

**GOVERNMENT OF INDIA
MINISTRY OF POWER**

**LOK SABHA
UNSTARRED QUESTION NO.292
TO BE ANSWERED ON 17.11.2016**

HYDRO POWER IN MAHARASHTRA

**†292. SHRI RAJU SHETTY:
SHRI FEROZE VARUN GANDHI:**

**Will the Minister of POWER
be pleased to state:**

- (a) the details of the potential of hydropower generation in the country, State-wise;**
- (b) the reasons for not able to tap this potential, State-wise; and the reasons for consistent decline in the hydropower generation during last two decades;**
- (c) the details of the present hydropower projects under various states and corporations with their proposed capacity and completion period and in case of delayed projects reasons therefor, project-wise; and**
- (d) the steps being taken/proposed to be taken to fully harness the hydropower potential in the country, State-wise?**

A N S W E R

**THE MINISTER OF STATE (INDEPENDENT CHARGE) FOR POWER,
COAL, NEW & RENEWABLE ENERGY AND MINES**

(SHRI PIYUSH GOYAL)

(a) & (b) : As per Reassessment-Studies, carried out by CEA during 1978-87, the assessed hydro potential in the country is 148701 MW out of which 145320 MW of the potential consists of hydro electric schemes having installed capacity above 25 MW. Currently, 43112 MW (including Pumped Storage Schemes) of potential has been exploited. The state-wise details of potential and its development is enclosed at Annex-I.

The share of hydro power generation has declined due to High Capital Cost, Land Acquisition Issues, Environment and Forest Clearances, Rehabilitation & Resettlement Issues, Inadequate Infrastructural facilities in remote hydro project locations, Law & Order / Local issues, Geological Surprises, Natural Calamities, Inter-State issues, etc. and resultant relatively high tariff.

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(c) : Presently, 44 Hydro-electric projects (above 25 MW) aggregating to 13182 MW are under construction in the country. The details of such projects are enclosed at Annex-II. Out of these projects, 19 Hydro electric projects aggregating to 6281 MW are stalled/stressed. The details of such projects along with reasons thereof are enclosed at Annex-III.

(d) : A number of remedial measures have been undertaken by the Government to fully harness the hydropower potential in the country viz. provision of debt financing of longer tenure under National Electricity Policy, option of charging lower rate of depreciation vis-a-vis Central Electricity Regulatory Commission (CERC) norms, extending cost plus tariff regime for public and private sector hydro projects upto 15.08.2022 in Revised Tariff Policy, excluding hydro power from Renewable Purchase Obligation etc.

ANNEX REFERRED TO IN REPLY TO PARTS (a) & (b) OF UNSTARRED QUESTION NO. 292 TO BE ANSWERED IN THE LOK SABHA ON 17.11.2016.

STATUS OF HYDRO ELECTRIC POTENTIAL DEVELOPMENT

(In terms of Installed Capacity – above 25 MW)

As on 31.10.2016

Region/ State	Identified Capacity as per reassessment study		Capacity Under Operation		Capacity Under Construction		Capacity Under Operation + Under Construction		Capacity yet to be taken up under construction	
	Total	Above 25 MW								
	(MW)	(MW)	(MW)	%	(MW)	(%)	(MW)	(%)	(MW)	%
NORTHERN										
Jammu & Kashmir	14146	13543	3119.0	23.03	1180.0	8.71	4299.0	31.74	9244.0	68.26
Himachal Pradesh	18820	18540	9438.0	50.91	2086.0	11.25	11524.0	62.16	7016.0	37.84
Punjab	971	971	1206.3	100	206.0	21.22	1412.3	100.00	0.0	0.00
Haryana	64	64	0.0	0	0.0	0.00	0.0	0.00	0.0	0.00
Rajasthan	496	483	411.0	85.09	0.0	0.00	411.0	100.00	0.0	0.00
Uttarakhand	18175	17998	3756.4	20.87	1430.0	7.95	5186.4	28.82	12811.7	71.18
Uttar Pradesh	723	664	501.6	75.54	0.0	0.00	501.6	75.54	39.0	5.87
Sub Total (NR)	53395	52263	18432.3	35.27	4902.0	9.38	23334.3	44.65	28928.8	55.35
WESTERN										
Madhya Pradesh	2243	1970	2395.0	100	400.0	20.30	2795.0	100.00	0.0	0.00
Chhattisgarh	2242	2202	120.0	5.45	0.0	0.00	120.0	5.45	2082.0	94.55
Gujarat	619	590	550.0	100	0.0	0.00	550.0	100.00	0.0	0.00
Maharashtra	3769	3314	2487.0	75.05	0.0	0.00	2487.0	75.05	827.0	24.95
Goa	55	55	0.0	0.00	0.0	0.00	0.0	0.00	55.0	100.00
Sub total (WR)	8928	8131	5552.0	68.28	400.0	4.92	5952.0	73.20	2179.0	26.80
SOUTHERN										
Andhra Pradesh	2366	2341	1746.8	74.62	1010.0	43.14	2756.8	117.76	0.0	0.00
Telangana	2058	2019	701.0	34.72	90.0	4.46	791.0	39.18	1228.0	60.82
Karnataka	6602	6459	3585.4	55.51	0.0	0.00	3585.4	55.51	2873.6	44.49
Kerala	3514	3378	1881.5	55.70	100.0	2.96	1981.5	58.66	1396.5	41.34
Tamil Nadu	1918	1693	1782.2	100	0.0	0.00	1782.2	100.00	0.0	0.00
Sub Total (SR)	16458	15890	9696.9	61.02	1200.0	7.55	10896.9	68.58	4993.2	31.42
EASTERN										
Jharkhand	753	582	170.0	29.21	0.0	0.00	170.0	29.21	412.0	70.79
Bihar	70	40	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00
Odisha	2999	2981	2027.5	68.01	0.0	0.00	2027.5	68.01	953.5	31.99
West Bengal	2841	2829	441.2	15.60	120.0	4.24	561.2	19.84	2267.8	80.16
Sikkim	4286	4248	765.0	18.01	2526.0	59.46	3291.0	77.47	957.0	22.53
Sub Total (ER)	10949	10680	3403.7	31.87	2646.0	24.78	6049.7	56.65	4630.3	43.35
NORTH EASTERN										
Meghalaya	2394	2298	282.0	12.27	40.0	1.74	322.0	14.01	1976.0	85.99
Tripura	15	0	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00
Manipur	1784	1761	105.0	5.96	0.0	0.00	105.0	5.96	1656.0	94.04
Assam	680	650	375.0	57.69	0.0	0.00	375.0	57.69	275.0	42.31
Nagaland	1574	1452	75.0	5.17	0.0	0.00	75.0	5.17	1377.0	94.83
Arunachal Pradesh	50328	50064	405.0	0.81	2854.0	5.70	3259.0	6.51	46805.0	93.49
Mizoram	2196	2131	0.0	0.00	60.0	2.82	60.0	2.82	2071.0	97.18
Sub Total (NER)	58971	58356	1242.0	2.13	2954.0	5.06	4196.0	7.19	54160.0	92.81
ALL INDIA	148701	145320	38326.8	26.37	12102.0	8.33	50428.8	34.70	94891.2	65.30

Note:-

In addition to above 9 PSS (4785.6 MW) are under operation, 2 PSS (1080 MW) are under construction.

ANNEX REFERRED TO IN REPLY TO PART (c) OF UNSTARRED QUESTION NO. 292 TO BE ANSWERED IN THE LOK SABHA ON 17.11.2016.

List of Under Construction Hydro Electric Projects (above 25 MW) in the country – State-wise

Sl. No.	Name of Scheme (Executing Agency)	Sector	(As on 31.10.2016)	
			Cap. Under Execution (MW)	Completion Period
Andhra Pradesh				
1	Polavaram (PPA)	State	960.00	2021-22 ##
2	Nagarujana Sagar TR(APGENCO)	State	50.00	2016-17
Sub-total: Andhra Pradesh			1010.00	
Arunachal Pradesh				
3	Kameng (NEEPCO)	Central	600.00	2017-18 @
4	Pare (NEEPCO)	Central	110.00	2017-18 @
5	Subansiri Lower (NHPC)	Central	2000.00	2020-21 *
6	Gongri(Dirang Energy)	Private	144.00	2019-20 #
Sub-total: Arunachal Pradesh			2854.00	
Himachal Pradesh				
7	Parbati St. II (NHPC)	Central	800.00	2018-19
8	Uhi-III (BVPCL)	State	100.00	2017-18
9	Sawra Kuddu (HPPCL)	State	111.00	2018-19
10	Sainj (HPPCL)	State	100.00	2016-17
11	Shongtong Karcham (HPPCL)	State	450.00	2019-20
12	Kashang -II & III (HPPCL)	State	65.00	2019-20 *
13	Bajoli Holi (GMR)	Private	180.00	2019-20
14	Sorang (HSPCL)	Private	100.00	2017-18 *
15	Tangnu Romai (TRPG)	Private	44.00	2018-19 *
16	Tidong-I (NSL Tidong)	Private	100.00	2017-18
17	Chanju-I (IA Energy)	Private	36.00	2016-17
Sub-total: Himachal Pradesh			2086.00	
Jammu & Kashmir				
18	Kishanganga (NHPC)	Central	330.00	2017-18
19	Ratle (RHEPPL)	Private	850.00	2021-22 *
Sub-total: Jammu & Kashmir			1180.00	
Kerala				
20	Pallivasal (KSEB)	State	60.00	2019-20 *
21	Thottiyar (KSEB)	State	40.00	2019-20 *
Sub-total: Kerala			100.00	
Madhya Pradesh				
22	Maheshwar (SMHPCL)	Private	400.00	2017-19 *
Sub-total: Madhya Pradesh			400.00	
Maharashtra				
23	Koyna Left Bank (WRD,MAH)	State	80.00	2019-20 #
Sub-total: Maharashtra			80.00	
Meghalaya				
24	New Umtru (MePGCL)	State	40.00	2016-18 @
Sub-total: Meghalaya			40.00	
Mizoram				
25	Tuirial (NEEPCO)	Central	60.00	2017-18
Sub-total: Mizoram			60.00	
Punjab				
26	Shahpurkandi (PSPCL)	State	206.00	2019-20 *
Sub-total: Punjab			206.00	
Sikkim				
27	Bhasmey (Gati Infrastructure)	Private	51.00	2019-20

28	Dikchu (Sneha Knietic)	Private	96.00	2016-17
29	Rangit-IV (JAL Power)	Private	120.00	2019-20 *
30	Rangit-II (Sikkim Hydro)	Private	66.00	2019-20 #
31	Rongnichu (Madhya Bharat)	Private	96.00	2019-20
32	Tashiding (Shiga Energy)	Private	97.00	2016-17
33	Teesta St. III (Teesta Urja Ltd.)	State	1200.00	2016-17
34	Teesta St. VI (LANCO)	Private	500.00	2021-22 *
35	Panan (Himagiri)	Private	300.00	2020-21 ##
	Sub-total: Sikkim		2526.00	
	Telangana			
36	Pulichintala (TSGENCO)	State	90.00	2016-18
	Sub-total: Telangana		90.00	
	Uttarakhand			
37	Lata Tapovan (NTPC)	Central	171.00	2021-22 *
38	Tapovan Vishnugad (NTPC)	Central	520.00	2019-20
39	Tehri PSS (THDC)	Central	1000.00	2019-20
40	Vishnugad Pipalkoti (THDC)	Central	444.00	2019-20
41	Vyasi (UJVNL)	State	120.00	2018-19
42	Phata Byung (LANCO)	Private	76.00	2018-19 #
43	Singoli Bhatwari (L&T)	Private	99.00	2019-20 #
	Sub-total: Uttarakhand		2430.00	
	West Bengal			
44	Rammam-III (NTPC)	Central	120.00	2019-20
	Sub-total: West Bengal		120.00	
	Total:		13182.00	

* Subject to restart of works

Subject to active start of works

Subject to active start of works and award of E&M works

@ Projects in the programme of 2016-17, however slipping to 2017-18.

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Stalled Under Construction Hydro Electric Projects

Sl. No	Name of Project/ Executing Agency / Capacity (MW)	State	Reasons for Stuck up
	Central Sector		
1	Lata Tapovan, NTPC Limited 3x57=171 MW	Uttarakhand	Construction work stopped vide Hon'ble Supreme Court order dated 7.5.14.
2	Subansiri Lower NHPC Limited 8x250=2000 MW	Arunachal Pradesh / Assam	-Since 16.12.2011 works stopped due to agitation by various activists, fearing dam safety and downstream impacts of dam. -Case in Hon'ble NGT, Kolkata bench.
	State Sector		
3	Kashang - II & III HPPCL 2x65 = 130 MW (1 unit already commissioned)	H.P.	-Works on KK Link tunnel could not start since 2011, due to two separate cases (one for Environmental clearance and another for Forest clearance) were pending in NGT. The case of Environmental clearance has been decided in favour of HPPCL, whereas in the case of Forest clearance, it has been directed by the NGT that matter shall be placed before Gram Sabha in the presence of a Judicial Officer. The entire proceeding shall be completed not later than three months from the date of commencement of proceeding of Gram Sabha. HPPCL shall then submit the report to NGT. The application for challenging the NGT decision has been filed in the Hon'ble Supreme Court by HPPCL which has now been withdrawn on the direction of Govt. of Himachal Pradesh on dated 08.09.2016.
4	Shahpurkandi Irr. Deptt., Pb. & PSPCL 3x33+3x33+1x8=206 MW	Punjab	- Works of Dam (J&K side) stopped since 30.08.2014 due to inter-state disputes between Punjab and J&K Government.
5	Polavaram Polavaram Project Authority(12x80 = 960 MW)	A.P.	-Slow progress of works due to funds constraints. - Public hearing for construction of protective embankment to be held in Oddisha and Chhattisgarh as desired by MOEF.
6	Thottiyar KSEB 1x30+1x10=40 MW	Kerala	- Works are almost standstill since Nov, 2015. The contractor has put forward a proposal for foreclosure of the Project due to their financial stringency and a detailed note regarding the same was submitted to the Board for approval. It is decided to foreclose the work and the balance work may be re-arranged through open tender or through Govt. approved executing agencies like Uralungal Labour Contract Co-operative Society.

Sl. No	Name of Project/ Executing Agency / Capacity (MW)	State	Reasons for Stuck up
7	Pallivasal KSEB 2x30=60 MW	Kerala	- Works are almost standstill since Jan, 2015. The contractor has put forward a proposal for foreclosure of the Project due to their financial stringency and a detailed note regarding the same was submitted to the Board for approval. It is decided to foreclose the work and the balance work may be re-arranged through open tender or through Govt. approved executing agencies like Uralungal Labour Contract Co-operative Society.
8	Koyna Left Bank PSS WRD, Govt. of Maharashtra 2x40=80 MW	Maharashtra	- Project stalled since July, 2015. The current expenditure on the project has already reached to almost original administrative approved cost level hence expenditure on the project is stopped and project work is processing at very slow rate. Revised cost is under approval by State Govt.
	Private Sector		
9	Maheshwar Shree Maheshwar Hydel Power Corporation Limited 10x40= 400 MW	M. P.	Works suspended since Nov-11 due to cash flow problem with developer.
10	Teesta VI Lanco Teesta Hydro Power Ltd. 4x125=500 MW	Sikkim	There is almost no progress since April, 2014. (Funds Constraints)
11	Rangit-IV Jal Power Corp. Ltd. (JPCL) 3x40= 120 MW	Sikkim	Works stopped since Oct-13 due to funds constraints with developer.
12	Panan Himagiri Hydro Energy Pvt Ltd. 4x75 = 300 MW	Sikkim	Major Civil Works could not start since April, 2014 for want of NGT Clearance
13	Ratle GVK Ratle Hydro Electric Project Pvt. Ltd. 4x205+1x30=850MW	J&K	There is no progress since 11 th July, 2014. (R&R issues, Local issues, Law & order problem, Indus Water Treaty etc.)
14	Tangnu Romai Tangnu Romai Power Generation 2x22=44 MW	H.P.	The developer informed that the project suffered due to very poor geology in HRT, due to which project got delayed and cost had increased. Further Works stalled since January, 2015 due to fund constraints.
15	Sorang Himachal Sorang Power Ltd. 2x50=100 MW	H.P.	Works are stalled since 18.11.2015 due to rupture in the surface penstock pipe when unit#2 was under trial run.

Total = 15 Nos. (5896 MW)

In addition to above, the following projects are also stressed :-

Sl. No	Name of Project/ Executing Agency/ Capacity (MW)	State	Reasons for Stress
1	Phata Byung M/s.Lanco 2x38=76 MW	Uttarakhand	- Works affected due to flash flood in June, 2013. - Slow pace of works. - High tariff due to time & cost over-run.
2	Singoli Bhatwari M/s.L&T 3x33=99 MW	Uttarakhand	- Works affected due to flash flood in June, 2013. - Slow pace of works. - High tariff due to time & cost over-run.
3	Gongri Dirang Energy Pvt. Ltd. 2x72=144 MW	Arunachal Pradesh	Works stopped since 2 nd week of April, 2016 due to fund flow problem with promoter / lenders. Works restarted in July-2016 but fund constraints still exist.
4	Rangit-II Sikkim Hydro Power Ltd. 2x33=66MW	Sikkim	Works are stalled since 2014 due to non-release of funds by lenders because of power evacuation and land acquisition issues. Developer has to infuse equity into the project. Meanwhile, the promoter of the company 'Gammon India Ltd' is under CDR. Hence PFC is unable to disburse the loan. Talks between developer & lenders is under progress, however funds yet not disbursed by banks. The developer re-started works w.e.f. September, 2016.

Total = 4 Nos. (385 MW)

Grand Total = 19 Nos. (6281 MW)
