(ix) Eastern Peripheral Expressway

(x) Delhi-Agra NH2 Expressway

(xi) Hyderabad ORR Expressway

(xii) 5 Connected highways to each megacity

Phase II (3-5 Years):

Big Cities like State capitals, UT headquarters are also planned to be covered for distributed and demonstrative effect. Further, important Highways connected with each mega city are planned to be taken up for coverage.

Upgradation of thermal power and hydro power generation plants

1107. SHRI SAMBHAJI CHHATRAPATI: Will the Minister of POWER be pleased to state:

(a) whether the efficiency of Government controlled thermal and hydro power plants has reduced substantially because of lack of proper maintenance and timely upgradation of machines and tools resulting in static or reduced power generation;

(b) if so, the reasons therefor with respect to each of the power plants under the control of Government;

(c) whether Government has formulated any programme to upgrade such thermal and hydro power plants; and

(d) if so, the details thereof?

THE MINISTER OF STATE OF THE MINISTRY OF POWER (SHRI RAJ KUMAR SINGH): (a) and (b) The efficiency of thermal and hydro power plants in the Central Sector has not reduced.

(c) and (d) The power generating utilities undertake Renovation and Modernisation (R&M)/Upgradation works from time to time as required. It is a continuous exercise, as a cost effective option for optimization of energy resources through improvement in efficiency, better plant availability and also augmentation of capacity.

During 2017-22, Renovation and Modernisation (R&M)/Life Extension (LE) works of 71 units of 14929 MW thermal power stations (7 units of 224 MW for R&M in Central Sector and 34 units of 7570 MW for L.E. and 30 units of 7135 MW for R&M in State

sector) have been identified. List of these Thermal Power Stations is given in the Statement-I (*See* below). Out of these, R&M/LE works of 6 thermal power stations for an aggregate capacity of 887 MW (2 Central Sector *i.e.* Unit No. 3 and 6 of Kathalguri CCGT and 4 State Sector *i.e.* Unit No. 4 of Ukai, Unit No. 3 of Wanakabori, Unit No. 6 of Koradi and Unit No. 12 of Obra Thermal Power Stations) have been completed. R&M/L.E. works for the remaining units are under various stages such as, preparation of DPR, Remnant Life Assessment (RLA)/feasibility study and bid/NIT award etc. Currently, the R&M/LE works are undergoing for 410 MW capacity at 3 thermal power station (Unit No. 7 and 13 of Obra and Unit 6 of Barauni Thermal Power Stations).

During 2017-22, an aggregate capacity of 9294.25 MW at 47 Hydro Electric Power (HEP) Stations (9 in Central Sector and 38 in State Sector) is programmed for R&M through Life Extension and Uprating. List of these HEP Stations is given in the Statement-II (*See* below). Out of the 47 schemes, three schemes (Ganguwal and Kotla and Dehar Power House (Unit-6) and Salal HEP) in Central Sector and two schemes (Sholayar-I and Bhadra River Bed) in State Sector with an aggregate installed capacity of about 882.4 MW have been completed till June, 2020.

Statement-I

Status of units where Life Extension/Renovation and Modernization works have been taken up for implementation during 2017–22

(As on 30.06.2020)

Sl. No.	State	Name of Station	Unit No.	Cap. (MW)
State sector LE Works				
1.	Uttar Pradesh	Obra	12	200
2.	Uttar Pradesh	Obra	13	200
3.	Uttar Pradesh	Anpara TPS	1	210
4.	Uttar Pradesh	Anpara TPS	2	210
5.	Uttar Pradesh	Anpara TPS	3	210
6.	Gujarat	Ukai	3	200
7.	Gujarat	Ukai	4	200
8.	Gujarat	Ukai	5	200
9.	Gujarat	Wanakbori	1	210

Sl. No.	State	Name of Station	Unit No.	Cap. (MW)
10.	Gujarat	Wanakbori	2	210
11.	Gujarat	Wanakbori	3	210
12.	Maharashtra	Koradi	6	210
13.	Maharashtra	Koradi	7	210
14.	Maharashtra	Bhusawal	2	210
15.	Maharashtra	Bhusawal	3	210
16.	Maharashtra	Nashik	3	210
17.	Maharashtra	Nashik	4	210
18.	Maharashtra	Nashik	5	210
19.	Maharashtra	Parli	4	210
20.	Maharashtra	Parli	5	210
21.	Maharashtra	Chandrapur	3	210
22.	Maharashtra	Chandrapur	4	210
23.	Maharashtra	Chandrapur	5	500
24.	Maharashtra	Chandrapur	6	500
25.	Maharashtra	Khaperkheda	1	210
26.	Maharashtra	Khaperkheda	2	210
27.	Bihar	Barauni	6	110
28.	West Bengal	Kolaghat	1	210
29.	West Bengal	Kolaghat	2	210
30.	West Bengal	Kolaghat	3	210
31.	West Bengal	Kolaghat	5	210
32.	Karnataka	Raichur	1	210
33.	Karnataka	Raichur	2	210
34.	Karnataka	Raichur	3	210
	Sub Total State Sector (LE)			7570

Sl. No.	State	Name of Station	Unit No.	Cap. (MW)
State sector (R&M Programme)				
35.	Uttar Pradesh	Obra	7	100
36.	Uttar Pradesh	Anpara 'B'	4	500
37.	Uttar Pradesh	Anpara 'B'	5	500
38.	Punjab	Ropar	1	210
39.	Punjab	Ropar	2	210
40.	Punjab	Ropar	5	210
41.	Punjab	Ropar	6	210
42.	Punjab	GH TPS (Leh. Moh.)	1	210
43.	Punjab	GH TPS (Leh. Moh.)	2	210
44.	Rajasthan	Kota	3	210
45.	Rajasthan	Kota	4	210
46.	Rajasthan	Kota	5	195
47.	Rajasthan	Suratgarh TPS	1	250
48.	Rajasthan	Suratgarh TPS	2	250
49.	Rajasthan	Suratgarh TPS	3	250
50.	Rajasthan	Suratgarh TPS	4	250
51.	Chhattisgarh	Korba (West)	1	210
52.	Chhattisgarh	Korba (West)	2	210
53.	Chhattisgarh	Korba (West)	3	210
54.	Chhattisgarh	Korba (West)	4	210
55.	Madhya Pradesh	Sanjay Gandhi	1	210
56.	Madhya Pradesh	Sanjay Gandhi	2	210
57.	Maharashtra	Chandrapur	7	500
58.	Maharashtra	Khaperkheda	3	210

Sl. No.	State	Name of Station	Unit No.	Cap. (MW)
59.	Maharashtra	Khaperkheda	4	210
60.	Tamil Nadu	Tuticorin TPS	1	210
61.	Tamil Nadu	Tuticorin TPS	2	210
62.	Tamil Nadu	Tuticorin TPS	3	210
63.	Tamil Nadu	Tuticorin TPS	4	210
64.	Tamil Nadu	Tuticorin TPS	5	210
	Sub Total State Sector (R&M)			7135
	Total State Sector (LE+R&M)			14705
Central Sector R&M (Gas Based)				
NEEPCO				
65.		Kathalguri CCGT	GT-1	33.50
66.		Kathalguri CCGT	GT-2	33.50
67.		Kathalguri CCGT	GT-3	33.50
68.		Kathalguri CCGT	GT-6	33.5
69.		Kathalguri CCGT	ST-1	30.00
70.		Kathalguri CCGT	ST-2	30.00
71.		Kathalguri CCGT	ST-3	30.00
	Total [Central Sector- Gas (R&M)]		224	
	Total [R&M/LE (State+ Centre)]		71	14929

Statement-II

State-wise list of Hydro RMU&LE schemes programmed for completion during 2017-22

Sl. No.	Name of Project, Agency Inst. Cap. (No. x MW)	Central Sector (CS)/ State Sector(SS)	Capacity Covered Under RMU & LE (No.x MW)	Category
1	2	3	4	5
A. Completed Schemes				
Himachal Pradesh				
1.	Ganguwal (1x29.25+2x24.2) & Kotla (1x29.25+2x24.2), BBMB	CS	1x24.2 (U-2) 1x24.2 (U-3)	RM&LE
2.	Dehar Power House (Unit-6), BBMB (6x165)	CS	1x165	R&M
3.	Salal, NHPC (6x115)	CS	5x115	R&M
Tamil Nadu				
4.	Sholayar-I, TANGEDCO (2x35)	SS	2x35	RMU&LE
Karnataka				
5.	Bhadra River Bed units, KPCL (2x12)	SS	2x12	R&M
	Sub Total (A)		882.40	
B. Ongoing Schemes - Under Implementation				
Himachal Pradesh				
6.	Ganguwal & Kotla Power House, BBMB (4x24.2)	CS	4x24.2	R&M
7.	BhakraLB, BBMB (5x108)	CS	5x108	RMU&LE
8.	BhakraRB, BBMB (5x1157)	CS	5x157	R&M
9.	Baira Siul, NHPC (3x60)	CS	3x60	RM&LE

1	2	3	4	5
10.	Bhabha Power House, HPSEB (3x40)	SS	3x40	RM&LE
11.	Dehar Power House (Unit-3), BBMB (1x165)	CS	1x165	R&M
Jammu and Kashmir				
12.	Chenani, J&KSPDC (5x4.66)	SS	5x4.66	RM&LE
13.	Ganderbal, J&KSPDC (2x3+2x4.5)	SS	2x4.5	RM&LE
Uttarakhand				
14.	Tiloth, UJVNL (3x30)	SS	3x30	RM&LE
15.	Dhalipur, UJVNL (3x17)	SS	3x17	RM&LE
Uttar Pradesh				
16.	Rihand, UPJVNL (6x50)	SS	6x50	RM&LE
17.	Obra, UPJVNL (3x33)	SS	3x33	RM&LE
Gujarat				
18.	Ukai, GSECL (4x75)	SS	3x75(U-l,2,&4)	R&M
19.	Kadana PSS, GSECL (4x60)	SS	4x60	R&M
Telangana				
20.	Nagarjuna Sagar Ph-II works, TSGENCO (1x110+7x100.8)	SS	1x110+7x100.8	R&M
21.	Nagarjuna Sagar Left Canal Power House, TSGENCO (2x30.6)	SS	2x30.6	R&M
Karnataka				
22.	Munirabad Dam Power House, KPCL (2x9+1x10)	SS	2x9 + 1x10	R&M
23.	Nagjhari KPCL (3x150)	SS	3x150 (U-1 to 3)	R&M
24.	Shivasamudram, KPCL (6x3+4x6)	SS	6x3+4x6.	RM&LE

1	2	3	4	5
Kerala				
25.	Sholayar, KSEB (3x18)	SS	3x18	RM&LE
26.	Idukki 1st stage, KSEB (3x130)	SS	3x130	R&M
27.	Kuttiyadi, KSEB (3x25)	SS	3x25	RMU&LE
Madhya Pradesh				
28.	Bargi, MPPGCL (2x45)	SS	2x45	R&M
29.	Pench, MPPGCL (2x80)	SS	2x80	R&M
30.	Bansagar Ton-I, MPPGCL (3x105)	SS	3x105	R&M
Odisha				
31.	Hirakud-I OHPC (2x37.5)	SS	2x37.5 (U5&6)	RMU&LE
32.	Hirakud-II (Chiplima), OHPC (3x24)	SS	1x24 (U-3)	RM&LE
33.	Balimela, OHPC (6x60)	SS	6x60	RM&LE
	Sub Total (B)	5863.90		
C. Ongoing Schemes - Under Tendering				
Himachal Pradesh				
34.	Giri, HPSEB (2x30)	SS	2x30	RM&LE
Punjab				
35.	Mukerian St. I, St. II, St. III & St.IV, PSPCL (3x15, 3x15, 3xl9.5&3xl9.5)	SS	3x15, 3x15, 3xl9.5 & 3x19.5	R&M
36.	Shanan HEP, PSPCL (1 x50+4x 15)	SS	1x50+ 4x15	R&M
Uttarakhand				
37.	Ramganaga, UJVNL (3x66)	SS	3x66	RM&LE
38.	Dhakrani, UJVNL (3x11.25)	SS	3x11.25	RM&LE
Karnataka				
39.	Kadra Dam Power House, KPCL(3x50)	SS	3x50	RM&LE

1	2	3	4	5
40.	Kodasalli Dam Power House, KPCL (3x40)	SS	3x40	RM&LE
41.	Linganamakki Dam Power House, KPCL (2x27.5)	SS	2x27.5	RM&LE
42.	Gerusoppa Dam Power House (Sharavathy Tail Race), KPCL (4x60)	SS	4x60	RM&LE
Jharkhand				
43.	Panchet, DVC (2x40)	CS	1x40 (U-1)	RMU&LE
Meghalaya				
44.	Umium St.III, (Kyrdemkulai) MePGCL (2x30)	SS	2x30	RMU&LE
	Sub Total (C)		1273.75	
D. Ongoing Schemes - Under DPR Preparation/ Finalisation/ Approval				
Karnataka				
45.	MGHE, KPCL (4x21.6+4x13.2)	SS	4x21.6+ 4x13.2	RM&LE
46.	Supa Dam Power House, KPCL (2x50)	SS	2x50	RM&LE
47.	Sharavathy Generating Station, KPCL (10x103.5)	SS	10x103.5	RM&LE
	Sub Total (D)		1274.20	
	Total (A+B+C+D)		9294.25	

Avenues and opportunities to Indian researchers residing in foreign countries

1108. DR. VIKAS MAHATME: Will the Minister of SCIENCE AND TECHNOLOGY be pleased to state:

(a) whether Government has formulated schemes to provide attractive avenues and opportunities to Indian researchers who are residing in foreign countries to work in Indian Institutes and Universities; and