stations including Switching Station with transformation capacity of 9437.5 MVA.
- 11,213.196Ckt. Kms. Of Transmission lines of 400KV,220KV and 132KV rating

The present peak demand of the state is about 3300MW, which is handled by the existing network and equipment of the system. To improve the low voltage problem in 20nos. Grid Sub-Stations action has already been taken to install 275MVAR shunt capacitor with an estimated cost of Rs.12.71 Crores.

12 nos. of Transmission Projects have been commissioned during 2010-11 and 3 more nos will be commissioned shortly.

OPTCL has taken up the construction work of the Grid Sub-Stations at Barbil and Bonai including transmission lines of Bidanasi – Cuttack, Paradeep-Jagatsingpur, Mendhasal-Bidanasi with its own funding.

OPTCL has already signed agreement with PGCIL and placed order for construction of Grid Sub-Stations at Dabugaon, Bhawanipatna, Nuapada, Padmapur, Kuchinda and Boudh and 400KV transmission line from Meramundali to Duburi within 32 – 36 months.

OPTCL has taken up the construction work of different Grid Sub-Stations at Purusottampur, Chandpur, Banki, Kardagadia Kalunga, Udala, Gopinathpur(Keonjhar), Lapanga,Kuanmunda, Samuka Beach Resort, Puri, Dhamara, Marshghai(Luna), Olaver,Hindol Road and Argul including Bolangir – Kesinga 220KV D.C line for which tendering work have been entrusted to NTPC - ESCL.

OPTCL has also taken steps for construction of 400KV Grid Sub-Stations at Nisa and Khuntuni, 220KV Grid Sub-Stations at Puri,Narasinghpur,Lahanda and Pratap Shasan, 132KV Grid Sub-Stations at Baliguda,Kantabanji and Chhatabar along with 220KV Transmission line from Kuchei to Jaleswar, Jaynagar to Jaynagar(PG), Cuttack to Uttara (Jatni) and

132KV D.C line from Pratap Shasan to Phulnakhara and Khariar to Kantabanji.

The Commissioning work of 220KV Grid Sub-Station at Bolangir,Paradeep and 132/33Kv Grid Sub-Stations at Barpali,Karanjia, Phulnakhara, Badagada, Basta and Anandpur have been made operational recently.

Besides the same the proposal for capacity addition of 58nos. existing Grid Sub-Stations with 3<sup>rd</sup> transformer bay are also being taken up and schedule to be completed by 11<sup>th</sup> plan period.

For evacuation of state share of power from the up coming IPPs, System Studies have been conducted by taking 17nos. of IPPs having installed capacity of 22775MW and ITPS(OPGC) having capacity of 1200MW expected to be coming up by the end of 12<sup>th</sup> plan period out of which 6536MW are of Orissa State share.in the said study 400KV Ring System network has been proposed with 8nos. 400KV Sub-Stations i.e. Lapanga, Nisha, Khuntuni in Ist phase, Joda, Dhamara, Kuanrmunda in 2<sup>nd</sup> phase and Paradeep, Berhampur in 3<sup>rd</sup> phase alongwith 20nos. associated transmission lines. Approval has already been accorded from Board of Director of OPTCL for construction of 400KV Grid Sub-Stations scheduled in Ist phase.

**Reliability and quality of power supply will be ensured with completion of above said projects as per planning.**

### **GRIDCO**

GRIDCO Limited (formerly Grid Corporation of Orissa Limited) is primarily encased in the business of bulk purchase of electricity from the generator through long term power purchase agreements PPA and it sales in bulk to the four DISCOMs in the State GRIDCO plays a major rule in planning the power requirement of the State and also facilitating in the setting up of generating stations for all form of power in the State.

Being the designated State Govt. agency to procure power on behalf of State Govt. GRIDCO has already executed PPAs with 29 nos of private power generators for procuring 6538 MW Power. Besides GRIDCO has already signed

9 nos of PPA with NTPC for its various up coming Super Thermal Power Project with a total requisition of 4750 MW. Further it has signed PPA with OHPC for it up coming projects at Sindol I,II & III for a quantum of power 322 MW. GRIDCO will also avail 50% of power from units 3 & 4 of OPGC having installed capacity of 660 MW each. Orissa will be a surplus state from the year 2016 onwards after generation of power from all these sources.

During last three years GRIDCO has availed power to the extend up 220.586 MU through power exchange and power banking to meet deficit of the State. A year wise detailed of transaction through India Energy Exchange (IEX) and Banking arrangement is furnished below:-

**All figures are in MU**

<b>Year</b>	<b>Availed power through Banking</b>	<b>Procured power through Power Exchange</b>	<b>Power sold through Power Exchange</b>
2008-09	16.282	-	27.67
2009-10	83.425	20.919	0.9
2010-11 (Upto Dec-10)	99.96	-	18.22

In the process of harnessing clean energy by encouraging Solar, Biomass & Mini Hydro Power Developer, Gridco have already signed 24 nos of PPA with the developers for generation of 262 MW power. During insufficient availability of power from all sources in passed three years and current Financial Year, GRIDCO has been managing the same by exploring all available sources as well as procuring high cost power to ensure uninterrupted power supply to the consumers of the State.

During 2009-10 the actual Revenue gap increase to Rs.1753.70 Crore against OERC surmised at Rs.833.00 Crore as against audit book loss of Rs.146.53 Crore after considering Rs.1414.31 Crore as regulatory assets to be recovered in future year tariff. Govt. has sanction 1000 Crore as Govt. guarantee during January,2010 to tide over the above revenue gap. For F.Y 2010-11 as against a revenue gap of Rs.806.00 Crore projected by OERC, GRIDCO has estimated the gap at Rs.1758.00 Crore due to actual

requirement of power by DISCOMs and increase in approve rate by OERC of Per Unit power cost. In order to bridge the above gape GRIDCO has arranged term loan of Rs. 1137.00 Crore. Further Govt. of Orissa has sanctioned Govt., guarantee of Rs. 1000.00 Crore during November,2010.

The total Revenue profit and loss of GRIDCO for last three years is as under.

**Rs. in Crore**

Year	Total Revenue	Profit / (Loss)
2007-08	3,348.26	566.08
2008-09	2,825.95	98.14
2009-10	4,248.54	146.53 (Loss)

**Capacity addition through 30 IIPs, UMPPs & NTPC.**

State Government have signed MoUs with 30 private IPPs for generation of power. 38,000 MW of power is expected to be generated through these IPPs out of which 6774 MW may be available to the State as State share. Besides, 12000 MW power is expected to be generated by Ultra Mega Power Projects (UMPPs) and 7720 MW power from three projects of NTPC. The State will get 7900 MW power from these UMPPs and NTPC projects towards its share.

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