सत्यमेव जयते

भारत सरकार
Government of India
विद्युत मंत्रालय
Ministry of Power
उत्तर क्षेत्रीय विद्युत समिति
Northern Regional Power Committee

संख्या: NRPC/OPR/102/01/2019/12562-600 दिनांक: 17.10.2019

सेवा मे,

एल.जी.बी.आर. उपसमिति के सभी सदस्य
Members of LGBR Sub-Committee

विषय: Minutes of 18th meeting of LGBR sub-committee - reg.

The 18th LGBR sub-committee meeting was held on 10.10.2019 at NRPC Secretariat, New Delhi. The minutes of the meeting is enclosed herewith.

संलग्नक: यथोपरि

(**सौमित्र मज़ूमदार**)
अधीक्षण अभियंता

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23. Sh. Girish Deshpande, Director (Technical) JSW Energy Ltd., New Delhi (Fax: 48178740)
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Minutes of the 18th LGBR Sub-Committee meeting

18th LGBR Sub-Committee meeting was held on 10.10.2019 at NRPC Secretariat, New Delhi. The list of the participants of the meeting is attached in ***Annexure-I.***

2. MS, NRPC welcomed the participants to 18th LGBR Sub-Committee meeting. He briefed the committee about the significance of annual outage planning and LGBR and its importance in effective optimization of resources. It was mentioned by MS, NRPC that as per CERC (IEGC) Regulations 2010, constituents have to submit proposed outage plan to RPC Sectt. by 31st October and Draft outage plan is to be prepared by respective RPCs by 30th November, followed by finalization of Annual Outage Plan by RPC Sectt. by 31st December.

3. SE (O), NRPC briefed about the IEGC provisions (section 5.7.1 and 5.7.4), requirement for declaration of peak demand season as per section 42(3) of the Terms & Conditions of Tariff Regulation 2019, and the procedure adopted by CEA for LGBR preparation.

4. CEA methodology for assessment of Energy requirement and Peak demand is as attached in ***Annexure-II.***

5. Further, Annual outage planning methodologies as decided in 1st and 12th LGBR was briefed in the meeting. After deliberations, the following revised guidelines were agreed to:

i. Planned shutdown of generating unit, particularly that of 500 MW and above should be avoided during summer particularly during the period from 1st June to 30th August. However, in case of Rajasthan since their peak demand occurs during winter and also since considerable wind generation is available during summer, planned outage of intra-State generating units may be allowed in summer after careful consideration.

ii. Planned shutdown of thermal units particularly that of 500 MW and above should be avoided during winter particularly from 15th December to 15th January.

iii. Concurrent shutdown of more than two generating units of capacity 500 MW or more during the period from 15th Feb to 30th April and from 1st October to 30th November may be allowed.

iv. During peak months (as per point i and ii above), shut downs in combined cycle gas based stations should be planned in such a manner that operation in open cycle is avoided. For this purpose, whenever shutdown of ST unit is planned, endeavor should be made to carry out maintenance in GT units of the module as well.

v. There is not much flexibility as far as planned shutdown of GTs is concerned as the same is to be decided based on Equivalent Operating Hours (EOH). However, possibility of advancing these shutdowns should be considered to the extent possible so as to follow other guidelines.

vi. In case of Gas based station, the generating company shall inform beneficiaries, NRLDC and NRPC Secretariat at least 100 hours before EOH is about to expire.

vii. Concurrent planned shutdown of two generating unit at a generating station should be avoided.

viii. For Central Generating Stations dedicated to a particular State, prior consultation with SLDC concerned would be carried out before finalizing annual generation outage plan.

6. The proposed outage plan of the states & utilities was also discussed in detail. The tentative outage plan as per the discussion is enclosed at ***Annexure-III***.

7. The Energy requirement projection for 2020-21 as per CEA methodology was explained in the meeting (***Annexure-IV***). This energy requirement projection was compared with the data received from the states.

8. After deliberations in line with aforesaid reviewed guidelines, following decisions were taken:

a. A Committee comprising of SE(O), NRPC as chairman and members from NLDC and NRLDC shall prepare draft and final LGBR 2020-21 report within the timelines stipulated in IEGC. The report shall be comprehensive covering both generation and transmission.

b. Delhi was requested to review its energy requirement for the month of September 2020. Rajasthan was also requested to review its energy requirement data for the months June & July 2020.

c. Except Rajasthan, all states & UTs shall submit their inputs for the review of LGBR 2019-20, latest by 31.10.2019.

d. States & UTs of NR were requested to submit their month-wise minimum demand data, latest by 31.10.2019.

9. Meeting ended with the vote of thanks to the chair.

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Annexure-I

List of Participants of 18th LGBR Sub-Committee Meeting held on 10.10.2019 at NRPC Sectt.

S. No	Name	Designation & Organization	Mobile No.	Email Id	Signature
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List of Participants of 18th LGBR Sub-Committee Meeting held on 10.10.2019 at NRPC Sectt.

S. No	Name	Designation & Organization	Mobile No.	Email Id	Signature
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Annexure-II

Methodology for Assessment of Energy Requirement and Peak Demand

A. Assessment of Energy requirement

In order to estimate the annual energy requirement during 10th Plan period a weighted recursive method utilizing the monthly growth rate of energy during the last 8 years was resorted to. In this method, maximum weight age was given to the growth during the last year and comparatively lower weight age to the growth during the preceding years, as the future demand is likely to be influenced more by the recent trend of growth as compared to the preceding years.

Weight age of 40%, 30% & 15% have been given to the growth during the preceding three years and lower weight age of 3.75% each has been given to the growth rates to the years before preceding three years.

The methodology is detailed below:

1. Let E0, E1, E2, E3, E4. E5. E6. E7 represent the energy requirement for a State in April 1994, 1995, 1996, 1997, 1998, 1999, 2000 and 2001.
2. Then, monthly growth factors of energy for the State are:

$$R1 = \frac{E1}{E0},\ R2 = \frac{E2}{E1},\ R3 = \frac{E3}{E2},\ R4 = \frac{E4}{E3}.\ R5 = \frac{E5}{E4},\ R6 = \frac{E6}{E5}.\ R7 = \frac{E7}{E6}$$

3. Then, growth factor for energy for April 2002 has been computed by giving different weight ages to the growth factors during the past 7 years as described above.

$$R8 = (0.4 \times R7) + (0.3 \times R6) + (0.15 \times R5) + [(0.15/4) \times (R1 + R2 + R3 + R4)]$$
$$= (0.4 \times R7) + (0.3 \times R6) + (0.15 \times R5) + (0.0375 \times R4) + (0.0375 \times R3) + (0.0375 \times R2) + (0.0375 \times R1)$$

4. Then, the energy requirement for April 2002
   $E8 = R8 \times E7$
5. Energy requirement for April 2003 would suitably be calculated using data for April 1995 through April 2002.
6. Energy requirement for different months of a year is calculated on the above lines utilizing the energy requirement of corresponding months.

B. Assessment of Load Factors & Peak Demand

The load factor is influenced by nature of load mix i.e. component of industrial & commercial load, regulation of power supply to agriculture sector and surplus & shortage condition of power. Load factors shall be high if the component of industrial & commercial load is high. If the power supply to agriculture sector is regulated i.e. limited to few hours in a day, the load factor shall be high and in case the power supply to agriculture sector is not regulated the load factor shall be low. Under power shortage conditions the load factor increases.

The effect of above factors is reflected in the actual monthly load factors of the states and it is felt that the load factor for the next year shall be influenced maximum by the load factors of previous three years. In order to take into account the growth in load factor for each year over the past year, the monthly average growth in monthly load factor over a period of past 8 years was worked out for each State for different months by projecting the load factor for a month in the year 2002-03 by best fitting straight line curve of actual load factors of corresponding months of previous 7 years and taking the estimated average growth in LF as the difference between projected load factor for 2002-03 and actual load factor of 1st year. The same was added to the monthly load factors of the corresponding months for previous three years and average taken. The methodology is given below:

1. Let LF01, LF 00, LF99, LF 98, LF 97, LF 96, LF 95 and LF 94, be the actual load factor in respect of a State for April 2001, 2000, 1999, 1998, 1997, 1996, 1995, 1994 respectively.

2. LF02p = Projected load factor for April 2002 from best fitting straight line from LF 94 to LF01

3. GF = Estimated average growth in load factor from 1994 to 2002
   i. =(LF02p – LF94)/8

4. Estimated Load factor for April 2002,
   1. LF02 = [(LF01+ GF)+ (LF00+ 2GF)+ (LF99 + 3 GF)]/ 3

Further taking into consideration the factors described above, the load factors worked out in some cases were more than 0.85 and the same were restricted to 0.85 to avoid underestimation of peak demand.

Note : While working out energy requirement / peak demand of a particular State / UT by a method other than stated above, it should be ensured that the figure so arrived at must never be less than that of last year for the corresponding month. If it is so, it must be modified accordingly.

Annexure-III

केंद्र / Station	Unit	केंद्र क्षमता Station Capacity (MW)	वार्षिक आऊटेज योजना के अनुसार अनुरक्षण शेड्यूल Maintenance Schedule as per Annual Outage Planning			अभ्युक्तियाँ Remarks
			से / From	तक / To	दिनों की संख्या No of Days	
NTPC						
Singrauli STPS	1	200	15-Aug-20	28-Sep-20	45	Capital O/H+DDCMIS
	2	200	25-Apr-20	29-May-20	35	Boiler+DDCMIS
	3	200			0	
	4	200			0	
	5	200			0	
	6	500			0	
	7	500	25-Sep-20	20-Oct-20	26	
Rihand-I	1	500	1-Apr-20	20-May-20	50	Overhauling of Boiler & its auxiliaries,· RLA of Boiler, Replacement of Eco Coils, · R&M of Mill APH, · Overhauling of HP,IP,LP Turbine, · 3.3KV Unit Board Replacement , Generator primary water skid replacement, · Other defects attending
	2	500			0	
Rihand-II	3	500	20-Sep-20	9-Oct-20	20	Overhauling of Boiler & its auxiliaries , Furnace modification for NOx control , FGD Dampers installation,
	4	500			0	
Rihand-III	5	500	15-Feb-21	20-Mar-21	34	Overhauling of Boiler & its auxiliaries., Furnace modification for NOx control, FGD Dampers installation, Short Shutdown (05 Days) to be taken for Boiler License renewal
	6	500	15-Apr-20	15-May-20	31	Overhauling of Boiler & its auxiliaries., · Overhauling of LP turbine NFT & MPI of LP Turbine Free Standing Blades, · DPT of LP Casing, · Turbine CVs/SVs servicing, · COLTCS Commissioning, · Installation of thermocouples at Eco-Hopper (C&I), · Furnace modification for NOx control , · Pressure grouting of bearing foundations, · FGD Dampers installation, · Other defects attending
Unchahar -I	1	210				
	2	210	10-Apr-20	15-May-20	36	Overhauling
Unchahar -II	3	210				
	4	210	30-Nov-20	3-Jan-21	35	Overhauling
Unchahar -III	5	210				
Unchahar IV	6	500	1-Oct-20	30-Oct-20	30	Overhauling
Dadri (NCTPS)	1	210	1-Apr-20	5-May-20	35	BLR+DSI
	2	210	26-Sep-20	15-Oct-20	20	Capital OH (C) + FGD/Nox
	3	210	23-Dec-20	26-Jan-21	35	Boiler O/H (A)
	4	210				
	5	490	25-Feb-21	21-Mar-21	25	Boiler O/H +LP+Gen (B)
	6	490				
Anta GPS	GT 1	88.7	2-Apr-20	2-May-20	30	16000/C Major Inspection/ WHRB License Renewal
	GT 1	88.7	15-Oct-20	19-Oct-20	4	4000/A Minor Inspection
	GT 2	88.7	15-May-20	19-May-20	4	4000/A Minor Inspection
			1-Nov-20	7-Nov-20	6	8000/B Minor Inspection
	GT 3	88.7	20-Apr-20	24-Apr-20	4	WHRB License Renewal
			3-Sep-20	9-Sep-20	6	12000/B Minor Inspection
			22-Feb-21	24-Mar-21	30	16000/C Major Inspection
	ST G	153.2	2-Apr-20	7-May-20	35	50000 VOH Major Inspection+ LP Blade Carrier repaire
Auriya GPS	GT 1	111.19	28-Apr-20	28-Apr-20	1	Boiler licence Renewal
			31-Aug-20	14-Sep-20	15	Turbine inspection
			1-Nov-20	2-Nov-20	2	Filter Replacement
	GT 2	111.19	15-Jun-20	15-Jun-20	1	Boiler licence Renewal
			10-Nov-20	11-Nov-20	2	Filter Replacement
	GT 3	111.19	10-Jul-20	16-Jul-20	7	Combustor Inspection
			25-Nov-20	25-Nov-20	1	Boiler licence Renewal
	GT 4	111.19	10-Feb-21	10-Feb-21	1	Boiler licence Renewal
	ST 1	109.3			0	

Annexure-III

केंद्र / Station	Unit	केंद्र क्षमता Station Capacity (MW)	वार्षिक आऊटेज योजना के अनुसार अनुरक्षण शेड्यूल Maintenance Schedule as per Annual Outage Planning			अभ्युक्तियाँ Remarks
			से / From	तक / To	दिनों की संख्या No of Days	
	ST 2	109.3			0	
Dadri GPS	GT 1	130.19	24-May-20	28-May-20	5	4000 EOH Inspection
			21-Oct-20	27-Oct-20	7	8000 EOH Inspection
			19-Dec-20	20-Dec-20	2	Air Intake Filter Replacement
			6-Jan-21	7-Jan-21	2	Boiler Licence Renewal/ Compressor Washing
	GT 2	130.19	11-Apr-20	15-Apr-20	5	4000 EOH Inspection
			24-Jun-20	25-Jun-20	2	Boiler Licence Renewal
			24-Sep-20	30-Sep-20	7	8000 EOH Inspection
			1-Dec-20	2-Dec-20	2	Air Intake Filter Replacement
			2-Jan-21	2-Jan-21	1	Compressor Washing
	GT 3	130.19	1-Jun-20	5-Jun-20	5	4000 EOH Inspection
			18-Nov-20	24-Nov-20	7	8000 EOH Inspection
			10-Dec-20	11-Dec-20	2	Air Intake Filter Replacement
			7-Jan-21	8-Jan-21	2	Boiler Licence Renewal/ Compressor Washing
	GT 4	130.19	3-Apr-20	9-Apr-20	5	8000 EOH Inspection
			1-Sep-20	10-Sep-20	7	Flame Tube Inspection
			12-Nov-20	13-Nov-20	2	Air Intake Filter Replacement
			22-Feb-21	26-Feb-21	5	4000 EOH Inspection/Compressor Washing
			29-Mar-21	30-Mar-21	2	Boiler Licence Renewal
	ST 1	154.51	21-Oct-20	30-Oct-20	10	Annual Shutdown
	ST 2	154.51	1-Sep-20	10-Sep-20	10	Annual Shutdown
Faridabad GPS (CSGS Dedicated to Haryana)	GT 1	137.758	1-Oct-20	5-Oct-20	5	4000 EOH & Bioler license
	GT 2	137.758	1-Oct-20	5-Oct-20	5	4000 EOH & Bioler license
	STG	156.08	1-Dec-20	25-Dec-20	25	STG Ovehauling + GRP replacement
Koldam HEP (NTPC)	1	200	8-Dec-20	12-Dec-20	5	Annual Inspection
	2	200	14-Dec-20	18-Dec-20	5	Annual Inspection
	3	200	2-Feb-21	6-Feb-21	5	Annual Inspection
	4	200	8-Feb-21	12-Feb-21	5	Annual Inspection
IGSTPP, Jhajjar	1	500	21-Jan-21	27-Jan-21	7	BLR
	3	500	22-Sep-20	5-Nov-20		
	2	500	1-Apr-20	7-Apr-20	7	BLR
	3	500	22-Sep-20	5-Nov-20	45	Boiler Annual Overhaul + LP Turbine replacement
NPCIL						
NAPS	1	220	NIL			
	2	220	1-Apr-20	30-Apr-20	30	Biennial Shut Down
RAPS - A(CSGS Dedicated to Raj)	2	200				
RAPS - B	3	220	NIL			
	4	220	NIL			
RAPS - C	5	220	NIL			
	6	220	NIL			
NHPC						
BAIRA SIUL	1	60	Not required			R&M
	2	60	1-Dec-20	30-Dec-20	30	AM
	3	60	5-Jan-21	4-Feb-21	31	AM
SALAL	1	115	14-Nov-20	3-Dec-20	20	AM
	2	115	4-Dec-20	23-Dec-20	20	AM
	3	115	24-Dec-20	12-Jan-21	20	AM
	4	115	13-Jan-21	1-Feb-21	20	AM
	5	115	2-Feb-21	21-Feb-21	20	AM
	6	115	22-Feb-21	13-Mar-21	20	AM
TANAKPUR	1	31.4	20-Apr-21	24-May-21	35	AM
	2	31.4	9-Mar-21	12-Apr-21	35	AM
	3	31.4	15-Nov-20	3-Mar-21	109	CM
	Proposed Complete Shutdown for construction of Indo-Nepal Link Canal during Feb-21 & Mar-21.					
CHAMERA-I	1	180	7-Dec-20	27-Dec-20	21	AM
	2	180	29-Dec-20	18-Jan-21	21	AM
	3	180	20-Jan-21	9-Feb-21	21	AM
URI	1	120	31-Dec-20	19-Jan-21	20	AM
	2	120	20-Jan-21	8-Feb-21	20	AM
	3	120	1-Nov-20	30-Nov-20	30	CM
	4	120	1-Dec-20	30-Dec-20	30	CM
CHAMERA-II	1	100	11-Nov-20	25-Nov-20	15	AM
	2	100	13-Dec-20	27-Dec-20	15	AM
	3	100	27-Nov-20	11-Dec-20	15	AM
DHAULIGANGA	1	70	15-Nov-20	6-Dec-20	22	AM
	2	70	9-Dec-20	30-Dec-20	22	AM
	3	70	3-Jan-21	24-Jan-21	22	AM
	4	70	28-Jan-21	18-Feb-21	22	AM
DULHASTI	1	130	1-Dec-20	20-Dec-20	20	AM
	2	130	23-Dec-20	11-Jan-21	20	AM

Annexure-III

केंद्र / Station	Unit	केंद्र क्षमता Station Capacity (MW)	वार्षिक आऊटेज योजना के अनुसार अनुरक्षण शेड्यूल Maintenance Schedule as per Annual Outage Planning			अभ्युक्तियाँ Remarks
			से / From	तक / To	दिनों की संख्या No of Days	
	3	130	14-Jan-21	2-Feb-21	20	AM
SEWA-II	1	40	14-Nov-20	28-Nov-20	15	AM
	2	40	1-Dec-20	15-Dec-20	15	AM
	3	40	18-Dec-20	1-Jan-21	15	AM
CHAMERA-III	1	77	2-Jan-21	16-Jan-21	15	AM
	2	77	20-Jan-21	3-Feb-21	15	AM
	3	77	7-Feb-21	28-Feb-21	22	CM
	Complete shutdown for repair works of GIS for 08 days, tentatively in April					
URI II	1	60	1-Nov-20	20-Nov-20	20	AM
	2	60	23-Nov-20	12-Dec-20	20	AM
	3	60	15-Dec-20	3-Jan-21	20	AM
	4	60	6-Jan-21	25-Jan-21	20	AM
PARBATI III	1	130	15-Nov-20	5-Dec-20	20	AM
	2	130	6-Dec-20	26-Dec-20	20	AM
	3	130	27-Dec-20	17-Jan-21	21	AM
	4	130	18-Jan-21	8-Feb-21	22	AM
NIMMO BAZGO	1	15	18-Nov-20	10-Dec-20	23	AM
	2	15	14-Dec-20	5-Jan-21	23	AM
	3	15	9-Jan-21	31-Jan-21	23	AM
CHUTAK	1	11	24-Dec-20	22-Jan-21	30	AM
	2	11	24-Jan-21	22-Feb-21	30	AM
	3	11	25-Oct-20	23-Nov-20	30	AM
	4	11	24-Nov-20	23-Dec-20	30	AM
K'GANGA	1	110	14-Dec-20	28-Dec-20	15	AM
	2	110	30-Dec-20	13-Jan-21	15	AM
	3	110	15-Jan-21	29-Jan-21	15	AM
BBMB						
Bhakra	2	126	13-Oct-20	3-Nov-20	22	Annual Maintenance
	3	126	20-Apr-20	11-May-20	22	Capital Maintenance of Head gates
	3	126	4-Feb-21	23-Feb-21	20	Annual Maintenance
	4	126	24-Dec-20	12-Jan-21	20	Annual Maintenance
	5	126	1-Apr-20	31-May-20	61	Cavitation Repair
	5	126	16-Mar-21	4-Apr-21	20	Annual Maintenance
	6	157	23-Sep-20	12-Oct-20	20	Annual Maintenance
	7	157	1-Jan-20	31-May-20	152	Capital Maintenance
	8	157	13-Jan-21	3-Feb-21	22	Annual Maintenance
	8	157	16-Mar-21	6-Apr-21	22	Capital Maintenance of Head gates
	9	157	4-Dec-20	23-Dec-20	20	Annual Maintenance
	10	157	1-Nov-20	31-Mar-21	151	Capital Maintenance
	10	157	1-Nov-20	31-Mar-21	151	Capital Maintenance
Ganguwal	1	27.99	15-Apr-20	18-Apr-20	4	Quartely Mtc/
			3-Aug-20	8-Aug-20	6	Half yearly Maintenance
			15-Jan-21	24-Jan-21	10	Annual Maintenance
	2	24.20	7-Apr-20	10-Apr-20	4	Quartely Mtc/
			14-Sep-20	19-Sep-20	6	Half yearly Maintenance
			16-Dec-20	29-Dec-20	14	Annual Maintenance
	3	24.20	20-Apr-20	29-Apr-20	10	Annual Maintenance
			21-Oct-20	27-Oct-20	7	Half yearly Maintenance
			6-Jan-21	9-Jan-21	4	Quartely Mtc/
Kotla	1	28.94	4-May-20	12-May-20	9	Annual Maintenance
			5-Oct-20	11-Oct-20	7	Half yearly Maintenance
			11-Jan-21	14-Jan-21	4	Quartely Mtc/
	2	24.20	8-Jun-20	11-Jun-20	4	Quartely Mtc/
			1-Sep-20	7-Sep-20	7	Half yearly Maintenance
			16-Mar-21	25-Mar-21	10	Annual Maintenance
	3	24.20	1-Apr-20	4-Apr-20	4	Quartely Mtc/
			21-Sep-20	27-Sep-20	7	Half yearly Maintenance
			7-Dec-20	16-Dec-20	10	Annual Maintenance
Dehar	1	165	20-Nov-20	9-Dec-20	20	Annual Maintenance
	2	165	10-Mar-20	17-Jun-20	100	Capital Maintenance
	3	165	18-Jan-21	6-Feb-21	20	Annual Maintenance
	4	165	1-Oct-20	8-Jan-21	100	Capital Maintenance
	5	165	14-Jan-21	22-Apr-21	99	Capital Maintenance
	6	165	10-Oct-20	29-Oct-20	20	Annual Maintenance
Pong	1	66	15-Feb-20	15-Mar-20	30	Annual mtc/+ Replacement of Generator Protection of Unit/
	1	66	3-Oct-20	9-Oct-20	7	Half yearly Maintenance
	2	66	16-Mar-20	15-Apr-20	31	Annual mtc/+ Replacement of Generator Protection of Unit/
	2	66	10-Oct-20	16-Oct-20	7	Half yearly Maintenance
	3	66	16-Apr-20	15-May-20	30	Annual mtc/+ Replacement of Generator Protection of Unit/
	3	66	17-Oct-20	23-Oct-20	7	Half yearly Maintenance
	4	66	16-May-20	5-Jun-20	21	Annual Maintenance
	4	66	24-Oct-20	30-Oct-20	7	Half yearly Maintenance
	4	66	15-Feb-21	15-Mar-21	30	Annual mtc/+ Replacement of Generator Protection of Unit/
	5	66	6-Jun-20	25-Jun-20	20	Annual Maintenance
	5	66	1-Nov-20	7-Nov-20	7	Half yearly Maintenance
	5	66	16-Apr-21	15-May-21	30	Annual mtc/+ Replacement of Generator Protection of Unit/
	6	66	25-Jun-20	15-Jul-20	21	Annual Maintenance
	6	66	3-Oct-20	9-Oct-20	7	Half yearly Maintenance
	6	66	16-Mar-21	15-Apr-21	31	Annual mtc/+ Replacement of Generator Protection of Unit/
SJVNL						
Rampur(6x68/67)	1	68.67	1-Dec-20	10-Dec-20	10	Annual Planned Maintenance
	2	68.67	11-Dec-20	20-Dec-20	10	
	3	68.67	21-Dec-20	31-Dec-20	11	
	4	68.67	1-Jan-21	10-Jan-21	10	

Annexure-III

केंद्र / Station	Unit	केंद्र क्षमता Station Capacity (MW)	वार्षिक आऊटेज योजना के अनुसार अनुरक्षण शेड्यूल Maintenance Schedule as per Annual Outage Planning			अभ्युक्तियाँ Remarks
			से / From	तक / To	दिनों की संख्या No of Days	
	5	68.67	11-Jan-21	20-Jan-21	10	
	6	68.67	21-Jan-21	31-Jan-21	11	
Nathpa-Jhakri(6x250)	1	250	1-Dec-20	10-Dec-20	10	Annual Planned Maintenance
	2	250	11-Dec-20	20-Dec-20	10	
	3	250	21-Dec-20	31-Dec-20	11	
	4	250	1-Jan-21	10-Jan-21	10	
	5	250	11-Jan-21	20-Jan-21	10	
	6	250	21-Jan-21	31-Jan-21	11	
THDC						
Tehri HPP	1	250	1-Apr-20	30-Apr-20	30	Annual Maintenance
	2	250	1-Mar-21	30-Mar-21	30	Annual Maintenance
	3	250	1-May-20	15-Jun-20	46	Major Maintenance
	4	250	1-Jun-20	30-Jun-20	30	Annual Maintenance
Koteshwar HEP	1	100	1-May-20	5-Jun-20	36	Annual Maintenance
	2	100	1-Oct-20	5-Nov-20	36	Annual Maintenance
	3	100	16-Nov-20	20-Dec-20	35	Annual Maintenance
	4	100	17-Mar-21	21-Apr-21	36	Annual Maintenance
DELHI						
GTPS/IPGCL-(6x30+3x34)	GT# 1	30				
	GT# 2	30				
	GT# 3	30				
	GT# 4	30				
	GT# 5	30				
	GT# 6	30				
	STG # I	30				HRSG# 1: 02/06/2020 HRSG# 2: 02/06/2020
	STG # II	30				HRSG# 3: 12/05/2020 HRSG# 4: 12/05/2020
	STG # III	30				HRSG# 5: 15/10/2020 HRSG# 6: 15/07/2020
PRAGATI - I/PPCL	GT# 1	104	1-Sep-20	10-Sep-20	10	Combustion Inspection
			Dec'2020		2	Turbine Inlet Air filter replacement
	GT# 2	104	Dec'2020		2	Turbine Inlet Air filter replacement
		104	1-Mar-21	20-Mar-21	20	Hot Gas Path Inspection
	STG # I	122			4	HSRG#1: March'21
					4	HSRG#2: Oct/-Nov'20
PRAGATI - III(BAWANA)/ PPCL	GT# 1	216	1-May-20	2-May-20	2	Transformer Testing
			1-Sep-20	3-Sep-20	3	Boroscopic Inspection (BI)
	GT# 2	216	16-Mar-20	5-Apr-20	21	Hot Gas Path Inspection
			30-Nov-20	1-Dec-20	2	Transformer Testing
			1-Feb-21	3-Feb-21	3	Boroscopic Inspection (BI)
	STG # I	253/6	1-Feb-21	10-Feb-21	10	Condenser Cleaning (HRSG#1: 02.11.2020)
			5-Feb-21	6-Feb-21	2	Transformer Testing (HRSG#2: 02.11.2020)
	GT# 3	216	4-Sep-20	6-Sep-20	3	Boroscopic Inspection (BI)
			9-Oct-20	10-Oct-20	2	Transformer Testing
	GT# 4	216	7-Sep-20	9-Sep-20	3	Boroscopic Inspection (BI)
			11-Oct-20	12-Oct-20	2	Transformer Testing
			10-Jan-21	30-Jan-21	21	Hot Gas Path Inspection & Generator Inspection
	STG # II	253/6	13-Oct-20	14-Oct-20	2	Transformer Testing (HRSG#3: 03.03.2021)
			21-Mar-21	30-Mar-21	10	Condenser Cleaning (HRSG#4: 03.03.2021)
HARYANA						
Panipat Thermal Power Station, Panipat	5	210				Unit 5 is to be Phased out w.e.f. 30.10.2019
	6	210	During March, 21		7	For installation of DSI for meeting new Environment norms notified by MoEF & CC
	7	250	During January, 21		7	For installation of DSI for meeting new Environment norms notified by MoEF & CC
	8	250	During November, 20		30	Mini O/H & Installation of DSI for meeting New Environment Norms notified by MoEF & CC
Deen Bandhu Chhottu Ram Thermal Power Station, Yamunanagar	1	300	During November, 20		30	Mini Overhauling
	2	300				
Jhajjar Power Limited(JPL)	1	660				
	2	660	1-Mar-20	15-Apr-20	50	Capital overhaul
Adani Power Mundra ltd (APMuL)	7	660				
	8	660				
	9	660	15-Nov-20	05-Dec-20	20	Annual Overhaul
	Total					
MGTPS CLP Jhajjar	1	660				
RAJASTHAN						
SSTPS, Suratgarh	1	250	25-Jul-20	13-Aug-20	20	Annual Boiler Overhaul (Date of BLR - 04.03.21)
	2	250	NR			- (Date of BLR - 13.08.20)
	3	250	01-Jul-20	20-Jul-20	20	Annual Boiler Overhaul (Date of BLR - 05.02.21)
	4	250	NR			- (Date of BLR - 10.01.21)
	5	250	NR			- (Date of BLR - 19.06.20)
	6	250	NR			- (Date of BLR - 05.02.21)
SSCTPP, Suratgarh	7	660	NR			-
	8	660				-
KSTPS, Kota	1	110	21-Aug-20	04-Sep-20	15	Annual Boiler Overhaul (Date of BLR - 02.02.20)
	2	110	10-Sep-20	24-Sep-20	15	Annual Boiler Overhaul (Date of BLR - 10.01.20)
	3	210	16-Apr-20	11-Jun-20	57	Annual Capital Overhaul (Date of BLR - 10.08.19 (Fees deposited & applied for 06 Months Extension))
	4	210	26-Sep-20	10-Oct-20	15	Annual Boiler Overhaul (Date of BLR - 17.02.20)
	5	210	01-Jul-20	16-Aug-20	47	Annual Capital Overhaul (Date of BLR - 18.10.19)
	6	195	15-Jun-20	29-Jun-20	15	Annual Boiler Overhaul (Date of BLR - 26.10.19)
	7	195	12-Oct-20	26-Oct-20	15	Annual Boiler Overhaul (Date of BLR - 13.03.20)
KaSTPP, Kalisindh	1	600	10-Oct-20	30-Oct-20	21	Annual Boiler Overhaul (Date of BLR - 21.12.19)
	2	600	10-Aug-20	30-Aug-20	21	Annual Boiler Overhaul (Date of BLR - 26.05.20)
CTPP, Chhabra	1	250	20-Mar-20	18-Apr-20	30	Annual Capital Overhaul (Date of BLR - 06.01.21)
	2	250	01-Jul-20	20-Jul-20	20	Annual Boiler Overhaul (Date of BLR - 05.06.20)
	3	250	01-Jun-20	20-Jun-20	20	Annual Boiler Overhaul (Date of BLR - 01.07.20)
	4	250	01-May-20	20-May-20	20	Annual Boiler Overhaul (Date of BLR - 08.05.20)
CSCTPP, Chhabra	5	660	01-Sep-20	30-Sep-20	30	Annual Boiler Overhaul (Date of BLR - 26.06.20)

Annexure-III

केंद्र / Station	Unit	केंद्र क्षमता Station Capacity (MW)	वार्षिक आऊटेज योजना के अनुसार अनुरक्षण शेड्यूल Maintenance Schedule as per Annual Outage Planning			अभ्युक्तियाँ Remarks
			से / From	तक / To	दिनों की संख्या No of Days	
[illegible]	6	660	15-Apr-20	14-May-20	30	Annual Boiler Overhaul (Date of BLR - 26.03.20)
DCCPP, Dholpur	GT-1	110	NR			-
	GT-2	110				-
	STG	110				(Date of BLR - 18.07.20/05.08.20)
RGTPP, Ramgarh	GT-1	35.5	02-Aug-20	31-Aug-20	30	Major Inspection
	GT-2	37.5	NR			-
	STG-I	37.5	02-Aug-20	22-Aug-20	21	Turbine Intermediate Overhauling (Date of BLR - 10.03.21)
	GT-3	110	NR			-
	STG-II	50	NR			- (Date of BLR - 11.03.21)
Mahi Hydel, Banswara	PH-1	25	01-Jun-20	30-Jun-20	30	Annual Maintenance
		25	01-May-20	30-May-20	30	Annual Maintenance
	PH-2	45	01-Jun-20	30-Jun-20	30	Annual Maintenance
		45	01-May-20	30-May-20	30	Annual Maintenance
Adani Power Rajasthan Ltd. Kawai	1	660				
	2	660	01-Aug-20	30-Aug-20	30	COH
UTTAR PRADESH						
Anpara	1	210				
	2	210				
	3	210	16-Mar-20	14-Apr-20	30	Annual Maintenance
	4	500	17-Nov-20	31-Dec-20	45	Capital Overhaul
	5	500				
	6	500	01-Feb-21	17-Mar-21	45	Capital Overhaul+FGD Installation + De Nox Installation
	7	500	15-Feb-21	31-Mar-21	45	Capital Overhaul+FGD Installation + De Nox Installation
Obra	9	200				
	10	200	18-Dec-20	31-Jan-21	45	Capital Overhaul
	11	200				
	12	200				
	13	200				
H'Ganj	7	110				
	8	250	01-Jan-21	18-Jan-21	18	Mini Overhaul
	9	250				
Parichha	1	110	Unit# 1 To be Proposed for deletion.			
	2	110				
	3	210				
	4	210	01-Dec-20	30-Dec-20	30	Annual Maintenance
	5	250				
	6	250	20-Jan-21	18-Feb-21	30	Annual Maintenance
IPP's						
Anpara - C Lanco	1	600				
	2	600	01-Oct-20	04-Nov-20	35	Capital Overhaul
RPSCL Rosa	1	300				
	2	300	05-Feb-21	21-Mar-21	45	Turbine HP + LP + Geneator Capital OH
	3	300				
	4	300	22-Nov-20	11-Dec-20	20	Boiler OH
LPGCL Lalitpur	1	660				
	2	660	04-Feb-21	28-Feb-21	25	Annual Overhaul
	3	660				
PPGCL Bara	1	660	01-Apr-20	10-Apr-20	10	Boiler License Renewal
	2	660	16-Nov-20	05-Dec-20	20	Annual Maintenance
	3	660	27-Jan-21	15-Feb-21	20	Annual Maintenance
NTPC Tanda	1	110				
	2	110				
	3	110	15-Apr-20	04-May-20	20	Annual Maintenance
	4	110	25-Sep-20	31-Oct-20	37	Capital Overhaul
UTTARAKHAND						
Chibro Power Station	1	60	1-Nov-20	30-Nov-20	30	Annual Maintenance
	2	60	1-Dec-20	30-Dec-20	30	Annual Maintenance
	3	60	1-Jan-21	30-01-2021	30	Annual Maintenance
	4	60	01-02-2021	02-03-2021	30	Annual Maintenance
Khodri power station	1	30	1-Nov-20	25-Nov-20	25	Annual maintenance
	2	30	1-Dec-20	25-Dec-20	25	Annual Maintenance
	3	30	1-Jan-21	25-Jan-21	25	Annual Maintenance
	4	30	1-Feb-21	25-Feb-21	25	Annual Maintenance
Dhakrani Power House	1	11.25	15-Nov-20	19-Dec-20	35	Annual Maintenance
	2	11.25	25-Dec-20	28-Jan-21	35	Annual Maintenance
	3	11.25	1-Feb-21	7-Mar-21	35	Annual Maintenance
Dhalipur Power Station	1	17	1-Apr-20	8-Jul-20	99	Under RMU works
	2	17				
	3	17	9-Dec-20	31-Mar-21	113	Under RMU works
Kulhal Power House	1	10	16-Nov-20	30-Dec-20	45	Annual Maintenance
	2	10	4-Jan-21	17-Feb-21	45	Annual Maintenance
	3	10	21-Feb-21	2-Apr-21	41	Annual Maintenance
Tiloth Power House (MB-1)	1	30	21-Jul-20	20-Aug-20	31	Planned Maintenance during Monsoon Closure
			15-Jan-21	4-Feb-21	21	Planned Maintenence during lean discharge period
	2	30	21-Jul-20	20-Aug-20	31	Planned Maintenance during Monsoon Closure
			12-Dec-20	1-Apr-21	111	Comprehensive RMU
	3	30	1-Apr-20	11-Dec-20	255	Comprehensive RMU
MB II, Dharasu Power House.	1	76	1-Nov-20	30-Dec-20	60	Annual Maintenance
	2	76	6-Jan-21	5-Mar-21	59	Annual Maintenance
	3	76	15-Oct-20	13-Dec-20	60	Annual Maintenance
	4	76	20-Dec-20	17-Feb-21	60	Annual Maintenance
Chilla Power House	1	36	15-11-2020	20-12-2020	36	Annual Maintenance
	2	36	23-12-2020	27-01-2021	36	Annual Maintenance
	3	36				
	4	36	30-01-2021	05-03-2021	35	Annual Maintenance
Ramganga Power House	1	66	1-Jul-20	28-Feb-21	243	Capital Maintenance
	2	66	1-Aug-20	31-Aug-20	31	Annual Maintenance
	3	66				
Sharda Power House	1	13.8	22-Feb-21	28-Mar-21	35	Annual Maintenance
	2	13.8	10-Jan-21	13-Feb-21	35	Annual Maintenance
	3	13.8	22-Nov-20	31-Dec-20	40	Annual Maintenance

Annexure-III

केंद्र / Station	Unit	केंद्र क्षमता Station Capacity (MW)	वार्षिक आऊटेज योजना के अनुसार अनुरक्षण शेड्यूल Maintenance Schedule as per Annual Outage Planning			अभ्युक्तियाँ Remarks
			से / From	तक / To	दिनों की संख्या No of Days	
Jaypee Vishnuprayag Hydro Electric Plant (4X100MW)	1	100	2-Nov-20	8-Nov-20	7	For repair / replacement of runners and other maintenance works.
	2	100	7-Dec-20	13-Dec-20	7	
	3	100	4-Jan-21	10-Jan-21	7	
	4	100	1-Feb-21	7-Feb-21	7	
PUNJAB						
GGSSTP Ropar	3	210				
	4	210				
	5	210	15-11-2020	29-12-2020	45	TG Beraing Inspection and Fans Maintenance will be done. (Date and times is tentative)
	6	210				
GHTP LM	1	210	17.11.2020	31.12.2020	45	Capital HPT/IPT/LPT/ Gen
	2	210				NIL
	3	250	01.03.2021	20.03.2021	20	Annual mtc.
	4	250	15.01.2021	03.02.2021	20	Annual mtc.
NPL	1	700	01.04.2020	10.04.2020	10	
	2	700	01.02.2021	30.03.2021	60	
TSPL	1	660	Feb	March	30	Annual overhauling
	2	660	10-10-2020	10-11-2020	30	Annual overhauling
	3	660				
GVK	1	270	-	-	-	-
	2	270	01.04.2020	20.04.2020	20	Annual Overhaul
HIMACHAL PRADESH						
Larji (3X42MW)	Unit -I	42 MW	15-02-2021	25-03-2021	39	Annual Maintenance of M/Cs and associted Equipments
	Unit -II	42 MW	26-12-2020	08-02-2021	45	
	Unit -III	42 MW	01-11-2020	10-12-2020	40	
Bhaba (3X40MW)	Unit No.I	40 MW	05-01-2021	15-02-2021	42	Annual Maintenance of M/Cs and associted Equipments
	Unit No.II	40 MW	26-12-2020	08-02-2021	45	
	Unit No.III	40 MW	05-11-2020	31-12-2020	57	
Bassi (4X15 MW)	Unit No.I	16.5 MW	15-10-2020	30-11-2020	47	To carry out the annual maintenance fo machine during lean season
	Unit No.II	16.5 MW	15-11-2020	27-12-2020	43	
	Unit No.III	16.5 MW	23-01-2021	05-03-2021	42	
	Unit No.IV	16.5 MW	02-01-2021	Feb-21	40	
Uhl-III (3X33.3 MW)	Unit No.I	33.3 MW	15-10-2020	30-11-2020	47	To carry out the annual maintenance fo machine during lean season
	Unit No.II	33.3 MW	15-11-2020	27-12-2020	43	
	Unit No.III	33.3 MW	23-01-2021	05-03-2021	42	
Giri (2X30 MW)	Unit -I	30 MW	15-04-2020	15-05-2020	31	Annual Maintenance of M/Cs and associted Equipments
	Unit -II	30 MW	15-12-2020	15-01-2021	32	
Ghanvi (2X11.25 MW)	Unit No.I	11.25 MW	01-12-2020	31-01-2021	62	Annual Maintenance of M/Cs and associted Equipments
	Unit No.II	11.25 MW	01-02-2020	31-03-2020	60	
Ghanvi -II (2X5 MW)	Unit No.I	5 MW	01-12-2020	31-01-2021	62	Annual Maintenance of M/Cs and associted Equipments
	Unit No.II	5 MW	01-02-2021	31-03-2021	59	
Andhara (3X5.65 MW)	Unit -I	5.65 MW	20-12-2020	25-01-2021	37	Annual Maintenance of M/Cs and associted Equipments
	Unit -II	5.65 MW	05-11-2020	15-12-2020	41	
	Unit -III	5.65 MW	15-11-2020	08-12-2020	24	
Baner (3x4 MW)	Unit No.I	4 MW	01-11-2020	30-11-2020	30	Annual Maintenance of M/Cs and associted Equipments
	Unit No.II	4 MW	01-12-2020	31-12-2020	31	
	Unit No.III	4 MW	01-01-2021	31-01-2021	31	
Khauli (2X6 MW)	Unit No.I	6 MW	07-11-2020	31-12-2020	55	Annual Maintenance of M/Cs and associted Equipments
	Unit No.II	6 MW	01-01-2021	28-02-2021	59	
Gaj (3X3.5 MW)	Unit No.I	3.5 MW	17-10-2020	19-11-2020	34	Annual Maintenance of M/Cs and associted Equipments
	Unit No.II	3.5 MW	21-11-2020	29-12-2020	39	
	Unit No.III	3.5 MW	30-12-2020	03-02-2021	36	
Binwa (2X3 MW)	Unit No.I	3 MW	14-11-2020	12-12-2020	29	Annual Maintenance of M/Cs and associted Equipments
	Unit No.II	3 MW	13-12-2020	15-01-2021	34	
Station: IAHEPL	1	12	1-Nov-20	25-Nov-20	25	Annual Maintenance
	2	12	1-Dec-20	25-Dec-20	25	
	3	12	1-Jan-21	25-Jan-21	25	
Upper Nanti	1	7.00				IA Hydro Power Plant, Maintenance Activities are carried out during lean period wherein one Unit goes under maintenance while the other machine keeps running & vice-versa
	2	7.00				
Lower Nanti	1	6.75				In case of Small Hydro Power Plants, Maintenance Work is carried out during lean period in which one Unit is kept under maintenance while other Unit keeps on running & vice-versa
	2	6.75				
Malana HEP	1	43	15-Jan-21	03-Feb-21	20	Annual Maintenance
	2	43	07-Feb-21	26-Feb-21	20	Annual Maintenance
Baragaon Small HEP, Himachal Pradesh	Unit-I	8 MW	Any days between Nov. 2020 to March 2021		7 Days	Annual Maintenece of Plant, Transmission Line & Machinery of the project
	Unit-II	8 MW				
	Unit-III	8 MW				
BASPA-II H.E.P.	1	100	15-01-2020	24-01-2020	10	Tentative Schedule for Annual Maintenance of unit and its Auxiliary system. PLF is estimated on past expected hydrology experience
	2	100	01-02-2021	10-02-2021	10	
	3	100	21-02-2021	02-03-2021	10	
	Unit No.I	65	30-04-2020	30-05-2020	31	

Annexure-IV

Energy Requirement of Chandigarh												
	April	**May**	**June**	**July**	**Aug.**	**Sept.**	**Oct.**	**Nov.**	**Dec.**	**Jan.**	**Feb.**	**March**
2010-11	134	160	149	143	142	133	121	96	112	129	94	106
2011-12	116	169	163	163	154	148	119	101	107	112	103	109
2012-13	124	169	193	191	160	148	117	100	109	123	99	104
2013-14	120	164	162	178	164	147	123	96	106	125	115	110
2014-15	110	152	182	182	182	150	119	99	115	125	105	103
2015-16	118	165	168	178	171	158	123	99	108	116	101	102
2016-17	**131**	**173**	**185**	**185**	**172**	**164**	**125**	**96**	**104**	**113**	**93**	**104**
2017-18	**133**	**174**	**179**	**189**	**170**	**169**	**129**	**100**	**108**	**118**	**98**	**112**
Final (2018-19)	**139**	**179**	**182**	**194**	**170**	**175**	**132**	**101**	**110**	**121**	**100**	**116**
% Growth	**4.3**	**2.8**	**1.5**	**2.7**	**-0.2**	**3.6**	**2.3**	**0.8**	**1.9**	**2.5**	**2.0**	**3.4**
Energy Requirement of Delhi												
	April	**May**	**June**	**July**	**Aug.**	**Sept.**	**Oct.**	**Nov.**	**Dec.**	**Jan.**	**Feb.**	**March**
2010-11	2336	2698	2629	2730	2463	2206	2034	1605	1675	1938	1546	1765
2011-12	2041	2716	2774	2883	2670	2585	2092	1759	1783	1924	1705	1747
2012-13	2056	2670	2961	2943	2545	2412	1964	1604	1747	1925	1546	1715
2013-14	2094	2682	2782	2884	2670	2629	2160	1603	1829	1945	1600	1750
2014-15	2131	2791	3237	3320	3183	2827	2353	1746	1926	2087	1691	1824
2015-16	2263	3091	3098	3119	3082	3047	2544	1804	1904	1970	1773	1931
2016-17	**2628**	**3287**	**3498**	**3311**	**3211**	**3109**	**2622**	**1751**	**1797**	**1938**	**1711**	**1966**
2017-18	**2610**	**3375**	**3359**	**3474**	**3474**	**3264**	**2767**	**1827**	**1881**	**2019**	**1783**	**2075**
Final (2018-19)	**2850**	**3534**	**3540**	**3602**	**3651**	**3300**	**2790**	**1858**	**1922**	**2046**	**1792**	**2077**
% Growth	**9.2**	**4.7**	**5.4**	**3.7**	**5.1**	**1.1**	**0.8**	**1.7**	**2.2**	**1.3**	**0.5**	**0.1**
Energy Requirement of Haryana												
	April	**May**	**June**	**July**	**Aug.**	**Sept.**	**Oct.**	**Nov.**	**Dec.**	**Jan.**	**Feb.**	**March**
2010-11	2492	2917	3047	3351	3385	2825	3090	2537	2752	2980	2387	2789
2011-12	2274	2829	3250	4029	3679	3338	3327	2694	2741	2936	2839	2824
2012-13	2660	3659	4185	4393	4031	3835	3515	3103	3274	3173	2445	3134
2013-14	2903	3986	4155	5106	4480	4306	3512	2921	3249	3390	2610	3300
2014-15	2952	3698	4418	5349	5505	4393	3922	3189	3571	3521	3181	2913
2015-16	3003	4100	4326	4866	5052	4921	4271	3159	3490	3644	3448	3232
2016-17	**3618**	**4196**	**4798**	**5303**	**5003**	**5062**	**4200**	**2876**	**3567**	**3449**	**3253**	**3571**
2017-18	**3651**	**4649**	**4574**	**5700**	**5442**	**5391**	**4389**	**3117**	**3765**	**3708**	**3417**	**3539**
Final (2018-19)	**3924**	**5007**	**4694**	**6054**	**5657**	**5770**	**4546**	**3162**	**3901**	**3803**	**3514**	**3704**
% Growth	**7.5**	**7.7**	**2.6**	**6.2**	**3.9**	**7.0**	**3.6**	**1.4**	**3.6**	**2.6**	**2.8**	**4.7**
Energy Requirement of Himachal Pradesh												
	April	**May**	**June**	**July**	**Aug.**	**Sept.**	**Oct.**	**Nov.**	**Dec.**	**Jan.**	**Feb.**	**March**
2010-11	514	634	593	625	620	616	638	608	690	710	651	642
2011-12	599	704	680	686	646	667	645	660	731	719	688	688
2012-13	625	776	760	773	726	754	740	713	756	787	663	723
2013-14	713	750	761	784	748	743	739	697	779	795	690	730
2014-15	726	759	731	775	771	730	682	721	762	765	687	698
2015-16	718	765	733	737	734	735	724	675	777	775	723	725
2016-17	**672**	**750**	**747**	**744**	**742**	**751**	**736**	**710**	**755**	**779**	**695**	**750**
2017-18	**769**	**803**	**754**	**800**	**799**	**759**	**808**	**810**	**846**	**846**	**762**	**831**
Final (2018-19)	**808**	**832**	**837**	**872**	**872**	**782**	**854**	**866**	**885**	**881**	**790**	**883**
% Growth	**5.1**	**3.6**	**11.0**	**9.0**	**9.1**	**3.0**	**5.6**	**6.9**	**4.7**	**4.1**	**3.7**	**6.3**
Energy Requirement of Jammu & Kashmir												
	April	**May**	**June**	**July**	**Aug.**	**Sept.**	**Oct.**	**Nov.**	**Dec.**	**Jan.**	**Feb.**	**March**
2010-11	1140	1125	1061	1073	1047	1140	1147	1168	1249	1281	915	1225
2011-12	1168	1154	1071	833	1074	1148	1168	1259	1366	1368	1276	1326
2012-13	1195	1252	1184	1176	1196	1151	1289	1365	1482	1502	1299	1319
2013-14	1222	1300	1230	1290	1218	1125	1240	1345	1400	1492	1345	1350
2014-15	1378	1342	1282	1315	1268	955	1340	1445	1616	1604	1328	1341
2015-16	1285	1347	1342	1265	1248	1279	1357	1410	1538	1587	1432	1482
2016-17	**1432**	**1540**	**1431**	**1220**	**1321**	**1353**	**1440**	**1506**	**1618**	**1599**	**1469**	**1469**
2017-18	**1507**	**1597**	**1493**	**1518**	**1490**	**1426**	**1505**	**1563**	**1674**	**1663**	**1530**	**1522**
Final (2018-19)	**1586**	**1701**	**1570**	**1659**	**1600**	**1545**	**1572**	**1626**	**1729**	**1705**	**1610**	**1569**
% Growth	**5.3**	**6.5**	**5.2**	**9.3**	**7.4**	**8.4**	**4.4**	**4.0**	**3.3**	**2.5**	**5.2**	**3.1**

Annexure-IV

Projected Energy Requirement of Punjab												
	April	**May**	**June**	**July**	**Aug.**	**Sept.**	**Oct.**	**Nov.**	**Dec.**	**Jan.**	**Feb.**	**March**
2010-11	3459	3891	4596	4946	5054	4210	3648	2750	3073	2984	2614	3259
2011-12	2939	3991	4442	5707	5189	4574	3617	2613	2893	2828	3007	3259
2012-13	3031	3763	5437	6611	5923	4745	3813	2745	2518	3055	2400	2872
2013-14	3101	4084	4933	6401	5528	5211	3686	2690	2967	2884	3400	3200
2014-15	2979	3885	5762	6639	6537	4747	3724	2866	3109	2914	2652	2815
2015-16	3001	4349	5451	6350	6212	5478	3928	2670	3212	3073	3018	2883
2016-17	**3381**	**4734**	**5997**	**6598**	**6389**	**6226**	**4341**	**2842**	**3223**	**3013**	**2985**	**3369**
2017-18	**3536**	**5004**	**5446**	**7320**	**6904**	**6610**	**4604**	**2975**	**3349**	**3138**	**3050**	**3613**
Final (2018-19)	**3721**	**5342**	**5446**	**7766**	**7208**	**7230**	**4903**	**3063**	**3426**	**3195**	**3146**	**3897**
% Growth	**5.2**	**6.7**	**0.0**	**6.1**	**4.4**	**9.4**	**6.5**	**3.0**	**2.3**	**1.8**	**3.2**	**7.9**
Projected Energy Requirement of Rajasthan												
	April	**May**	**June**	**July**	**Aug.**	**Sept.**	**Oct.**	**Nov.**	**Dec.**	**Jan.**	**Feb.**	**March**
2010-11	3633	3839	3577	3481	3023	3053	3903	3476	4287	4584	3979	4426
2011-12	3929	4125	3965	3880	3511	3348	4368	4812	4980	4997	4782	4937
2012-13	3843	4316	4919	4638	3927	3881	4931	4818	5261	5417	4369	5218
2013-14	4277	4961	4624	4271	3980	5016	4416	4957	5639	5654	4850	5550
2014-15	4681	5163	5616	5548	5373	5207	5837	5798	6210	6027	5630	4626
2015-16	4485	5366	5144	4793	5230	6197	6005	5802	6348	6568	5862	5620
2016-17	**5328**	**5941**	**5916**	**5284**	**4735**	**5801**	**5545**	**5747**	**6187**	**6110**	**5696**	**5549**
2017-18	**5256**	**6015**	**5565**	**5250**	**5950**	**6236**	**5837**	**6002**	**6455**	**6419**	**5882**	**6447**
Final (2018-19)	**5518**	**6206**	**5718**	**5395**	**6512**	**6314**	**5953**	**6272**	**6705**	**6569**	**6030**	**6200**
% Growth	**5.0**	**3.2**	**2.8**	**2.8**	**9.4**	**1.3**	**2.0**	**4.5**	**3.9**	**2.3**	**2.5**	**-3.8**
Projected Energy Requirement of Uttar Pradesh												
	April	**May**	**June**	**July**	**Aug.**	**Sept.**	**Oct.**	**Nov.**	**Dec.**	**Jan.**	**Feb.**	**March**
2010-11	6535	6681	6622	6540	6373	5915	6313	5726	6468	6883	5758	6478
2011-12	6179	6598	6427	7162	6886	7012	7220	6379	6943	6968	6801	6985
2012-13	6618	8510	8489	8177	7565	7569	7910	7075	7497	8087	6441	7709
2013-14	7789	8885	7616	8460	8245	8537	7646	7259	7880	7894	6765	8200
2014-15	8247	9227	9364	9566	9966	9322	8589	7982	8193	8286	7208	7225
2015-16	7747	9651	9491	9605	9981	10234	9426	7785	7976	8340	7756	8396
2016-17	**9198**	**9312**	**9723**	**9268**	**9351**	**9736**	**9069**	**7963**	**8466**	**8747**	**7850**	**8886**
2017-18	**9764**	**11055**	**11111**	**10749**	**11442**	**10914**	**9843**	**8448**	**9083**	**9412**	**8369**	**10060**
Final (2018-19)	**10296**	**11992**	**12024**	**11526**	**12242**	**12375**	**10466**	**9366**	**10016**	**10804**	**8604**	**10466**
% Growth	**5.4**	**8.5**	**8.2**	**7.2**	**7.0**	**13.4**	**6.3**	**10.9**	**10.3**	**14.8**	**2.8**	**4.0**
Projected Energy Requirement of Uttarakhand												
	April	**May**	**June**	**July**	**Aug.**	**Sept.**	**Oct.**	**Nov.**	**Dec.**	**Jan.**	**Feb.**	**March**
2010-11	781	846	846	838	816	770	794	757	901	905	764	832
2011-12	841	902	880	920	826	869	827	821	877	947	889	884
2012-13	883	1023	1025	1003	953	963	932	891	965	923	858	912
2013-14	948	1099	946	1066	1024	1001	967	922	1012	1064	920	970
2014-15	959	1057	1107	1091	1114	1065	990	969	1032	1113	961	987
2015-16	1006	1139	1146	1144	1121	1130	1029	959	1085	1135	1008	987
2016-17	**1081**	**1159**	**1183**	**1149**	**1153**	**1139**	**1079**	**960**	**1027**	**1098**	**985**	**1056**
2017-18	**1081**	**1226**	**1193**	**1167**	**1174**	**1191**	**1154**	**1123**	**1213**	**1228**	**1094**	**1122**
Final (2018-19)	**1136**	**1286**	**1242**	**1272**	**1283**	**1261**	**1220**	**1209**	**1297**	**1288**	**1166**	**1181**
% Growth	**5.1**	**4.9**	**4.1**	**9.0**	**9.3**	**5.9**	**5.7**	**7.6**	**6.9**	**4.9**	**6.6**	**5.3**
Projected Energy Requirement of Northern Region												
	April	**May**	**June**	**July**	**Aug.**	**Sept.**	**Oct.**	**Nov.**	**Dec.**	**Jan.**	**Feb.**	**March**
2010-11	21024	22791	23120	23727	22923	20868	21688	18723	21207	22394	18708	21522
2011-12	20086	23188	23652	26263	24635	23689	23383	21098	22421	22799.39	22090.44	22759
2012-13	21035	26138	29153	29905	27026	25458	25211	22414	23609	24992	20120	23706
2013-14	23167	27911	27209	30440	28057	28715	24489	22490	24861	25242.87	22295	25160.22
2014-15	24161.8	28075	31698	33785	33898	29395	27555.2	24815.32	26533.5	26441.25	23442.91	22530.4
2015-16	23626	29973	30899	32057	32831	33179	29407	24363	26438	27208	25121	25358
2016-17	27469	31092	33478	33062	32077	33341	29156.7	24451	26744	26846	24737	26720
2017-18	28307	33898	33674	36167	36845	35960	31036	25965	28374	28551	25985	29321
Final (2018-19)	29978	36078	35254	38340	39193	38752	32434	27522	29991	30412	26754	30092
% Growth	**5.9**	**6.4**	**4.7**	**6.0**	**6.4**	**7.8**	**4.5**	**6.0**	**5.7**	**6.5**	**3.0**	**2.6**