

Vision 2030 *(in respect of MSPCL)*

1. Transmission System

With allocation from new generating sources such as NEEPCO Kameng HEP Stage I & II, Monarchak Gas Based Power Project, Punatsangchhu-II HEP, etc. the average cost of power is expected to increase from Rs. 2.97 / kWh to Rs. 3.46 / kWh. The Inter-state power transmission is operated at 400 kV and 132 KV voltage system constituting the existing Dimapur Imphal and Leimatak-Jiribam 132 KV lines (126 Km) of Power Grid Corporation of India Limited (PGCIL) and 400 kV Silchar Imphal line (167 Km). Another inter-state transmission line i.e., Imphal – New Kohima – New Mariani 400kV D/C Line (230 km) is taken up by Kohima Mariani Transmission Limited (KMTL), a subsidiary of Kalpataru Power Transmission Limited (KPTL) under Tariff Based Competitive Bidding (TBCB) which will ensure stability and reliability in the entire region in the power supply system, more particularly the State of Manipur, from the 400 kV D/C ring main system comprising of Misa – Balipara –Bongaigaon – Azara – Byrnihat – Silchar - Imphal- New Kohima -Mariani - Misa. The line is scheduled to be completed by 30th June, 2020

The peak demand of Manipur is 215 MW in FY 2018-19 against a projection of 303 MW by 19th Electric Power Survey of India conducted by CEA. As on 31st March, 2019 there is 1(one) nos. of 400/132 kV sub-stations at Imphal (PG) with 630 MVA capacity, 17 (seventeen) nos. of 132/33 kV sub-stations with 698 MVA capacity and 84 (eighty-four) nos. of 33/11 kV sub-stations with 596 MVA capacity in operation. Thus, the existing transmission system is adequate to meet the present peak demand of the state.

However, in view of anticipated increase in power demand as forecasted in the 19th Electric Power Survey of India conducted by CEA, it is imperative on the State to place adequate transmission infrastructure to meet the increased power demand. Towards this, MSPCL has 1 (one) 400/132 kV sub-station, 2 (two) nos. of 132/33 kV sub-stations (under NERPSIP: North Eastern Region Power System Improvement Project) and 21 (twenty one) nos. of 33/11 kV sub-stations (13 nos. under NERPSIP) under advance stages of construction which are targeted to be completed & commissioned by June, 2020 for providing grid power to all corners of the State. Once these ongoing works are completed, the total transformation capacity by 2020 would be 945 MVA at 400kV level, 934 MVA at 132kV level and 931 MVA at 33 kV level.

Increased demand has necessitated drawing of more transmission lines, but due to congestion it has become almost impossible to draw lines in the densely populated areas of the state. To avoid these ROW issues MSPCL has proposed for re-conductoring of the 132 kV Ring Main circuit of the State along with few important 33 kV sub-transmission lines supplying power to the Imphal area with High Temperature Low Sag (HTLS) conductors which will double the

transmission capacities of the lines. The proposal has been included for implementation during the award period of the 15th Finance Commission (2020 – 2025). There is also plan to establish another 3 (three) 132/33 kV sub-stations at Maram, Khoupum & Kamjong and 40 (forty) 33/11 kV sub-stations at various load centers across the state. Appropriate renovation and modernization schemes are also being taken up to equipped the system with latest equipment and technology.

As mandated under the Electricity Act, 2003, the State Load Despatch Center (SLDC) has been operationalized at Yurembam enabling real time scheduling, dispatch and management of power supply in the State which presently incorporates 11(eleven) nos. of 132/33 kV sub-stations. Currently work is in progress to lay an extensive network of optical fibre of 571 km in length (365 km under NER Wide Band Expansion and 206 km under Power System Development Fund, PSDF) to link the existing 132 kV sub-stations across the state with SLDC, Yurembam. Another 1383 km of optical fiber to link 78 nos. of 33/11 kV sub-stations to the main control center at SLDC is also being laid. This fiber optics network will act as a voice communication link as well as a medium for real time data acquisition from the sub-stations to the Main Control Center at SLDC.

With considerable capacity addition and system strengthening initiatives taken up by MSPCL, the planned transmission system seems to be adequate to meet future load demand of Manipur for the next 15 years

2. Development of Hydro power.

Use of electricity started in Manipur way back in 1930 when two micro Hydel-stations having capacities of 100kw and 56 kw were commissioned at Leimakhong. The power generated from these stations were mainly supplied to the load centres like the Palace compound and Bazar area of Imphal through a long 11 KV line. Overall management including operation & maintenance of power supply was done by the then Manipur State Hydro Electricity Board. It was then transferred to Public Works Department, Govt. of Manipur. It started functioning independently as Electricity Department, Govt. of Manipur in February, 1970. In order to meet the increasing power demand of the state one 132 KV substation at Yurembam was commissioned in December 1981 to facilitate purchase of power from Assam. Meanwhile, the Loktak Hydel Electric project of capacity 3X35 MW was also commissioned under central sector in 1984. Power generated from such projects located in the region is shared amongst the states in the region as per the allocations made by the Central Government. With effect from 1st Feb., 2014 the Electricity department, Government of Manipur has been restructured into two companies, the Manipur State Power Distribution Company Limited (MSPDCL) responsible for distribution and the Manipur State Power Corporation Limited (MSPCL) responsible for transmission & generation functions.

The state has recently seen tremendous advancement in power sector mainly in Transmission, Sub- transmission and distribution systems. Power Department has been able to provide electricity and its associated services to the satisfaction of its consumers. To meet the ever increasing demand, the State Government has also given importance to the generation sector by trying to harness the available hydro power potential of the state. The hydro potential of the state in respect of large and medium range projects has been assessed as around 2200 MW. Out of this available potential, only 105 MW Loktak Power Station has been developed so far. The balance potential remains untapped.

The following table gives the details of 8 Hydropower Projects in Manipur which are in different stages of implementation.

Sl. No	Name of Project	Agency & Status	Capacity (MW)	Remarks
1	Loktak Downstream HE-project	To be Implemented by NHPC & Manipur as Joint Venture	66	All Clearances such as TEC, Environment, Forest, Defence etc. already obtained.
2	Tipaimukh HE- Project	Implemented by NHPC, NEEPCO & Manipur	1500	Environment Clearance obtained, Forest Clearance denied by the Ministry of Environment & Forest. Options for reducing dam heights are being explored
3	Pabram HE- Project	Yet to be allocated	190	Pre-Feasibility Reports available.
4	Irang HE-Project	-Do-	60	-Do-
5	Tuivai HE-Project	-Do-	51	-Do-

6	Nungleiband HE- Project	-Do-	105	-Do-
7	KhongnemChakha HE-Project	-Do-	67	-Do-
8	MaklangTuyungbi HE project	-Do-	45	-Do-

The State is trying to develop its hydropower potential in a phased manner within the frame work of the State Hydro Power Policy namely "Manipur Hydro Power Policy-2012" which covers development of the Hydro Power Projects having capacities more than 5 MW. Projects having capacities of 5 MW and below are kept under the purview of MANIREDA.

In view of the growing concern of Climate change and other Environment issues associated with the large hydro projects, the state Government has given more thrust on the development of small hydro projects having capacities of 25 MW and below. Power Department has recently completed re- assessment of the small hydro power potential with the latest available technologies and identified 31 nos. of projects located in all the four basins of the state totalling capacity of more than 300 MW.

The details of the hydro projects which have been identified in the recent studies are shown in the table below:-

Sl. No.	Basin-wiseName of project	Capacity	Sl. No.	Basin-wise Name of project	Capacity
I.	BARAK BASIN		II.	LANIYE BASIN	
1	Nungbut	10 MW	1	ChammuTurel 1	2.39 MW
2	Barak 1	5.6 MW	2	ChammuTurel 2	1.65 MW
3	Barak 2	6 MW	3	ChammuTurel 3	5 MW
4	Barak 3	18 MW	4	Ther	7.8 MW
5	Barak 4	49.4 MW	5	Lainilok 1	2.27 MW
6	Ngehaki	5.2 MW	6	Lainilok 2	0.78 MW
7	Inhuki	3 MW	7	Laniye river	14.6 MW
8	Sulenki	7.35 MW	8	Knobari river	2.7 MW
9	Irang 1	13 MW		S/Total:	37.19 MW
10	Irang 2	3.5 MW			
11	Irang 3	46.5 MW			
12	Ijai	28.7 MW			
	S/Total:	196.25 MW			

III.	MAKLANGKHONG BASIN		IV.	MANIPUR BASIN	
1	Sana lok 1	5.32 MW	1	Imphal HEP	28.3 MW
2	Sana lok 2	1.18 MW	2	Chakpi 1	0.509 MW
3	Mamikua	5.82 MW	3	Chakpi 2	2.306 MW
4	MAKLANGKHONG	5.6 MW	4	Chakpi 3	3.115 MW
5	Tuyungbiturel	9 MW	5	Khuga	0.442 MW
6	Nampanlok	5.44 MW		S/Total:	34.672 MW
	S/Total:	32.36 MW			
Total (I+II+III+IV) :			300.472 MW		

The hydro power sector may be considered as an industry which can transform the socio-economic condition of the state. The generated energy can not only meet the state's future demand but can earn huge revenue by marketing out the surplus energy outside the state through its strong existing and upcoming transmission network. It will also help in developing the remote villages located in the far flung hilly areas of the state.