

## **CHAPTER - 13**

### **ENERGY**

13.1 Electricity is an essential requirement for all facets of our life and it has been recognized as a basic human need. It is the key to accelerating economic growth, generation of employment, elimination of poverty and human development especially in rural areas. Provision of electricity is essential to cater for requirements of agriculture and other important activities including small and medium industries, khadi and village industries, cold chains, health care, education and information technology.

13.2 The State is deficient in water resources and conventional resources of power generation like coal, oil and gas for undertaking new power generation schemes. However, there is vast potential for power generation from non-conventional sources of energy like wind, solar and biomass. Therefore, emphasis on renewable energy will supplement the electricity requirement of the State. The gross annual per capita consumption of electricity during 2008-09 of Rajasthan was 747.07 kwh as compared to all India average of 733.54 kwh.

13.3 State Government accords highest priority to power generation to become self-sufficient in power and minimize the gap between demand and supply. Efforts are being made to encourage public private partnership in power generation. The State Government is facilitating efforts to reduce the T & D losses. All villages and habitations would be covered by electrification and priority would be given to SC/ST colonies.

13.4 Efforts are being made to provide regular and continuous electricity to the farmers @ 8 hours per day on economical rates. Efforts would also be made to provide 24 hours domestic electricity in all villages as being provided in urban areas. Electricity connection to the BPL families of urban areas would be given @ ₹ 2,500/- only. Under the Kutir Jyoti Yojana, free electric connections are being given to rural BPL families.

13.5 The Rajasthan Power Sector Reforms Act unbundled the erstwhile RSEB into one generation, one transmission and three distribution companies at Jaipur, Jodhpur and Ajmer. It also established the Rajasthan Electricity Regulatory Commission. The State is one of the India's most advanced States in terms of metering and collections (more than 95 percent electricity is metered & sustained rate is also about 95 percent). Strengthening of power network is high priority area of the State Government.

13.6 Despite growth in connectivity, there are issues like unconnected households and low consumption of electricity that need to be improved. Agriculture accounts for about 41 percent and industry for over 31 percent of total consumption of electricity in the State. Though almost 75

percent of electricity consumers are domestic but they account for only 20 percent of the total consumption. Only 55 percent households have access to electricity. About 91 percent villages are connected but electrification has not penetrated adequately at the household level, therefore, 56 percent rural households are still unconnected. The number of total customers is around 38.50 lakhs.

13.7 The company-wise details of the outlays kept in the Eleventh Five Year Plan 2007-12, likely expenditure to be incurred in the Annual Plan 2010-11 and outlays proposed for these companies for the Annual Plan 2011-12 are as follows:-

**Table No. 13.1**

(₹ in crore)

S. No.	Company	Eleventh Plan Outlay	Likely Exp. 2010-11	Proposed Outlay 2011-12
1	Raj. Vidyut Utpadan Nigam Ltd.	11443.00	3780.00	5460.00
2	Raj. Vidyut Prasaran Nigam Ltd.	6600.00	2000.00	2820.00
3	Jaipur Vidyut Vitran Nigam Ltd.	2680.00	1455.00	1352.00
4	Ajmer Vidyut Vitran Nigam Ltd.	2432.00	1259.00	1059.00
5	Jodhpur Vidyut Vitran Nigam Ltd.	2435.00	1439.00	1374.00
<b>Total</b>		<b>25590.00</b>	<b>9933.00</b>	<b>12065.00</b>

13.8 The outlays proposed in the Eleventh Five Year Plan 2007-12 for the different activities of the power companies, are as follows:-

**Table No. 13.2**

(₹ in crore)

Particulars	RVUN	RVPN	JVVN	AVVN	JDVVN	Total
1. Generation	11443.00	80.00	-	-	-	11523.00
2. Transmission	-	3895.00	-	-	-	3895.00
3. Sub-Transmission	-	-	680.00	730.00	815.00	2225.00
4. WB Funded Works	-	625.00	740.00	775.00	360.00	2500.00
5. Normal RE	-	-	882.00	495.00	900.00	2277.00
6. Feeder Renovation Programme	-	-	50.00	180.00	80.00	310.00
7. RGGVY/AREP	-	-	328.00	252.00	280.00	860.00
8. Cash Support for FRP	-	2000.00	-	-	-	2000.00
<b>Total</b>	<b>11443.00</b>	<b>6600.00</b>	<b>2680.00</b>	<b>2432.00</b>	<b>2435.00</b>	<b>25590.00</b>

13.9 The outlays proposed in the Annual Plan 2011-12 for the different activities of the power companies, are as follows:-

**Table No. 13.3**

(₹ in crore)

Particulars	RVUN	RVPN	JVVN	AVVN	JDVVN	Total
1. Generation	5460.00	20.00	-	-	-	5480.00
2. Transmission	-	2800.00	-	-	-	2800.00
3. Sub-Transmission and Distribution	-	-	585.00	355.00	339.00	1279.00
4. Normal RE	-	-	345.00	405.00	606.00	1356.00

Particulars	RVUN	RVPN	JVVN	AVVN	JDVVN	Total
5. Feeder Renovation Programme	-	-	5.00	10.00	5.00	20.00
6. RGGVY/AREP/R-APDRP	-	-	265.00	165.00	300.00	730.00
7. Transition Support	-	-	152.00	124.00	124.00	400.00
<b>Total</b>	<b>5460.00</b>	<b>2820.00</b>	<b>1352.00</b>	<b>1059.00</b>	<b>1374.00</b>	<b>12065.00</b>

### RAJASTHAN RAJYA VIDYUT UTPADAN NIGAM LTD.

13.10 At present, Rajasthan Vidyut Utpadan Nigam owns & operates the following Thermal/Gas Hydel Power Stations in the State Sector. The capacity includes units commissioned up to November, 2010.

**Table 13.4**

S. No.	Power Stations	Installed Capacity (MW)
1.	Suratgarh Thermal Power Station	1500
2.	Kota Thermal Power Station	1240
3.	Ramgarh Gas Power Plant	113.5
4.	Mahi Hydel Power Plant	140
5.	Mini Micro Hydel Schemes	23.85
6.	Giral Lignite Thermal Power Plant Unit-I & II -92x125 MW)	250
7.	Dholpur Combined Cycle Gas Project	330
8.	Chhabra Thermal Power Project Unit-1&2 (2x250 MW)	500
	<b>Total</b>	<b>4097.35</b>

13.11 In addition to this, RVUN is managing and operating following two power stations, which are owned by RVPN:

1.	Rana Pratap Sagar Hydel Power Stations	172 MW
2.	Jawahar Sagar Hydel Power Stations	99 MW
	<b>Total</b>	<b>271 MW</b>

13.12 The likely expenditure of the Company during the Annual Plan 2010-11 is ₹ 3780 crore and the proposed outlays for the Annual Plan 2011-12 is ₹ 5460 crore. The proposed amount will be utilized on the following projects:

(₹ in crore)

S. No.	Item/ Project	Outlays	
		Likely Exp. 2010-11	Proposed Outlay 2011-12
1	Chhabra Thermal Power Project Stage-I, Phase-2 Unit – 3 & 4 (2x250 MW)	670.00	860.00
2	Kalisind Thermal Power Project Unit – 1 & 2 (2x600 MW)	1400.00	1035.00

S. No.	Item/ Project	Outlays	
		Likely Exp. 2010-11	Proposed Outlay 2011-12
3	Ramgarh Gas Thermal Power Project Stage III 160 MW	367.00	233.00
4	Dholpur Gas CCPP Stage II (3x110 MW)	125.00	300.00
5	Chhabra Thermal Power Project Stage-II Unit-5 & 6 (2x660 MW)	600.00	1000.00
6	Suratgarh Thermal Power Project Stage V Unit-7& 8 (2x660 MW)	600.00	1000.00
7	Kalisindh Thermal Power Project Stage II Unit -3 & 4 (2x660 MW)	0.00	400.00
8	Surtagrah Thermal Power Project Stage VI Unit -9 & 10 (2x660 MW)	0.00	400.00
9	Kota Gas CCPP (3x110 MW)	0.00	105.00
10	Chhabra Gas CCPP (3x110 MW)	0.00	105.00
11	Survey Investigation Schemes & Carried Over Liabilities	18.00	22.00
	<b>Total</b>	<b>3780.00</b>	<b>5460.00</b>

Project-wise details are as follows:

#### **A. On-going Power Projects:-**

##### **1. Chhabra TPP Stage I Phase 2, Unit-3 & 4 (2x250 MW)**

13.13 All statutory clearances including Environmental Clearance have been obtained for the project. Land and water allocation for the project are available. All orders have been placed and commissioning work by BHEL and BOP contractor at site is in progress with construction material. Construction work of Chimney Shell is complete and work of construction of Boiler, turbine & ESP is in progress. The drum of the unit-3 has been placed on site on 31.12.2010. The units are targeted for commissioning by October, 2011 & December, 2011 respectively.

13.14 Standing Linkage Committee of Union Ministry of Coal has allocated tapering linkage for the project. A captive coal block 'Parsa East and Kanta Basan' in Chhatisgarh State has been allotted by the Union Ministry of Coal for the project for which clearance from Union Ministry of Environment & Forest is yet to be received. Estimated cost of the project is ₹ 2200.00 crore, out of which 20 percent i.e. ₹440.00 crore has been made available by the State Government as equity. Remaining capital cost is being arranged by resorting to borrowing from PFC. An expenditure of ₹670.00 crore is likely to be incurred on the project during 2010-11 out of which ₹ 421.61 crore has already been incurred up to December, 2010. A provision of ₹ 860.00 crore is proposed for the Annual Plan 2011-12.

## **2. Kalisindh Thermal Power project Stage I Unit – 1 & 2 (2x600 MW)**

13.15 All statutory clearances including Environmental Clearance have been obtained for the project. Land and water allocation for the project are available. All orders have been placed and commissioning work by EPC contractor at site is in progress. Construction work of Chimney, ESP, Boiler, Raw water reservoir, STG Building, etc is in progress. Boiler Drum of unit-1 & 2 were placed on site on 19.05.2010 & 14.08.2010 respectively. The units are targeted for commissioning by December, 2011 & March, 2012 respectively.

13.16 Order for railway siding has been placed on M/s IRCON which has completed the route survey and Union Ministry of Railways has conveyed approval of the same. Acquisition of land for siding is in process. Standing Linkage Committee of Union Ministry of Coal has allocated tapering linkage for 1<sup>st</sup> Unit and is to be issued for 2<sup>nd</sup> Unit. A captive coal block 'Parsa East and Kanta Basan' in Chhatisgarh State has been allotted by the Union Ministry of Coal for the project for which clearance from Union Ministry of Environment & Forest is yet to be received. Estimated cost of the project is ₹ 4600.00 crore, out of which 20 percent i.e. ₹ 920.00 crore has been made available by the State Government as equity. Remaining capital cost is being arranged by resorting to borrowing from PFC. An expenditure of ₹1400.00 crore is likely to be incurred on the project during 2010-11, out of which ₹ 439.63 crore has already been incurred up to December, 2010. A provision of ₹ 1035.00 crore is proposed for the Annual Plan 2011-12.

## **3. Ramgarh Gas TPS Stage III (160 MW)**

13.17 All statutory clearances including Environmental Clearance have been obtained. Land and water allocation for the project are available. M/s Power Tech has been appointed as Project Consultants. Order for main equipment has been placed on M/s BHEL and order for balance of plant (BOP) has been placed on M/s Subhash Projects. Gas Turbine has reached at site and erection work has been started. Civil works by BOP contractor is in progress. M/s GAIL has completed laying of gas pipeline from M/s Focus Energy gas fields to the project site. The project is targeted for commissioning by March, 2012. Due to less carbon emissions, this project is being developed as CDM Project as per guidelines of UNFCCC for which Consultant shall be appointed.

13.18 Estimated cost of the project is ₹ 640.00 crore, out of which 20 percent i.e. ₹128.00 crore is being made available by the State Government as equity. Remaining capital cost shall be arranged by resorting to borrowing from PFC/REC. An expenditure of ₹ 367.00 crore is likely to be incurred on the project during 2010-11, out of which ₹ 51.59 crore has already been incurred up to December, 2010. A provision of ₹ 233.00 crore is proposed for the Annual Plan 2011-12.

## **B. New Power Projects:-**

### **1. Chhabra Thermal Power Project Stage-II Unit - 5 & 6 (2x660 MW)**

13.19 The land for the project has been acquired and 1570 mcft water has been allotted from Lhasi & Parvan dam. TOR for carrying out EIA studies has been approved by the Expert Appraisal Committee of Ministry of Environment & Forest. Initial activities of arranging statutory clearances have been initiated. REIA studies have been carried out and the public hearing has been conducted at site. Environmental Clearance is expected to be issued by March, 2011.

13.20 M/s TCE, Bangalore has been appointed as project consultants. Tenders on International Competitive Basis (ICB) for the project on EPC mode have been invited. Price bids have been opened & are under examination. Orders are expected to be placed by March, 2011. The project is targeted for commissioning in early 12<sup>th</sup> Plan. Due to less carbon emissions, this project is being developed as CDM Project as per guidelines of UNFCCC for which Consultant shall be appointed. Application has been submitted for Long term linkage/Captive coal block allotment for the project. Union Ministry of Power has recommended the case of Long term linkage to the Ministry of Coal. The Union Ministry of Power has also recommended the case of "Kente Extension" coal block. However, clearance from Union Ministry of Environment & Forest is required as the coal block falls under "No Go" area.

13.21 Estimated cost of the project is ₹ 7920 crore, out of which 20 percent i.e. ₹1584 crore shall be made available by the State Government as equity. Remaining capital cost is to be arranged by resorting to borrowing from PFC/REC. An expenditure of ₹ 600 crore is likely to be incurred on the project during 2010-11. A provision of ₹ 1000 crore is proposed for the Annual Plan 2011-12.

### **2. Suratgarh Thermal Power Project Stage-VI Unit-7 & 8 (2x660 MW)**

13.22 The land for the project has been acquired and 60 cusecs water has been allotted from IGNP. TOR for carrying out EIA studies has been approved by State Expert Appraisal Committee of The Union Ministry of Environment & Forest. Initial activities of arranging statutory clearances have been initiated. REIA studies have been carried out and the public hearing has been conducted at site. Environmental Clearance is expected to be issued by March, 2011.

13.23 M/s TCE, Bangalore has been appointed as project consultants. Tenders on International Competitive Basis (ICB) for the project on EPC mode have been invited. Technical bids have been opened & are under examination. The project is targeted for commissioning in early 12<sup>th</sup> Plan. Due to less carbon emissions, this project is being developed as CDM Project as per guidelines of UNFCCC for which Consultant shall be appointed. Application has been submitted for Long term

linkage/Captive coal block allotment for the project. The Union Ministry of Power has recommended the case to Union Ministry of Coal for Long term linkage and for “Kente Extension” coal block. However, clearance from the Ministry of Environment & Forest is required as the coal block falls under “No Go” area.

13.24 Estimated cost of the project is ₹ 7920 crore, out of which 20 percent i.e. ₹ 1584 crore shall be made available by the State Government as equity. Remaining capital cost is to be arranged by resorting to borrowing from PFC/REC. An expenditure of ₹ 600 crore is likely to be incurred on the project during 2010-11. A provision of ₹ 1000 crore is proposed for the Annual Plan 2011-12.

### **C. Approval for New Power Projects:**

13.25 Besides the above projects, the following new coal/gas based power projects has also been sanctioned in the State Sector, which shall be commissioned in the 12th Plan :-

**Table 13.6**

<b>S. No.</b>	<b>Name of the Project</b>	<b>Capacity</b>
1.	Dholpur Gas Extension Stage -II	3x110 MW
2.	Ramgarh Gas Extension Stage - IV	160 MW
3.	Suratgarh TPS Extension Project Stage VI (unit 9 & 10)	2x660 MW
4.	Kalisindh TPS Extension Project Stage II (unit 3 & 4)	2x660 MW
5.	Banswara TPP Unit - 1 & 2	2x660 MW
6.	Kota Gas CCPP	3x110 MW
7.	Chhabra Gas CCPP	3x110 MW
	<b>TOTAL</b>	<b>5110 MW</b>

13.26 Water allotment for these power projects has been made accept Kota Gas TPP, which is likely to be allocated shortly. Land for Dholpur, Suratgarh, Kalisindh, Kota & Chhabra projects is available and for Banswara green field project land has been identified and case is under process for notification. M/s BHEL, PCRI Haridwar has been appointed as Environmental consultant to carry out EIA studies. Dholpur, Kota & Chhabra gas based projects are being developed under “Fast – track Mode” and are targeted for commissioning in 2013-14. An expenditure of ₹125 crore is likely to be incurred on the Dholpur Gas project during 2010-11 & a provision of ₹ 300 crore is proposed for the Annual Plan 2011-12. An expenditure of ₹ 18 crore is likely to be incurred under the provision of Survey & Investigation (S& I) during 2010-11 and ₹ 22 crore is proposed for the year 2011-12 towards Survey & Investigation (S & I) for the new projects & carried over liabilities.

Detail of new projects to be taken up is as follows:

### **1. 2x660 MW Kalisindh Thermal Project Stage-II (Unit-3 & 4)**

13.27 Administrative & Financial” approval for the project to be set up under the state sector in 12<sup>th</sup> Plan has been accorded in June, 2010. The cost of the project is ₹ 7920 crore, out of which 20 percent shall be provided as equity support by the State Government. Remaining 80 percent shall be arranged as loan (IEBR) from PFC/REC. Land is already available and water has been allocated. M/s BHEL, PCRI Haridwar has been appointed as Environmental consultant to carry out EIA studies. The project is planned for commissioning in 2015-16. A budget provision of ₹ 400 crore has been kept for the Annual Plan 2011-12.

### **2. 2x660 MW Suratgarh Thermal Project Stage-V (Unit-9 & 10)**

13.28 Administrative & Financial” approval for the project to be set up under the state sector in Twelfth Plan has been accorded in June, 2010. Total cost of the project is ₹ 7920 crore, out of which 20 percent i.e. ₹1584 crore shall be provided as equity support by the State Government and remaining 80 percent shall be arranged as loan from PFC/REC. Land is already available and water has been allocated. M/s BHEL, PCRI Haridwar has been appointed as Environmental consultant to carry out EIA studies. The project is planned for commissioning in 2015-16. A budget provision of ₹ 400 crore has been proposed for the Annual Plan 2011-12.

### **3. 3x110 MW Kota Gas Project**

13.29 Administrative & Financial” approval for the project to be set up under the state sector in 12<sup>th</sup> Plan has been accorded in October, 2010. Total cost of the project is ₹1320 crore, out of which 20 percent i.e. ₹ 264 crore shall be provided as equity support by the State Government and remaining 80 percent shall be arranged as loan from PFC/REC. Land is already available and water is likely to be allocated shortly. M/s BHEL, PCRI Haridwar has been appointed as Environmental consultant to carry out EIA studies. The Terms of Reference (TOR) to carry out environmental studies has been approved by the Pollution Control Board. As the gas based power project has shorter gestation period as compared to thermal projects, this project is being developed under ‘Fast Track” mode and is targeted for commissioning in the year 2013-14. A budget provision of ₹ 105 crore has been proposed for the Annual Plan 2011-12.

### **4. 3x110 MW Chhabra Gas Project**

13.30 Administrative & Financial” approval for the project to be set up under the state sector in Twelfth Plan has been accorded in October, 2010. Total cost of the project is ₹ 1320 crore, out of which 20 percent i.e. ₹ 264 crore shall be provided as equity support by the State Government. Remaining 80 percent shall be arranged as loan from PFC/REC. Land is available and water has been allocated. M/s BHEL,



PCRI Haridwar has been appointed as Environmental consultant to carry out EIA studies. The matter of TOR has been discussed with Union Ministry of Environment & Forest. It has been listed for in Expert Appraisal Committee meeting dated 11.01.2011 and TOR is likely to be issued shortly. This project is being developed under 'Fast Track' mode and is targeted for commissioning in the year 2013-14. A budget provision of ₹105 crore has been proposed for the Annual Plan 2011-12.

#### **RAJASTHAN RAJYA VIDYUT PRASARAN NIGAM LTD.**

13.31 An expenditure of ₹ 2000 crore is likely to be incurred in the year 2010-11 and ₹ 2820 crore is proposed for the Annual Plan 2011-12. Break-up of the resources are as follows:-

**Table No. 13.7**

(₹ in crore)

<b>S. No.</b>	<b>Resources</b>	<b>Eleventh Plan Outlay</b>	<b>Likely Exp. 2010-11</b>	<b>Proposed Outlay 2011-12</b>
1	Bonds	450.00	350.00	400.00
2	LIC	250.00	250.00	250.00
3	Rural Electrification Corporation	1230.00	700.00	1200.00
4	PFC/Commercial Banks	1256.00	300.00	405.00
5	World Bank	500.00	-	-
6	State Equity	914.00	400.00	565.00
7	Transition support for FRP	2000.00	-	-
<b>Total</b>		<b>6600.00</b>	<b>2000.00</b>	<b>2820.00</b>

13.32 These outlays are proposed to be utilized on the following activities:-

**Table No. 13.8**

(₹ in crore)

	<b>Resources</b>	<b>Eleventh Plan Outlay</b>	<b>Likely Exp. 2010-11</b>	<b>Proposed Outlay 2011-12</b>
1	Generation (Shared Generating Project)	80.00	20.00	20.00
2	Transmission (on going & New works)	4520.00	1980.00	2800.00
3	Transition support for FRP	2000.00	-	-
<b>Total</b>		<b>6600.00</b>	<b>2000.00</b>	<b>2820.00</b>

#### **A. Generation (Shared Generating Projects)**

##### **1. Survey, Investigation and Preliminary Expenses**

13.33 A provision of ₹ 1 crore is proposed for making payment for S & I work and for preliminary expenses for inter-state new projects during the year 2011-12.

## 2. Bhakhra Beas Complex and Other Projects:

13.34 A total provision of ₹19 crore is proposed for up rating of Bhakra Left Bank and other capital works of BBMB for the year 2011-12. This provision is for the Rajasthan's Share in Modernization works. During 2011-12, 5.47 MW capacity is likely to be added from Rajasthan's share from uprating of 2 units of Bhakhra Left Bank. This provision may be utilized for purchase of 11kV/132kV Generator Transformers for RPS/JS Hydel Power Stations also.

### B. Transmission

13.35 A provision of ₹ 2800 crore is proposed for Transmission works during the year 2011-12. During 2011-12, the work on evacuation schemes of Chhabra TPS, Kalisindh TPS, Suratgarh Super Critical TPS, Kawai Super Critical TPS and Ramgarh GTPS will be in full swing. Looking to the delay in allocation of coal linkage for Banswara Super Critical TPS and requirement of strengthening the system, it has been decided to advance construction of 400 kV GSS at Jodhpur and Chittorgarh along with associated lines which have been approved under evacuation of Banswara Super Critical TPS. These works will now be constructed under normal development work. The works on these schemes shall also be carried out during 2011-12 and these GSS are likely to be commissioned during 2012-13. More transmission schemes related to forthcoming Generation Stations and for expansion of transmission system are likely to be approved by 2011-12 which will be included in Annual Plans at the time of revision.

13.36 During 2011-12, major expenditure will be on construction of evacuation schemes which includes 765 kV and 400 kV transmission systems. The commissioning of 765 kV and 400 kV works covered in evacuation schemes will start in 2012-13 matching commissioning of generation units.

13.37 Besides above, looking to the load growth, the expansion in transmission system and augmentation of capacity of existing EHV GSS is required. It is proposed to commission 10 Nos. of 220 kV and 20 Nos. of 132 kV GSS along with their associated lines in the year 2011-12. An addition of 1500 MVA transformer capacity under augmentation program is also proposed during 2011-12.

13.38 Targets for the Eleventh Five Year Plan 2007-12, likely achievements of the Annual Plan 2010-11 and proposed targets for Annual Plan 2011-12 are as follows:-

**Table No. 13.9**

S. N.	Head of Scheme	Unit	Eleventh Plan Target	Likely Ach. 2010-11	Targets Proposed for 2011-12
I	400 KV Lines 400 KV Substations	Km MAV	2445 2205	750 630	- -

S. N.	Head of Scheme	Unit	Eleventh Plan Target	Likely Ach. 2010-11	Targets Proposed for 2011-12
	400 KV Substations	No.	7	2	-
II	220 KV Lines	Km	2950	600	600
	220 KV Substations	MVA	2600	800	1000
	220 KV Substations	No.	26	8	10
III	132 KV Lines	Km.	1750	500	450
	132 KV Substations	MVA	1875	550	500
	132 KV Substations	No.	75	20	20
IV	Augmentation	MVA	5000	1200	1500

### Major Initiatives/Innovations:

13.39 The scheme for creation of 765kV System has been approved for the first time in the State. 2 Nos. of 765kV GSS at Anta and Phagi along with 2XS/C, 765kV lines from Anta to Phagi are proposed to be constructed under composite evacuation of Chhabra Super Critical TPS and Kalisindh TPS. Orders for 765kV lines have already been placed and tenders for 765kV GSS have been opened and techno commercial evaluation is under process.

13.40 One Hybrid 132 kV GSS has already been commissioned during 2008-09 at SMS Stadium, Jaipur. One Hybrid 220 kV GSS at Indira Gandhi Nagar and two GIS 132 kV GSS at New Jhotwara and PWD Bunglow, Jaipur are under construction which are likely to be commissioned in 2010-11. Besides these, more Hybrid/GIS Sub-Stations i. e. 220kV GSS at Mansarovar, Nallah Power House in Puranaghat and 132kV GSS at MNIT in Jaipur and Pratapgarh Engineering College, Old Power House & Kuri-Bhagtasani in Jodhpur have been approved, which are being taken for execution.

13.41 220kV XLPE cables and 220kV GIS Sub-stations are being introduced in urban areas. In first phase, 220kV GIS Mansarovar and NPH will be awarded for execution with associated cables.

### D. Projects being developed through Private Sector

#### (i) Case-1 Procurement of 1000MW base load + 1000MW season load power of Discoms in Twelfth Plan

13.42 RERC have approved 1000 MW base load power round the year 1000 MW seasonal load i.e. October to March. Based on the approval of RERC, competitive bidding process was carried out in accordance with guidelines of Union Government for procurement of power under Case-1 & PPA has been signed between M/s Adani Power Rajasthan Ltd. & Discoms of Rajasthan for 1200 MW power. RERC has conveyed the approval for adoption of the tariff discovered through competitive bidding process which is ₹3.2383/kWh & approved additional 200 MW power.

13.43 For procurement of 1000 MW base load power in place of 1000 MW seasonal load power an Energy Assessment Committee (EAC) has been

formed by the State Government and Demand forecast & availability analysis of power for the State have been approved. The report of EAC has been submitted to RERC.

**(ii) Case- 2 1320 MW Banswara Thermal power project (2X660 MW)**

13.44 The State Government has approved for setting up of 2X660 MW Supper Critical Thermal Power Project at Banswara under Private Sector. Application for long term coal linkage has been submitted to Union Ministry of Coal & Mines. Water allocation of 2000 MCFT from Mahi Project has been allocated. The Terms of Reference for environmental appraisal has been approved by the expert appraisal committee of Union Ministry of Environment & Forest. The possession of 444.50 acres Government land & 862.56 acres of private land has been taken by RVPN. Public hearing by pollution control board of Rajasthan has taken place on 11.3.10. Final report has been submitted to Union Ministry of Environment & Forest. Power Ministry vide office memorandum dt.20.8.10 has recommended the case of allotment of coal linkage during Twelfth Plan for this project to Ministry of Coal. RERC has ordered to issue fresh RFQ after having coal linkage in place.

**(iii) Case-2 70 MW Gurha Thermal Power Project**

13.45 A lignite based generation station with 70MW capacity is proposed to be built at Gurha (West) based on competitive bidding process under Private Sector. It is 70 km South West of Bikaner. Land for this Project shall be provided by RSMML. The lignite for the project shall be supplied by M/S. RSMML from Gurha West mines. Water has been allocated from Indira Gandhi Canal. RFQ was opened on 13.10.09. Evaluation for RFQ and selection of qualified bidders has been finalized on 26.3.10. FRP issued on 7.4.10 and scheduled to be opened after one month from the date of issue of final FSA, which is under finalization.

**(iv) Case- 2 Giral Unit 3 & 4 Power Plant (2x125 MW)**

13.46 Work order for consultancy assignment to M/s PFCL has been placed on 30.6.2010 and SPV in the name of Barmer Thermal Power Co. Ltd. has been registered on 5.7.2010. Water for the project has been allocated. Transfer of 44.506 hectare land amounting to ₹ 31.28 lakh is under process and additional 56.48 hectare land for ash dyke has been allotted. RSMML has given in-principle approval to Supply the fuel (lignite). RFQ issued and tenders opened on 15.12.2010.

**(v) Case-2 1000 MW Gas based Thermal Power Plant at Keshoraipaton**

13.47 The State Government has approved setting up of 1000 MW gas based power project at Keshoraipaton and appointed RVPN as Nodal Agency. Co-operative Department has given in principle approval to hand over the 458 bigha land of Shri Keshoraipatan Co-operative Sugar Mill Ltd. to RVPN at cost of ₹ 56.25 crore.

13.48 M/s PFCL has been appointed as Consultant. Registration of SPV in the name of Keshoraipatan Gas Thermal Power Company Ltd has been done. Water allocation of 10 cusec (315 mcft) for 330 MW has been made. Request for allocation 30 Cusec (945 mcft) water for 1000 MW instead of 10 cusec for 330 MW has also been made. GAIL in principle has agreed to supply the required quantity of gas for the project at market driven prices.

**(vi) Jalipa Kapurdi Lignite Mining cum Power Generation Project (Rajwest)**

13.49 Under private sector 8x135MW TPS is under construction by M/S. Rajwest Power Limited. As per information provided by M/S. Rajwest Power Limited, first two units have been commissioned on 26.11.2009 and on 4.10.2010 respectively. Balance Six units are likely to be commissioned from January, 2011 to July, 2011.

**(vii) Transmission Projects to be developed through Private Sector Participation undertaken by RVPN as BPC**

13.50 The State Government constituted a State Level Empowered Committee (SLEC) with a view to encourage competition in private sector participation for development of transmission projects in State. The SLEC decided three transmission projects (two 400 kV and one 220 kV) to be implemented through competitive bidding process and authorized Rajasthan Rajya Vidyut Prasaran Nigam Limited to act as Bid Process Coordinator (BPC) for the purpose of selection of Bidder as Transmission Service Provider (TSP).

13.51 LoI has been issued on 30.9.2010 in favour of M/s. GMR Energy Ltd. for two of the three projects i.e 1. 400 kV S/C Bikaner-Deedwana-Ajmer line with 400 kV/220 kV GSS at Deedwana and Associated schemes/work 2. 400 kV S/C Hindaun-Alwar line with 400 kV/220 kV GSS at Alwar and Associated schemes/work .

13.52 The State Level Empowered Committee on 10.9.2010 have identified two more projects to be developed through tariff based competitive bidding under private sector detailed as under:

13.53 (i) 400kV D/C Babai (Jhunjhunu)-Jaipur (North) line along with 400kV/220kV GSS at Jaipur (North).

(ii) 400kV D/C Jodhpur (New)-Udaipur line along with 400kV/220kV GSS at Udaipur.

13.54 The preliminary actions for selection of developer for above project have been started by RVPN.

## DISTRIBUTION COMPANIES

13.55 The details of resources envisaged for financing the outlays of ₹ 4153.00 crore kept in the Annual Plan 2010-11 are as follows:-

**Table No. 13.10**

(₹ in crore)

Resources	Annual Plan 2010-11			
	Jaipur	Ajmer	Jodhpur	Total
1. LIC	65.00	100.00	80.00	245.00
2.REC/RGGVY	100.00	543.00	338.00	981.00
3. Commercial Banks/PFC/ Other Resources	928.00	284.00	645.00	1857.00
4. Equity from State Government	210.00	208.00	252.00	670.00
5. Transition Cash Support	152.00	124.00	124.00	400.00
<b>6. Total</b>	<b>1455.00</b>	<b>1259.00</b>	<b>1439.00</b>	<b>4153.00</b>

**Table No. 13.11**

(₹ in crore)

S. No.	Schemes	Annual Plan 2010-11			Total
		Jaipur	Ajmer	Jodhpur	
1	2	3	4	5	6
1	Sub Transmission	540.00	582.00	240.00	1362.00
2	Rural Electrification Work	438.00	408.00	671.00	1517.00
3	Feeder Renovation Programme	80.00	15.00	140.00	235.00
4	RGGVY	95.00	60.00	128.00	283.00
5	R-APDRP	150.00	70.0	136.00	356.00
	<b>Total Capital Investment</b>	<b>1303.00</b>	<b>1135.00</b>	<b>1315.00</b>	<b>3753.00</b>
7	Transition Cash Support	152.00	124.00	124.00	400.00
	<b>Grand Total</b>	<b>1455.00</b>	<b>1259.00</b>	<b>1439.00</b>	<b>4153.00</b>

13.56 The details of resources envisaged for financing the outlays of ₹ 3785.00 crore proposed in the Annual Plan 2011-12 for distribution companies are as follows:-

**Table No. 13.12**

(₹ in crore)

Resources	Proposed Outlay 2011-12			
	Jaipur	Ajmer	Jodhpur	Total
1. LIC	100.00	80.00	90.00	270.00
2.RE Works	345.00	468.00	200.00	10213.00
3. RGGVY/R-APDRP	200.00	0.00	0.00	200.00
4. PFC/Commercial Banks /NCRPB	355.00	200.00	710.00	1265.00
5. Equity	200.00	187.00	250.00	637.00
6. Transition Support from State Government	152.00	124.00	124.00	400.00
<b>7. Total</b>	<b>1352.00</b>	<b>1059.00</b>	<b>1374.00</b>	<b>3785.00</b>

13.57 Proposed outlays for various activities of the Distribution Companies in the Annual Plan 2011-12 are as follows:-

**Table No. 13.13**

(₹ in crore)

Schemes	Proposed Outlay 2011-12			
	Jaipur	Ajmer	Jodhpur	Total
1. Sub Transmission	585.00	355.00	339.00	1279.00
2. Rural Electrification Works	345.00	405.00	606.00	1356.00
3. Feeder Renovation Programme	5.00	10.00	5.00	20.00
4. RGGVY	15.00	5.00	10.00	30.00
5. R-APDPR – Part-A	125.00	80.00	155.00	360.00
6. R-APDPR – Part-B	125.00	80.00	135.00	340.00
<b>Total Capital Investment</b>	<b>1200.00</b>	<b>935.00</b>	<b>1250.00</b>	<b>3385.00</b>
7. Transitional Cash Support	152.00	124.00	124.00	400.00
<b>Grand Total</b>	<b>1352.00</b>	<b>1059.00</b>	<b>1374.00</b>	<b>3785.00</b>

### Feeder Renovation Programme

13.58 The distribution system suffers from very high losses as well as poor quality of infrastructure. The present distribution losses in the state are as high as 40 percent. A massive Feeder Renovation Programme has been launched for renovation of distribution feeders to bring down T & D losses. Under this programme higher capacity existing 11/0.4 KV transformers on rural feeders are being replaced by 25 KVA with meter inbuilt transformers and the LT Lines will also be replaced by insulated AB Cables. Under FRP, length of 11 KV Lines will be increased and for individual agriculture connection separate LT Line from distribution transformer is to be drawn up to the maximum length of 270 meter.

13.59 A provision of ₹ 20 crore is proposed for the Annual Plan 2011-12 for Feeder Renovation Programme.

### Rajiv Gandhi Grameen Vidyutikaran Yojana (RGGVY)

13.60 The RGGVY scheme was launched by the Central Government in April, 2005. As per this scheme, all the villages/hamlets will be electrified by 2010-11 and provision of access to electricity to rural households including BPL families. Connections to BPL families will be given free of cost under this scheme. 90 percent of the scheme would be released as grant, whereas 10 percent as loan. REC has been designated as Nodal Agency for implementation of this program.

### Status of Sanctioned Schemes

**Table 13.13**

S. No.	Plan	No. of Schemes	Sanctioned Cost (₹ in crore)
1.	Tenth Plan	25	505.29
2.	Eleventh Plan	15	802.86
	<b>Total</b>	<b>40</b>	<b>1307.15</b>

## Status of coverage & achievement up to Nov. 2010

Table 13.14

S. NO	Particular	Coverage as Joint Survey			Ach. up to 30.11.2010			Percentage Ach.		
		X Plan	XI Plan	Total	X Plan	XI Plan	Total	X Plan	XI Plan	Total
1.	Unelectrified Villages	1645	2743	4388	1645	1581	3226	100	57.64	73.52
2.	Intensive Electrification	14714	19233	33947	14714	8773	23487	100	45.61	69.19
3.	Electrification of Dhanies	3638	3552	7190	3638	1628	5266	100	45.83	74.24
4.	BPL Houses	449237	633654	1082891	475474	386574	862048	106	61.01	79.61
5.	APL Houses	402764	181158	583922	439427	180853	620280	109	99.83	106.23

13.61 In February, 2008, REC clarified to include the un-electrified dhanies having population more than 100. As such, 22 supplementary schemes including un-electrified dhanies having population more than 100, which were not covered in earlier sanctioned RGGVY schemes, for additional cost of ₹ 822.88 crore have been submitted to REC for sanction & remaining schemes will be prepared after approval of any one supplementary scheme on same pattern.

13.62 So far 40 schemes of all the three Distribution Companies costing ₹ 1307.15 crore have been sanctioned by REC under the scheme. An amount of 775.14 crore was released up to March, 2010. During the year 2010-11, an amount of ₹14.85 crore has been released up to November, 2010. Thus total amount of 789.99 crore has been received up to November, 2010 against the sanctioned amount.

### R-APDRP

13.63 The Union Ministry of Power has launched a new scheme of R-APDRP. Under the scheme works for developing IT enable activities such as SCADA etc. and strengthening of existing network are to be taken up. As per phasing the scheme for IT enable activities under Part-A of R-APDRP has been sanctioned by the Union Ministry of Power. The work has also been started and it is expected that execution of scheme under R-APDRP Part-A shall be completed by the end of March, 2011. Under the scheme for strengthening of network towns having population more than 30,000 are to be considered and scheme of such towns are under formulation. These projects are to be completed within 3 years. An outlay of ₹ 700 crore has been proposed for the Annual Plan 2011-12 for all distribution companies.

### RAJASTHAN RENEWABLE ENERGY CORPORATION LTD.

13.64 Rajasthan Energy Development Agency and Rajasthan State Power Corporation Ltd. have been merged in the year 2002 to form a new Corporation namely Rajasthan Renewable Energy Corporation (RREC) Ltd. The Corporation is responsible for development of non-conventional energy sources in the State.



13.65 There are still a large number of un-electrified villages in the State. These villages are located in remote areas and sparsely populated due to which cost of electrification of these villages is very high. Therefore, these villages are illuminated through Solar Photo-Voltaic Domestic Lighting System (DLS).

13.66 The State Government is providing a subsidy of ₹ 4550 for installing a DLS. An expenditure of ₹ 2 crore is likely to be incurred during 2010-11 and the same amount is proposed for the Annual Plan 2011-12. It is proposed to install 6006 SPV DLS under Rural Electrification Programme during the Annual Plan 2011-12.