CHAPTER 10

ENERGY

Power or electricity is the most convenient and versatile form of energy. All form of economic activity whether it be agriculture, industry or services is relied upon the un-interrupted power supply as well as it is the most crucial source of supplying domestic energy requirement. Diesel Generating (DG) sets are the major source of energy in this Union Territory.

Prior to Independence, a small steam driven reciprocating engine direct current generator of 100 KW capacity was installed by the Britishers at Ross Island in 1932. After the departure of the Japanese occupation forces and British re-occupation in these island in 1945, the power house was shifted from Ross Island to Atlanta Point, Aberdeen, Port Blair and two 50 KW diesel engine driven DC generators were installed and commissioned. Only the bungalows and offices of the British were provided with electricity. After Independence two steam turbine generating sets of 550 KW each were established during 1951 in the Power House at Chatham Island. The boilers were operated on wood fuel and saw dusts which were the waste products of Chatham Saw Mill, and later on Mangrove wood was also used as fuel. This was the start of the alternating current power supply at Port Blair.

Due to the geographical and topographical peculiarities of these islands, including separation by sea over great distances, there is no single power grid for all the electrified islands and instead separate power houses cater independently to the power requirements of separate Islands. At present there are 53 power houses with 178 DG sets and aggregate capacity of 109.45 MW.

The Electricity Department A & N Administration is providing round the clock power supply in all Major islands to 130289 consumers. The per capita power consumption in A & N Islands is 664.46 KW.

130289, consumers have been provided electricity through about 4864 Kms. of HT and LT lines and 918 Nos by Distribution Transformers.

Power supply is available to 96% of population. Remaining 4% are in encroached forest area where in some power is being provided through solar equipments.

Islands /areas comprising around 85% of population have been covered with round the clock power supply through DG sets.

Energy Generation

The total quantity of power generation in 2012-13 was 263.35 (in MU) which increased to 310.01 MU in 2016-17. The number of consumers (in ‘000’) also increased from111.04 during2012-13 to130.29 in 2016-17.

Statement 10.1

Year wise Energy Generated and no of Electricity consumers

Year	Generation(in MU)	Consumers (in'000')
2012-13	263.35	111.04
2013-14	274.96	117.04
2014-15	294.37	119.74
2015-16	309.89	124.62
2016-17	310.01	130.29

The pattern of consumption is given in following statement.

Statement 10.2
Pattern of Electricity Consumption (MU)

Year	Domestic	Commercial	Industrial	Water Works & Street Light	Others	Total
2012-13	100.20	53.14	19.33	9.47	28.24	210.38
2014-15	115.54	58.71	13.38	9.92	31.91	229.46
2015-16	121.17	57.09	15.42	8.92	36.48	239.08
2016-17	129.90	58.02	17.97	8.64	38.35	252.88

The domestic consumption of energy increased from100.20 MU during 2012-13 to 129.90 MU during 2016-17 where as industrial consumption decreased from 19.33MU to17.97 MU during2016-17

Transmission Loss

The Year wise line losses are tabulated as below:

Statement 10.3

Year	Line Loss(%)
2012-13	17.93
2015-16	20.90
2016-17	16.23

Reduction of losses and improvement of efficiency is one of the main aims of the department. The present T&D loss is A&N is around17.93% during 2012-13 and has been reduced to a16.23% during 2016-17.

Statement 10.4
Details of Line Data

Year	**33 KV (in Km)**	**11 KV (in Km)**	**LT Line (in Km)**
2012-13	423.22	291.66	3010.20
	33 KV (in Km) 11 KV (in Km)		
2014-15	1314.16		3516.64
2015-16	1313		3423
2016-17	1390.476		3474

I. RENEWABLE ENERGY:-

(i) Establishment of 50 KWp Grid Connected Solar Power Plant at Raj Niwas under Special Area Demonstration Programme (SADP):-

50 KWp Grid Connected Solar Power Plant at Raj Niwas was installed by the Department through M/s Voltech Engineers Pvt. Ltd. and commissioned on 20.08.2016. This plant has generated 41069 units till June, 2017 and saved 10807 Litres of diesel amounting to Rs.5.56 Lakhs (@ Rs. 51.44 per litre).

(ii) Establishment of 1MWp Grid connected Rooftop SPV Plants in Govt. buildings through M/s Solar Energy Corporation of India (SECI):-

a. JERC has finalized the tariff rate as Rs.4.64/kwh for this project.

b. 1 MWp Rooftop Solar Power Plants has been installed in 15 Govt. buildings. All these plants are in operation and 104926 units generated by this Plant till June, 2017 has saved 27612 Litres of Diesel amounting to Rs.14.20 Lakhs (@ Rs. 51.44 per Litre).

(iii) Commissioning of hiring DG sets at Neil Island:-

The power supply position has been improved at Neil Island by installation and commissioning of 2x750 KVA DG sets on Hiring basis and no load shedding is exercised since then.

(iv) Commissioning of Hiring DG sets at Havelock:-

3x1 MW DG sets installed and commissioned at Havelock on hiring basis on 2.4.2017. With the commissioning of these hired DG sets the power supply position at Havelock Island has been improved and no load shedding is exercised since then.

(v) Deen Dayal Upadhyay Gram Jyoti Yojana (DDUGJY):-

REC Power Distribution Company Limited RECPDCL has been appointed as Project Management Agency (PMA) for implementation of the project. The agreement is signed between A & N Administration and RECPDCL on 2nd May 2017. REPDCL has prepared the NIT and will float NIT by 2nd week of August, 2017.

(vi) Integrated Power Development Scheme (IPDS):-

DPR of Rs.17.86 Cr. approved by the Monitoring Committee of MOP on 13.02.2017. M/s RECPDCL appointed as PMA for implementation of the project during March, 2017. The agreement signed between A&N Administration and RECPDCL on 02.05.2017. REPDCL has prepared the NIT and will float NIT by 2nd week of August, 2017.

(vii) Establishment of Solar Power Plant:-

Power Purchase Agreement (PPA) signed on 18.08.2016 with Neyvelli Lignite Corporation (NLC), NTPC and REIL for establishment of Solar Project at Attampahad.

Foundation Stone ceremony for establishment of Solar Power Plant at Manglutan (17 MWp) & Chidiyatapu (8 MWp) has been done on 7.4.2017 at Manglutan site by Hon'ble Home Minister of India Shri Rajnath Singh in presence of Hon'ble LG & Hon'ble Member of Parliament.

Land use letter has been issued on 04.05.2017 in favour of NLC at Garacharama, Pahargaon and Dollygunj areas for utilization of 20.252 Ha allotted land for establishment of 10 MW Solar Power Plant.

NTPC and NLC already floated tender for Solar Power plant, power evacuation system and BESS which will be opened in this month. Tender under preparation by REIL for Solar power plant at Neil & Havelock Islands.

National Thermal Power Corporation (NTPC), New Delhi

- ✓ NTPC will establish Solar PV Plant of 8 MWp at Chidiyatapu and 17 MWp at Manglutan including Battery Energy Storage System (BESS).
- ✓ Foundation stone for both Chidiyatapu and Manglutan Solar PV Plants laid by Hon'ble Union Home Minister Shri Raj Nath Singh on 07.04.2017.
- ✓ NTPC floated tender for Solar Power plant, power evacuation system and BESS which will be opened in August, 2017.
- ✓ The above works will be awarded in September '2017.
- ✓ The Project will be completed within 15 months from the date of award.

Neyveli Lignite Corporation (NLC), Tamil Nadu:

- ✓ NLC shall establish 2x10 MWp Solar PV Plant at Attampahad with Battery Energy Storage System (BESS).
- ✓ The land measuring an area of 21.4 Hectare at Attampahad and contiguous land of 25.25 Hect. at Dollygunj has been allotted in favour of Electricity Department for Establishment of 2x10 MWp Solar Plant by NLC.
- ✓ Foundation stone laid by Hon'ble Lt. Governor, A&N Islands on 30.05.2016.
- ✓ NTPC floated tender for Solar Power plant, power evacuation system and BESS which will be opened in August, 2017.
- ✓ The above works will be awarded in September '2017.
- ✓ The completion time of project is twelve months from the date of award of work.

Rajasthan Electronics & Instruments Limited (REIL), Rajasthan:

- ✓ REIL shall establish Solar PV Plant of 1 MWp each at Havelock and Neil Island along with Battery Energy Storage System (BESS) for cloud intermittency.
- ✓ Tender under preparation by REIL for Solar power plant at Neil & Havelock Islands.
- ✓ NIT will be floated by August,2017 and the project will be completed within one year after LOA.

Setting up of Energy Management Centre (EMC):

- ✓ As per the Minutes of Meeting held on 06.01.2017 at MOP, New Delhi the **Energy Management Centre** shall be established by PGCIL. 40% fund for Energy Management Centre shall be provided by MNRE under Solar Park and balance 60% by MOP under PSDF / any other scheme of GOI.
- ✓ As per the MOM dated 06.01.2017, the revised cost estimates has been submitted to MOP vide letter dated 21.02.2017 with the request to convey under which scheme i.e. PSDF / any other scheme of GOI, the DPR has to be submitted for release of 60% grant.
- ✓ The field visit was made in the 1st week of March '2017 by PGCIL for conducting survey of solar and other project sites.

(viii) Distribution of LED bulbs under DELP Scheme:-

- Old lighting system has been replaced by Energy Efficient LED lamps.

- Four Lakhs LED Lamps of 9 Watt distributed amongst the 01 Lakh Domestic Consumers @ 4 LED bulbs each for subsidized amount of Rs.10/- per bulb.

- LED bulbs distributed through each Site-Offices.

- An appreciable reduction (7-8%) in peak load hour has been reported from all Division.

- The Warranty of LED bulb is three years for free replacement.

(ix) 1.125 MW Tidal Wave Energy Project at Little Andaman:-

- ✓ M/s Sea-Faraday will be establishing 1.125 MW Wave Energy power generating station near Hut Bay on pilot project basis under "Research, Design, Development and Demonstration (RDD&D)" scheme of MNRE.
- ✓ JERC has approved the project with the tariff rate of Rs.15.69 per kwh as an indicative tariff vide letter dated 22nd November, 2016.
- ✓ The draft PPA submitted by M/s Sea-Faraday has been scrutinized and requested to re-submit the same for approval of Administration and JERC.
- ✓ The firm has also been advised to carryout the Detailed Bathymetry Study of the project site along with the GPS co-ordinates required for environmental clearance and also for leasing out the Seabed.

(x) Establishment of 30 MW (Expandable to 50 MW) LNG Based Power Plant at South Andaman Island:-

- A MOU has been signed with M/s Petronet LNG Ltd (PLL), on 14.04.2016 to carryout feasibility study for establishment of 30 MW (Expandable to 50 MW) LNG Based Power Plant in South Andaman to phase out Diesel Generating Sets.

- 0.82 Hect. Land at Hopetown has been allotted to Electricity Department for LNG Power Plant.

- PLL has started Geo Technical Investigation on Marine & land site, Environment Impact Assessment Studies and Detailed Bathymetry Study at the proposed site at Hopetown. The reports are expected in the 2nd week of June 2017.

- PLL has applied for environmental clearance and the matter is likely to be taken up in the first week of June, 2017.

(xi) Solar Power Policy:-

"A&N Administration Solar Power Policy" and "Guidelines for implementation of programme on off grid and decentralized / grid connected solar applications under JNNSM" notified with the approval of Hon'ble Lt. Governor vide Administration's letter No. EL/PL/1-38(a)/2016/PF dated 28.02.2017.

(xii) <u>Saansad Adarsh Gram Yojana (SAGY)</u>:-

- LED bulbs distributed at all three places under SAGY.
- 50 Nos. LED street lights installed at Kinyuka village.
- 20 Nos. Solar street lights each installed at Ramnagar and Ferrargunj and 15 Nos Solar street lights installed at Kinyuka, Car Nicobar.