GOVERNMENT OF INDIA
MINISTRY OF NEW AND RENEWABLE ENERGY
LOK SABHA
UNSTARRED QUESTION NO. 2363
TO BE ANSWERED ON 16.03.2017

TRANSMISSION PROJECTS

2363. DR. K. GOPAL:

Will the Minister of NEW & RENEWABLE ENERGY be pleased to state:

(a) whether the transmission projects worth Rs. 50,000 crore would be up for bids during this financial year in order to boost capacity of renewable energy and if so, details thereof;

(b) whether the increasing share of renewable energy in the overall energy mix in the country will have significant implications for the national grid and will go upto 40 per cent by 2030 and if so, the details thereof; and

(c) whether this will throw a huge challenge to the grid operations and if so, the details thereof and the steps proposed to be taken thereon?

ANSWER

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

(a): No Madam. Under Green Energy Corridor transmission projects, Rs.5049.72 crore and Rs. 11369 crore have been bidded out under intra-state and inter- state components respectively.(Annexure-I & II)

(b): No Madam. Share of renewable energy in overall energy mix of the country is not targeted to go up to 40% by 2030. The Intended Nationally Determined Contributions of India aim to achieve about 40% cumulative installed capacity from non-fossil fuel based energy resources by 2030.

(c): Large scale integration of renewable energy into the grid will be a challenging situation due to intermittent nature of wind and solar. To meet such challenge, following steps are being taken:

(i) Development of Green Energy Corridor.

(ii) Notification of Forecasting and Scheduling of Regulations by CERC and SERCs.

(iii) Amendment of Regulations for Technical Standards for Grid Connectivity.

(iv) Development of Renewable Energy Management Centres.

(v) Installation of Availability Based Tariff meters.

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Annexure-I

Details of bids put up by various states for Intra-State transmission works under Green Energy Corridor during 2016-17

-	Name of the State	Transmission projects whose bid has been done during 2016-2017	Cost (Rs. Cr.)
1.	Tamil Nadu	(1) 400kV DC line with Quad Moose ACSR with MC line from Kayathar 400 kV SS to proposed Thennampatti 400 kV SS (7kms) for a total length of 24 km falling in wind zone-2. (2) Providing 4 Nos Bay extension at Kayathar 400 kV SS for Thennampatti Feeder and future bay	273
2	Rajasthan (for tranche –I)	(1) Construction of 400kV D/C Jaisalmer -2 - Barmer line - 130kms. (2) Construction of 400kV D/C Barmer - Bhinmal(PGCIL) line-140kms. (3) Construction of 220/132kV GSS at Kolayat alongwith 220kV extension Bays at existing 220kV GSS at Gajner on Turnkey basis. (4) Construction of 220/132kV GSS at Chatrail alongwith 2 Nos. 220kV extension Bays at 400/220kV GSS at Ramgarh on Turnkey basis. (5) Construction of 220/132kV GSS at Undoo alongwith 220kV extension Bays at 220kV GSS at Pokaran on Turnkey basis. (6) Construction of 220/132kV GSS at Pokaran on Turnkey basis (7) Construction of 220/132kV GSS at PS-1/Bajju alongwith 2 Nos. 220kV extension Bays at 400/220kV GSS at Bhadla on Turnkey basis	552.282
3	Andhra Pradesh	(1) Erection of Bay Extensions works at : i) Uravakonda 400kV SS : 2 x 500 MVA + 1 x 80MVAR ii) Jammalamadugu 400kV SS : 1 x 315 MVA + 1 x 80MVAR iii) Hindupur 400kV SS: 1x315 MVA (2) 220 KV DC Moose line from 400KV Jammalamadu SS to 220 KV Betamcherla SS(136 Ckm) (3) 220/132/33 KV SS at Betamcherla (2x160&2x31.5 MVA) (4) 132kV LILO of both circuits of 132kV DC	271.43

		line from 132kV Suzlon Wind PStation - existing 132kV Jammalamadugu SS to the proposed 400/220/132kV Jammalamadugu SS (24 Ckm) (5) 220 KV DC Moose line from 400KV Jammalamadugu SS to 220 KV Tadipatri S (80 Ckm) (6) 220 KV Bay Extensions at 220 KV Tadipatri Substation (7) Stringing of 2nd Ckt on 132 KV DC/SC Line from Badvel-Porumamilla Line and LILO of Both Circuits to 220KV SS Porumamilla on Multi Ckt Towers (4 Ckm) (8) 132 KV Bay Extensions at 220 KV Porumamilla SS(2 Nos),132/33 KV Porumamila SS(1Nos) and 132/33 KV SS Badavel SS(1 No), including ,Pannels,Telcom Etc	
4	Himachal Pradesh	(1) Construction of 132 kV D/C line from 22/132 kV sub station at Tangnu Romai HEP to 132/220 kV sub station at Sunda. (2) Construction of 132/220 kV, 2x100 MVA GIS sub station at Dehan in Distt. Kangra (3) Providing additional 33/132 kV, 31.5 MVA Transformer at 33/132 kV, 31.5 MVA GIS sub station at Pandoh in Distt. Mandi (4) 33 kV Palchan-Prini line (5) 220 kV Snail-Hatkoti line (6) Providing additional 400/220 kV, 1x315 MVA transformer in the 400/220 kV sub station at Gumma (ADB funded) in Distt. Shimla. (7) Construction of 33 kV GIS switching station at Palchan in Distt. Kullu. (8) Providing additional 10 MVA, 66/22 kV power transformer a/w spare bay at 10 MVA, 66/22 kV Nogli for evacuation of power from SHEPs in Andhra Nogli Zone (9) Augmentation of Kotla- Nogli-Samoli 66 kV line with AL59 conductor (60 Km) (10) Augmentation of 2nd 66/22 kV, 10 MVA transformer at Samoli to 20 MVA (11) Construction of 66/22 kV, 2x10 MVA sub station at Hatkoti alongwith 66 kV S/C line on D/C towers (20 Kms) from Hatkoti to Samoli (12) Augmentation of 66 kV D/C line between Ghanvi-II to Kotla with HTLS conductor (8 Kms) (13) Construction of 66 kV S/C line from Nathpa to Wangtoo a/w terminal bays (14) C/O 66/22 kV 2x25/31.5 MVA S/St at Andhra and 22kV Controlling Substation at Gumma (15) Construction of 66/22 kV, 1x10 MVA sub	418.07

			station at yard of Rukti I alongwith 66 kV S/C line(6 Km) on D/C towersfrom the Yard of Rukti I to yard of Shaung Power House.	
		(16)	Construction of 66/22 kV, 1x10 MVA sub station at yard of Pooh alongwith 66 kV S/C line.	
		(17)	Augmentation of transformer from 2.5 MVA to 6.3 MVA and construction of 33 kV S/C line on D/C structures between Shillai and Sataun a/w terminal bays (20 Kms)	
		(18)	22KV S/C line on D/C structures and cross arms (0.15Sq. In "WOLF" cond.) between Hatkoti and Kotkhai a/w terminal bays and space for spare feeder bay	
		(19)	Augmentation of 33 KV existing line between Dadahu and Dhaula Kuan & Dhaula Kuan and Giri with WOLF conductor	
		(20)	33 kV line from Prini to 220/33 kV sub station in the yard of Allain Dhuangan HEP with 33 kV XLPE cable.	
		(21)	LILO of 33 KV Pandoh- Bijni line at proposed 33/132 KV Pandoh Sub-Station.	
		(22)	Strengthening of 33 KV D/C Pandoh-Bijini line with WOLF conductor.	
		(23)	Strengthening of 33 KV S/C Padhar to Bijini line with WOLF conductor.	
		(24)	Augmentation of existing 33 kV Gharola to LILO point at Karian with WOLF conductor of 33 kV line from Gharola to Chamba (48.5 Kms)	
		(25)	Strengthening / Up-gradation of existing S/C 33 kV feeder No.II from Baner Power House to 132/33/11 kV Sub-Station Dehan under ESD No.II Palampur	
		(26)	LILO of one circuit of 33 KV D/C line from Shahpur to Kangra at proposed 33/132 KV CHAMBI Sub-Station and LILO 33kV S/C line from Gaj to Shahpur at 33/132kV sub-stastion Chambi along with reconductoring of Gaj-Shahpur Line (New line 9.5 Km, reconductoring 18.5 Km).	
5	Gujarat	(1)	220 kV Kalavad GIS substation (Dis. Jamnagar)	1365.93
		(2)	220 KV Moti Gop substation (Dist. Jamnagar)	
		(3)	Up-gradation of 132 KV Wankaner substation to 220 KV level (Dist. Rajkot) - Hybrid / GIS technology	
		(4)	400 KV Bhachunda GIS substation (Dist. Kutch) (220/66 KV scheme is already	

		approved) (5) 400 KV D/C Shapar – Pachham (Fedra) line (Twin AL-59) (6) 400 KV D/C Bhogat – Kalavad line (Twin AL-59) (7) 400 KV Hadala – Shapar line (Twin AL-59) (8) LILO of one circuit of 220 KV D/C Akrimota – Nakhatrana line at Bhachunda (9) 220 KV D/C Bhatia - Bhogat line (AL-59) (10) 220 KV D/C Bhogat - Ranavav line (AL-59) (11) 220 KV D/C Chorania – Salejada line (AL-59) (12) 220 KV D/C Radhanpur – Sankhari line (AL-59) (13) LILO of one Circuit of 220 KV D/C Hadala - Sartanpar at 220 KV Wankaner (AL-59) (14) LILO on 220 KV S/C Lalpar - Sartanpar line at 220 KV Wankaner (M/C tower by replacement of existing 132KV towers) (AL-59) (15) 220 KV D/C Bhogat – Moti Gop line (AL-59) (16) LILO of both circuits of 220 KV D/C Tebhda – Nyara line at Moti Gop substation (M/C line : AL-59) (17) 400 kV D/C Bhachunda – Varsana line (Twin AL-59)	
6	Karnataka		0
7	Madhya Pradesh	(1) 220kV & 132kV Lines and Substations works of Badwani, Dhar and Jhabua District (2) 400kV, 220kV & 132kV Lines and Substations works of Mandsaur District (3) 400kV, 220kV & 132kV Lines and Substations works of Betul and Rewa District (4) 220kV & 132kV Lines and Substations works of Neemuch and Ratlam District (5) 400kV Lines works in Shajapur District (Part-1) (6) 400kV Lines and Substations works in Shajapur District (Part-2) (7) 220kV & 132kV Lines and Substations works in Shajapur(Part-3) and Sheopur District	2026.92
8	Maharashtra	Details of 15 transmission lines bidded during 2016-17 not provided by the State	142.09
	Total		**5049.722**

Annexure II

Details of bids put up by POWERGRID for Inter-State transmission schemes under Green Energy Corridor

	GEC ISTS Scheme	Cost bidded (Rs. Crore)
1	GEC- Part A (KfW Tranche-I) **Rajasthan (Northern region)** • Ajmer (New) – Ajmer (RVPN) 400 Kv D/c (Quad) – 57 km • Chittorgarh (new) – Chittorgarh (RVPN) 400kv D/c (Quad) – 25 km • Establishment of 2x1500 MVA, 765/400 kV S/s at Chittorgar April, 17 • Establishment of 2x1500 MVA, 765/400 kV S/s at Ajmer (New) • Associated reactive compensation (Bus reactor each at 765 kV Ajmer & Chittorgarh S/s **Tamil Nadu (Southern region)** • Tirunelveli Pooling Station – Tuticorin Pooling Station 400 k (Quad) – 55/56 km Mar, 18 • Establishment of 2x500 MVA, 400/230kV S/s at Tirunelveli Station (being revised due to Associated reactive compensation (Bus reactor)	1479
2	GEC- Part B (KfW Tranche-II) **Raj (Northern Region)** • Chittorgarh – Ajmer (New) 765kV D/c- 199 km Associated line reactors **Gujrat (Western Region)** • Establishment of 765/400/220 kV (765/400 Kv-2x1500 MVA & 400/220kV–2x500 MVA) sub-station at Banaskanta • Banaskanta – Chittorgarh 765kV D/c – 285 km Dec, 17 • Banaskanta – Sankhari 400 kV D/c – 26 km • Associated reactive compensation (Bus reactor at 765 kV Banaskanta & line reactors)	3705

3	GEC- Part C (KfW Tranche-III) **<u>Gujarat (Western Region)</u>** • Establishment of 765/400/220 kV (765/400 Kv-2x1500 MVA & 400/220kV–2x500 MVA) sub-station at Bhuj Pool • Bhuj Pool – Banaskanta 765 Kv D/c – 309 km July, 18 • Associated reactive compensation (Bus reactor at 765 kV Bhuj Pool S/s & line reactors)	2247
4	GEC- Part D (ADB) **<u>Rajasthan (Northern Region)</u>** • Ajmer (New) – Bikaner (New) 765 kV D/c – 272 km • Bikaner (New) – Moga(PG) 765 kV D/c – 350 km • LILO of one circuit of 400 kV Bhadla – Bikaner (RVPN) line Bikaner (New) – 60 km Mar, 18 • Establishment of 2x1500 MVA, 765/400 kV S/s at Bikaner (New)	3938
	Total (**Transmission Schemes**)	**11,369**