Maharashtra State Electricity Distribution Company Ltd.

Addendum IX

Date: 24.06.2024

BTR No. PHPS/01

MSEDCL has floated Request for Selection of Procurement of 1,000 MW Energy Storage Capacity (For 8 Hours discharge with maximum 5 Hours continuous discharge) for 40 years from ISTS/InSTS Connected Pumped Hydro Storage Plant/s through competitive bidding vide BTR No. PHPS/01 date:09.03.2024 on Bharat Electronictender.com. In this regards some modifications and additions will be made to RfS and ESFA as below:

SN	Clause	Original Clause	Modified Clause
1.	PHESFA 5.15.4 (Additional Clause)	-	**Alternate Source of Supply**: In the event the Developer agrees and undertakes to supply from an alternate PSP source, and the Procurer agrees to accept supply from such alternate source, the whole or part of the entitlement of the Procurer from electricity that would have been produced from Contracted Capacity during the period between the Scheduled Completion Date and COD, and on the terms specified in this Agreement, the Damages payable under this clause 5.15 shall be reduced in the same proportion that such supply shall bear to the Contracted Capacity. Any additional transmission charges or losses on account of such change in source of supply as against the contracted PSP Capacity, shall be borne by the Developer. Provided further that, any savings in transmission charges or losses on account of such change in source of supply shall accrue to the Procurer.
2.	RfS – 3.32	**Paragraph 1 under "Land/project Arrangements"**: The developer shall submit documents/Lease Agreement to establish possession/right to use 100% (hundred	Relevant portion of the clause is being revised as below: The developer shall submit documents/Lease Agreement to establish possession/right to use: i) required land for Powerhouse &

<table>
<tr><th>SN</th><th>Clause</th><th>Original Clause</th><th>Modified Clause</th></tr>
<tr><td></td><td></td><td>per cent) of the required land in the name of the project company for a period not less than the complete term of the ESFA, on or before the Scheduled Commissioning Date (SCD). Wherever leasing of private land is involved, the lease should allow transfer of land lease rights to the lenders or Buying Utility, in case of default of the ESSD. ESSD shall submit a sworn affidavit from its authorized signatory, listing the details of the land and certifying that total land required for the Project is under clear possession of the Developer.</td><td>associated equipments/facilities to MSEDCL up to the scheduled Financial Closure date and ii) required land for Reservoir (upper & lower) to MSEDCL, on or before SCD.

Wherever leasing of private land is involved, the lease should allow transfer of land lease rights to the lenders or Buying Utility, in case of default of the ESSD. ESSD shall submit a sworn affidavit from its authorized signatory, listing the details of the land and certifying that total land required for the Project is under clear possession of the Developer.</td></tr>
<tr><td>3.</td><td>PHESFA

4.2 (f)</td><td>Conditions Subsequent for the Developer:

f) Provided documentary evidence for clear title and possession of the land.</td><td>The clause is modified as below:

Conditions Subsequent for the Developer:

f) Provided documentary evidence for clear title and possession of the land as per timelines specified in clause 5.1.1 (n).</td></tr>
<tr><td>4.</td><td>PHESFA 5.1.1 (n) (Additional Clause)</td><td>-</td><td>The developer shall submit documents/Lease Agreement to establish possession/right to use: i) required land for Powerhouse & associated equipment’s/facilities to MSEDCL up to the scheduled Financial Closure date and ii) required land for Reservoir (upper & lower) to MSEDCL, on or before SCD.

Wherever leasing of private land is involved, the lease should allow transfer of land lease rights to the lenders or Buying Utility, in case of default of the ESSD. ESSD shall submit a sworn affidavit from its authorized signatory, listing the details of the land and certifying that total land required for the Project is under clear possession of the Developer.</td></tr>
<tr><td>5.</td><td>PHESFA 5.11.5 (Illustration purpose, State of Charge)</td><td>
<table>
<tr><th>State of Charge (MWh)</th><th>Remaining Maximum Continuous Discharge (output energy) (MWh) (instant MW output capped to Contracted Capacity)</th><th>Remaining Maximum Continuous Charge (input energy) (grossed up for Cycle Loss) (MWh)(instant MW input capped to Contracted Capacity)</th></tr>
<tr><td>8,000 (max)</td><td>8,000</td><td>0</td></tr>
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<tr><th>State of Charge (MWh)</th><th>Remaining Maximum Continuous Discharge (Output Energy) (MWh) (Instant MW output capped to Contracted Capacity</th><th>Remaining Maximum Continuous Charge (Input Energy) (Grossed up for Cycle Loss) (MWh) (Instant MW input capped to Contracted Capacity</th></tr>
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SN	Clause	Original Clause	Modified Clause
		<table><tr><td>6000</td><td>6000</td><td>2500</td></tr><tr><td>4000</td><td>4000</td><td>5000</td></tr><tr><td>2000</td><td>2000</td><td>7500</td></tr><tr><td>0 (min)</td><td>0</td><td>10,000 (max)</td></tr></table>	<table><tr><td>6000</td><td>6000</td><td>2667</td></tr><tr><td>4000</td><td>4000</td><td>5333</td></tr><tr><td>2000</td><td>2000</td><td>8000</td></tr><tr><td>0 (Min)</td><td>0</td><td>10667</td></tr></table>
6.	PHESFA Clause 5.1 (l)	Each unit of the Pumped Hydro Storage based Energy Storage System (PHESS) shall have the ability to vary the capacity between 20% to 100% of the rated MW capacity with hydro unit overload capacity as per CEA standard.	The clause is modified as below: In generation mode, the PHESS project, at overall plant level, shall have the ability to vary the capacity from 20% to 100% of the rated MW capacity and at individual unit-level, PHESS project shall have the ability to vary the unit-level capacity between 50% to 100% of the rated MW capacity with hydro unit overload capacity as per CEA standard.
7.	PHESFA Clause 16.4.1 and Clause 16.4.2	16.4.1 - Upon Termination on account of a Developer Default, the Developer shall pay to the Procurer, by way of Termination Payment, an amount equal to the AFC that would have been due and payable for Normative Availability for a period of 1 (one) year as if the PHESS had operated for such 1 (one) year from the date of Termination 16.4.2 - Upon Termination on account of a Procurer Default, the Procurer shall pay to the Developer, by way of Termination Payment, an amount equal to the AFC that would have been due and payable for Normative Availability for a period of 6 (six) months as if the PHESS had operated for such 6 (six) months from the date of Termination.	16.4.1 - Upon Termination on account of a Developer Default, the Developer shall pay to the Procurer, by way of Termination Payment, an amount equal to the AFC that would have been due and payable for Normative Availability for a period of 24 (twenty-four) months as if the PHESS had operated for such 24 (twenty-four) year from the date of Termination 16.4.2 - Upon Termination on account of a Procurer Default, the Procurer shall pay to the Developer, by way of Termination Payment, an amount equal to the AFC that would have been due and payable for Normative Availability for a period of 24 (twenty-four) months as if the PHESS had operated for such 24 (twenty-four) months from the date of Termination.
8.	RfS Clause No.3.9 ii c	The Bidder/s shall provide proof and credential as per Format – 6.14: Format for certificate from Statutory Auditor for Technical Criteria that demonstrates previous experience of successfully commissioning/ operating Thermal and Hydro generation projects for capacity equivalent to that quoted by the Bidder under this Tender.	The Bidder/s shall provide proof and credential as per Format – 6.14: Format for certificate from Statutory Auditor/ Chartered Accountant for Technical Criteria that demonstrates previous experience of successfully commissioning/ operating Thermal or Hydro generation projects for capacity equivalent to that quoted by the Bidder under this Tender.
9.	RfS Clause 3.13 (i)	**Bidding Component** Selection of bidders shall be through a competitive bidding process, based on the lowest quoted Total Storage Cost	**Bidding Component** Selection of bidders shall be through a competitive bidding process, based on the lowest quoted Total Storage Cost

SN	Clause	Original Clause	Modified Clause
		discovered (expressed in INR/MW/annum) during E-Reverse Auction. Bidder shall quote the combination of the following. - Component A: Annual Fixed Charges (AFC) and - Component B: Cycle Loss (CL) The Bidder/s shall quote the AFC (expressed in INR/MW/annum) and declare the Cycle Loss (expressed in %) of the Projects at the time of submission of response to Tender which is constant during the entire term of the ESFA. Total Storage Cost, which is combination of AFC & Cycle Loss, shall be arrived at and denominated up to two decimal places as per the below formula: Total Storage Cost = Component A+ (Component A x Component B) For illustration: If a Bidder declares a Cycle Loss of 15% for a Contracted Capacity of 500 MW, with an Annual Fixed Charge of INR 50,00,000/MW, then Total Storage Cost computed as per above formula shall be INR 57,50,000/MW/annum.	discovered (expressed in INR/MW/annum) during E-Reverse Auction. Bidder shall quote the combination of the following. - **Component A**: Annual Fixed Charges (AFC) and - **Component B:** Cycle Loss (CL) [It cannot be changed in e-RA] The Bidder/s shall quote the AFC (expressed in INR/MW/annum) and declare the Cycle Loss (expressed in %) of the Projects at the time of submission of response to Tender which is constant during the entire term of the ESFA. ***a.***For **intra state Developer** Total Storage Cost, which is combination of AFC & Cycle Loss, shall be arrived at and denominated up to two decimal places as per the below formula: Total Storage Cost = Component A+ (Component A x Component B). For illustration If a bidder declares a cycle loss of 15% for contracted capacity of 500MW with an annual fixed charge of INR 50,00,000/MW, then Total storage cost computed as per above formula shall be INR 57,50,000/MW/annum. *For interstate state* Developer All India **Transmission Charges** declared by NLDC for the month in which bid will be submitted and weekly **Transmission losses** are considered for calculation of total storage cost for evaluation purpose only. Illustration is given in **Table A** enclosed.

TABLE A

SR No	**Bid Evaluation for Inter State PSP (for illustration purpose)**	
1	Contracted Capacity (MW)	**1000**
2	Hours of Operation in Pumping mode per Day	**10**
3	Hours of Operation in Generation mode per Day	**8**
4	AFC Quoted by Bidders (Rs/MW/Year)	₹ 50,00,000
5	Annual AFC calculated = (4*1)	₹ 5,00,00,00,000
6	Cycle loss Quoted by Bidders (%)	25.00%
7	Capacity Required in Pumping Mode (MW) considering declared Cycle loss MW	1333
8	All India Trasmission loss Declared By NLDC for the month in which of Bid Submission Date occurred is to be considered (% Monthly Avg)	3.50%
9	Power to be scheduled by Procurer considering Transmission Loss 3.5%	1382
10	Extra Power required for pumping due to T/L considering 10 Hrs pumping MWh	158860
11	APC considered (Rs/KWh)	5.5
12	Burden due to Extra pumping power = (10*11)	₹ 87,37,30,570
13	Bidders Quote Considering Declared Cycle loss considered for evaluation =(4+(4*6)	₹ 62,50,000

TABLE A		
SR No	**Bid Evaluation for Inter State PSP (for illustration purpose)**	
14	Storage Cost considering Cycle Loss (Rs/Per Year)	₹ 6,25,00,00,000
15	All India Trasmission Charge Declared By NLDC for the month in which of Bid Submission Date occurred is to be considered (Rs/Unit)	0.52
16	Possible Generation per year (KWh) considering 95% availability and 8 hr/day Generation	2628000000
17	Transmission Charges considered for evaluation (Rs/year) =(15*16)	₹ 1,36,65,60,000
18	Total storage cost considering All India Transmission Charges (Rs/Year) =(14+17)	₹ 7,61,65,60,000.00
19	Rate to be considered for Evaluation considering Transmission Charges (Rs/MW/Year) =(18/1)	₹ 76,16,560.00
20	Discharge received at Maharashtra periphery considering TL of 3.5% (MW)	965
21	Power loss due to transmission loss in discharge mode considering 8 Hrs Discharge (MWh/Year)	91980
22	Burden-Power loss due to transmission loss at discharging cycles (Rs) =(11*21)	₹ 50,58,90,000.00
23	Total Burden considering Transmission losses (Rs/Year) =(12+22)	₹ 1,37,96,20,569.95
24	Burden to be Considered for evaluation (Rs/MW/Year) =(23/1)	**₹ 13,79,620.57**
25	Final Rate to be considered for Evaluation (Rs/MW/Year) =19+24	₹ 89,96,180.57

Calculation of Actual AFC payable to Interstate Bidder after ERA	
IPO Rate to be displayed to bidder (Rs/MW/Year) (A)	₹ 89,96,180.57
Final Rate Quoted by Bidder in ERA (RS/MW/Year) (B)	**₹ 85,00,000.00**
Total Storage Cost ©=B*1	₹ 8,50,00,00,000.00
Total Annual Storage Cost Excluding Transmission Charges and Transmission loss component and Cycle loss component Rs D= C-14-17-23	₹ 4,50,38,19,430.05
Final Payable AFC to Bidder (RS/MW/Year) E=D/1	**₹ 45,03,819.43**

Sd/-

Chief Engineer (Power Purchase)

MSEDCL