

EPC PACKAGE FOR WASTE TO ENERGY PROJECT (2X350 TPD) FOR KAWAS GAS POWER STATION

Bidding Document No.: CS-2600-001-9

Amendment No. 04 to Forms & Procedures (FP), Section-VII

S. No.	Clause Reference	Amendment	
		Existing Provisions	Amended Provisions
1	Book 1 of 3 Attachment- 13	Attachment-13 (Milestone schedule)	Replace Attachment-13 with revised Attachment-13 (REV.01) enclosed herewith.
2	Book 1 of 3 New Attachment	--	Add new Attachment to Stage-I (Techno-Commercial) form as Attachment-17 (List of spares) enclosed herewith.
3	Book 2 of 3 Price Schedules	Revised Prices Schedule in excel format	Replace earlier issued Price Schedules with Revised Price Schedules enclosed as separate excel sheet in C-folder.
4	Book 3 of 3 Appendix-1 (Rev.01) to Form of Contract Agreement (Form-5) Issued vide Amdt 01 to Section-VII Page 3 of 23	B. Schedule 1 and 5 : Payment Terms for Recommended Spares (When ordered) on Ex-Works (India) basis ... C. Schedule No. 2 : Local Transportation All Plant and Equipment and recommended spares (if ordered)	To be read as under: B. Schedule 1 : Payment Terms for Mandatory Spares on Ex-Works (India) basis ... C. Schedule No. 2 : Local Transportation All Plant and Equipment and mandatory spares
5	Book 3 of 3 Appendix-1 (Rev.01) to Form of Contract Agreement (Form-5) Issued vide Amdt 01 to Section-VII Page 16 of 23	I. Schedule-3 : Payment Terms for Operation and Maintenance Charges	To be read as under: I. Schedule-3 : Payment Terms for Operation and Maintenance (O&M) Charges inclusive of Recommended spares quoted in Schedule-5

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6	Book 3 of 3 Appendix-1 (Rev.01) to Form of Contract Agreement (Form-5) Issued vide Amdt 01 to Section-VII Page 19 of 23	1.2 The Billing Breakup for Mandatory Spares shall be submitted to the Employer for approval as per the format enclosed as Annexure-1 to this Appendix-1 indicating therein the details such as Make, Model number, Drawing/Datasheet number and Part number of all spare items. The relevant drawings/documents shall be submitted along with the Billing Break up. NOT APPLICABLE	To be read as under: 1.2 The Billing Breakup for Mandatory Spares shall be submitted to the Employer for approval as per the format enclosed as Annexure-1 to this Appendix-1 indicating therein the details such as Make, Model number, Drawing/Datasheet number and Part number of all spare items. The relevant drawings/documents shall be submitted along with the Billing Break up. APPLICABLE
7	Book 3 of 3 Appendix-2 to Form of Contract Agreement (Form-5) Page 1 of 13	(ii) The price adjustment provisions shall be applicable separately for price components relating to Supply of Equipment including spare parts, Installation, Civil and Structural Works, as per price break-up furnished by the Contractor in Schedule-1/ Schedule-5 and Schedule-3. The Price Adjustment shall be without any Ceiling. (iii) Only following components of the Contract Price will be subject to Price adjustment: ... (e) Ex-Works (India) Price of Recommended Mandatory Spares manufactured within the Employer's Country (covered in Schedule-5).	To be read as under: (ii) The price adjustment provisions shall be applicable separately for price components relating to Supply of Equipment including spare parts, Installation, Civil and Structural Works, as per price break-up furnished by the Contractor in Schedule-1/ Schedule-5 and Schedule-3. The Price Adjustment shall be without any Ceiling. (iii) Only following components of the Contract Price will be subject to Price adjustment: ... (e) Ex-Works (India) Price of Recommended Mandatory Spares manufactured within the Employer's Country (covered in Schedule-5).
8	Book 3 of 3 Appendix-4 to Form of Contract Agreement (Form-5)	Appendix-4 (Time Schedule)	Replace Appendix-4 with revised Appendix-4 (REV.01) enclosed herewith.

**EPC PACKAGE FOR WASTE TO ENERGY PROJECT (2X350 TPD) FOR
KAWAS GAS POWER STATION
BIDDING DOCUMENT NO. CS-2600-001-9**

(Milestone Schedule)

Bidder's Name and Address :

To
Contract Services,
NTPC Limited,
6th Floor, Engg. Office Complex,
Plot A-8A, Sector-24, Noida-201301

Dear Sirs,

We declare that following program for **EPC PACKAGE FOR WASTE TO ENERGY PROJECT (2X350 TPD) FOR KAWAS GAS POWER STATION** shall be followed by us in furnishing, erecting, testing, commissioning and completion of facilities and FOR site delivery of all mandatory spares covered under the package shall be followed by us.

S. No.	Activity/ Description of Milestones	Duration in Months from NOA	
		Start	Finish
1.	Soil Investigation	0	1
2.	Site mobilization and preparatory works	1	2
3.	Site Leveling	2	3
4.	Detailed Engineering & Approval	1	12
5.	Foundation and Civil works	6	15
6.	Delivery of all main equipment including mandatory spares	9	18
7.	Installation of main equipment	10	20
8.	Other Misc. Civil works	-	24
9.	Commissioning (cold & hot)	25	28
10.	Trial Run	28	29
11.	Completion of facilities	29	30

Note:

1. "Start" in each activity means next day after the lapse of duration given from NOA, however, in case of "Start=0" the start date will be the date of NOA.
2. "Finish" means last day of completion of the period of particular activity.

Date : (Designation)

Place : (Printed Name)

**EPC PACKAGE FOR WASTE TO ENERGY PROJECT (2X350 TPD) FOR
KAWAS GAS POWER STATION
BIDDING DOCUMENT NO. CS-2600-001-9**

(List of Spares)

Bidder's Name and Address :

To
Contract Services,
NTPC Limited,
6th Floor, Engg. Office Complex,
Plot A-8A, Sector-24, Noida-201301

Dear Sirs,

- 1.0 We declare we have reviewed the applicability of the spares mentioned below and our observations are mentioned in remarks column in table below.

S. No.	Description	Unit	Qty	Qty proposed by Bidder	Remarks
A	Boiler and Auxiliaries				
1	Ignition valve for burner	Sets	2		
2	Combustion Grate	Sets	2		
3	Fluidized Bed Nozzles	Sets	2		
4	Tubes	Nos.	60		
5	Fins	Nos.	40		
6	Coils(each type)	Nos.	5		
7	Soot blower (each type)	Sets	2		
8	PA / FD fan spares	Sets	2		
9	APH / steam coil heater spares	Sets	2		
10	Lime spray nozzles, dozing pumps	Sets	2		
11	Oil guns	Sets	2		
12	Safety valve	Sets	2		
13	Drum internals spares etc.,	Sets	2		
14	Pressure parts each type / material / radius etc	Sets	2		
15	Ignitors	Sets	2		
16	Gas igniting device for burner	Sets	3		
17	Flame scanner for burner	Sets	2		
18	Flame monitoring device for burner	Sets	2		
B	Waste Handling system				
1	EOT	Nos	1		
2	Grab crane bucket	Sets	2		
C	SLAG AND ASH HANDLING SYSTEM				
1	Slag extractor	Sets	3		
D	FLUE GAS CLEANING SYSTEM				
1	Activated carbon spray nozzles, metering systems	Sets	2		
2	Manhole Packing for Induced draft fan	Sets	2		
3	Fabric filter bags (No of bags approx. 1500)	Nos	300		

S. No.	Description	Unit	Qty	Qty proposed by Bidder	Remarks
4	Ash removal system from bag filter	Sets	2		
5	Pneumatic valves for bag filter cleaning system	Sets	2		
6	Cages for bag filter	Sets	2		
E	Instrumentation				
1	Hart calibrator	Nos	1		
2	DI cards (Each type)	%	10		
3	DO cards (Each type)	%	10		
4	AI cards (Each type)	%	10		
5	AO cards (Each type)	%	10		
F	Analyzers				
1	Zirconium cell for O2 analyzer at BF outlet	Set	2		
2	CEMS	Set	2		
G	Mechanical seals				
1	Boiler feed water pump	Sets	2		
2	Hot well transfer pump	Sets	2		
3	Ejector (Nozzle replacement)	Nos	1		
4	Rupture disc	Nos	2		
5	ID & PA Fan - (bearings, couplings etc)	Sets	5		
H	Turbine Generator and Auxiliaries				
	STEAM TURBINE				
1	Bearing Pads	Set	1		
2	Thrust Pads(Active& Non-Active)	Set	1		
	GENERATOR				
1	Bladed/unbladed rotor	Nos	1		
2	RTD's(each type)	Nos	2		
1	COMPRESSOR	Sets	1		
2	Boiler feed pump	Nos.	1		
I	HT Motors				
1	Compressor Motor	Nos.	1		
2	BFP Motor	Nos.	1		
3	FD Fan Motor	Nos.	1		
4	ID Fan Motor	Nos.	1		
J	Air Cooled Condenser				
1	Mechanical seal for CEP	Set	1		
2	Mechanical seal for DBP	Set	1		
3	Motor bearing for CEP &DBP (DE + NDE)	Set	1 each		
4	Motor bearing fan(DE + Non DE)	Set	1		
5	Rupture disc	No.	1		

- 2.0** Further, we suggest following addition to the above list of spares. Finalization of spares list shall be discussed during post-bid discussions after Stage-I Bid opening.

S. No.	Description	Unit	Qty proposed	Remarks

- 3.0** We further, confirm that we shall quote prices in our Stage-II (Price) bid for the complete list of Mandatory spares issued as an amendment to bidding documents.

Date : (Designation)

Place : (Printed Name)

Note : 1. Bidder may use similar format for furnishing data.

TIME SCHEDULE

- 1.0 It is clearly understood and agreed that time is the essence of this Contract and shall be strictly adhered to by the Contractor. The program of furnishing, erecting, testing, commissioning completion of facilities and site delivery of mandatory spares, identifying the key phases in various areas of work like design, procurement, manufacture, field activities including civil construction works shall be as per Master Network enclosed as Annexure-I to this Appendix-4 (*The Master Network submitted by the Bidder as per provision of Bid Data Sheets and as mutually discussed and agreed before Notification of Award shall be enclosed as Annexure-I to this Appendix-4*). As per this Master Network, the key milestones for completion of facilities are as under :

S. No.	Activity/ Description of Milestones	Duration in Months from NOA	
		Start	Finish
1.	Soil Investigation	0	1
2.	Site mobilization and preparatory works	1	2
3.	Site Leveling	2	3
4.	Detailed Engineering & Approval	1	12
5.	Foundation and Civil works	6	15
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Note:

1. "Start" in each activity means next day after the lapse of duration given from NOA, however, in case of "Start=0" the start date will be the date of NOA.
 2. "Finish" means last day of completion of the period of particular activity.
- 2.0 This master network and the key milestone dates will be discussed and agreed before the execution of Notification of Award. Engineering Drawing and Data Submission Schedule shall also be discussed and finalised before the issue of Notification of Award.
- 3.0 After the Notification of Award, the contractor shall plan the sequence of work of manufacture and erection to meet the above stated dates of successful completion of facilities and shall ensure all work, manufacture, shop testing, inspection and shipment of the equipment in accordance with the required construction/erection sequence.

- 4.0 Within one month of the Notification of Award, the Contractor shall submit to the Employer for his review and approval two copies (one reproducible and one print) of detailed PERT Network schedules with master network activities further exploded based on the Master Network mutually agreed by the employer and contractor, showing the logic and duration of the activities covered in both the First and Second Contracts in the following areas:

Engineering, procurement, manufacturing and supply, detailed engineering, procurement (including brought out items), manufacturing, dispatch, shipment, receipt at site and activities related to erection, commissioning and completion of facilities.

5.0 Detailed Manufacturing Programme

Detailed Manufacturing PERT Network for all the manufacturing activities and Contractor/sub-Contractors works shall also be furnished within 60 days of Notification of award. The manufacturing network shall be supported by detailed procurement programme for critical bought out item/raw materials.

6.0 Pre-Erection Activity Programme

The erection network will be supported by detailed Pre-erection activity programme covering the following:

- A) Manpower Deployment
- B) T&P Mobilization
- C) Detailed Site Mobilization Plant

- 6.1 The bidder shall furnish the list of T&P to be deployed by him in Attachment-11 along with the Methodology of Construction and Erection which shall be discussed and mutually agreed to before Notification of the Award along with the schedule of deployment of such T&P.

The finalised list of T&P alongwith the schedule of their deployment shall then be enclosed as Annexure-4B to Appendix-4 of the Contract Agreement.

Any additional T&P required for satisfactory execution of the Contract as per specified time schedule, shall be mobilised by the Contractor as per the directions of Project Manager without any extra cost to Employer.

- 7.0 Within one week of approval of the network schedule, the Contractor shall forward to the Project Manager, copies of the Computer Initial run-Data. The type of outputs and number of copies of each type to be supplied by the Contractor shall be determined by the Project Manager.
- 8.0 All the networks shall be updated every month or at a frequency mutually agreed upon. Within seven days following the Monthly Review, a progress meeting shall be held, whenever possible at the works, wherein the major items of the plant or equipment are being produced. The meeting will be attended by the Project Manager and responsible representative of Contractor that the Project Manager consider necessary for the meeting.
- 9.0 Access to the Contractor's and Sub-Contractor's work shall be granted to the Project Manager at all reasonable times for the purpose of ascertaining the progress.