

# ANNEXURE - 10

  
(Purushottam Singh)  
Director (Operation)  
UJVN Ltd.  
Dehradun

Name of Project : Ramganga

E&M Expenses

Additional Capitalization Proposed for the FY 2018-19					
Sr. No.	Description	Amount (Rs. In Crores)	Need/Urgency of CAPEX	How the Capex will have improvement in performance of plant/life enhancement	Justification of cost/rate
A	Land	-			
B	Building	-			
C	Major Civil Works	-			
D	Plant & Machinery	-			
1	Major repairing, overhauling & refurbishment work of 125/25 Ton EOT cranes	0.73	Technical audit has been carried out by the Central Board of Irrigation and Planning (CBIP), New Delhi and mentioned in their report that replacement of the E&M equipments with latest technology is essential.	Reliability of EOT crane has been increased and breakdown shall be attended immediately	Rates have been based on market survey/budgetary offer
2	Complete overhauling and replacement of defective parts of G-25 Governor of U#1 and 3	0.19		Generation loss shall be minimised due to breakdown of governor system.	
3	SITC of BCH make starter panels, incomers and various pressure Transducers along with Design & Development of drawing and also interfacing with existing hardware of lubricating oil pumps (LOP) and Governing oil pumps (GOP) System.	0.16		Better reliability of the Governor oil/lubricating oil circulating system with latest technology has been achieved now which shall reduce breakdown time.	
4	Repair of MIV, stator coolers and thrust bearing oil coolers of unit # 3	2.69		Extra leakage in MIV causing the extra burden on dewatering pumps and leakage of water shall be arrested.	

  
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5	Major overhauling of unit # 3 including Design, Fabrication, Supply, Installation, Testing and Commissioning of Bulkhead and High Speed Lubrication System	4.18	<p>Technical audit has been carried out by the Central Board of Irrigation and Planning (CBIP), New Delhi and mentioned in their report that replacement of the E&amp;M equipments with latest technology is essential.</p>	Reliability/stability of the machine shall be improved as machine has not been undergone major repair since last 30 years. Availability of one bulk head gate is essential to carry out the major repair works in one unit and simultaneously achieving the generation from other two units.	<p>Rates have been based on market survey/budgetary offer</p>
6	Design, Engineering, Manufacturing, Supply, Installation, Testing and Commissioning of microprocessor based Governors and Digital Static Excitation system of latest technology system for all three units.	3.71		Breakdown time shall be reduced and safety & reliability has been increased.	
7	Procurement of different valves and NRV etc.	0.20		This shall strengthen the drainage and dewatering system and safety/reliability of the Powerhouse shall be increased.	
8	Repairing of bulk head gate.	0.10		This shall improve the safety against flooding.	
9	Repairing of the draft tube gates	0.38		Reliable and smooth operation and to avoid leakage from gate during annual maintenance of machine(s), which shall reduce the annual maintenance time	
10	Supply and installation of drainage/dewatering Pumps	0.40		Proper healthiness of drainage /dewatering system shall be ensured.	
11	Supply, installation, testing & commissioning of 132 kV SF6 circuit breakers.	1.05		Breakdown time shall be reduced and safety & reliability has been increased.	
12	Procurement of New Governor Oil Pumps	0.40		Reliability of the system shall be increased and breakdown time will be reduced.	

  
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13	Design, Engineering, Manufacturing, Supply, Installation, Testing and commissioning of stator core with class-F insulation in one Unit				
14	Design, Engineering, Manufacturing, Supply, Installation, Testing and commissioning of stator winding with class-F insulation in one Unit	7.25	Technical audit has been carried out by the Central Board of Irrigation and Planning (CBIP), New Delhi and mentioned in their report that replacement of the E&M equipments with latest technology is essential.	Improvement in reliability and higher generation shall be achieved.	Rates have been based on market survey/budgetary offer
15	Re-Insulation of rotor poles with class-F insulation of one Unit				
16	Supply, installation, testing & commissioning of feeder protection Panel	1.00			
17	Supply, installation, testing & commissioning of Isolators	1.50	Technical audit has been carried out by the Central Board of Irrigation and Planning (CBIP), New Delhi and mentioned in their report that replacement of the E&M equipments with latest technology is essential.	Reliability and safety of the system shall be increased and breakdown time will be reduced.	Rates have been based on market survey/budgetary offer
18	Supply, installation, testing & commissioning of Mulsifyre system.	0.75			
19	Major overhauling of Generator Transformer	0.50			
20	Supply, installation, testing & commissioning of UAT, SAT and NGT.	1.25			

  
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21	Supply, installation, testing & commissioning of vacuum circuit breakers.	1.00	Technical audit has been carried out by the Central Board of Irrigation and Planning (CBIP), New Delhi and mentioned in their report that replacement of the E&M equipments with latest technology is essential.	Reliability and safety of the system shall be increased and breakdown time will be reduced.	Rates have been based on market survey/budgetary offer
22	Supply, installation, testing & commissioning of 110V batteries and charger	0.50			
23	Supply, installation, testing & commissioning of 415 V switchgears	0.50			
24	Supply, installation, testing & commissioning of machine protection panel.	1.50			
		29.93			
E	Vehicles	-			
F	Furniture & Fixtures	-			
G	Office Equipment	-			
H	Others	-			
	Total	29.93			

  
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Additional Capitalization Proposed for the FY 2019-20					
Sr. No.	Description	Amount (Rs. In Crores)	Need/Urgency of CAPEX	How the Capex will have improvement in performance of plant/life enhancement	Justification of cost/rate
A	Land	-			
B	Building	-			
C	Major Civil Works	-			
D	Plant & Machinery	-			
1	Major overhauling of unit # 1 including Repair of MIV, stator coolers and Supply, Installation, Testing and Commissioning of High Speed Lubrication System and thrust bearing oil coolers.	6.70		Reliability/stability of the machine shall be improved as machine has not been undergone major repair since last 30 years.Extra leakage in Powerhouse causing the extra burden on dewatering pumps and wastage of water shall be arrested.	
2	Design, Engineering, Manufacturing, Supply, Installation, Testing and commissioning of stator core with class-F insulation in one Unit	3.50	Technical audit has been carried out by the Central Board of Irrigation and Planning (CBIP), New Delhi and mentioned in their report that replacement of the E&M equipments with latest technology is essential.	Improvement in reliability and higher generation shall be achieved.	Rates have been based on market survey/budgetary offer
3	Design, Engineering, Manufacturing, Supply, Installation, Testing and commissioning of stator winding with class-F insulation in one Unit	3.50		Improvement in reliability and higher generation shall be achieved.	
4	Re-Insulation of rotor poles with class-F insulation of one Unit	2.50	Technical audit has been carried out by the Central Board of Irrigation and Planning (CBIP), New Delhi and mentioned in their report that replacement of the E&M equipments with latest technology is essential.		Rates have been based on market survey/budgetary offer

  
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5	Major overhauling of Generating Transformer of one Unit.	0.50	Technical audit has been carried out by the Central Board of Irrigation and Planning (CBIP), New Delhi and mentioned in their report that replacement of the E&M equipments with latest technology is essential.	Reducing the breakdown time	Rates have been based on market survey/budgetary offer
6	Procurement of safety equipments/fire extinguishers etc	1.00		Availability of these equipments shall increase the reliability & safety of Man and equipments.	
7	Supply, Installation, Testing and Commissioning of PLCC and RTU's	0.50		Improvement in communication and data carrying system shall resulting the smoothe operation with higher efficiency.	
		18.20			
E	Vehicles	-			
F	Furniture & Fixtures	-			
G	Office Equipment	-			
H	Others	-			
	Total	18.20			

  
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Sr. No.	Description	Amount (Rs. In Crores)	Need/Urgency of CAPEX	How the Capex will have improvement in performance of plant/life enhancement	Justification of cost/rate
A	Land	-			
B	Building	-			
C	Major Civil Works	-			
D	Plant & Machinery	-			
1	Major overhauling of unit # 2 including Repair of MIV, stator coolers and Supply, Installation, Testing and Commissioning of High Speed Lubrication System and thrust bearing oil coolers.	7.00	Technical audit has been carried out by the Central Board of Irrigation and Planning (CBIP), New Delhi and mentioned in their report that replacement of the E&M equipments with latest technology is essential.	Reliability/stability of the machine shall be improved as machine has not been undergone major repair since last 30 years.Extra leakage in Powerhouse causing the extra burden on dewatering pumps and wastage of water shall be arrested.	Rates have been based on market survey/budgetary offer
2	Design, Engineering, Manufacturing, Supply, Installation, Testing and commissioning of stator core with class-F insulation in one Unit	3.70		Improvement in reliability and higher generation shall be achieved.	
3	Design, Engineering, Manufacturing, Supply, Installation, Testing and commissioning of stator winding with class-F insulation in one Unit	3.70	Technical audit has been carried out by the Central Board of Irrigation and Planning (CBIP), New Delhi and mentioned in their report that replacement of the E&M equipments with latest technology is essential.	Improvement in reliability and higher generation shall be achieved.	Rates have been based on market survey/budgetary offer
4	Re-Insulation of rotor poles with class-F insulation of one Unit	2.63			

  
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5	Major overhauling of Generating Transformer of one Unit.	0.53	Technical audit has been carried out by the Central Board of Irrigation and Planning (CBIP), New Delhi and mentioned in their report that replacement of the E&M equipments with latest technology is essential.	Reducing the breakdown time	Rates have been based on market survey/budgetary offer
		17.56			
E	Vehicles	-			
F	Furniture & Fixtures	-			
G	Office Equipment	-			
H	Others	-			
	Total	17.56			

  
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Additional Capitalization Proposed for the FY 2021-22					
Sr. No.	Description	Amount (Rs. In Crores)	Need/Urgency of CAPEX	How the Capex will have improvement in performance of plant/life enhancement	Justification of cost/rate
A	Land	-			
B	Building	-			
C	Major Civil Works	-			
D	Plant & Machinery	-			
1	Major overhauling of MIV of unit # 3	2.24	Technical audit has been carried out by the Central Board of Irrigation and Planning (CBIP), New Delhi and mentioned in their report that replacement of the E&M equipments with latest technology is essential.	No Leakage from MIV shall prevent the loss of water and reduce also the burden on the drainage and dewatering system hence efficiency of the system shall increase.	Rates have been based on market survey/budgetary offer
2	Major overhauling of Generating Transformer of one Unit.	0.55		Reducing the breakdown time	
3	Supply of spares of governor and excitation system	2.00	Essential to keep the latest technology based system intact.	Spares are required for O&M of new governor. It will minimize the generation loss and breakdown hours.	
		4.79			
E	Vehicles	-			
F	Furniture & Fixtures	-			
G	Office Equipment	-			
H	Others	-			
	<b>Total</b>	<b>4.79</b>			

  
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