

Talwandi Sabo Power Limited

And

XXXXXXXXXXXXXXXXXX

Contract# xxxxxxxxxxxx

CONTRACT FOR PROVISION OF [] SERVICES

THIS AGREEMENT is made on **XXXXXXXXXX**

BETWEEN

- (1) **COMPANY NAME**, a company incorporated in India currently having its registered office at _____, (hereinafter referred to as the "Company", which expression, unless the context requires otherwise, shall include its successors and permitted assignees); and
- (2) **XXXX** a company incorporated under the provisions of Company Act, 1956 and having its registered office at **XXXXXXXXXXXXXXXXXXXX** (hereinafter referred to as the "Service Provider", which expression, unless the context requires otherwise, shall include its successors and permitted assignees).

RECITALS:

WHEREAS the Company requires the Service Provider to provide certain services and the Service Provider is engaged in the business of providing such services and has agreed to perform the Services for the Company on the terms and conditions set out in this Contract.

NOW THEREFORE IT IS HEREBY AGREED as follows:

1. The Service Provider agrees to perform the Services in accordance with the terms and conditions of this Contract and, in consideration of its due performance of the Services, the Company agrees to pay the Service Provider according to the rates, terms and conditions herein contained.
2. The Contract shall comprise the following documents:

This Agreement
Schedule I: Standard Terms and Conditions
Attachment 1 to Schedule I: Scope of work
Attachment 2 to Schedule I: Compensation Schedule

(all hereinafter the "**Agreement**").

3. In the event of any inconsistency or discrepancy between any of the documents listed above, the Standard Terms and Conditions shall have preference over any other documents and these Standard Terms and Conditions shall apply and shall be incorporated by reference / deemed incorporated in any Purchase Order issued hereunder and shall prevail at all times between the Parties over any other terms and conditions (including any terms or conditions which Service Provider purports to apply except where the Parties by its/their authorized signatories have specifically agreed in writing to vary and override the said Standard Terms and Conditions.
4. The effective date of this Agreement shall be ********* (hereinafter the "**Effective Date**") and this Agreement shall be valid for a period of ********* from the Effective Date / up to ********* ("**Term**").
5. For the purposes of Clause 8 (Payment) of Schedule I (Standard Terms and Conditions), the address for sending invoices shall be as follows:

Accenture * _____
Contact:
Email:
Attention:

6. For the purposes of Notices Clause of Schedule I (Standard Terms and Conditions), the address for notices shall be:

If to the Company:

Talwandi Sabo Power Limited Limited

* _____
Attention:
Email: *****
Ph: *****

If to the Service Provider:

XXXXXXXXXXXXXXXXXXXX

7. For the purposes of this Agreement, the Company's representative shall be ***** & for operational matters shall be *****. The Service Provider's representative shall be XXXXXXXXX for all matters, including contractual and operational.

IN WITNESS WHEREOF the Parties hereto have executed this Agreement on the day, month and year herein above written:

Signed by.....[Witness Name]

Signed by.....

.....
for and on behalf of **TALWANDI SABO POWER LIMITED**

for and on behalf of XXXXXXXXXXXXXXX

Witness.....

Witness.....

PLEASE TICK:

WE HAVE READ THE STANDARD TERMS AND CONDITIONS ENCLOSED WITH THIS AGREEMENT

SCHEDULE I STANDARD TERMS AND CONDITIONS

1. DEFINITIONS

1.1 In the Agreement, the following words and expressions shall, unless the context otherwise requires, have the following meanings:

"Affiliate" shall mean with respect to any person, any other person that, directly or indirectly, controls, is controlled by or is under common control of such specified person. For the purposes of this definition,

"control" means the direct or indirect beneficial ownership of more than fifty percent (50%) of the issued share capital, stock or other participating interest or the legal power to direct or cause the direction of the general management of the company, partnership or other person in question, and "controlled" shall be construed accordingly;

"Agreement" shall mean the Agreement between the Company and the Service

Provider to which this Schedule is attached.

"Purchase Order" shall mean the document recording the specific Services to be carried out under this Agreement, from time to time.

"Fees" shall mean the prices and/or rates payable by the Company in respect of the Services and/or as specified in the relevant Purchase Order.

1.2 Unless otherwise stated, any and all references in the Agreement to Clauses are references to the Clauses of the Agreement.

1.3 The headings in the Agreement are used for convenience only and shall not govern or affect the interpretation of the Agreement.

1.4 Words denoting the singular shall include the plural and vice versa, where the context requires.

1.5 Except as expressly identified, any reference to statute, statutory provision or statutory instrument shall include any re-enactment or amendment thereof for the time being in force.

1.6 Unless expressly stated otherwise, all references to days, weeks, months and years shall mean calendar days, weeks, months and years.

2. SCOPE OF CONTRACT

2.1 The terms and conditions of the Agreement shall apply from the Effective Date and shall remain valid for the Term unless this Agreement is terminated earlier by the Company in accordance with Clause 10 below (Standard Terms and Conditions).

2.2 Subject to the provisions of this Agreement, the Parties agree that upon request of the Company in terms hereof, the Service Provider shall perform the Services at such locations and for such periods as may be agreed with the Company.

2.3 From time to time, the Company may issue a Purchase Order to the Service Provider. In such case, the terms and conditions of this Agreement shall apply to each

such Purchase Order as if repeated in total.

2.4 The Service Provider shall commence the Services on the scheduled commencement date stated in the Purchase Order and shall continue such Services for the duration of the Purchase Order. Each Purchase Order is subject to agreement on a case by case basis.

3. SERVICES

3.1 The Service Provider shall perform the Services with all due skill, care and diligence in a safe, competent and timely manner and in accordance with the requirements of the Agreement and/or the relevant Purchase Order.

3.2 Except to the extent that it may be legally or physically impossible, the Service Provider shall comply with the Company's instructions and directions in all matters relating to the Services consistent with the provisions hereunder.

3.3 The Service Provider shall agree with the Company in the relevant Purchase Order from time to time as regards the personnel who will perform the Services and shall:

(a) only provide such personnel who possess appropriate experience, skills and qualifications necessary for the Services to be performed in accordance with this Agreement;

(b) not remove or replace such personnel without the prior written consent of the Company (not to be unreasonably withheld); and

(c) nominate a senior manager or director of the Service Provider to have overall responsibility for the provision of the Services in terms of the relevant Purchase Order, which person shall attend any meetings with the Company on reasonable prior notice.

3.4 The Company shall be entitled to request the Service Provider to replace any of its personnel providing the Services, where in the Company's reasonable opinion such person is incapable and or unsuitable for performing the Services required by this

Agreement. The Service Provider shall promptly replace such person at no additional cost to the Company.

- 3.5 Without prejudice to any other rights of the Company under the Agreement or at law, if the Service Provider fails to perform the Services in accordance with the provisions of this Agreement, the Company may use alternative means to perform the Services and the Service Provider shall be liable for any additional cost incurred by the Company in using such alternate means.

4. FEES

- 4.1 The Company shall pay for the Services performed in accordance with the prices as per Attachment 2 to Schedule I and/or rates specified in the relevant Purchase Order.
- 4.2 In case of contingency assignments, the agreed fees for such onetime Services shall be payable on completion of the relevant assignment as per the Purchase Order.

5. SERVICE PROVIDER'S GENERAL OBLIGATIONS

- 5.1 The Service Provider shall, and the Service Provider shall ensure that its employees and representatives shall, in performing its obligations under this Agreement, comply in all respects with all relevant laws, statutes, regulations and orders for the time being in force.
- 5.2 Where any of the Service Provider's employees or representatives is present at any of the Company's premises for the purposes of this Agreement, the Service Provider shall at all times remain responsible for the conduct and safety of such employee or representative.
- 5.3 The Service Provider shall not, in performing its obligations under this Agreement, hold itself out or permit any person to hold it out as being authorised to bind the Company in any way and will not commit any act which might reasonably create the impression that it is so authorised.
- 5.4 The Service Provider shall ensure that it has in place and maintains in place for the

duration of this Agreement sufficient insurance to comply with all applicable laws and to cover its potential liabilities under this Agreement and shall provide evidence of such insurances to the Company on request.

- 5.5 The Service Provider may not subcontract any of its obligations under this Agreement without the prior written consent of the Company. The Service Provider shall not be relieved from any of its obligations or liabilities under the Agreement by virtue of any subcontract and the Service Provider shall be responsible for all Services, acts, defaults or omissions of its subcontractors (and its or their employees and consultants) as though they were the services, acts, defaults or omissions of the Service Provider.

- 5.6 In performing the Services, the Service Provider shall:

- (a) give preference to the purchase and use of goods manufactured, produced or supplied in India provided that such goods are available on terms equal or better than imported goods with respect to the timing of delivery, quality, quantity required, price and other terms;
- (b) subject to Clause 5.5, employ Indian subcontractors having the required skills or expertise to the maximum extent possible insofar as their services are available on comparable standards with those obtained elsewhere and at competitive prices and on competitive terms, provided that where no such sub-Contractors are available, preference shall be given to non-Indian subcontractors who utilise Indian goods to the maximum extent possible, subject to the proviso in Clause 5.6 (a) above; and
- (c) subject to Clause 5.5, co-operate with and assist Indian companies as subcontractors to enable them to develop skills and technology to service the petroleum industry.

- 5.7 The Service Provider shall maintain proper and accurate records in relation to the Services and shall provide copies of the same

to the Company on request. The Company (or its appointed representative) shall have the right to audit the relevant books and accounts of the Service Provider in relation to any reimbursable charges paid for by the Company under this Agreement. Such audit right shall survive for a period of 2 (two) years following the expiry or termination of the Agreement. Any incorrect payments identified by such audit shall be adjusted between the Parties as appropriate.

6. THIRD PARTY CLAIMS AND LIMITATION OF LIABILITY

6.1 - The Service Provider shall be liable for and shall defend, indemnify and hold the Company harmless from and against any and all claims, liabilities, costs, damages and expenses (including court costs and legal fees) in connection with:

- (a) any claim made by any third party (including, but not limited to, any claim made by any governmental or statutory authority) against the Company arising out of or in connection with the performance by the Service Provider of its obligations under this Agreement.
- (b) any infringement (whether actual or alleged) of any patent or other intellectual property right arising out of or in connection with the performance of this Agreement by the Service Provider

6.2 Notwithstanding anything to the contrary in this Agreement, in no event shall either Party be liable to the other, whether arising under Agreement, tort (including negligence), strict liability or otherwise, for any indirect, consequential, special, punitive, exemplary or incidental loss or damages of any nature arising at any time from any cause whatsoever.

7. VARIATIONS

7.1 At any time during this Agreement, the Company may request the Service Provider to vary, amend or otherwise alter the Services (a "Variation Request").

7.2 Upon the receipt of a request from the Company pursuant to Clause 7.1, the Service Provider shall, within 7 days, notify the Company of the effect of the Variation

Request on the Fees and/or other terms of the relevant Order.

7.3 If following receipt of the Service Provider's response pursuant to Clause 7.2, the Parties are in agreement on the Variation Request and the adjustments to be made to the relevant Purchase Order, the Parties shall execute a variation order (a "Variation Order") to reflect such agreement.

7.4 The Services shall not be varied, amended or otherwise altered and/or the Fees shall not be adjusted until such time as a Variation Order is executed by both Parties.

8. PAYMENT

8.1 In addition to any requirements set out in the relevant Purchase Order, each invoice shall:

- (a) be in duplicate;
- (b) bear the Contract Number stated on the cover sheet to the Agreement;
- (c) state the name, e-mail address, mobile telephone number of the Company's Representative; and
- (d) be accompanied by supporting evidence and itemised in accordance with the Company's requirements.

Specifically, the Service Provider shall submit the following information/ documents to the Company:

- (i) Copy of registration certificates under Indian tax/other laws including but not limited to Service Tax, Excise, import export code etc., as applicable.
- (ii) Copy of PAN.

Invoices to the Company shall be sent to the address set out in the Agreement. Service Provider must ensure that all invoices for services performed or goods delivered are submitted to the Company within 90 days.

8.2 The Company shall make payment of a correct invoice within 45 days of receipt to the Service Provider's nominated bank account. Any invoice not complying with the

provisions of this Agreement will be returned by the Company and the Service Provider shall submit a rectifying invoice.

8.3 The Company may dispute any amount on an invoice and withhold the disputed amount provided that:

- (a) the Company makes payment of any undisputed portion of the invoice and notifies the Service Provider of the disputed amount within 45 days of receipt of the relevant invoice;
- (b) if the dispute is resolved in favour of the Service Provider, the Company shall pay the disputed amount within fifteen (15) days of the date of the resolution of the dispute or forty-five (45) days of receipt of the invoice, whichever is later.

If the dispute is resolved in favour of the Company, the Service Provider shall forthwith issue a credit note for the disputed amount.

8.4 The Company shall be entitled to set-off / adjust / deduct from any invoice under this Agreement, any payment due from the Service Provider to the Company or any of its Affiliates.

9. TAXES

9.1 Definitions

For the purposes of this Clause 9:

- (a) "Tax" or "Taxes" means taxes, levies, duties, fees, charges and contributions as amended from time to time and any interest or penalties thereon;
- (b) "Government Authority" or "Government Authorities" means any local or national government or authority of any country, competent to levy any Tax.

9.2 Person Responsible for payment of taxes

Except as may be expressly set out in this Agreement, the Service Provider shall be responsible for:

- (a) the payment of all Taxes now or hereafter levied or imposed on the Service

Provider or its subcontractors or on the personnel of the Service Provider or its subcontractors by any Government Authority in respect of any wages, salaries and other remuneration paid directly or indirectly to persons engaged or employed by the Service Provider or its subcontractors (hereinafter referred to as "Personal Income tax");

- (b) the payment of all Taxes now or hereafter levied or imposed by any Government Authority on the actual/assumed profits and gains made by the Service Provider or its subcontractors (hereinafter referred to as "Corporate Income tax");
- (c) the payment of all Taxes now or hereafter levied or imposed by any Government Authority on the services, if any, provided to the Company by the Service Provider or its subcontractors (hereinafter referred to as "Service tax");
- (d) the payment of all Taxes now or hereafter levied or imposed by any Government Authority on the goods, if any, sold to the Company by the Service Provider or its subcontractors (hereinafter referred to as "Sales tax/VAT");
- (e) the payment of all Taxes now or hereafter levied or imposed by any Government Authority on the goods, if any, manufactured by the Service Provider or its subcontractors for sale to the Company (hereinafter referred to as "Excise Duty"); and
- (f) the payment of any other Taxes now or hereafter levied or imposed by any Government Authority on the Service Provider or its subcontractors as a result of the performance of this Agreement.

9.3 Withholding taxes and Withholding certificates

9.3.1 The Company shall, at the time of its payments due to the Service Provider, withhold the necessary taxes at such rate as is required by any Government Authority, unless and to the extent that the Service Provider shall produce to the Company any certificate issued by a Government Authority (having authority to issue such certificate) entitling the Service Provider to

receive the payments under the Agreement for a prescribed period without deduction of any tax or deduction at a lower rate.

9.3.2 The Company shall provide the necessary withholding tax certificates to the Service Provider within the time stipulated by the relevant law to enable the Service Provider to file the same with the Government Authority as a proof of payment of such taxes.

9.4 Person Responsible for filing of returns / information to Government Authorities

9.4.1 The Service Provider shall be responsible for filing all necessary Tax returns (including, without limitation, returns for Corporate Income tax, Personal Income tax, Service tax, Sales tax and Excise Duty) with the relevant Government Authorities in accordance with all applicable statutory requirements and shall be responsible for providing all information requested by such Government Authorities.

9.4.2 The Service Provider shall also ensure that its sub-Contractors file such returns as stipulated by the relevant Government Authorities and furnish such information as requested for by the relevant Government Authorities.

9.4.3 The Company, with respect to the tax withheld from the Service Provider in accordance with Clause 9.3 (Withholding Tax and Withholding Tax Certificates), shall be responsible for filing the withholding tax returns with the relevant Government Authorities in accordance with applicable statutory requirements.

9.5 Company's rights, if treated as representative assessee by Government Authorities

In certain situations, a Government Authority may treat the Company as the representative assessee of the Service Provider and/or its sub-contractors and recover the Taxes due to the Government Authority by the Service Provider or its sub-contractors from the Company. In such situations, the Company shall have the following rights:

(a) The Company shall be entitled to recover from the Service Provider, the

Taxes paid on behalf of the Service Provider or its sub-contractors (together with any costs and expenses incurred by the Company in connection therewith) or to retain the same out of any amounts to be paid to the Service Provider or its sub-contractors that may be in its possession (whether due under this Agreement or otherwise) and shall pay only the balance, if any, to the Service Provider; and

(b) If the Company is required to furnish any details or documents in such capacity, the Company shall request the details or documents to be furnished to it by the Service Provider and the Service Provider shall immediately furnish the same to the Company. If the Service Provider fails to comply with the foregoing, any penalty/interest levied on the Company for non-filing or late filing of details or documents in this regard shall be recoverable from the Service Provider.

9.6 Indemnity

The Service Provider shall defend, indemnify and hold the Company harmless from and against any and all claims, liabilities, costs, damages and expenses (including court costs and legal fees) in connection with any Taxes which may be levied or imposed on the Service Provider or its sub-contractors by any Government Authority arising out of or in connection with the performance of this Agreement.

9.7 Changes in Law

If, after the date of execution of this Agreement, there is any change in law which results in a change in the rate of any Tax included in the Service Provider's prices or rates or the introduction of a new Tax and such change results in an increase or decrease in the cost to the Service Provider of performing this Agreement then the Parties shall agree to a revision in pricing to reflect such change provided that:

(a) the Party requesting such revision shall promptly (and in any case prior to submission of the Service Provider's final invoice under this Agreement) notify the other Party that such change in law has arisen; and

- (b) the Party requesting such revision shall provide the other Party with documentary proof of such change in cost to the reasonable satisfaction of the other Party; and
- (c) the provisions of this Clause 9.7 shall not apply to changes in Personal Income tax or Corporate Income tax or to changes in non-Indian Taxes.

receiver or manager of its business or undertaking appointed; or

- (e) if the force majeure under Clause 14 continues for more than thirty (30) days.

10. TERMINATION

10.1 Either Party may, at any time and without cause, terminate all or part of this Agreement by giving no less than [30] days' prior written notice to the other party. Provided that, if any Purchase Order has already been initiated and the work is in progress, then the Company only shall have the right to cancel/ terminate any Work under the relevant Purchase Order as specified in such Purchase Order without cause and with immediate effect.

10.3 In the event of cancelation/ termination of all or part of this Agreement for any reason, the Company's sole liability to the Service Provider in respect of such cancelation/ termination shall be to make payment of the Fees properly due under this Agreement up to the date of termination.

10.4 The expiry or termination of this Agreement shall be without prejudice to the rights and obligations of the Parties up to and including the date of expiry or termination and shall not affect or prejudice any term of this Agreement that is expressly or by implication provided to come into effect on, or continue in force after, such expiry or termination.

10.2 In addition, the Company may terminate all or part of this Agreement with immediate effect by written notice to the Service Provider if one of the following circumstances occurs:

- (a) if the Service Provider breaches any provision of this Agreement, provided that where remediable, the Company has notified the Service Provider of such breach and the Service Provider has upon receipt of such notice, failed to immediately and thereafter continuously proceed to remedy such breach to the Company's reasonable satisfaction; or
- (b) if the Service Provider becomes insolvent or bankrupt or makes a composition or arrangements with its creditors; or
- (c) if the Service Provider is wound up or a resolution for its winding up is made (other than for the purposes of an amalgamation or reconstruction whilst solvent); or
- (d) if the Service Provider has a liquidator, provisional liquidator, receiver, administrator or an administrative

11. CONFIDENTIALITY

11.1 The Company and the Service Provider shall keep any information which either Party learns about or receives from the other pursuant to this Agreement in strict confidence and will not disclose the same to any third party without the prior written consent of the other Party. The foregoing restriction shall not apply in respect of information which the Company requires to disclose for the purpose of performing Services or which was in the possession of the disclosing party prior to this Agreement or which is required to be disclosed by any law, rule or regulation of any governmental agency or court order. The provisions of this Clause shall survive the expiry of termination of the Agreement for a period of 3 years.

11.2 The Service Provider shall not disclose such Information(s) to any potential Sub-contractors until such time and in manner agreed by Company in writing. The decision of the Company will be final and binding on the Service Provider in this regard.

11.3 The Service Provider shall use best endeavours to prevent the authorised disclosure of the all information hereunder. Where any information is required to be

disclosed under Clause 11.1, the Service Provider shall give prompt notice to the Company and shall use its best commercial endeavours to limit the extent of any such disclosure.

12. NOTICES

12.1 Any notice or other communication required or given under this Agreement shall be delivered in writing either by hand or by courier, registered mail with acknowledgment due, or fax to the address of the relevant Party set out in the Agreement (or such other address as may be notified by the relevant Party from time to time).

12.2 If a notice is delivered by hand or courier during normal business hours of the intended recipient it shall be deemed to have been received at the time of delivery otherwise on the next business day of the recipient. A notice sent by facsimile shall be deemed to have been received at the time when the sender's facsimile machine acknowledges transmission provided however that if the time of acknowledgement of transmission is after 5.00pm on a business day of the recipient it shall be deemed to have been received on the next business day of the recipient.

12.3 All notices or other communications between the Parties shall be in the English language.

13. GENERAL LEGAL PROVISIONS

13.1 The Company shall be entitled to assign this Agreement to an affiliate/subsidiary or on giving written notice to the Service Provider. Save as aforesaid, the Service Provider shall not be entitled to assign this Agreement or any part or any benefit or interest in or under it without the prior written approval of the Company which the Company may at its sole discretion accept or refuse.

13.2 This Agreement shall not be amended or modified except by mutual agreement in writing between the Parties.

13.3 This Agreement and the all Schedules and Attachments annexed hereto contains the

whole agreement between the Parties relating to the subject matter of this Agreement, and supersedes any previous understandings, commitments, agreements or representations in respect of the subject matter.

13.4 No delay or failure on the part of either Party to enforce from time to time all or any part of the terms and conditions of this Agreement shall be interpreted as a waiver of such terms and conditions.

13.5 Nothing in this Agreement shall, or shall be deemed to, create an agency, a partnership or a relationship of employer and employee between the Parties. For the avoidance of doubt, nothing in this Agreement shall prevent or restrict the Company from entering into parallel Agreements with other parties for services similar or related to the Services.

13.6 Unless otherwise specifically stated, both the Company and the Service Provider shall retain all rights and remedies, both under the Agreement and at law, which either may have against the other.

13.7 Each Party represents and warrants to the other that (i) it has been duly registered and organised and is a validly existing legal entity under the laws of the jurisdiction of its incorporation and that it has full power, authority and capacity to enter into and to carry out its obligations under the Agreement and (ii) by performing the Services it will not be in breach of any other Agreement, agreement, license or permit or in violation of any law and (iii) it shall at all times act in accordance with applicable laws and regulations.

13.8 The Service Provider shall comply with all safety instructions of the Company consistent with the provisions of the Agreement including, without limitation, the safety instructions of any of the Company's other Service Providers. Such instructions shall, if the Service Provider so requires, be confirmed in writing by the Company's Representative, so far as practicable.

13.9 The Service Provider shall not be entitled, without the written consent of Company,

to make any news release or public announcement concerning the subject matter of the Agreement or to refer to the Company, use its name or logo, in print or electronic forms for marketing or reference purposes.

13.10 If any provision of this Agreement is prohibited, invalid or unenforceable in any jurisdiction, that provision will, as to that jurisdiction, be ineffective to the extent of the prohibition, invalidity or unenforceability without invalidating the remaining provisions of this Agreement or affecting the validity or enforceability of that provision in any other jurisdiction, unless it materially alters the nature or material terms of this Agreement.

13.11 The provisions of this Agreement are solely for the benefit of the Parties. No other person are intended to have, nor will have, any rights whatsoever, under this Agreement, whether for injury, loss or damage to person(s) or property or for economic loss.

13.12 This Agreement may be executed in one or more counterparts, each of which will be deemed to be an original copy of this Agreement and all of which, when taken together, will constitute one and the same instrument.

14. FORCE MAJEURE

14.1 Neither the Company nor the Service Provider shall be responsible for any failure to fulfil any term or condition of the Agreement if and to the extent that fulfilment has been delayed or temporarily prevented by a force majeure occurrence such as any (a) Act of God, (b) fire, flood, earthquake, (c) war, riot, insurrection and civil commotion, mobilization or military, call up of a comparable scope, which has been notified in accordance with this Clause 14 and which is beyond the reasonable commercial control and without the fault or negligence of the party affected and which, by the exercise of reasonable diligence, the said party is unable to provide against.

14.2 In the event of a force majeure occurrence, the party that is or may be delayed in performing the Agreement shall notify the other party without delay giving the

full particulars thereof and shall use reasonable endeavours to remedy the situation without delay.

14.3 Save as otherwise expressly provided in the Agreement, no payments of whatever nature shall be made in respect of a force majeure occurrence.

14.4 Following notification of a force majeure occurrence in accordance with Clause 14.2, the Parties shall meet without delay with a view to agreeing a mutually acceptable course of action to minimise any effects of such occurrence.

15. BUSINESS ETHICS

15.1 The Service Provider shall declare any conflicts of interest with the Company including relationship or financial interest of any nature whatsoever with employees, managers, other suppliers, vendors or stakeholders of the Company.

15.2 The Service Provider shall not use the services of any of the employees of the Company, directly or indirectly or enter into any sort of monetary transaction with the employees of the Company. The Service Provider undertakes that he has not given, offered or promised to give directly or indirectly any bribes, commission, gift, consideration, reward, or inducement to any of the employees of the Company or their agent or relatives for showing or agreeing to show favor or disfavor to any person in relation to this Agreement or forbearing to do or for having done or forborne to do any act in relation to the obtaining or execution of the aforesaid undertaking, by the Service Provider, or his partners, agent or servant or any one authorized by him or acting on his behalf. The Service Provider undertakes that in the event of use of any corrupt practices by the Service Provider, the Company shall be entitled to terminate the Agreement forthwith and recover from the Service Provider, the amount of any loss arising from such termination. A decision of the Company or his nominee to this effect that a breach of the undertaking had been committed shall be final and binding on the Service Provider.

15.3 If at any time during execution or performance of this Agreement the Service Provider if faced with any undue demand, request for gratification or favor from any employee of the Company or a person connection with such employee, the Service Provider must report the same immediately at tspl.whistleblower@vedanta.co.in.

15.4 The Service Provider agrees to comply with the provisions of the Company's Supplier Code of Conduct and the Company's Human Rights Policy including the Modern Slavery Act and in case of breach thereof, the same shall be treated as a breach of this Agreement.

15.4.1 The Service Provider shall maintain records and provide to the Company upon request such records and evidences, as the Company may reasonably require, confirming the Service Provider's compliance with the obligations under Clause 15.4.

15.5 The Service Provider shall comply with the Anti-Bribery and Corruption (AB&C) requirements as applicable to them.

15.6 The Company shall have a right to initiate "audit proceedings" against the Service Provider to verify compliance with AB&C requirements. Such audit may be carried out by Company or by a reputed agency to be appointed by Company at the sole discretion of Company. The Service Provider shall extend full cooperation for smooth completion of the audit mentioned herein.

15.7 Notwithstanding anything in this agreement, Company shall have right to terminate the Agreement forthwith in case, it is found that the Service Provider has failed to comply with AB&C requirements.

15.8 The Service Provider may submit/report 'Complaints' pertaining to any violation to the Company's ethical business practices as specified in the Company's Code of Conduct Policy.

External stakeholders such as vendors, customers, business partners etc. have the opportunity to submit 'Complaints'; however, the Company is not obligated to keep

'Complaints' from non-employees confidential or to maintain the anonymity of non-employees. We encourage individuals sending 'Complaints'/raising of any matter to identify themselves instead of sending anonymous 'Complaints' as it will assist in the effective complaint review process.

Post review, if the complaint is found to be have been made with malafide intention, stringent action will be taken against the complainant. We encourage reporting genuine 'Complaints' and those submitted in true faith.

All the 'Complaints' under this policy should be reported to the Group Head-Management Assurance at the following address:

Group Head – Management Assurance,
Vedanta, 75 Nehru Road
Vile Parle (E), Mumbai 400 099
'Complaints' can also be sent to the designated e-mail id: tspl.whistleblower@vedanta.co.in

16. GOVERNING LAW AND DISPUTE RESOLUTION

16.1 This Agreement shall be governed by, construed and enforced in accordance with the laws of Punjab, India.

16.2 Any dispute or difference whatsoever arising between the parties out of or relating to the interpretation, meaning, scope, operation or effect of this Agreement or the existence, validity, breach or anticipated breach thereof or determination and enforcement of respective rights, obligations and liabilities of the parties thereto shall be amicably settled by way of mediation. If the dispute is not conclusively settled within a period of twenty-one (21) days from the date of commencement of mediation or such further period as the parties shall agree in writing, the dispute shall be referred to and finally resolved by arbitration under the Arbitration and Conciliation Act, 1996 (as amended from time to time), which are deemed to be incorporated by reference into this clause. The arbitration shall be conducted as follows:

(i) A sole arbitrator shall be appointed in case the value of claim under dispute is less than ₹ 50,00,000 (Rupees Five Million Only) and in any other event by a forum of three arbitrators with one arbitrator nominated by each Party and the presiding arbitrator selected by the nominated arbitrators.

(ii) The language of the mediation and arbitration proceedings shall be English. The seat of arbitration shall be Bathinda, Punjab.

(iii) The award made in pursuance thereof shall be final and binding on the parties. The right to arbitrate Disputes under this Agreement shall survive the expiry or termination of the Agreement.

ATTACHMENT 1 to SCHEDULE I

SCOPE OF WORK

O&M AHP CONTRACT

FOR

TALWANDI SABO POWER LIMITED (OWNER)

1980 MW SUPERCRITICAL THERMAL POWER PLANT
(3 X 660 MW)

AT VILLAGE BANWALA, DISTT. MANSA

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1. Introduction

Talwandi Sabo Power Limited (TSPL) was incorporated as an SPV by Punjab State Power Corporation Ltd (PSPCL) with the purpose of constructing a 1980 (3x660) MW thermal power plant at Village Banawala, Mansa-Talwandi Sabo Road, District Mansa, Punjab, India. Sterlite Energy Limited (a Vedanta group company) was selected as the developer of the Coal Handling & Ash handling Plant based on the Tariff Based International Competitive Bidding Process (Case-2) on BOO basis for supply of 100% power to Punjab State Power Corporation Ltd (PSPCL) for 25 years as per the guidelines of Government of India. Power Purchase Agreement and other related agreements were signed between TSPL and PSPCL on September 1, 2008, and the ownership of Talwandi Sabo Power Limited was transferred to Sterlite Energy Limited (SEL) on that date.

The salient features of the power plant are as below:

- Primary Fuel : Coal.
- Source of Coal : MCL/SECL
- Start-up Fuel : LDO / HFO
- Water Source : Jagga Canal, 5kms from
- Pulverizing System : Ball and tube mill
- Boiler : Supercritical
- Steam Turbine : Three cylinder, with Reheat and regenerative cycle & Nozzle and throttle governed turbine
- Turbo Generator- Water cooled stator and hydrogen Cooled rotor, Direct Coupled Generator with static excitation.

The switchyard is connected through PGCIL national grid with three double circuit 400KV line.

General Information:

- 1.0 OWNER : Talwandi Sabo Power Limited.
- 2.0 CONSULTANT : Development Consultants Pvt. Ltd.
- 3.0 EPC CONTRACTOR : SEPCO-I AND MCNALLY BHARAT
- 4.0 LOCATION : At Village Banawla, Dist Mansa, and Punjab, India
- 5.0 Elevation above sea level : 210 meter
- 6.0 Nearest Railway Station : Satta Singhwala, 12 km from site
- 7.0 Nearest Town : Mansa
- 8.0 Nearest Airport : Chandigarh, 200kms from site
- 9.0 Ambient Air Temperature
 - a) Max. Design temperature : 48.2° C
 - b) Min. Daily mean & average : -3.9° C
 - c) Design Wet bulb temperature : 28 °C

1.1 Ash handling Plant information

1.1.1 Design Basis Report

➤ Proximate Analysis (% by weight)

Sl. No.	Description	Design Quality	Worst Quality
1	GCV (kcal/kg)	3300	3000
2	Ash	41.6	45
3	Volatile matter	22	21
4	Fixed carbon	24.5	22
5	Moisture	11.9	15
6	Total	100.0	100.0
7	Grindability(HGI)	45	42

➤ Ultimate analysis of coal

Sl. No.	Description	Design Quality %	Worst Quality %
1	Carbon	36.5	31.9
2	Hydrogen	2.0	1.8
3	Oxygen	6.3	4.8
4	Nitrogen	1.2	0.9
5	Sulfur	0.4	0.6
6	Ash	41.6	45
7	Moisture	12	15
8	GCV	3300 kCal/kg	3000kCal/kg

1.1.2 Ash analysis

	ASH ANALYSIS	Design Quality	Worst Quality
1	Deformation Deg.C	1290	1340
2	Hemisphere Deg.C	1350	>1400
3	Flow Deg.C	1500	>1400
4	Moisture %	0.14	
5	Unburnt Carbon %	0.36	
6	SiO ₂ %	54.9	59.6
7	Al ₂ O ₃ %	25.4	30.75
8	Fe ₂ O ₃ %	9.3	6.5
9	TiO ₂ %	1.3	1.75

	ASH ANALYSIS	Design Quality	Worst Quality
10	P ₂ O ₅ %	0.1	0.47
11	K ₂ O %	0.3	0.27
12	CaO %	3.1	0.25
13	MgO %	1.8	0.08
14	Na ₂ O %	0.3	0.15
15	SO ₃ %	2.3	0.03
16	Mn ₃ O ₄ Undetermined%	0.7	0.15

➤ Coal consumption

The design coal consumption per unit at B-MCR: 459.7t/h

The worst coal consumption per unit at B-MCR: 508.2t/h

The calculated ash quantity as per the coal analysis and the coal consumption the calculated ash quantity for each boiler at B-MCR is as follows:

Discharge place	Design capacity of boiler calculated ash	Design coal (B-MCR) t/h	Worst coal (B-MCR) t/h
Boiler calculated ash	100%	195.89	231.98
Bottom ash	20%	39.18	46.40
FF+ precipitator fly Ash	90%	176.30	208.78
ECO fly ash	5%	9.79	11.60

Discharge place	Design capacity of boiler calculated ash	Design coal (B-MCR) t/h	Worst coal (B-MCR) t/h
APH fly ash	5%	9.79	11.60
Total ash	120%	235.06	278.37

The ash quantity of fly ash hoppers

Discharge place	NO. of hoppers	Design coal t/h	Worst coal t/h
First field	2×4=8	141.0	167.0
Second field	2×4=8	28.2	33.4
FF	2×4×3=24	7.2	8.4
ECO	6	9.79	11.60
APH	8	9.79	11.60

➤ Bulk density of ash:

a) BA and FA for volume computation: 850kg/m^3 and 800kg/m^3 respectively.

b) BA/FA for strength computation 1600 kg/ m^3 .

c) FA for ESP/APH/ECO hopper volume computation: 750 kg/ m^3 .

2. Scope of work

2.1 Battery limit for AHP O&M

Sr. No.	Description of area	Battery limits for O&M of Ash Handling system of three units (3*660 MW) at TSPL
1	Bottom ash handling system	Including Bottom ash hoppers to de-canting bin & HCSD unloading and ash dyke along with complete associated system.
2	Bottom ash water recovery system	Complete cycle of recovery water with associated system including rain water pond pumping system operation & maintenance.
3	Fly ash handling system	Fly ash system the battery limit is end to end from & including outlet MIV of Economizer & APH hopper to silo and ash dyke unloading points
4	ESP including bag filters and associated systems	From ESP inlet dampers (excluding dampers O&M) till FF (fabric filter) outlet duct including bypass dampers & intermediate expansion bellow
5	Compressed air system	Complete compressed air system including air driers, compressor & compressor house for ash handling system (excluding IAC compressor) with associated system and compressed air piping in Main plant from service air isolation valve in boiler.
6	Ash Dyke Area	Contractor has to look after sprinkling water pumping system for ash dyke and HCSD conveying lines through coordination round the clock and civil maintenance work of minor nature.
7	Bulker Management system	Movement of bulker from gate entry to silo unloading area and then loaded bulker from silo to gate through proper weighing of bulker as per SOP with help of traffic management.
8	Housekeeping	Housekeeping of complete area in battery limit including roads, cleaning and emptying of water harvesting ponds & trenches (once in a quarter)
9	Drinking water system, firefighting system, plant lighting, HVAC, AC	Complete maintenance and upkeep of the drinking water, firefighting system, lighting, HVAC, AC etc. in the battery limits

2.2 Scope -General

- 2.2.1 The scope of work includes round the clock planning and execution of operation & maintenance activities of the entire mechanical equipment, system and subsystem; field installation of electrical, control & instrumentation equipment's & instruments of the ESP+FF, AHP, HCSD & Compressor House equipment, installed within plant battery limit with improvements/Modifications/Relocations for achieving smooth, efficient and reliable operation of the plant.
- 2.2.2 Preparing and putting into implementation an effective operation and preventive maintenance program. Developing SOPs, SMPs, PM Check lists and implementation after approval.
- 2.2.3 Consumable supply and management-As per annexure-I.
- 2.2.4 Assisting in spares indenting, approval and shifting of spares to work location.
- 2.2.5 Assisting in inventory management and control.
- 2.2.6 Supply, Maintenance and Testing & Certification of Lifting Tools and Tackles (Own as well as TSPL).
- 2.2.7 Arranging Expert services and required AMCs for critical equipment.
- 2.2.8 Setting up & Management of contractor's office and store.
- 2.2.9 Oiling / greasing of mechanical equipment such as pumps / gear drives, lubrication of Drives and associated equipment. The quantity of oil / grease in various pumps, couplings, and gear units should be inspected periodically, and maintained strictly as per the requirements.
- 2.2.10 Replacement / top-up of all lubricants as per the recommendation of the manufacturer or instruction of the EIC.
- 2.2.11 Waste oil management including storage and disposal as per environment norms.
- 2.2.12 Waste management generated through operation & maintenance should be segregated as per SOP and submitted to TSPL store for waste disposal.
- 2.2.13 Dewatering required in work area and maintenance of dewatering pumps.
- 2.2.14 Operation and maintenance of dewatering sump pumps installed in the trench sump around Bottom ash hopper area, Ash slurry pump house area etc.
- 2.2.15 Operation and Maintenance of EOT crane / hoist installed in ash handling plant including ash water recovery system, ash silo, pump houses, compressor house, ESP+FF etc. within battery limit.
- 2.2.16 Operation and Maintenance of facility amenities like; ventilation system, water coolers (including recharging of refrigerant) etc. Repairing of Building Doors / Shutters, Window grills, locking arrangement, and window glass panes, safety railing & toe guards etc. Modifications for proper locking of Equipment enclosures, Electrical / Instrument panel doors, Breakers, Modules, Servicing of all types of pneumatic cylinders including seal kits, o rings, Fittings etc.
- 2.2.17 Complete Housekeeping (including pest and rodent control) of Ash Handling Plant / System. This includes area cleaning, road cleaning, building roof cleaning, roof drains cleaning, floor cleaning, equipment cleaning, trenches & drains cleaning and Toilets cleaning by using disinfectant. Cleaning of all water tanks / sumps, mud sumps. Dewatering of stagnated water in the battery limits.
- 2.2.18 Cleaning and housekeeping of cable trays, equipment, field instruments shall be ensured by O&M contractor. Proper Housekeeping & equipment cleaning schedule to be prepared and shall be approved by TSPL EIC, Compliance & effectiveness shall be checked by TSPL EIC & shall be part of KPI. Panel sealing and locking to be ensured all time by maintenance contractor.
- 2.2.19 Regular as well as need base cleaning of all major equipment, pumps, instruments, electrical equipment and panels of Ash handling plant. Proper attention is to be given towards running equipment during cleaning so that it does not cause any adverse effect on the equipment. If necessary, cleaning of running equipment is to be carried out in presence of TSPL representatives.
- 2.2.20 Removals of fallen foreign material from BAH, fly ash hoppers and other vessels.
- 2.2.21 Collection and shifting of spilled over Ash to ash dyke
- 2.2.22 Removal of ash from the ash disposal pipe area as accumulated due to leakage from the coupling or pipe failure. The ash accumulated on the ground floor during the process of day to day operation has to be removed by the contractor.

- 2.2.23 Removal of jamming / choke up in vessel, hopper, silos, piping etc. Clearing of choking / jamming in the bottom ash and fly ash system shall be carried out by the contractor in such a way that there is no spillage of ash left in the surrounding
- 2.2.24 Quarterly cleaning of trenches in the battery limit and rain water pond.
- 2.2.25 Any accumulation of the ash while clearing choking / jamming in the system, and due to cleaning of trenches, pits, sumps, ash control room and ash slurry disposal pump house will have to be removed by the contractor and to be dumped on specified area mentioned by TSPL. The entire length of ash pipes are to be kept in good condition and vegetation growth along the pipeline are to be removed periodically.
- 2.2.26 Segregating and removing the scraps from each site after completion of work to ensure housekeeping. Shifting of waste oil drums and scraps material to scrap yard as per SOP.
- 2.2.27 Training and Skill development of contractor's own team.
- 2.2.28 Implementing safety standards of TSPL Safety Section to ensure safety compliance in all activities of AHP O&M.
- 2.2.29 Data Management, Work Scheduling and Report Generation.
- 2.2.30 The contractor shall maintain daily logging of the progress made during each shift which includes preventive / breakdown / shutdown / faults attended during the shift.
- 2.2.31 Monitoring of the performance of different components of ash handling system is in the scope of contractor and the contractor is to intimate adequate measures to be taken to overcome actual or likely shortfall in performance. Maximizing AHP utilization factor for achieving optimum auxiliary power consumption.
- 2.2.32 Furnishing adequate technical back up from the contractor's head office including periodic visits to the site by its senior engineers / management team to ensure smooth, safe and reliable operation and maintenance of the plant.
- 2.2.33 O & M of any additional equipment added in future (as a part of AHP) shall be in the scope of the AHP O & M contractor.
- 2.2.34 Any activities not mentioned in the scope, yet are required for successful completion of the job are within the purview of this comprehensive contract.
- 2.2.35 Any miscellaneous work not mentioned in scope but is essential for smooth, safe and efficient operation of any equipment in the scope shall be deemed to be in the scope of contractor.
- 2.2.36 Fire-fighting system's security within the battery limit will be under the scope of work of O&M contractor.
- 2.2.37 The cost of all superintendence of labor, materials, tools, equipment, mobilizing and demobilizing equipment, fixtures, transport charges, insurance charges, bank guarantee charges, temporary and permanent works, testing, handling of materials, stocking and removal charges of any rejected materials, power arrangement and satisfactory maintenance of the same for the full and satisfactory completion of the works intended are all inclusive as a part of scope of work.
- 2.2.38 Any item/services required for the completion of the Work and essential for meeting the performances, warranties, safety and execution of the Work but not specifically covered in the Technical Specification/Scope of work shall be deemed to be included in the scope and will be part of the Contract and no extra charges / claims shall be permitted other than the price quoted in the Price Schedule.
- 2.2.39 Taking regular/ daily samples, laboratory analysis and submission of reports of fly ash & bottom ash. The Owner shall provide the laboratory facility to the Contractor for laboratory analysis of fly ash and bottom ash.
- 2.2.40 The scope of work defined reasonably inferred as being required for successfully executing the comprehensive scope of work whether or not specifically mentioned in the technical specifications.
- 2.2.41 Lighting system general maintenance and defect attending works within the boundary of the scope of work is in scope of work of the O&M Contactor
- 2.2.42 To maintain the ash handling plant, carry out any repair required pertaining to regular, preventive and breakdown maintenance is in the scope of the O&M Contractor
- 2.2.43 All maintenance planning and documentation shall be done in SAP and MIS system such that whole process will be traceable.
- 2.2.44 Regular maintenance and/or modification and/or rectification due to accidents like fire, pipe failure etc. for all underground pipelines and cables is in contractor's scope. Any machinery and/or tools e.g. JCB, excavator and/or drill machine required for repairing the underground items, to be supplied by the contractor.
- 2.2.45 De-silting of the rain water pond will be under the scope of agency.
- 2.2.46 For better communication, common mobile number system for each location in operation and maintenance department to be established.

- 2.2.47 For maintenance in ash dyke, contractor will manage 2 nos. DG sets for maintenance purpose.
- 2.2.48 For emergency de-watering purpose, diesel operated de-watering pump 2 nos. of 100 m3/hr shall be in contractor scope.
- 2.2.49 Painting of plant equipment, steel structure where ever rust/damage observed.
- 2.2.50 Contractor shall provide required machinery for handling of ash and its disposal as per annexure-II.

2.3 SCOPE - MAINTENANCE :

The maintenance work will cover entire Mechanical and field installation of Electrical, Control & instrumentation equipment, instruments, system, subsystem within the battery limits and shall include routine, preventive, predictive and breakdown maintenance of the system, sub-systems and equipment as per list mentioned hereafter.

- 2.3.1 The maintenance work will include servicing / replacement, internal checking, trouble shooting and rectification of defects of these equipment.
- 2.3.2 During any short or opportunity shutdown the defect rectification and preventive maintenance responsibility is covered under the scope of agency.
- 2.3.3 Regular walk-through audit of all areas and identification of defects & leakages. Attending all leakages & defects in time. A leakage of ash or slurry from pipe / couplings up to ash dyke has to be arrested on most priority basis and in minimum possible time.
- 2.3.4 Arresting Ash / water / Oil / Air leakages from piping / valve / flanges / inspection door / bonnet / stuffing box / union / coupling / tees / by gasket replacement / by O ring replacement / by caulking the non-asbestos thread / applying putty / gland packing replacement / tightening of fasteners / tightening of gland follower / welding etc. Attending leakages of Drain and Impulse lines. Replacement of Drain and Impulse line valves and piping.
- 2.3.5 Replacement and Servicing of all type of Valves, Dome valves, Segregating valves, Material handling valves, Air intake valves, Vacuum breakers, Knife gate valves, pneumatic / oil operated Servomotors, Safety valves, NR valves, Butterfly valves, Pilot valves, Air valves and Test valves. Valve seats lapping & blue matching, slide / seat replacement, seal replacement to achieve leak free tightness.
- 2.3.6 Servicing and Setting of Safety Valves and Relief valves.
- 2.3.7 Servicing, Setting and tuning of various valve operating livers / linkages.
- 2.3.8 Removal & Refitting / Replacement of Electrical / Pneumatic Actuators. Repairing / Servicing of Electric / Pneumatic Actuators.
- 2.3.9 Replacements of valves, flanges, fasteners, orifices, pipe fittings, traps, filter elements etc. Cutting & welding work required for the same.
- 2.3.10 Cleaning of all Filters and Strainers of Air / Water / Oil circuits.
- 2.3.11 Draining of oil / removal of old grease required for maintenance and re-filling the same / new on completion of maintenance activity. Replacement of complete lubricant after thorough cleaning of reservoir of the equipment whenever required.
- 2.3.12 Separate storing and centrifuging of used oil for future use.
- 2.3.13 Servicing of rotary equipment and associated system.
- 2.3.14 Repair of all fly ash hoppers, its inspection doors, vibrators, level switches, hopper heaters, shock pads, fluidizing pads etc.
- 2.3.15 Checking / repairing and servicing of bottom ash hopper gates with hydraulic cylinders, piping, valves, solenoids, pressure switches, Jet pulsing Pump etc. Internal checking / repairing of clinker Grinders, gland sealing, fluid couplings, reduction gear boxes etc., the oil tightness of the filling plug and the fluid coupling should be checked. The fusible plug should be replaced, in case it melts. The servicing of fluid coupling is in the scope of the contractor.
- 2.3.16 Periodic performance monitoring of all types of pumps (water pumps, mud pumps, and slurry pumps), compressors & blowers and replacement of damaged parts.
- 2.3.17 Complete troubleshooting of pump, Inspection of Pump bearing, and replacement of bearing, servicing / replacement of mechanical seal, inspection & servicing of hydraulic coupling. Pump Motor coupling inspection,

- coupling replacement, Element / Bushing replacement, Lubrication. Shifting / placement & alignment of drive motor.
- 2.3.18 Proper alignment & leveling of pipe lines viz. ash slurry disposal lines up to ash dyke, fly ash disposal lines, ash water lines and compressed air lines etc., as & when required.
 - 2.3.19 De-metering of pipes shall be arranged by the contractor as and when required. Rotation of Ash slurry discharge & conveying pipes up to ash dyke will have to be carried out by the contractor as per the requirement on mutually agreed terms. Damaged & eroded pipes are to be replaced as per findings or assessment.
 - 2.3.20 Planning and scheduling all activities for the O&M, as per OEM recommendation & system requirement as available/implemented in the plant.
 - 2.3.21 Identify leakage in the ash disposal lines, removal and refitting of trench cover, RCC block, cleaning of ash, mud or ash water (dewatering of trench) from trenches.
 - 2.3.22 Shifting of scrap pipe, bends, couplings, gaskets, nuts bolts & any extra material to appropriate location as directed by the EIC. Removal of obstruction such as forestry material, earth ware etc. to identify the leakage.
 - 2.3.23 Fabrication jobs for repairing reusable spares shall be under the scope of agency and also agency shall maintain the fabrication yard.
 - 2.3.24 Minor civil works, touch up painting as required. Leakage/seepage arresting from silos/tanks- structure mounting joints or provision of any small opening for pipe layout, which are essential for O&M of AHP equipment.
 - 2.3.25 Providing (supply and erection) safe scaffoldings for carrying out the O&M works. Scaffolding material will be under scope of agency.
 - 2.3.26 Regular inspection, calibration, testing of measuring / testing equipment as per OEM / statutory guidelines.
 - 2.3.27 Regular sampling, testing and cleaning of waste oils, lubricating oils etc. as required for smooth operation of various equipment.
 - 2.3.28 Performing all activities for repairs, replacement of spares as per PM/ breakdown maintenance (spares & consumables will be supplied by Owner free of cost as per actual consumptions excluding consumables specifically identified in the scope document) including activities like LT motor re-winding, online oil filtration, leakage arresting etc. Repair and re-use of spares especially costly spares.
 - 2.3.29 Static and dynamic balancing of all rotating equipment as per schedule/ based on condition monitoring.
 - 2.3.30 Spares inventory management & control, timely indenting for spares considering lead times, re-order level, consumption pattern.
 - 2.3.31 Carry out continuous improvement projects/activities for improvement of AHS efficiency and outputs including modifications / relocations to existing system after due approval of Owner.
 - 2.3.32 Provide and maintain material handling equipment for O&M of Ash Handling Plant as per Annexure –II.
 - 2.3.33 Maintenance of fabric filter, ESP & associated system will be under the scope of agency.
 - 2.3.34 HCSD area and associated system as per battery limit will be part of sow.
 - 2.3.35 Rain water pond maintenance and de-silting of the same will be part of scope of work.
 - 2.3.36 Maintenance of Fire Detection system shall be in contractor's scope. Repairing of Fire Hose cabinets including glass fitting, preservation and up keeping of fire hose cabinet & hoses shall be done by contractor. Servicing / replacement of firefighting line components and attending fire water line leakages shall be done by TSPL. Reporting of fire-fighting line leakages shall be done by the contractor.
 - 2.3.37 Balancing, Condition Monitoring and corrective actions.
 - 2.3.38 Online leak arresting in Ash handling system will be under the scope of agency.
 - 2.3.39 Lubrication of gears & wire rope of EOT crane, brake liners replacement and setting of brakes, replacement of wire rope, servicing of gearboxes.
 - 2.3.40 Servicing and lubrication of hoists, EOTs, monorails / chain blocks / trolleys of AHP area.
 - 2.3.41 Periodic cleaning / acid cleaning of cooling water jackets & piping associated to equipment.
 - 2.3.42 Checking, Setting & repairing of all hangers and supports.
 - 2.3.43 Replacement of conveyor belts, belt tension adjustment, alignment of pulleys.
 - 2.3.44 Fabrication of patches for leakage arresting from metal sheets, fabrication of shims for alignment, preparation of non-asbestos / rubber / metal gaskets from sheet, fabrication of jigs & fixtures for maintenance.
 - 2.3.45 Reconditioning of worn out spares, hard facing.
 - 2.3.46 Heating / Cutting of fastener / bearing / coupling whenever required during the maintenance.
 - 2.3.47 Repairing of metal structure / floor grills / ladders / doors & windows of Ash Handling Plant area / building.
 - 2.3.48 Transportation of spares / material / chemicals from TSPL stores to work site return back to TSPL stores.

- 2.3.49 Unpacking, unloading, unloading / loading of equipment / component on return / sending for outside repairing / development purpose.
- 2.3.50 Necessary guarding of tools, tackles, spares, dismantled components, scrap materials during carrying out of maintenance & operation jobs.
- 2.3.51 Work area cleaning and Scrap removal after completion of maintenance activity as per SOP.
- 2.3.52 Erecting Safe scaffolding and approaches to work whenever and wherever required and immediate removal of the same on completion of maintenance work.
- 2.3.53 Touch up painting and corrosive resistance painting of equipment without material supply. Painting for sign boards, nomenclature of equipment etc. in contractor scope.
- 2.3.54 Any type of special coating for pumps ,pipes and wearable surface shall be part of scope of work whereas material will be provided by the TSPL
- 2.3.55 Provide safety tools & tackles, PPEs and following safety procedures as per Vedanta's guidelines
- 2.3.56 Providing necessary support for OEM/expertise services (inclusive AMCs) for critical equipment (SCC, ESP+FF, HCSD pump, compressor, air driers)
- 2.3.57 Third party testing and certification of the tools/tackles, lifting equipment, EOT cranes, hoists etc. in the battery limit as per prevalent rules and regulation.
- 2.3.58 Statutory compliance and approvals of plant installations & equipment from various statutory / govt. agencies as per applicable laws.
- 2.3.59 Scope covers third party / statutory inspection, testing & approval of special tools and tackles supplied by OEM and tools & tackles which are under ownership of OWNER installed at site.
- 2.3.60 Scope of work shall also include addressing Near Misses and unsafe conditions on priority as & when they are raised, to reduce hazards at site.
- 2.3.61 All Safety equipment and consumables like uniform, safety appliances, safety belt, full harness, safety helmet, hand gloves, rubber gloves, face shields, gumboots, special aprons; full safety harness, ear plugs / ear muff, dust shields, safety goggles, and first aid kit etc. will be in Contractor's scope and should comply to standards prescribed by OWNER.
- 2.3.62 The Maintenance Contractor shall be responsible for house keeping the plant equipment's under scope available in good working condition at all times.
- 2.3.63 In case any equipment has to go for shop repair, i.e. outside the plant for major repairs etc., the Maintenance Contractor scope includes dismantling, shifting, and packing & forwarding of the equipment and supervision of repair.
- 2.3.64 Maintenance Contractor shall have to depute his manpower for inspection of maintenance or job work if the same is being executed outside the plant premises (within India) as & when required. All the Local Conveyance, Travelling, Lodging & boarding, mobile, photocopy, fax etc. charges included in Maintenance Contractor scope.
- 2.3.65 Contractor has to ensure Performance and/or efficiency of plant/equipment shall not deteriorate after the maintenance work. Key features of this Maintenance Service Agreement are timely response to breakdown, diagnostic skills and capability to bring the equipment back into service in minimum time with cost efficiency.
- 2.3.66 Scope of work also includes planning and recommending spare parts in day to day working. Maintenance Contractor may be required to refer maintenance instruction manuals, drawings for the purpose of maintenance planning and execution.
- 2.3.67 Maintenance Contractor will comply with all requirements of Quality / Environment / Safety systems like ISO9001 :2000, ISO 14000, OHSAS 18001, BSC, EMS 50001, ISO 39000 etc. as per OWNER system requirements pertaining to the work from time to time. The Maintenance Contractor shall ensure compliance with safety and statutory requirements and assist OWNER in implementation of Quality System / OHSAS/EMS etc.
- 2.3.68 Maintenance Contractor will carry out / assist in preparation, maintaining, validation & updating of Standard Maintenance Procedures (SMPs) / Drawings other detail of all the equipment and handover the same to Engineer-In-Charge time to time as per OWNER requirements.
- 2.3.69 Maintenance of new system/equipment if installed & commissioned at later stage due to plant performance requirement or improvement project in the plant area other than the enclosed broad major equipment categories are also part of this scope of work.
- 2.3.70 Any event which is likely to affect smooth operations should be promptly informed to TSPL CCR / OWNER EIC.
- 2.3.71 The contractor's personnel shall mark their attendance according to the procedure specified by OWNER

- 2.3.72 Maintenance of earth pit, earthing equipment including up gradation in the battery limit. Maintenance of Air conditioning and its accessories.
- 2.3.73 Submission of Root cause analysis, Failure analysis report within 24-48 hours of failure. Contractor has to maintain sufficient inventory of all consumables in his scope to ensure no work is being held up due to non-availability of consumable.
- 2.3.74 Scaffolding wherever required is in contractor scope.
- 2.3.75 Fabrication of special fixtures for the said job is in contractor scope.
- 2.3.76 All type of the consumable and general hardware insulation tape, copper/SS/GI/PVC tubes & fittings, ferrules, masking tapes, plastic cellulose tapes, fiberglass tapes, Teflon tape and any other insulation tapes; Termination & Jointing kits (LT), Cleaning agents such as Cotton rags, cloth, Petrol, Diesel, Kerosene, CRC, Electrical contact cleaner, rust remover, soap, silicon sealants, M-seal, adhesives, adhesives, Calibration gases, Buffer solution for PH calibration, Batteries for instruments, Plastic sheets & tying, detergents, disinfectants, insulating varnish, Paint, thinner and solvent shall form part of the scope of the Contractor.
- 2.3.77 The Maintenance Contractor shall keep in safe custody all damaged/replaced material for return of the same to OWNER or to be dealt with in accordance with the instructions of the Engineer-in-charge
- 2.3.78 The Maintenance Contractor shall, upon the OWNER's written instruction, remove from the Works any person employed by him in the execution of the Works, who misconducts himself or is incompetent or negligent.
- 2.3.79 The Maintenance Contractor shall remain in constant communication with the Engineer -In -Charge in order to receive any instructions from the Engineer- In -Charge. Further the Maintenance Contractor shall strictly abide by the said instructions so received.
- 2.3.80 The Maintenance Contractor shall submit a monthly report on the status of the Works to the Owner Engineer-In-Charge.
- 2.3.81 Checking & proactive actions for diaphragm during opportunity or shut down for all CV, dampers etc.
- 2.3.82 Agency shall be responsible for running & routine maintenance, defects, breakdown and preventive maintenance of all the field installation of equipment's, instruments, system and subsystem of electrical, control & instrumentation as per scope battery limit.
- LT motors, drive of all type and ratings.
 - Local Panel, Compressor panel, control boxes, SOV Control box
 - Field instruments and devices - seal air pressure fault, feedback faults, instrument air leakages ,Limit switch adjustments , Proxy switch checking & adjustment ,Level Switch Tx checking ,Purge SOVs checking & attending air leakages in SOVs ,replacement of O ring & Diaphragm ,Pressure Switch & Tx
 - Wet and dry ash conveying line & belt instruments & safety devices
 - Pulsing valve maintenance.
 - Pneumatic actuator, power cylinder, air / electric operated actuator and MOV
 - Serving of AFR & Drain SOVs , Installation of new Fittings
 - Instrument air tubing and piping and connections.
 - Maintenance supply box.
 - Illumination system

2.4 SCOPE –OPERATION

- 2.4.1 Round the clock operation of complete ash handling system comprising of ash handling plant with all sub systems/auxiliaries from bottom/fly ash hoppers (including ESP+FF+ECO+APH),HCS to ash pond/silo including ash water recovery system, bulker loading system, ash pond spray water system, dewatering pump system at rain water pond
- 2.4.2 Continuous monitoring of ash evacuation timings, judging flow through evacuation line by line temperature or pressure drop, monitoring silo / hopper levels and maintaining the safe operating levels in fly ash silos to keep sufficient margin for ash evacuation.
- 2.4.3 Safe operation and shutdown of system / equipment as per instructions of Control Room Engineers.
- 2.4.4 Opening / closing of Valves, Dampers, and Gates as and when required and as per instructions received.

- 2.4.5 The routine & emergency operation as well as necessary isolations of system / circuit / equipment should be done with utmost care and presence of mind.
- 2.4.6 The job of Field Operator will include vigilant monitoring of all equipment functioning in surrounding area by taking rounds, taking note of any abnormal sound, identifying leakages / abnormality of equipment, watching field instrumentation readings and reporting deviations from desired / running parameters, finding of change in vibration / temperature of equipment bearings, prompt updating control room engineers about any abnormalities, taking corrective actions and giving feedback to control room engineers.
- 2.4.7 Filling the field & control room log books for all equipment / system reading.
- 2.4.8 Electrical / mechanical isolation & normalization of equipment / system.
- 2.4.9 Local line up of equipment / system as per standard operating procedure and giving clearance to control room for start / stop of the equipment.
- 2.4.10 Co-ordinate with maintenance for maintenance execution requirements.
- 2.4.11 Loading of ash in truck/CBT, bulker and HYWA as required.
- 2.4.12 Removal of ash block from vessels, hopper, piping etc.
- 2.4.13 Cleaning of Equipment.
- 2.4.14 Field operator shall take necessary measures to prevent overflow from ash slurry sump, surge tank to avoid discharge of the slurry to the nearby drains.
- 2.4.15 Operation of ash dyke sprinkler system and ash dyke water recovery system.
- 2.4.16 Water sprinkling on roads within boundary limits on daily basis shall be done by the O&M contractor for dust suppression.
- 2.4.17 Daily patrolling of ash pipe for any damage or ash level with inspection report on daily basis.
- 2.4.18 Prepare and circulate daily report as per prescribed format given by TSPL EIC.
- 2.4.19 Follow PTW system as per SOP for each and every O&M activities.
- 2.4.20 SOP must be followed for all equipment operation. SOP board to be painted & maintained for all areas by the contractor.
- 2.4.21 Any protection, interlock should not be bypassed unless authorized in writing
- 2.4.22 System /equipment healthiness should be maintained such as it runs within its operating limits with its optimum efficiency.
- 2.4.23 Proper log books should be filled and maintained, required reports to be prepared and circulated as per frequency given by EIC.
- 2.4.24 All required equipment for Ash handling must be available.
- 2.4.25 Reporting & feedback system must be follow as per directed by TSPL AHP in charge.
- 2.4.26 The above scope is tentative. However any job required for smooth and safe operation of the plant has to be done by the Contractor at no additional cost to TSPL.

2.5 Tools & Plants (List to be provided by contractor)

- 2.5.1 All tools, tackles & plants required for safe execution of this contract have to be provided by the contractor. An indicative list of minimum tools is mentioned in Annexure-III. A proper log of tools brought into the plant needs to be maintained by the vendor and the report needs to be shared with TSPL on monthly basis. It is mandatory to certify the tools & tackles from Third Party inspection before and periodically for taking in inventory at TSPL site store otherwise keep the tools & tackles as damage inventory at separate location.
- 2.5.2 Tools and testing instrument & equipment list mentioned above is only indicative but not exhaustive contractor is required to add to list all the required tools, tackles and testing instrument required for the completion of all the activities in the scope of the work. Contractor will arrange a survey and prepare the tool and tackles list before mobilization and get it approved from TSPL.

2.6 PLANNING

- 2.6.1 A committed work program will be given by OWNER to O&M Contractor every week. In addition to that Contractor shall go through all the current defects in computerized maintenance management system / SAP at least twice in a day. Also Contractor shall be required to take-up various maintenance activities as per the instruction of Owner EIC. Most of the maintenance activities are taken up in planned way except emergency jobs.
- 2.6.2 This shall require O&M Contractor site supervisor/engineer to go through the defects in CMMS / SAP and check the same at site and submit the job plan for the jobs to be done.
- 2.6.3 Planning shall be done on weekly and daily basis. It shall be based on the current defects in maintenance management system, diagnosis by condition monitoring, preventive maintenance; Testing & calibration schedule; opportunity based maintenance and shall be in consultation with the Engineer In-charge. Weekly plan shall be prepared by Wednesday of every week. Daily planning shall be done one day earlier and shall be in line with weekly planning. Contractor will submit such a program to OWNER EIC, but the approval by the OWNER of the program shall not relieve the O&M Contractor from any obligation under the Maintenance Service Agreement.
- 2.6.4 Planning of jobs also includes working out requirement of consumables and spares and verifying the availability and getting them issued from respective stores, a day in advance of taking up the job at site.
- 2.6.5 Spares planning and spares inventory management will be by O&M Contractor. The Contractor is responsible for inventory monitoring, continuous checking of the availability of spares agreed mutually and timely inputs / alerts.
- 2.6.6 O&M Contractor will carry out planning / assist in preparation, maintaining, validation & updating of Standard Operating Procedure/Standard Maintenance Procedures (SMPs) /HIRADEC/ Drawings other detail of all the equipment's and handover the same to Engineer-In-Charge time to time as per OWNER requirements.

2.7 WORK EXECUTION

- 2.7.1 Permit to work / Safety documents for day to day working on plant equipment/system will be received by OWNER's competent persons, based on the planning done the previous day. As per instruction / approval of OWNER engineer in-charge, Contractor's maintenance competent engineer may also be required to avail the permit to work as per approved procedure of OWNER
- 2.7.2 Maintenance Contractor's engineer will check the Safety document for proper isolation as per the planning, before starting the job at site. Any disagreement about safety documentation needs to be first reported to Engineer-in-charge who will advise further course of action to Maintenance Contractor's representative as per approved procedure of OWNER.
- 2.7.3 Maintenance Contractor to mobilize the necessary manpower for the job at site and carry out the job as per the job plan / method statement, with all necessary safety measures as prescribed in the method statement / job plan / risk assessment or specific instructions from the shift staff during issuing of work-permit.
- 2.7.4 Maintenance Contractor is also required to or assists OWNER in preparation of the standard maintenance procedure for various plant equipment's and system. Maintenance Service Agreement is also expected to access hazard or risks in various plant equipment & system maintenance & related activities and required to document the standard Job Safety Analysis checklist as per instruction and approval of OWNER in charge.
- 2.7.5 Maintenance Contractor's engineer will keep OWNER engineer in-charge informed of the progress of job at site and findings for the job.
- 2.7.6 In case of maintenance jobs on critical equipment, the job should be completed on the same day, unless an approval is sought from engineer-in-charge to break and continue with the work on following day.
- 2.7.7 Maintenance Contractor engineer will make list of spares required based on findings apart from the spares what were planned for the job and get the same issued through ECI. After completion of the job, balance spares, which are not used, shall be returned to the stores. Also items, which are removed and require refurbishment, will be

repaired and returned back to stores by the Maintenance Contractor. Maintenance Contractor shall have to submit reconciliation statement for materials issued by OWNER at the end of the month or as demanded by Owner EIC.

- 2.7.8 During the course of the work, all the spares parts removed should be kept in proper bins and equipment removed, to be kept on side, so that they don't interfere in access to other equipment/ create safety hazards.
- 2.7.9 All the waste oil /grease / consumables collected during the maintenance jobs should be collected and disposed as per the management control procedure as applicable.
- 2.7.10 After completion of the job, the work place should be cleared of tools / tackles / consumables / waste oil etc. with complete housekeeping and the same should be reported to the engineer in charge

2.8 PROGRESS REPORTING & MEETINGS

- 2.8.1 O&M Contractor's site in charge and engineers shall be required to participate in monthly review meeting with OWNER and comply with all the actions in the agreed time.
- 2.8.2 O&M Contractor will provide detailed monthly report which shall mainly include (but not limited to) the details of maintenance works carried out during the month, statistics about the work order raised during the month , work orders completed during the month, work orders pending at the end of the month with reasons. The report should cover major jobs done during the month, major equipment not available, spare parts required, suggestion for improvements at site, area wise condition monitoring report, list of equipment in fair condition, equipment corrected based on CM, NDT jobs carried out etc.
- 2.8.3 Monthly report should also indicate compliance with the KPI's and contractor performance score card during the month, which shall be finalized based on the discussion with EIC.
- 2.8.4 O&M Contractor shall also be required to submit equipment, instrument, devices testing & calibration reports in the required format for various testing & calibration activities carried out at site in day to day or as per routine maintenance & testing schedule.
- 2.8.5 O&M Contractor's higher management representative will visit site every quarter to have review meetings with OWNER site management. Maintenance Contractor to attend Bi-monthly SHE meeting

2.9 O&M of Auxiliary Systems covered under the scope of the contract for AHP

The contractor shall be responsible for below supporting system for Ash Handling Plant within battery limits.

- 2.9.1 Ash pond sprinkler system
- 2.9.2 AC and HVAC system in Ash handling system
- 2.9.3 RCC silos and bulker loading system including all auxiliaries.
- 2.9.4 Firefighting & detection system
- 2.9.5 Electrical and C&I field equipment, instruments, system / subsystem including lighting and maintenance supply system for AHS.
- 2.9.6 Air handling Unit of service air compressor house.
- 2.9.7 Rain water pond dewatering system.
- 2.9.8 Any new additional system for improvement of ash handling plant
- 2.9.9 Flushing of the seal trough as per requirement of the main plant operation.
- 2.9.10 Ash spillage collection and shifting will be under the scope of agency.
- 2.9.11 Centralize AC & ventilation system only for the AHP (ESP+HCSD control room)
- 2.9.12 Service air system in plant including drier & receiver.
- 2.9.13 Sump pumps, sump pits, draining & dewatering system
- 2.9.14 EOT & Hoists mechanical & electrical maintenance & overhauling associated with AHP
- 2.9.15 Bag filters of ash silos & their periodic cleaning/replacement
- 2.9.16 Fly & bottom ash sample collection for testing & reporting
- 2.9.17 Deployment of machineries for O&M of AHP as per annexure –II

3. Quality

3.1 Maintenance Quality

- 3.1.1 All maintenance activities which are carried out by the O&M Contractor should confirm to the best engineering practices and be carried out in minimum time possible, Bench marks should be established for time taken and approved by Owner.
- 3.1.2 O&M Contractor to offer quality that is consistently dependable for the entire duration of the assignment in whatever jobs are done under the scope of the contract.
- 3.1.3 O&M Contractor to demonstrate and give reliable services to avoid repetitive defects of the same nature.
- 3.1.4 All the jobs shall be carried out to the satisfaction of the engineer in charge and his decision shall be final and binding on the O&M Contractor.
- 3.1.5 Any failure attributable to poor workmanship shall be attended free of cost at O&M Contractor's account. Owner's EIC decision in this case shall be final. Example of poor workmanship is wrong fitment of component, improper fitment of component etc.

3.2 Operation Quality

- 3.2.1 Operation of all equipment to be done as per SOP
- 3.2.2 Operation of all equipment to be done within rated technical parameter of equipment and system.
- 3.2.3 Operation of all equipment to be done with optimum utilization to ensure minimum running hrs.
- 3.2.4 Equipment should not run with any major defect with bypassing any interlock, protection, alarm etc.
- 3.2.5 Operation to be done with ensuring all safety standards.
- 3.2.6 Operation to be done with ensuring all environmental norms.

4. List of equipment and auxiliaries in AHP

Following is the list of main equipment in AHP. O & M Contractor has to carryout complete operation & maintenance of all AHP equipment but not limited to following table:

Item	Equipment	Type and Specification	Unit	QTY.	
				Per Unit	Total
	BA handling system				
1	Hydraulically operated isolating gate		Set	1×3	3
2	Submerged scraper Chain conveyor	40-80t/h	Set	1×3	3
3	Clinker grinder	Single roll 120t/h	Set	1×3	3
4	BA slurry pump	Q=535m ³ /h H=65m	Set	2×3	6
5	Sewage pump	Q=40m ³ /h H=15m	Set	2×3	6
6	BA slurry sump stirrer	Ø1000mm	Set	1×3	3

7	Motor-driven single beam hanging crane	Lifting weight: 1.5t lifting height: 6.5m span: 3m	Set	1×3	3
8	Motor water filter	Q=285m ³ /t	Set	2×3	6
9	Pipe type heat exchanger	Q=285m ³ /t	Set	2×3	6

Item	Equipment	Type and Specification	Unit	QTY.	
				Per Unit	Total
Compressed Air System for Ash Handling					
10	Air compressor	60Nm ³ /min P=0.8MP			19
11	Combined air dryer	50Nm ³ /min P=0.8MP	Set		4
12	FREEZE AIR DRYER	90Nm ³ /min P=0.8MP	Set		11
13	Air receiver	50m ³ P=1.0MP	Set		13
14	Motor-driven crane	Lifting weight: 5t lifting height: 7m/14m	Set		2
Fly ash handling system					

Item	Equipment	Type and Specification	Unit	QTY.	
				Per Unit	Total
15	ESP hopper blow tank pump	4.0m ³	Set	16×3	48
16	FF hopper blow tank pump	0.5m ³	Set	24×3	72
17	Economizer hopper blow tank pump	0.5m ³	Set	6×3	18
18	Air heater hopper blow tank pump	0.5m ³	Set	8×3	24
19	Hopper fluidizing fan	Q=15m ³ /min P=0.068MPa	Set	2×3	6
20	Hopper fluidizing air heater	120kW	Set	1×3	3

Fly Ash Silo System				
21	Silo fluidizing fan	Q=20m ³ /min P=0.068MPa	Set	4
22	Electric air heater	120kW	Set	3
23	Dry ash unloader	200t/h	Set	3
24	Double paddle mixer	200t/h	Set	3
25	Motor-driven air-lock feeder	200t/h	Set	6

Item	Equipment	Type and Specification	Unit	QTY.	
				Per Unit	Total 合
26	Fabric filter	150m ²	Set		3
27	Sewage pump	Q=40m ³ /h H=15m	Set		2
28	Cantilever crane	Lifting weight:1t,lifting height:25m,R=4m	Set		1
29	<u>Air receiver</u>	6m ³	Set		1
30	<u>Pressure relief valve</u>	508	Set		3
31	LP Pump	Type CPC 200/400, dischagre 610m ³ /hr, 50M head, 140KW, 415V, 4 pole 1450rpm,			5
32	HP pump	Type 3 MD 125/305V, dischagre 105m ³ /hr, 90M head, 55KW, 415V, 4 pole, 1450rpm,			5
33	Sludge Pump	Type ARS 80/340, dischagre 30m ³ /hr,& 60 m ³ /hr 40M head, 18.5KW, 415V, 4 pole			4
34	Drain sump Pump	Type VO 80/340+ARS, dischagre 25m ³ /hr, 35M head, 18.5KW			4
35	Dewatering bin	U# 3 side Capacity - 350 m ³ ; Height - 9 mtr ; U#1&2 side - Capacity 700 m ³ , Height 15			6
36	Surge tank	Top ID - 12mtr , Bottom ID - 3 mtr,12 mm MS thick plate, Height- 6 mtr			2
37	Settling tank	Top ID - 12 mtr , Bottom ID - 1.85 mtr,12 mm MS thick plate, Height- 6.5 mtr			2
38	Mixing tank	Capacity -98 m ³ , Height - 4 mtr			4
39	HCS D Pump	Type KOS 25150 HP capacity 292m ³ /hr, 60bar			4
40	Paddle Mixer	Capacity 220T/hr, 75KW, 415V, 1500rpm			4
41	Charge Pump	Flow 292m ³ /hr, discharge pressure, 75KW, 415V, 6 pole 1000rpm,			4
42	Agitator	4 - upper impeller 3 - Middle Impeller			4
43	Agitator Gearbox	Bevel helical gearbox, Gear ratio - 25.6:1			4
44	Measuring loop pump	Type SPX40-position 2, 2.2KW, 415V, 4 pole 1500rpm			4
45	Belt Conveyor 1A,2A,3A	Width 800mm, Type Nylon/nylon, rating 315/3 HD, length 32m, 5.5KW, 415V, 4 pole			3
46	Belt Conveyor 4A,5A,6A	Width 800mm, Type Nylon/nylon, rating 315/3 HD, length 32m, 5.5KW, 415V, 4 pole			3
47	Clinker Grinder	Double roll type, size- below 6 mm,11KW, 415V, 4 pole 1500rpm,			3
48	Vibratory Feeder	Type OA 1250/900 AS U16X, Capacity 20- 70T/hr, 2x1.1KW, 415V, 4 pole 1500rpm			9
49	Bin vibrator	V-200 Electromagnetic vibrator 3000rpm, 415V, 7A			18
50	Vibrating screen	Make - ElectroZavado -200			3

51	Sluice gate	Type - Hydro-pneumatic operated, size 615 x 915 mm			15
52	Cylinder for sluice gate	Double acting type , Bore - 250 mm, Stroke - 660 mm			15
53	Side decanter	MOC - SS 304 , Thickness - 3mm, Size 570 x 270 mm perforated plate			24
54	Centre- decanter	MOC - SS 304 , Thickness - 3mm, Size 570 x 270 mm perforated plate (curved)			6
55	EOT				4
56	manual hoist				4

The Contractor scope related to Ash Dyke Management shall not include lifting of Ash from Ash Dyke. The Operation, maintenance & effective utilization of ash pond, operation and maintenance of slurry lines, water recovery system, spray water system including relocation & extension of slurry discharge point inside the ash dyke shall be included in Contractor Scope.

5. Contractors Obligations:

- 5.1 It is a responsibility of Maintenance Contractor to set up office, store, oil room with required infrastructure. OWNER will provide only land to build office by Maintenance Contractor. One single point connection for water and electricity will be provided near to allotted space (within 500 meter) to meet office requirement. Laying of cable, pipe from that point to office premise and further distribution to various sections is in Maintenance Contractor scope.
- 5.2 Maintenance Contractor Team members are required to stay near to plant area and enough communication facility to be provided at their housing place by Maintenance Contractor to ensure that they can be contacted during odd hours and emergencies. Transportation of staff from their house to plant is in the scope of Maintenance Contractor. The vehicle should be fully licensed to carry people.
- 5.3 Maintenance Contractor shall procure and maintain all the labor licenses as required by the law before commencement of work and during the course of execution of the Maintenance Service Agreement. OWNER will assist him by issuing necessary documents relevant to this Maintenance Service Agreement from the client side.
- 5.4 Maintenance Contractor employees shall have their uniform.
- 5.5 The Maintenance Contractor shall ensure that the Works are performed to the satisfaction of OWNER or as per the Schedule of Works. Further it shall be the responsibility of the Maintenance Contractor to deploy sufficient skilled and experienced Persons to ensure that no Persons is required to work for more than the normal duty hours per day or on account of absenteeism of other staff or as a reliever.
- 5.6 The Maintenance Contractor shall ensure that a representative of the Maintenance Contractor be available to OWNER to apprise OWNER of the progress on the completion of the Works if so required by OWNER.
- 5.7 The Maintenance Contractor shall exercise all reasonable skill, care and diligence in the performance of the Works.
- 5.8 The Maintenance Contractor shall ensure the discipline of the Persons deployed by him.
- 5.9 The Maintenance Contractor shall submit the Results of the Works performed by the Persons for review and comment prior to the completion of the Works and upon completion of the Works shall further submit a Report on the same.
- 5.10 The Maintenance Contractor shall ensure that the fair wages are paid to the Persons and under no circumstances it is less than the minimum wages as stipulated by the state Government of Punjab and shall further ensure the disbursement of wages in the presence of the Engineer-in-charge or his authorized representatives.
- 5.11 The Maintenance Contractor shall be responsible that Persons deployed by him make themselves familiar with site emergency plan (available with Engineer-In-Charge) and comply the same at all times.
- 5.12 The Maintenance Contractor shall maintain proper records of the materials issued to the Persons and hand over the same to OWNER upon completion of the Works and prior to the termination of this Agreement. In the event of any shortage being found in the amount of materials issued, consumed and returned, the Maintenance Contractor shall be liable to compensate OWNER for such shortage to the extent of twice the actual cost of the material. Further the Maintenance Contractor shall not use/transfer the material issued for the performance of a particular Work to the performance of any other Work or project without the prior permission of the Owner Engineer-in-charge.
- 5.13 The Maintenance Contractor shall keep in safe custody all damaged/replaced material for return of the same to OWNER or to be dealt with in accordance with the instructions of the Engineer-in-charge.
- 5.14 The Maintenance Contractor shall further be responsible for the safe custody of the OWNER tools and tackles and return of the same in good working condition upon completion of the Works. In the event of any damage/loss to the said tools and tackles, the Maintenance Contractor shall compensate OWNER for the same to the extent of twice the actual cost of the damaged/lost tools and tackles as and by way of liquidated damages towards such loss/damage.
- 5.15 It shall be the responsibility of the Maintenance Contractor to promptly attend to any faults / complaints reported to it or to its Persons. In the event that the Maintenance Contractor fails to promptly remedy the said faults/ complaints OWNER shall be entitled to attend itself to such faults/complaints and deduct the costs so incurred from the amounts payable by OWNER towards the said Works to the Maintenance Contractor.

- 5.16 The Maintenance Contractor shall, upon the OWNER's written instruction, remove from the Works any person employed by him in the execution of the Works, who misconducts himself or is incompetent or negligent.
- 5.17 The Maintenance Contractor shall remain in constant communication with the Engineer -In -Charge in order to receive any instructions from the Engineer- In -Charge. Further the Maintenance Contractor shall strictly abide by the said instructions so received.
- 5.18 The Maintenance Contractor shall be responsible to arrange for the accommodation and welfare of the Persons at no extra cost to OWNER. Under no circumstances shall any Persons be permitted to reside/live in the substation buildings, workshop, tool room, office or premises of OWNER after completion of the day's work.
- 5.19 The Maintenance Contractor shall ensure that the Persons execute the Works in accordance with the directions of the Engineer-In-Charge.
- 5.20 It is the responsibility of the Maintenance Contractor to prevent any mishandling or damage to equipment/installations. In the event of such damages to equipment/installations, the Maintenance Contractor at no extra cost to OWNER shall replace the same.
- 5.21 Replaceable materials required for the Work shall be issued to the Maintenance Contractor from the store of OWNER.
- 5.22 The Maintenance Contractor shall submit a monthly report on the status of the Works to the Owner Engineer-In-Charge.
- 5.23 The Persons shall be provided with identity badges of approved design by OWNER to be worn by the Persons at all times when such Persons is on site.
- 5.24 The Maintenance Contractor shall ensure that the Persons properly maintain all the necessary working drawing and records provided by OWNER.
- 5.25 Neither the Maintenance Contractor nor any of the Persons shall enter into any monetary transactions or business with any of the persons associated with the OWNER or its associated companies.
- 5.26 In the event of any of the Persons going on strike, agitating or behaving in a manner not conducive to the interest of OWNER, the Engineer In Charge shall intimate the Maintenance Contractor, who shall immediately upon receiving such intimation promptly arrange to replace such Persons with suitable candidates acceptable to OWNER.
- 5.27 Maintenance Contractor shall submit the record of medical check-up of persons being sent on the TSPL site. Maintenance Contractor shall arrange for medical check-up of person being sent on TSPL site every year or earlier if so required by OWNER. No expenses in this regard will be payable by OWNER
- 5.28 All persons deployed by Maintenance Contractor on site will have to undergo a safety induction. Persons may have to undergo a safety rules training if OWNER so desires. However Maintenance Contractor will not be responsible for any cost incurred during induction and training of such person.
- 5.29 OWNER may decide to impart training to some of the persons to ensure their safety or to enhance person's skills in order to finish the work earlier. Such costs will be paid on actual. However decision to impart such training will rest with OWNER and will be binding on Maintenance Contractor
- 5.30 The Maintenance Contractor shall, in all matters arising in the performance of the Contract, comply in all respects with, give all notices and pay all fees required by the provisions of any national or state statute, ordinance or other law or any regulation or bye-law of any constituted authority.
- 5.31 The OWNER shall in reasonable time grant the Maintenance Contractor access to and possession of the Site, which may, however, not be exclusive to the Maintenance Contractor.
- 5.32 Where the manner of work execution is not set out in the Contract, the work shall be executed in a proper and workmanlike manner in accordance with recognized good practice.
- 5.33 The Maintenance Contractor shall give notice in writing to the OWNER if during the progress of the Works it shall appear to the Maintenance Contractor that the execution of the Works is not reasonably practicable or that after the completion of the Works the maintenance is unlikely to perform its purpose or to serve the objects of the OWNER.
- 5.34 During the course of the Contract the OWNER shall be entitled to inspect, examine and test the workmanship in maintenance, and to check the progress of the work. No such inspection, examination or testing shall release the Maintenance Contractor from any obligation under the Maintenance Service Agreement.
- 5.35 If, as a result of the inspection, examination or testing referred above or any inspection or examination carried out on Site, OWNER decides that any work on the plant is not proper or otherwise not in accordance with the Maintenance Service Agreement, OWNER may reject such work and shall notify the Maintenance Contractor thereof immediately. The Maintenance Contractor shall then with all speed make good the defect.
- 5.36 In the event of the Maintenance Contractor requiring any information or clarification on any matter related to the terms of this Agreement, OWNER shall provide the same to the Maintenance Contractor within a reasonable time and in writing provided the said information or clarification is properly referred to OWNER in writing by the Maintenance Contractor

- 5.37 The Maintenance Contractor shall be liable for and shall indemnify the OWNER against all losses, expenses or claims arising in connection with the death of or injury to any person employed by the Maintenance Contractor or his Subcontractors for the purposes of the Works, unless caused by any acts or defaults of the OWNER or other contractors engaged by the OWNER or by their respective employees or agents. In the latter cases the OWNER shall be liable for and shall indemnify the Maintenance Contractor against all losses, expenses and claims arising in connection therewith.
- 5.38 The Maintenance Contractor shall insure Maintenance Contractor's Equipment for its full replacement value whilst in transit to the Site, from commencement of loading until completion of unloading at the Site and while on the Site against all loss or damage caused by any of the Maintenance Contractor's Risks.
- 5.39 The Maintenance Contractor shall insure against liability to third parties for any death or personal injury and loss of or damage to any physical property arising out of the performance of the Maintenance Service Agreement. Such insurance shall be effected before the Maintenance Contractor begins any work on the Site.
- 5.40 The terms of the policy shall include a provision whereby, in the event of any claim being made against the OWNER in respect of which the Maintenance Contractor would be entitled to indemnity under the policy, the insurers will indemnify the OWNER against any costs, charges and expenses in respect thereof.
- 5.41 The Maintenance Contractor shall insure and maintain insurance against his liability for all employees brought on TSPL site.
- 5.42 The terms of the policy shall include a provision whereby, in the event of any claim being made against the OWNER in respect of which the Maintenance Contractor would be entitled to indemnity under the policy, the insurers will indemnify the OWNER against any costs, charges and expenses in respect thereof.
- 5.43 The Maintenance Contractor shall whenever required by the OWNER produce the policies or certificates of any insurance which he is required to effect under the Maintenance Service Agreement together with receipts for the premiums, and effect all insurances for which he is responsible with an insurer and in terms approved by the OWNER.
- 5.44 If the Maintenance Contractor fails to produce evidence of insurance cover as stated above then the OWNER may effect and keep in force such insurance. Premiums paid by the OWNER for this purpose shall be deducted from the Monthly Maintenance Fee.
- 5.45 If the Maintenance Contractor is not executing the Works in accordance with the Maintenance Service Agreement or is neglecting to perform his obligations there under so affect the progress of the Works, the OWNER may give notice to the Maintenance Contractor requiring him to make good such failure or neglect within such period as shall be reasonable in the circumstances. If the Maintenance Contractor failed to comply with such notice to the OWNER's reasonable satisfaction, or is in breach of his obligations under this Maintenance Service Agreement in such a manner as to cause the OWNER fundamentally to lose all trust in the Maintenance Contractor's ability to perform the Maintenance Service Agreement to completion, the OWNER may terminate the Maintenance Service Agreement forthwith. Any such termination shall be without prejudice to any other rights or powers of the OWNER or the Maintenance Contractor under the Maintenance Service Agreement.
- 5.46 The OWNER may upon such termination complete the Works himself or by any other Maintenance Contractor. The OWNER or such other Maintenance Contractor may use for such completion any Maintenance Contractor's Equipment, which is on the Site, and the OWNER shall pay or allow to the Maintenance Contractor a fair price for such use. Otherwise the Maintenance Contractor will be granted a reasonable period to remove the Maintenance Contractor's Equipment.
- 5.47 Contractor responsibility shall be reflected by below annexure- IV

6. Contractor's Staff and their Conduct

- 6.1 if any of the Contractor's employee, in the opinion of Engineer-in-Charge / Owner's representative, be found guilty of any misconduct or be incompetent or insufficiently qualified or negligent in the performance of their duties or that in the opinion of the Engineer-in-Charge / Owner's representative, undesirable for administrative or any other reasons, for such person(s) to be employed for providing desired services, then at the directions of the Engineer-in-Charge / Owner's representative, the Contractor shall at once remove such person (s). Vacancy so created shall be immediately filled at the expense of the Contractor by a qualified and competent substitute. In case the Owner request the Contractor to repatriate/ remove any person deployed under this Contract, the Contractor shall do so without any cost implication try the Owner.
- 6.2 The staff engaged by the Contractor shall not be under addiction of drug/ liquor while on duty.

- 6.3 The Contractor shall be solely responsible for the proper behavior of his employees and staff deputed by him. The Contractor shall exercise adequate control over them and in particular without prejudice to the said generality, the Contractor shall be bound to prohibit/prevent any of his employees from trespassing or acting in anyway detrimental or prejudicial to the interest of the community or the properties or occupiers of land or properties of any third party. In the event of such trespassing, the Contractor shall be responsible for all consequent claims or actions for damages or injury or any other grounds whatsoever. The decision of the Engineer-in-Charge / Owner's representative' upon 'any matter
- 6.4 If the Contractor or Its employees damage, break, deface the property belonging to the Owner or any third party during the execution of the Contract, the same shall be made good by the Contractor at his own expense and in default thereof, the Engineer-in-Charge may cause the same to be made good by other agencies and recover expenses from the Contractor for which the certificate of the Engineer-in-Charge shall be final.
- 6.5 All Contractors' personnel entering Owner's premises shall be properly identified by Identification Cards issued by O&M contractor as per Owners Site Operation and Security Process and must be worn at all times on Owner's premises.

7. Security, Statutory and Safety Regulations

- 7.1 The Contractor shall abide by all the safety & security regulations and Site specific operations procedures of the Owner in force and as prescribed from time to time. The Contractor shall also abide by all statutory requirements. The Contractor shall be responsible for the safety and security of all its deployed resources (manpower, machine, equipment etc.) and Owner shall in no way be responsible for any theft, damage, loss of equipment etc. or for any injury or death of any of the Contractors workmen. The Contractor shall report to Owner and other local authorities concerned all cases of accidents howsoever caused and wherever occurring on the works and shall make adequate arrangements for rendering immediately all possible aid to the victims of the accidents.
- 7.2 Owner shall not be in any way held responsible for any accident or damages incurred and claims arising there from during the period of the contract. The Contractor shall be responsible for following the provisions of all safety laws and rules made there under and other statutory requirements at his own cost,
- 7.3 The Contractor shall arrange to obtain from Owner the required gate pass for entry and exit to Owner's Site and other areas for each one of its engineers/specialists, representatives/ agents, supervisors, workmen and staff as per Owners prescribed procedure and format. Each entry and exit gate pass shall contain the photograph of the person concerned. In the event of loss and/or damage to the gate passes, the Contractor shall pay to Owner the prescribed charges before a new entry and exit gate pass can be issued. Owner's security department and the concerned officer/ engineer shall have the right to refuse the entry and exit gate passes to any worker or representatives of the Contractor without assigning any reason.
- 7.4 The Contractor must provide the requisite details like name, age, father's name, permanent and temporary address, recent photographs of the its employees, driver licenses, etc. as are essential for issuing permit/gate pass.
- 7.5 The Contractor shall register all equipment that may be taken inside the plant area in order to facilitate the issue of exit gate permits for such items to be taken out after the completion of work.
- 7.6 The Contractor shall not employ for the purpose of the Work, any person below the age of 18 years. Owner shall have the right to decide whether any person employed by the Contractor is below the age limit, and to refuse to allow any person, whom he considers to be under-aged to be employed by the Contractor.
- 7.7 The Contractor shall follow the provisions of Indian Factories Act 1948. Contract Labor (R&A) 1970, Workman Compensation Act 1923, Minimum Wages Act 1948 and all other provision of labor Arts / any other applicable laws and rules made there under from time to time as applicable, and shall indemnify Owner against all claims of compensations under the provisions of the Act in respect of workmen employed by the Contractor in carrying out the works and against all costs and expenses or penalties that may be incurred by Owner in connection therewith.
- 7.8 The Contractor shall submit labor license and maintain the same valid and concurrent during the tenure of contract. The Owner provides/ shall provide Form 5 to the Contractor for applying labor license.
- 7.9 The Contractor shall ensure that no explosive or inflammable material are used or stored at the contract site. In the event such material are essential as part of execution of the Contract work, written permission from the Engineer-in-Charge/ Owner's representative and shall be the Sole responsibility of the Contractor to ensure acquisition of necessary statutory permits and clearances and proper storage and handling of such material.
- 7.10 The Manpower required for the execution of scope of work (Including the PAPs) shall have to be in the rolls of the Contractor and wages, PF ESI etc shall all be in the name of Contractor only. Subcontracting for specialized services like OEM expertise where required will be allowed with specific approvals

- 7.11 The Contractor shall submit Group Insurance Policy/ESI of the workmen engaged in the contract within 15 days of Contract date or Effective date whichever is earlier.
- 7.12 The Contractor shall make payment to the workmen within 7 days of wage period i.e. end of every month (or any such earlier date as may be required by the applicable laws as notified by statutory bodies from time to time) and shall remit to their respective bank account. The Contractor shall ensure that all of his employees deployed for the contract shall have bank account and shall facilitate for the same. The Contractor shall submit documentary evidence towards this compliance along with the invoice. In case the salaries/wages are not paid as per the statutory timelines, the Owner shall be within its rights to pay the salaries & wages to meet the statutory compliance and recover the same from the accounts payable / securities provided by the Contractor.
- 7.13 The Contractor shall make arrangement for labor housing at his own costs outside the Plant (Site) boundaries only. No staff shall be permitted to stay or cook within the plant boundary. Only the personnel on the respective shift duty shall be allowed inside the plant. Reasonable office space for the employees on shift duty / storage of spares /workshop alone shall be provided inside the plant. However, the infrastructure and its maintenance shall be responsibility of the Contractor.
- 7.14 Reasonable space shall be provided to Contractor for the purpose of office and store/ workshop.
- 7.15 The Contractor shall strictly comply with State Pollution Control Board/ Environment Ministry norms/ guidelines at all times while performing under the Contract. The Contractor shall be solely responsible for any third party liabilities or penalties imposed by local bodies/ statutory authorities arising out of execution of the Contract and shall hold harmless and fully indemnify Owner against any such liabilities, claims etc.

8. Environmental, Health, Safety clause:

- 8.1 Contractor shall provide at its own cost, safety equipment and Personnel Protection Equipment (PPE) as per the requirement of Job Safety Analysis and minimum PPEs as may be proscribed by the Owner for operating within the Site.
- 8.2 The Contractor must adhere to all the applicable statutory laws pertaining to safety, health and environment as well as all the environment, safety & health points stipulated under the section Contract of this bid document.
- 8.3 All supervisors/ workers of Contractor must take safety and environmental induction training and comply with the instructions given therein.
- 8.4 The Contractor shall engage its human resources who are proven to be of good conduct and clean antecedents.
- 8.5 It shall be the responsibility of the Contractor to comply with all the statutory enactments, regulations, directions, notifications etc. issued by The Central and State Governments or any other Pollution Control Authorities from time to time.

9. Contractor Responsibility with Other Agencies

- 9.1 Without repugnance to any other condition, it shall be the responsibility of the Contractor not to divert or withdraw the people working for the contract for any other service contract without prior permission of the Owner. No claim shall be entertained on account of above.
- 9.2 The Contractor shall conform in all respects with the provisions of any statutory regulations, ordinances or byelaws of any local or duly constituted authorities or public bodies which may be applicable from time to time to the consulting services work.

10. Desired Performance Levels:

- 10.1 The Contractor to ensure that all equipment covered under the Scope of Work must perform at the same or better levels when compared to performance as observed/ recorded prior to the award of Contract / as defined in the Scope of Work thereon. In no case, the performance of any of the equipment shall be outside the recommended operating range specified by the OEM of the respective equipment under O&M manuals.
- 10.2 The related systems and/ or auxiliaries to these equipment shall also be maintained as per the requirement of the system's O&M manuals.
- 10.3 Contractor shall guarantee monthly availability of AHS (excluding statutory shut- downs/ planned Maintenance shutdown/force majeure/preventive maintenance time at 95% which shall be aggregated on monthly basis.

10.4 Contract's performance shall be evaluated on the basis of performance card (annexure-V) along with associated safety (annexure –VI), housekeeping (annexure –VII) & HR score cards (annexure-VIII).

Note:

- 1) Agency shall maintain Minimum duty position with 95 % attendance in respective shift to fulfill KPI otherwise penalty shall be imposed as per KPI.
- 2) Agency shall provide KRA against each Positional to achieve the KPI for the O&M contract of Ash Handling system.
- 3) Agency to suggest improvement plan for reducing the manpower with use of technology.

11. Key performance indicator

Sr. No	KPI	Factors	Attributable		Definition of per Instance	Measure	Penalty per instance	Maximum limit (monthly bill)		
			TSPL	Contractor						
1	DC loss	SSC unavailability	Foreign Material in SSC	At-tributable towards Agency will include all O&M failures excluding attributable towards TSPL within battery limit	DC loss for minimum 2 hours block	Daily generation report	INR 15000	10%		
			CG choking							
			PM not given as per schedule							
			Spares unavailability/							
		ESP Hopper level high	PM not given as per schedule							
			spares unavailability							
			Coal flow more than 510 ton/hr.;							
		Silo Level high	PM not given as per schedule							
			Spares unavailability/							
		BA conveying system unavailable	PM not given as per schedule							
Spares unavailability										
2	Fugitive Emission	Stack Emission >50 mg/Nm ³	Spares unavailability	Stack Emission >50 Nmg/m ³ for minimum 2 hours	PLC log book	INR 5000				
			high coal flow more than 510 ton/hr.							
			PM not given as per schedule							
			Start up of unit							
			Operational requirement/emergency							
			pulsing valve not available/breakdown							
			pneumatic cylinder issues							
			availability of bulker for pre-coating							
		SSC drain	Foreign Material					SSC drain by Man Hole	Daily MIS	INR 1000
			Operational fault							
PM not given as per schedule										
PM not given										

			CG choking			
		Fly ash hopper complete drain	PM not given as per schedule	Complete Fly ash hopper drain from Emergency drain/MIV valve	Daily MIS	INR 1000
			spares unavailability			
		Silo complete drain	PM not given as per schedule	Complete Silo drain from Dummy of dry ash un-loader / Air slider /with-out bulker	Daily MIS	INR 1000
			spares unavailability			
		Mixing tank complete drain	PM not given as per schedule	Complete drain of mixing tank form drain point/suction valve of charge pump	Daily MIS	INR 1000
			spares unavailability			
		De-canting bin complete drain	PM not given as per schedule	Complete drain of De-canting bin from belt side gate	Daily MIS	INR 1000
			spares unavailability			
		Settling tank complete drain	PM not given as per schedule	complete drain of settling tank from drain pipe	Daily MIS	INR 1000
			spares unavailability			
		Surge tank complete drain	PM not given as per schedule	complete drain of settling tank from drain pipe	Daily MIS	INR 1000
			spares unavailability			
		HCS Intermediate hopper complete drain	PM not given as per schedule	Complete drain of settling tank from drain pipe	Daily MIS	INR 1000
			spares unavailability			
3	Bulker loading	Movement of empty bulker from weighbridge to silo and loaded bulker from silo to weighbridge	Weigh bridge unavailability	Bulker loading less than 200 nos. for any particular day	Daily MIS	For every bulker less than 200 nos. INR 100 and max upto INR 5000 /day
			Bulker unavailability			
			Plant road unavailability			
		Bulker Loading	Ash generation			
			Bulker breakdown			
			spare unavailability			
			PM not given as per schedule			
4	Attendance of minimum duty positions			Availability of minimum duty position should be more than 95 % for any particular day	CLMS	INR 1.5* category wise daily wage

12. Sub-Contracting (Assignment):

12.1 The Contractor shall not sublet any part of the Contract to any other vendor/agency without the pre-written consent of the Owner. Such assignments or subletting or transfer shall not relieve the Contractor from any obligation, duty and responsibility under this Contract. Any assignment, transfer, subletting without the prior approval of the Owner shall be void. The Owner shall have the right to cancel the Contract and to get the services from elsewhere and the Contractor shall be liable to the Owner for any loss or damage which the Owner may sustain in consequence or arising out of such Contract and the Contractor shall indemnify such loss or damage to the Owner.

13. Annual Maintenance Contracts (AMC's)

O & M Contractor has to engage, coordinate mobilization and support the tentative following AMCs to OEM:

AMC	Qty	OEM
HCS&D piston type pumps	4	Putzmeister
Screw compressors	17	FS Curtis
Centrifugal compressor	2	FS Elliott

14. Reports

- 14.1 As per contractor performance score card agency shall prepare report which is to be submitted and to suggest remedial action for any observation on monthly basis
- 14.2 Mechanical and electrical checklist to be filled by the O&M contractor representative and would be signed jointly.
- 14.3 Root cause failure report of breakdowns and CAPA
- 14.4 Corrective and preventive action for repeated failures/maintenance.
- 14.5 Kaizen

15. Additional Services

- 15.1 The O&M Contractor is required to perform all Services as specified in this O&M Service Agreement as per Prudent Utility Practices including those prudent industry practices. However, there may be occasions when certain extra activities are required to be performed which necessitate deployment of additional manpower and/or resources (special tool and/or crane). Such activities shall be carried out by the O&M Contractor pursuant to a prior request of the Owner and such activities shall be called as Additional Services.
- 15.2 Additional Services as per annexure-X, provided under this O&M Service Agreement shall be reimbursed as per the job rates
- 15.3 Additional manpower & resources for Additional Services shall not be deployed to perform Scope of work for routine O&M activities under this O&M Service Agreement.

16. Annexures

16.1 Annexure-1: List of consumables

List of consumables		
Sl. No	Material Descriptions	contractor
1	Ceramic Non-Asbestos rope 6,8,10, 12,16, 20,25,40 mm champion	Y
2	Graphite rope 6, 8, 10,12 ,16,20 mm champion	Y
3	Non-Asbestos flat 25x3, 50x3, 50x5 mm champion	Y
4	Emery Paper & TAPE(Grit no.) 36,50,80 ,120,200 & 500 Carborundum	Y
5	Non- Asbestos cloth 1/8" Thick champion	Y
6	Teflon tape Pocket box/Roll	Y
7	Holdite	Y
8	Loctite make adhesives, sealants & gasketing compounds	Y
9	Graphite Powder	Y
10	M-Seal Set	Y
11	Non- Asbestos Putty	Y
12	Cotton Waste, Cotton cloth & Net Cloth	Y
13	Rustolene,WD40 rust removal spray	Y
14	MS cutting & grinding wheels for AG-4, AG-5, AG-7 grinding machines	Y
15	SS cutting & grinding wheels for AG-4, AG-5, AG-7 grinding machines	Y
16	Grinding Wheels of FF2 grinder	Y
17	Buffing wheel 2",3",4",6"	Y
18	Grinding Stones Set Conical oval, Cylindrical etc.	Y
19	Milling Cutter Conical oval, Cylindrical etc	Y
20	Wire Brush of different sizes	Y
21	Rust cleaner Compound Omega 636 or equivalent	Y
22	Anabond-202,610, 595 etc Make: Anabond	Y
23	Araldite Tube set	Y
24	Ethanol for equipment components cleaning	Y
25	Hacksaw blades	Y
26	Bearing retainer Make- Loctite	Y
27	RTV 732 Tube set	Y
28	Refrigerant	Y
29	Oxygen, DA and Argon gas cylinders	Y
30	Coir & Manila rope	Y
31	Welding Electrodes General:6013,7018→2.5,3.15,4 mm of make D&H/ESAB	Y
32	Brazing material (Flux & filler wire) L&T	Y

33	Belcha, Taklon, Spade tools	Y
34	Non-metallic gaskets	Y
35	SS Shims→0.05mm,0.1mm,0.2mm,0.3mm,0.5 mm,1mm,1.5mm,2 mm	Y
36	Valve lapping paste fine, medium & coarse.	Y
37	Grinding & cutting goggles	Y
38	All safety PPE for contract workmen	Y
39	Lead wires	Y
40	Chalks, marking pens and thermal chalks up to 300 degree	Y
41	PU Tube all sizes with required fittings	Y
42	SS tubing with required fittings	Y
43	O rings	Y
44	Conduits	Y
45	Fuses all types	Y
46	Terminal Blocks	Y
47	Earthing strips	Y
48	Wire brush-Pvc	Y
49	Emery paper	Y
50	Sand paper	Y
51	BRASS FITTING 1/4"	Y
52	SS-316 FITTING 1/2" WITH FERULE & NUT	Y
53	BRASS NEEDLE VALVE 1/4"	Y
54	BRASS UNION 1/4"	Y
55	BLIND CS1/2"	Y
56	SS-316 SEAMLESS EQUAL TEE 1/2"	Y
57	CONDENSATE POT	Y
58	CS BALL VALVE 1/2 "	Y
59	SOCKET CS1/2"	Y
60	BRASS FITTING 3/8" NPT (M) X 3/8" OD	Y
61	BRASS NEEDLE VALVE 3/8" NPT (F)	Y
62	BRASS UNION 3/8" NPT	Y
63	BLIND C.S 1/4" NPT (M)	Y
64	BLIND C.S 1/4" NPT (F)	Y
65	NIPPLE SS-304 3/8" NPT	Y
66	NIPPLE CS 1/2"X4" LONG	Y
67	BLIND CS 1/2" NPT (F)	Y
68	SS UNION 1/2" WITH NUT & FERRULE	Y
69	SS ELBOW 1/2"	Y
70	NUT & FERRULE BRASS 1/4"	Y
71	NUT & FERRULE SS-316 1/2"	Y
72	SS BALL VALVE 1/2"	Y

73	TEE CS 1/2"	Y
74	BRASS FITTING 3/8"NPT(M)X1/4" OD	Y
75	NIPPLE C.S 1/2" X 2.5"	Y
76	COPPER PIPE 1/4" PVC COATED	Y
77	COPPER TUBE PVC COATED 3/8"	Y
78	SS 316L SEAMLESS TUBE	Y
79	G.I. PIPES 2" 'B' CLASS	Y
80	MS SHEET	Y
81	SOCKET CS 3/4"	Y
82	SOCKET CS1/2"	Y
83	NIPPLE CS 1/2"X4" LONG	Y
84	CS BALL VALVE 1/2 "	Y
85	SOCKET C.S 3/4" SCH- 80	Y
86	SOCKET CS 1/2" SCH-80	Y
87	BALL VALVE C.S 1/2" SCH 80	Y
88	NIPPLE C.S 1/2"X 4" LONG SCH-80	Y
89	ANCHOR FASTENER HST M 10*90	Y
90	MS BOLT 1/2"X11/2"	Y
91	MS NUT 1/2" THINKNESS 3/8"	Y
92	M.S BOLT 1/2" X 2 "	Y
93	SS NEDDLE VALVE 1/4"1/4" NPT (F)	Y
94	SS 316 BALL VALVE 1/2"(F) THREDED TYPE1/2" NPT(F)	Y
95	SS-316 SOCKET 1/2"1/2" NPT(F)	Y
96	SS 316 UNION 1/2"1/2" OD X 1/2" OD,ALONGWITH NUT-FERRULE	Y
97	SS SOCKET 1/4"1/4" NPT(F)	Y
98	SS 316 REDUCER 1/2" (M) X 1/4" (F)THREAD NPT	Y
99	SS BLIND 1/2"1/2" NPT (M)	Y
100	SS BLIND 1/4"1/4" NPT(M)	Y
101	SS FERULE 1/2"	Y
102	SS FITTING 1/2"1/2" NPT(F) X 1/2 OD	Y
103	SS NIPPLE 1/2"1/2" NPT (M) X 2" LONG	Y
104	SS NIPPLE 1/4"1/4" NPT (M) X 4" LONG	Y
105	SS NIPPLE 1/2" * 4"1/4" NPT(M)	Y
106	SS ELBOW 1/2"	Y
107	1/2" NPT (M) X 1/2" OD,WITH NUT-FERRULE	Y
108	S.S.ADOPTER 1/4"1/4" NPT(M) X 1/4" OD,ALONGWITH NUT-FER- RULE	Y
109	S.S NUT 1/2"	Y
110	SS NUT 1/4"	Y
111	FITTING SS 316 1/2" NPT(M)X1/2"ODWITH NUT-FERRULE	Y

112	SS FERRULE 1/4"	Y
113	SS UNION 1/4" * 1/4"1/4" OD X 1/4" OD,ALONGWITH NUT-FERULE	Y
114	COPPER WASHERS 1/2"	Y
115	PVC COATED COPPER WASHERS 3/4"	Y
116	PVC COATED COPPER WASHERS 1"	Y
117	PVC COATED COPPER TUBE 8MM	Y
118	PVC COATED COPPER TUBE 10MM	Y
119	PVC COATED COPPER TUBE 12MM	Y
120	PVC COATED COPPER TUBE 12MM	Y
121	PVC TUBE 8MM	Y
122	PVC TUBE 10MM	Y
123	PVC TUBE 12MM	Y
124	1/2 BY 3/4 Air Filter Regulator	Y
125	Terminal Blocks	Y
126	Holdtite sealent	Y
127	White cotton cloth	Y
128	ARALDITE	Y
129	Anabond (Liquid Bearing Sealant)	Y
130	Hylomer universal blue compound, 100GM	Y
131	Lubricant spary stanvac AC-90	Y
132	Lubricant spary stanvac AC-90	Y
133	Persian blue tube	Y
134	RTV silicon sealant	Y
135	Rustolene	Y
136	Silicon sealant	Y
137	Silicon sealent 280ml	Y
138	Teflon tape-1/2INCH	Y
139	Teflon tape-3/4INCH	Y
140	Teflon tape-1 INCH	Y
141	Char coal/ salt for earth pit treatment	Y
142	Silica gel	Y
143	Fast drying HT insulating varnish	Y
144	Earthing consumables like GI flats/ GI wires/ 35 Sq.mm. Cu Cable	Y
145	Exhaust fan 18" single phase	Y
146	Copper flexible cable 1Cx2.5 sqmm	Y
147	Copper flexible cable 3Core x 1.5 Sqmm, Make-Finolex	Y
148	Copper flexible cable 3Core x 2.5 Sqmm, Make-Finolex	Y
149	copper wire-1.0 Sqmm	Y
150	copper wire-1.5 Sqmm	Y
151	copper wire-2.5 Sqmm	Y

152	copper wire-4 Sqmm	Y
153	copper wire-6 Sqmm	Y
154	Patch cable 1mtr-D-link	Y
155	Patch cable 2mtr-D-link	Y
156	Patch cable 5mtr-D-link	Y
157	Cable seal compound(3Kgs per set) Make-3M	Y
158	Straight through cable jointing kit 3C X 50 sqmm (SLA-4)	Y
159	Straight through cable jointing kit 3C X 70 sqmm (SLA-5)	Y
160	Straight through cable jointing kit(LT cable,1.1kv) 3Cx50	Y
161	Straight through cable jointing kit(LT cable,1.1kv) 3Cx70	Y
162	Straight through cable jointing kit(LT cable,1.1kv) 3.5Cx185	Y
163	Straight through cable jointing kit(LT cable,1.1kv) 3Cx185	Y
164	Straight through cable jointing kit(LT cable,1.1kv) 3Cx95	Y
165	Straight through cable jointing kit(LT cable,1.1kv) 3Cx150	Y
166	Straight through cable jointing kit(LT cable,1.1kv) 3Cx35 +1CX16	Y
167	Straight through cable jointing kit(LT cable,1.1kv) 3Cx25	Y
168	Straight through cable jointing kit(LT cable,1.1kv) 3Cx50	Y
169	Wire sleeve-2.0sqmm:F class	Y
170	Wire sleeve-3.0sqmm:F class	Y
171	Wire sleeve-4.0sqmm:F class	Y
172	Wire sleeve-5.0sqmm:F class	Y
173	Wire sleeve-6.0sqmm:F class	Y
174	Wire sleeve-8.0sqmm:F class	Y
175	Wire sleeve-10.0sqmm:F class	Y
176	Cable tie-100mm	Y
177	Cable tie-150mm	Y
178	Cable tie-300mm	Y
179	Cable tie-400mm	Y
180	Pvc ferrule 1.5sqmm	Y
181	Pvc ferrule 2.0sqmm	Y
182	Pvc ferrule 2.5sqmm	Y
183	Copper tube 6mm OD(Pvc Coated)	Y
184	Copper tube 8mm OD(Pvc Coated)	Y
185	Copper tube 10mm OD(Pvc Coated)	Y
186	flexible pipe-1"	Y
187	Nylon braided pipe 1"	Y
188	PVC Bend-1"	Y
189	PVC board	Y

190	PVC board-4x7	Y
191	Pvc Conduit Pipe 3/4"	Y
192	PVC Conduit pipe-1"	Y
193	PVC junction box 3/4"	Y
194	Spike board Make-Anchor	Y
195	Glass fuse 5x20mm 500V 0.5Amp	Y
196	Glass fuse 6x30mm 500V 1Amp	Y
197	PVC insulating tape	Y
198	Aluminium Lugs 120 sqmm	Y
199	Aluminium Lugs 150 sqmm	Y
200	Aluminium Lugs 185 sqmm	Y
201	Aluminium lugs 6 sqmm(Dowells)	Y
202	Aluminium lugs 10 sqmm(Dowells)	Y
203	Aluminium lugs 16 sqmm(Dowells)	Y
204	Aluminium lugs 25 sqmm(Dowells)	Y
205	Aluminium lugs 35 sqmm(Dowells)	Y
206	Aluminium lugs 50 sqmm(Dowells)	Y
207	Pin type copper lug insulated 1.5 sq mm	Y
208	Pin type insulated cu.lug 1.5 sq.mm flat	Y
209	Pin type insulated cu.lug 2.5 sq.mm flat	Y
210	Pin type copper lug insulated 2.5 sq mm	Y
211	Pin type insulated copper lug 4.5sq.mm	Y
212	Copper lug 1.5sq.mm ring type 5mm dia	Y
213	Copper lug 1.5sq.mm ring type 6mm dia	Y
214	Copper lug 2.5sq.mm ring type 5mm dia	Y
215	Ring type copper lug 2.5 sq.mm(10mm)	Y
216	Ring type copper lug 2.5 sq.mm(12mm)	Y
217	Ring type copper lug 4 sq.mm(8mm)	Y
218	Ring type copper lug 4 sq.mm(10mm)	Y
219	Ring type copper lug 4 sq.mm(12mm)	Y
220	Ring type copper lugs 4 sqmm(Dowells)	Y
221	Ring type copper lugs 6 sqmm(Dowells)	Y
222	Ring type copper lugs 10 sqmm(Dowells)	Y
223	Ring type copper lugs 16 sqmm(Dowells)	Y
224	Ring type copper lugs 25 sqmm(Dowells)	Y
225	Ring type copper lugs 35 sqmm(Dowells)	Y
226	Ring type copper lugs 50 sqmm(Dowells)	Y
227	Ring type copper lugs 70 sqmm(Dowells)	Y
228	Ring type copper lugs 95 sqmm(Dowells)	Y
229	Copper Lugs (Ring Type), 4 sq.mm	Y
230	Copper Lugs (Ring Type), 95 sq.mm (Heavy Duty)	Y

231	Copper Lugs (Ring Type), 150 sq.mm (Heavy Duty)	Y
232	Copper Lugs (Ring Type), 185 sq.mm (Heavy Duty)	Y
233	Straight copper lug 1.5 sq.mm	Y
234	Soldering iron 25watt	Y
235	Soldering lead	Y
236	Soldering paste	Y
237	Connectors (2way/3way / 4way, 1.5,2.5,6 sq.mm)	Y
238	Industrial plug & socket 5,15,20,32,63 A wall	Y
239	RJ4S Connector	Y
240	PLUG 6 AMP 2 PIN	Y
241	PLUG 6 AMP 3 PIN	Y
242	PLUG 16 AMP 3 PIN	Y
243	SOCKET 6 AMP 2 PIN	Y
244	SOCKET 6 AMP 5 PIN	Y
245	SOCKET 16 AMP 3 PIN	Y
246	SWITCH 6 AMP	Y
247	SWITCH 16 AMP	Y
248	INDICATOR 6 AMP	Y
249	HT insulation tape Role	Y
250	Fibre glass tape	Y
251	Monoplast tape	Y
252	Silica gel	Y
253	24 V hand lamps	Y
254	Bulbs for hand lamps	Y
255	Wire sleeve-12.0sqmm:F class	Y
256	Cable tie-50mm	Y
257	Aluminium Lugs 240 sqmm	Y
258	Aluminium Lugs 300 sqmm	Y
259	LUGS CONTROL COPPER PIN TYPE 1.5 SQ MM	Y
260	LUGS CONTROL COPPER PIN TYPE 2.5 SQ MM	Y
261	LUGS CONTROL COPPER PIN TYPE 4 SQ MM	Y
262	LUGS CONTROL COPPER PIN TYPE 6 SQ MM	Y
263	LUGS CONTROL COPPER RING TYPE 1.5 SQ MM	Y
264	LUGS CONTROL COPPER RING TYPE 2.5 SQ MM	Y
265	LUGS CONTROL COPPER RING TYPE 4 SQ MM	Y
266	LUGS CONTROL COPPER RING TYPE 6 SQ MM	Y
267	LUGS CONTROL COPPER U TYPE 1.5 SQ MM	Y
268	LUGS CONTROL COPPER U TYPE 2.5 SQ MM	Y
269	LUGS CONTROL COPPER U TYPE 4 SQ MM	Y
270	LUGS CONTROL COPPER U TYPE 6 SQ MM	Y
271	LUGS CONTROL COPPER PUSH TYPE 1.5 SQ MM	Y

272	LUGS CONTROL COPPER PUSH TYPE 2.5 SQ MM	Y
273	LUGS CONTROL COPPER PUSH TYPE 4 SQ MM	Y
274	LUGS CONTROL COPPER PUSH TYPE 6 SQ MM	Y
275	Copper Lugs (Ring Type), 240 sq.mm (Heavy Duty)	Y
276	Copper Lugs (Ring Type), 300 sq.mm (Heavy Duty)	Y
277	Bimetallic Sheet	Y
278	FUSE ASSEMBLY 10 AMP	Y
279	HOLDER ANGLE TYPE	Y
280	HOLDER STRAIGHT TYPE	Y
281	PLUG METAL 20 AMP 2POLE	Y
282	PLUG METAL 20 AMP 3 POLE	Y
283	PLUG METAL 30 AMP 2 POLE	Y
284	PLUG METAL 30 AMP 3 POLE	Y
285	SOCKET METAL 20 AMP 2POLE	Y
286	SOCKET METAL 20 AMP 3POLE	Y
287	SOCKET METAL 30 AMP 2 POLE	Y
288	SOCKET METAL 30 AMP 3 POLE	Y
289	ELECTRICAL WOODEN BOARD 8" x 6 "	Y
290	ELECTRICAL WOODEN BOARD 10 x 8 "	Y
291	CASING CAPING 12 MM 2MTR	Y
292	CASING CAPING 20 MM 2MTR	Y
293	CASING CAPING 25 MM 2MTR	Y
294	CASING CAPING 50 MM 2MTR	Y
295	PETROLEUM JELLY @ 500gm	Y
296	Cadmium Coated nut & bolts with plain & spring washers of various sizes	Y
297	hylum Sheet 3 MM	Y
298	hylum Sheet 5 MM	Y
299	hylum Sheet 10 MM	Y
300	hylum Sheet 25 MM	Y
301	hylum Sheet 35 MM	Y
302	SS nut bolts with plain & Spring Washer of various sizes for flexibles connection	Y
303	Metal powder for motor housing rebuilding	Y
304	Devcon putty for motor housing rebuilding	Y
305	Acrelyic sheet of various sizes	Y
306	Temperature indicating stick for various buses	Y
307	G.I SADDLE 1/2"	Y
308	G.I SADDLE 3/4"	Y
309	G.I SADDLE 1"	Y
310	G.I SADDLE 2"	Y
311	Terminal blocks of various sizes	Y

312	Welding Electrode, general purpose	Y
313	Anchor fastener Bolt 8MMx50MM	Y
314	Anchor fastener Bolt 10MMx50MM	Y
315	Anchor fastener Bolt 12MMx50MM	Y
316	Anchor fastener bolt 8mmX75mm	Y
317	Anchor fastener bolt 10mmX75mm	Y
318	Anchor fastener bolt 12mmX75mm	Y
319	Gurb screw size: 4mm	Y
320	Gurb screw size: 6mm	Y
321	Gurb screw size: 8mm	Y
322	Steel screw 25x8	Y
323	Steel screw 38x8	Y
324	Steel screw 50x8	Y
325	screw-1.0" wooden	Y
326	screw-1.5" wooden	Y
327	acetone	Y
328	Diesel as fuel and cleaning agent	Y
329	Petrol as cleaning agent	Y
330	Kerosene as a cleaning agent	Y
331	Rustolene	Y
332	CTC	Y
333	CRC	Y
334	Contact Cleaning spray	Y
335	Cotton hand gloves medium-doted	Y
336	Knitted hand gloves	Y
337	Dust bin	Y
338	Grease nipple straight 10mm	Y
339	Grease nipple straight 12mm	Y
340	Grease nipple straight 16mm	Y
341	Molykote grease 1000	Y
342	Molykote P-40	Y
343	Molykote S 1002 (400ml)	Y
344	Multiservice Grease LPX2	Y
345	Multiservice Grease LPX3	Y
346	Silicon grease 50 gm	Y
347	Esso Unirex N2	Y
348	Esso Unirex N3	Y
349	Oil resistant Rubber sheet	Y
350	Acrylic Sheet Size:12" X 18"	Y
351	Gasket oil resistance 0.5mm sheet	Y
352	Gasket oil resistance 1mm sheet	Y

353	Gasket oil resistance 2mm sheet	Y
354	Rubberised Cork gasket sheet 3.2 mm	Y
355	Rubberised Cork gasket sheet 6 mm	Y
356	Rubberised Cork gasket sheet 10 mm	Y
357	Rubberised Cork gasket sheet 15 mm	Y
358	TEFLONE SHEET 0.5MM THICK	Y
359	TEFLONE SHEET 1MM THICK	Y
360	TEFLONE SHEET 2MM THICK	Y
361	Teflone Tape 1/2 Inch	Y
362	Teflone Tape 3/4 Inch	Y
363	Teflone Tape 1 Inch	Y
364	Gasket Neoprene rubber 1.5mm thick	Y
365	Gasket neoprene rubber 3mm thick	Y
366	Rubber sheet 3mm	Y
367	Gasket Neoprene rubber 5mm	Y
368	Neoprene rubber sheet 5mm	Y
369	Neoprene rubber sheet 5mm	Y
370	CORD NBR 2MM DIA	Y
371	CORD NBR 3MM DIA	Y
372	CORD NBR 8MM DIA	Y
373	Cord viton rubber 1.5mm dia	Y
374	Cord viton rubber 2.0mm dia	Y
375	Cord viton rubber 2.5mm dia	Y
376	Cord viton rubber 3.0mm dia	Y
377	Cord viton rubber 4.0mm dia	Y
378	Cord viton rubber 6.0mm dia	Y
379	Cord viton rubber 8.0mm dia	Y
380	Anti corrosion Zinc paint / spary	Y
381	Paint & brush required for various electrical equipment after maintenance	Y
382	Enamel paint colour Black	Y
383	Enamel paint colour P Blue	Y
384	Enamel paint colour RED	Y
385	Enamel paint colour MUSTARD YELLOW	Y
386	BITUMIONUS PAINT	Y
387	Insulation varnish-Bectol Red	Y
388	Coolant ultra	Y
389	Servo/Shell grease EP2	Y
390	Servo grease MP3	Y
391	Servo/Shell grease EP3	Y
392	Grease NLGI Class-I, Std. - DIN 51825	Y
393	Lithium based Grease Grade – 3	Y

394	Silicon Rubber Putty	Y
395	Petroleum Jelly	Y
396	Graphite Powder	Y
397	Safety caution tape	Y
398	Barricade tape(Danger tape) 250mtr Roll	Y
399	Ear plug	Y
400	Fire bucket	Y
401	fire retardent cloth	Y
402	First aid box with wall hanging option, Make-Super safety services Type-B	Y
403	GI Barbed wire	Y
404	Nose mask	Y
405	chemical protection nose mask	Y
406	Respirator(Resiscutator)	Y
407	Safety goggles	Y
408	Safety helmet with ratchet susoension blue	Y
409	Safety helmet with ratchet susoension white	Y
410	Safety pad lock	Y
411	SS 304 stand 2 nos with barricading tape width 2" lenth 9'	Y
412	Tarpolene 30feetX18feet	Y
413	Welding Screen	Y
414	Welding Goggles	Y
415	Welding leg guard	Y
416	Welding hand sleeve	Y
417	Argon hand gloves	Y
418	Hose clamp 1", 2"	Y
419	Brass ball valve 15mm	Y
420	Hose clamp 1/4"	Y
421	Hose clamp 1/2"	Y
422	Hose clamp 3/4"	Y
423	Hose clamp 1 1/4"	Y
424	Hose clamp 1 1/2"	Y
425	Hose clamp 1 3/4"	Y
426	Hose clamp 2"	Y
427	Brass ball valve 25mm	Y
428	Brass ball valve 40mm	Y
429	Cable crimping tool for UTP cable	Y
430	Cable crimping tool(0.5 sqmm to 6 sqmm)	Y
431	Tuber cutter Coper 8mm	Y
432	Tuber cutter SS 20mm	Y
433	Drill bit HSS 5mm, 3mm	Y

434	Drill bit (2mm,3mm,4mm,5mm,6mm,6.5mm,8mm,10mm,12mm,13mm,14mm,16mm)	Y
435	Drill bit (4mm,6mm,8mm,10mm,12mm,14mm,16mm)	Y
436	Hole saw cutter-1/2 INCH, Material:HSS	Y
437	Hole saw cutter-3/4 INCH, Material:HSS	Y
438	Hole saw cutter-1 INCH, Material:HSS	Y
439	Hole saw cutter-1.1/4 INCH, Material:HSS	Y
440	Hole saw cutter-1.1/2 INCH, Material:HSS	Y
441	Hole saw cutter-1.3/4 INCH, Material:HSS	Y
442	Hole saw cutter-2 INCH, Material:HSS	Y
443	Hole saw cutter-2.1/4 INCH, Material:HSS	Y
444	Hole saw cutter -2.1/2INCH, material:HSS	Y
445	Hole saw cutter-2.1/2 INCH, Material:HSS	Y
446	Hole saw cutter -2.3/4 INCH, material:HSS	Y
447	Hole saw cutter-3 INCH, Material:HSS	Y
448	Hole saw cutter -3.1/2 INCH, material:HSS	Y
449	Silicon sealant gun	Y
450	Deep measuring tape 30 mtr long	Y
451	Digital Multimeter	Y
452	Hacksaw blade HSS 12X1/2 INCH	Y
453	Junior hacksaw blade-len-6INCH, width 1/4INCH	Y
454	Non-Sal wooden sleeper 8'x5"x5"	Y
455	Neon tester	Y
456	GI Tray for Moisture Testing 30X30X6CM	Y
457	GI Tray for Moisture Testing 62X62X6CM	Y
458	DPT Kit	Y
459	MPI kit	Y
460	Cutting hose pipe	Y
461	Hose connector	Y
462	Nozzle cleaner	Y
463	Centre Punch	Y
464	Rubber Hand gloves	Y
465	GI Fastners various type and sizes up to M32	Y
466	Nickle - Cadmium Fastners various type and sizes	Y
467	pure graphite sheet 2mm	Y
468	Electrical contract cleaner spray / solvent 88	Y
469	Fire Retardent sealing material	Y
470	Fire retardent paint	Y
471	Panel Door Locks	Y
472	Lighting conduit, Junction boxes, bend, T-Joints, GI Wire etc for complete re- pairing of the plant existing lighting	Y

473	LT Motor Cooling Fan	Y
474	LT Motor Oil Seal rings	Y
475	LT motor terminal block	Y
476	Panel power & control terminal block	Y
477	Cable various rating gland & Lugs	Y
478	Motor winding cleanser	Y

16.2 Annexure-II: List of heavy machineries

Annexure-II				
Heavy Industrial Vehicles to be deployed by the contractor				
Vehicle	No. of vehicles	Specifications/make	Deployment/day	Efficiency of vehicle (diesel consumption/hr)
Hyva/Tipper				
Pocklain				
Vacuum sucker				
Dozer				
JCB				
Bobcat				
Tractor with pump and sprinkler arrangement			General shift	
* Diesel cost for these vehicles shall be given by TSPL on efficiency basis in actual running hours as per GPS enabled hour meter installed on the vehicles and submitted verification by TSPL EIC.				

- ❖ Contractor to indicate the quantity of vehicles required in each category above for handling and disposal of ash

16.3 Annexure-III: list of tools and tackles

Annexure-III Tools & tackles for AHP		
S. No.	Tool	Qty
1	All kind of Spanners,	As required
2	Hammers,	As required
3	Chisel,	As required
4	Files,	As required
5	Calipers,	As required
6	Pliers,	As required

7	Screw Driver,	As required
8	Portable Drilling Machine,	As required
9	Pneumatic Grinding Machine,	As required
10	Grinding Machines,	As required
11	Panel Sheet Cutting Jig – Saw Machine,	As required
12	Cable Gland Hole Cutter,	As required
13	Hydraulic Hole Punch,	As required
14	Air Blowers,	As required
15	Hot Air Blower,	As required
16	Lamp Heater,	As required
17	ARC and TIG welding machines with generator or rectifier etc.,	As required
18	Welding Transformers	As required
19	Portable Welding Machines	As required
20	Gas cutting set,	As required
21	Slings	As required
22	Chain Blocks	As required
23	wire ropes	As required
24	Hydraulic Jacks	As required
25	Ellen keys	As required
26	Wrenches	As required
27	socket spanners	As required
28	test lamps,	As required
29	testers,	As required
30	discharge rods,	As required
31	multi meters and phase sequence tester,	As required
32	Meggers	As required
33	Lifting Tools & Tackles	As required
34	Transport Vehicles	As required
35	Hydraulic Mobile Crane	As required
36	Truck for transportation of spares and materials, Bus and Van for transportation of workmen	As required
37	Wire Rope	As required
38	Tap sets up to 8 mm	As required
39	Filler gauges,	As required
40	screw gauges,	As required
41	Vernier calliper	As required
42	Drill Machine	As required
43	Drill Bits	As required
44	Digital multimeters	As required
45	AC & DC Clamp on meters	As required
46	Mobile Scaffolding cum Ladder	upto 14 mtrs
47	Scaffolding material.	upto 14 mtrs
48	Ladders of various heights.	
49	Hydraulic Jacks (100 T, 50 T & 25T).	2 set from each

50	Slings(32 mm,25mm,50mm)-	4 no's of each type - 6 mt.& 3 mt. of length
51	Portable welding machines	15
52	Hydraulic tools (100 mm dial pressure gauge- 4 no's, mininess hose 1.5 mt.- 4 no's and 2 mtr 4 no's, 4 mininess couplings)	
53	Hilti-Machine	2
54	Wire Rope (16 mm)	300 mt.
55	Fire blankets	4
56	Dye Machine(thread cutting –plumbing material)	1
57	Induction coil heater for bearing fitment	2
58	Chain Block-5 Ton	15
59	Grease gun's- 10 kg-	10
60	Winch m and/or c- 10 T,25 T	1 each
61	Vernier Caliper	1
62	Drill machine (bit size up to 16mm)-	
63	Gas detectors	1
64	US thickness tester	1
65	Electric wrench –	2 to 3 different types for torque ratings
66	Oxygen level meter	1
67	Anemometer for underground ventilation monitoring	1
68	Lux level monitor	1
69	Infrared temp gun	10
70	Co-methane tester	1
71	Re-railing kit	1
72	Belt vulcanizing Machine	1
73	Thermography kit	1
74	Hydra New generation	1
75	Vacuum cleaner	3
76	Tractor with trolley& scrapper	1
77	Panel Cutting portable zig shaw	As required
78	Hacksaw Frame – Big	As required
79	Hacksaw Frame – Small	As required
80	Flat File (big)	As required
81	Flat File -(small)	As required
82	Half Round File -big	As required
83	Half Round File - small	As required
84	Round File -Big	As required
85	Round File - Small	As required
86	Hammer Small - 2LB	As required
87	Hammer Big - 5LB	As required
88	Hammer Big - 8LB	As required
89	Fiber Hammer	As required
90	Screw Driver Set	As required

91	Screw Driver 6" to12"	As required
92	Line Tester	As required
93	Nose plier - 6"	As required
94	Wire Stripper	As required
95	Flat Chisel 6"	As required
96	Flat Chisel 12"	As required
97	Cutting Plier	As required
98	combination Plier 150mm	As required
99	Combination Plier 250mm	As required
100	Circlip Plier 6"(External)	As required
101	Circlip plier - 12" (Internal)	As required
102	Circlip plier - 12" (External)	As required
103	Center Punch 6"	As required
104	Right Angle	As required
105	Nut - driver set 4 to 10mm	As required
106	Allen key set (mm and inch)	As required
107	Torque Wrench TM250	As required
108	Chain Blocks (2 Ton & 15Mtr. Lifting Chain)	As required
109	Chain Blocks (3 Ton & 15Mtr. Lifting Chain)	As required
110	Chain Blocks (5 Ton & 15Mtr. Lifting Chain)	As required
111	Wire Sling with 1Mtr.long ,15mm thick,2ton	As required
112	Wire Sling with 2Mtr.long ,15mm thick,2ton	As required
113	Wire Sling with 3Mtr.long ,15mm thick,2ton	As required
114	Wire Sling with 1Mtr.long ,18mm thick,3ton	As required
115	Wire Sling with 2Mtr.long ,18mm thick,3ton	As required
116	Wire Sling with 3Mtr.long ,18mm thick,3ton	As required
117	Wire Sling with 1Mtr.long ,24mm thick,5ton	As required
118	Wire Sling with 2Mtr.long ,24mm thick,5ton	As required
119	Wire Sling with 3Mtr.long ,24mm thick,5ton	As required
120	Nylon / Fiber Belt Sling 0.5ton(1Mtr.)	As required
121	Nylon / Fiber Belt Sling 0.5ton(2Mtr.)	As required
122	Nylon / Fiber Belt Sling 1ton(1Mtr.)	As required
123	Nylon / Fiber Belt Sling 1ton(2Mtr.)	As required
124	Nylon / Fiber Belt Sling 1ton(3Mtr.)	As required
125	Nylon / Fiber Belt Sling 2ton(1Mtr.)	As required
126	Nylon / Fiber Belt Sling 2ton(2Mtr.)	As required
127	Nylon / Fiber Belt Sling 2ton(3Mtr.)	As required
128	Nylon / Fiber Belt Sling 2ton(1Mtr.)	As required
129	Nylon / Fiber Belt Sling 2ton(2Mtr.)	As required
130	Nylon / Fiber Belt Sling 2ton(3Mtr.)	As required
131	Wire Bruch	As required
132	Safety Belt	As required
133	Nylon Rope 1" 20m	As required
134	Nylon Rope 3/4" 30m	As required

135	Nylon Rope 1/2" 20m	As required
136	D Shackles 5 Ton	As required
137	D" Shackles 3 ton	As required
138	D" Shackles 2 ton	As required
139	D" Shackles 1 ton	As required
140	D" Shackles 1/2 ton	As required
141	Pulley	As required
142	Measuring Tape(30 Mtr.)	As required
143	Measuring Tape(15 Mtr.)	As required
144	Measuring Tape(5 Mtr.)	As required
145	Measuring Tape(3 Mtr.)	As required
146	Hole saw Cutter(20/32/38/51mm) 27	As required
147	Hydraulic Hole Punch	As required
148	Poratble Hot Air Blower	As required
149	Large size Hot Air Blower	As required
150	Heating Lamp Set	As required
151	Oil Can	As required
152	Tin Cutter	As required
153	Test Lamp	As required
154	Pipe wrench - 10"	As required
155	Pipe wrench - 12"	As required
156	Pipe Wrench 24"	As required
157	Slide wrench 8"	As required
158	Slide wrench 12"	As required
159	Hole Punch different size	As required
160	Bearing Puller - 4"	As required
161	Bearing Puller 5" three leg	As required
162	Bearing Puller 6" three leg	As required
163	Bearing Puller 12" three leg	As required
164	Bearing Puller 12" Two leg	As required
165	8" Bearing Puller Two leg	As required
166	Air Blower	As required
167	Blow lamp	As required
168	Vacuum Cleaner	As required
169	Stepdown Transformer(240/24V;500VA)	As required
170	A type Fibre Ladder (3 Mtr.)	As required
171	Fibre Ladder (5 Mtr.)	As required
172	Folding Type fibre Ladder (10 Mtr.)	As required
173	Grease - Gun- 1Kg	As required
174	Grease - Gun - 5Kg	As required
175	Air Hose Pipe	As required
176	Silicone sealant gun	As required
177	Retractable fall arrester	As required
178	Temperature controlled soldering iron;50W;	As required

179	Ladder different size and height	As required
180	Impulse tube and pipe bending machine	As required
181	Impulse tube ferruling & flaring machine	As required
182	Insulated D-Spanner Set	As required
183	Insulated Ring-Spanner Set	As required
184	Digital Insulation Resistance Tester(500 - 5000V)	As required
185	AC/DC Clamp meter, 2000A	As required
186	mA Accuracy Clamp meter, 1 /5A, Fluke	As required
187	Digital multimeter with each electrician (with test lead), 600V, FLUKE	As required
188	Phase sequence indicator(with carry case), 415V, AE	As required
189	Earth resistance tester, 20Ω & 200Ω,FLUKE	As required
190	digital insulation tester with each electrician, 1000VDC, FLUKE	As required
191	Hand driven insulation tester, 500V	As required
192	Temperature Gun, FLUKE	As required
193	Pen type SKF make vibration probe, SKF	As required
194	Vibration analyzer	1 nos.
195	Digital Tachometer(Non- Contact type), 0-3000 RPM	As required
196	Lux Meter, FLUKE	As required
197	Specific electrical safety PPE	As required
198	Electrical Arc Flash Suit - 8 Cal/Cm ²	As required
199	Electrical Arc Flash Suit - 40 Cal/Cm ²	As required
200	Electrical Arc Flash Suit - 100 Cal/Cm ²	As required
201	Electrical Safety Shoes	As required
202	Electrical Safety insulated hand gloves	As required
203	Portable DG sets for welding machine operations	2 nos.
204	Portable DG pumps 150 m ³ /hr	2 nos.
205	6" hose pipe	200 mtr.

16.4 Annexure-IV: Responsibility matrix

Annexure-IV Responsibility Matrix				
Sl. No.	Description of work / Activity	Responsibility Matrix / Scope		REMARK
		OWNER	O&M contractor	
1	Total Maintenance of AHP		√	Total Mechanical maintenance of ash handling system (as per battery limit) of the plant and relevant facilities. Any equipment added in future for plant requirement. This includes Routine, Preventive, Predictive and break down maintenance.)

				Field installation of Electrical, Control & instrumentation equipment, instruments, system, subsystem related Routine, running, defect, Preventive, and Predictive, Breakdown maintenance Any equipment added in future for plant requirement. This includes Routine, Preventive, Predictive, Etc.)
2	Total Operation of the Ash handling plant		√	Operation of complete Ash Handling System given in as battery limit(Except DCS operation of SSC & slurry pumps) O&M contractor should depute graduate qualified engineer as a shift in charge. Complete Local Operations of Ash handling plant, HT & LT Switchgears. O&M contractor shall provide other required qualified engineer, technicians, operator, fitter, electricians to deliver the required services.
3	All type of Fuel required for O&M	√	√	Diesel for all material handling equipment including diesel operated pumps & DG sets shall be supplied by OWNER, however collection of diesel from storage facility and filling in the equipment to be done by the contractor. If diesel facility is not available or diesel is not available at site then O & M contractor has to arrange diesel from outside and cost shall be reimbursed based on actual consumption.
4	Lubricants which go into the System / equipment	√		Lubricants, hydraulic oil, and grease which go into the System / equipment for routine & preventive maintenance (preventive maintenance as per the OEM schedule) shall be provided by the owner.
5	Spares Parts which goes in to the System / equipment	√		Spares shall be provided by TSPL
6	Maintenance consumables as per annexure-I		√	Gases –welding/cutting gas, refrigerant gas, calibration gas also in the scope of O&M contractor. Minimum stock of consumables to be maintained. All consumables to procure from approved vendor list provided by owner.
7	Inventory of Spare Part in accordance with the OEM's		√	Spares planning, spares inventory management and timely indents with proper justification shall be done by O&M contractor. O&M contractor is responsible for inventory monitoring, continuous checking of the availability of spares agreed mutually and timely indents.

				Also reverse engineering as and when required shall be in scope of O&M contractor Benchmarking of Inventory with other same size reputed ash handling plants is also in the scope of O & M contractor.
8	Workshop Repair		√	Workshop jobs which are not possible inside plant work-shop up to Rs. 25000 per month or Rs 300000 per year shall be in O&M Contractor's scope under additional jobs. Beyond this value, if the work is got done with prior approval of TSPL, cost shall be reimbursed on submission of documents at actual basis. O&M contractor has to arrange loading/ unloading/ packing and removal/refixing and transportation. However owner shall assist to provide necessary gate pass and other documents. Transportation within 50 KM will be under the scope of vendor up to five trips per month.
9	Maintenance of HT & LT switch gear panel, power transformer, HT Motor, ESP rectifier panel, AC/DC distribution system, Battery, UPS & charges, PLC with associated system	√		Required support for removal and handling of the HT motor is included in agency scope.
10	AHP expert services		√	If any expert services required to be arranged as per TSPL, shall be done by the O&M contractor and TSPL shall reimburse the same on actuals
11	Waste Disposal		√	O&M contractor shall be responsible for waste disposal system. This includes disposal of scrap steel, rubber waste, lube waste, jute, cotton etc. to designated place as per TSPL SOP for Scrap.
12	Disposal of Solid/Liquid Waste		√	All solid waste ferrous or non-ferrous to be disposed by the O&M contractor as per SOP to some designated mutually agreed place within plant Boundary. All solids and liquid waste are to be disposed by the O&M contractor as per PCB norms & good housekeeping practices.
13	Fire Fighting Equipment		√	Only Maintenance of fire detection system and operation of hydrants and Deluge valves within battery limit in O&M contractor scope
14	Plant Safety and Security	√	√	Deployment of Security agency is in the scope of Owner however area wise security and safety shall be in the scope of O&M contractor.

15	Plant Up keep services		√	Housekeeping of the Ash handling plant shall be in the scope of O&M contractor. Contractor has to ensure that housekeeping of entire plant shall be based on 5S. Housekeeping shall be performed by using mechanized equipment like industrial vacuum cleaner (4 Nos.), sweeping machine (1 no.). Manual housekeeping shall be performed in the area where mechanized cleaning is not possible. To have regular thrust on Housekeeping there shall be periodical audits by joint member committee and performance shall be evaluated based on monthly scoring system. The committee shall give the score as per the standards formats of 5S which shall be prepared during implementation stage of systems.
16	Maintenance of internal roads, building and all major/minor civil works		√	All Repair & day to day maintenance of offices, storage sheds, civil repair and workshop shall be done by O&M contractor. Drain & road cleaning to be ensured on regular basis. Civil/painting/glass work up to Rs.50000 per month or Rs 600000 per annum is in contractor's scope under additional jobs.
17	Insurance for the Plant & Machinery as applicable	√	√	Owner shall obtain required plant and machinery insurance and shall also pay for the renewals. All required works for the insurance are made by O&M contractor.
18	Personnel Insurance & required by government rules		√	All statutory requirement related to O&M contractor personnel in O&M contractor scope
19	Material shifting from stores		√	All arrangement for transportation including crane, hydra, and trailer from owner's store to site shall be in the scope of O&M contractor for ash handling purpose.
20	Regular, Preventive, Predictive, Breakdown maintenance		√	All maintenance plans for the year to be submitted to Owner at starting of the year. Monthly reports including vibration analysis and health of the equipment has to be submitted to Owner regularly. All check lists, equipment history cards, any package used for computerized maintenance planning has to be handed over to Owner and at the end of contract period.
21	Annual Maintenance Contract with OEMs (Not Limited to) :	√		AMCs with OEM for HCSD pump and compressors shall be done by the owner, coordination and execution of AMC jobs to be done by the contractor on day-to-day basis.

22	Tools and Tackles		√	All tools and tackles required for O&M of AHP shall be in the scope of O&M contractor. Indicative tools list given in annexure-III.
23	Use of EOT cranes/lifting hoists Cranes		√	EOT/lifting hoists shall be handed over to O&M contractor Proper mechanical & electrical up keeping shall be in the scope of O&M contractor including qualified operator, load testing as per statutory requirement and necessary approvals.
24	Use of Equipment Handling System		√	All handling equipment shall be with O&M contractor.
25	Training & Development of O&M contractor's staff		√	O&M contractor shall provide on - job training (OJT) to contractor's staff in operation and maintenance as and when desired.
26	Manpower for O&M		√	All domain expert/area managers are to be mobilized within the allowed mobilization period. The deputation of area in-charges/ managers/engineers shall be done only after interviewed and finally after approval by owner. O&M contractor has to maintain the manpower as per the agreed requirement, If critical manpower shortfalls by less than 95%, then penalty shall be imposed as per the KPI
27	ISO, WCM, TPM, AO, 5S, Sustainability	√	√	Obtaining ISO /OHSAS certification shall be in the scope of Owner, however necessary support/documentation shall be provided by O&M contractor. Implementation of TPM, WCM, 6Sigma & 5S shall be in the scope of operator.
28	Suitable Office accommodation & furniture including storage facilities, rest room & office equipment facilities		√	Office building for staff members shall be in the scope of O & M contractor. Furniture & all other Furnishing (IT, Phones etc) as per the requirement shall also be in the scope of O&M contractor.
29	Medical Facilities at site	√	√	Medical facilities, as available in the factory premises shall be provided by Owner. However the required emergency services like Ambulance, First Aid & Dining facility has to be kept ready by O&M contractor.
30	Residential Accommodation, staff boarding/lodging, conveyance, food, uniform, PPEs		√	O&M contractor's responsibility.
31	Statutory Compliances Environmental aspects Inspectorate Factory inspectorate / Licensing and Permits from local & central authorities		√	All statutory compliances like third party inspection (TPI) Hoist/EOT statutory inspections, pressure vessel statutory inspections, lifting tools/tackles statutory inspections, walky-talky/ Long distance telephones license used under O&M scope etc. to be done by the contractor.
32	Evaluation of Plant Operation and furnishing recommendations on cost effective ways to improve the Plant Performance.		√	O&M contractor's responsibility.
33	Testing Instrument		√	The testing equipment as provided by OEM/EPC shall be handed over to O&M contractor Proper up keeping of these equipment shall be in the scope of O&M contractor.

34	Mobile Crane and Truck / Trailer with Operator, as & when required		√	O&M contractor's responsibility including crane required for collecting plate replacement.
35	Involvement of Sub contracting agencies		√	All core areas should be under direct control of O&M contractor. O & M contractor has to ensure onsite safety of all subcontract workforce. However for special areas where some sub agencies are needed, it should be approved by Owner.
36	Supervision of sub-contracting services		√	O&M contractor responsibility
37	Conveyor belt jointing		√	Belt jointer along with belt jointing compound shall be arranged by O&M contractor as & when required.
38	Proactive & Reliability Centered Maintenance philosophy should be adopted for the maintenance	√	√	Vibration analysis and oil analysis to be provided by owner. However contractor has to assist the vibration analysis agency & oil sample collection as per schedule
39	Weed/Pest Control		√	O&M contractor's responsibility.
40	Special Manpower Deployment during Monsoon		√	O&M contractor's responsibility.
41	Improvement Ash Handling Plants & Quality Circle		√	O & M contractor has to take necessary Improvement Ash Handling Plants & shall make Quality Circle teams to enhance the Efficiency of the Power Plant
42	Refurbishment of spares		√	O & M contractor has to refurbish the spares as per condition & reuse the same on mutual agreement of quality of refurbished spares.
43	Housekeeping of all the areas within the battery limit		√	No ash dust on any of the equipment & clean all the houses and/or buildings and ash handling area

16.5 Annexure-V: Contractor performance score card

Annexure-VI				
Contractor Performance Score card				
S No	Points	Measure	score calculation (monthly basis)	Wtg
1	Maintenance level -1			20
A	95 % preventive maintenance	Daily planning Sheet will be monitored against actual PM. Schedule for PM will be decided in department planning meeting.	100 % pm will be equal to 5	5
B	Implementation of HIRADEC	Any observation of HIRADEC not followed during any permit. Any deviations found at that point will be put through report/observations book.	100 % permit followed by HIRADEC is equal to 5	5
C	Corrective maintenance	Corrective jobs checks will be done by TSPL AHP team from permit system.	one repeated failure due to poor workmanship will deduct on point	5
D	Scraps removal after every CM, PM	Final inspection will be done by TSPL AHP team.	one incident will be equal to one point	5
2	Maintenance level -2			20

A	Planning meeting , safety SHE triangle meeting	Attendance of contractor site management (in charge, operation / maintenance co-ordinator/safety officer) side is mandatory and absent of above will result in point deduction		5
B	SAP PM regularization including closure	SAP authorization will be issued to appropriate persons through exams & they will be given right for all except permit closure & material issue.	delay in job due to incompetency per day will attract deduction of one point	5
C	Daily report	Contractor has to produce daily report through hard copy considering M+E+N& G shift concept. Format shall be given by TSPL	missing 6 reports =one point deduction	5
D	Monthly report	Contractor has to produce monthly report through hard copy consisting of aspect mutually agreed.	missing 1 report before 3 of each month will deduct 5 points	5
3	Operation service level			20
A	House keeping	Contractor has to ensure respective area, equipment is clean, tidy & sparkling.	proportional to House-keeping scorecard	5
B	Logbook	Contractor has to ensure all logbook & checklist filling in all area, shall be given by TSPL	missing 3 shift logbook = one point deduction	5
C	Daily report before 9 AM every day.	Contractor has to produce daily report through hard copy considering M+E+N shift.	missing 6 reports =one point deduction	5
D	Monthly report	Contractor has to produce monthly report preferably through soft copy consisting important aspect.	missing 1 report before 3 of each month will deduct 5 points	5
4	Improving O&M system			20
A	Kaizens related activities	Preliminary validation from AHP management further validated through modification process.	2 no. of kaizens will be equal to one point	10
C	Condition monitoring	TS dept. carries out condition monitoring & AHP equipment are covered through it. Report from Technical support is final.	Any CM observed not getting rectified within two days for stand by equipment will draw one point deduction for any equipment	5
D	RCA(root cause analysis of any failure)	Every RCA will have specific duration (max 15 days), final report need to be submitted within that period including all suggestion, modification. RCA shall be done in SAP		5
5	Statutory/ regulatory compliance			20
B	Compliance on HR requirement	TSPL HR is satisfied with all formalities carried out by contractor as per SOP.	per missing compliance will deduct one point	5
C	Hoist & pressure vessel compliance	All hoist in AHP are available during month (max downtime 5 day for only one hoist).	per compliance one point will be deduct	5
D	compliance on safety department	as per SOP and V-sap requirement	as per proportional to safety score card	10
Total Score				100

SCORE CRITERIA	SCORE	Penalty on every point deduction	Incentive
POOR	< 60*	100000	NA
AVERAGE	60-74	75000	NA
GOOD	75-85	50000	NA
VERY GOOD	86-90	NA	NA

EXCELLENT

91~100

NA

100000

***Note: if three consecutive month score come less than 60, TSPL have reserve right to take strong action or even terminate the contract.**

16.6 Annexure-VI: Safety Score card

Annexure-VI Monthly HSE Score Card					
Name of Contractor-			Month-		
Sr. No.	Parameter	Max Marks	Scoring Criteria	Marks Obtained	Remark
			1		
2	Incident cases/Property Damage/Fire incident/ Environmental Incident	4	For each incident case four marks shall be deducted		
3	Compliance of Vedanta Sustainability Frame work	8	For each violation of Vedanta Sustainability framework 1(One) marks shall be deducted. It Includes: a. Fleet Management b. Machine Guarding up keepment and fixation c. Waste management at workplace d. Health checkup of employees		
4a	Reporting of Near miss, Unsafe Acts and conditions	8	Reporting of Near miss -10 (Full marks - 5), Unsafe conditions -30 (Full marks - 3) Unsafe Acts -20 (Full marks - 2)		
4b	Percentage compliance of NCR raised in Portal or Various Audits	4	For each non compliances one mark shall be deducted		
5	No. severe safety Violation	5	5 marks shall be deducted for severe safety violation (for 10 no's of 4s - 5 marks and for 5 no's 5S , 5 marks will be deducted)		
6	a. Number of Tool Box / HSE Talks - 5 marks b. Contractor Weekly HSE meeting - 5 marks	10	a. Prorata basis (No. of Safety talk / month divided by average man power) b. Prorata basis		
7	HSE training,	5	8% coverage of total manpower per month		
8	Legal compliance status (Testing of Lifting Tools & Tackles, Safety Belts (full body harnesses, Fall arresters)	4	1 mark will be deducted for each non compliances observed on site.		
	PTW Compliance	8	For deviation in each PTW case two marks shall be deducted		

9	a. Condition of Hand Tools/Equipment/ Vehicle of the contractor b. Condition and compliance for movable equipment	4	a. 1(One) mark will be deducted for every non compliances observed on site. b. 1(One) mark will be deducted for every non compliances observed on site.		
10	Housekeeping (including waste removal from workplace after completion of work)	5	1(One) mark will be deducted for each non-compliances observed on site.		
11	Quality of PPEs and scaffolding compliance	5	1(One) mark will be deducted for every 1 non compliances observed on site.		
12	Safety motivational programme and other initiatives	5	Compliance of safety motivational programme and submission of relevant documents		
13	job specific compliance				
A	Are Water spillage are being cleaned daily	2	Marks will be Zero If found any non-conformity		
B	Fire protection system readiness	1	Marks will be Zero If found any non-conformity		
C	Insulation & Cladding completeness	2	Marks will be Zero If found any non-conformity		
D	Identification & mitigation of any gas leak	1	Marks will be Zero If found any non-conformity		
E	Are update list of vehicle driver/WAH are available	2	Marks will be Zero If found any non-conformity		
F	Is housekeeping of equipment is ok	2	Marks will be Zero If found any non-conformity		
G	Are all signage are available	1	Marks will be Zero If found any non-conformity		
H	Behavior of workers	2	Marks will be Zero If found any non-conformity		
I	Is 5S initiative followed & Kaizan has been implemented at your work place	2	Marks will be Zero If found any non-conformity		
TOTAL SCORE		100			
Signature of Contractor In charge			Signature of TSPL Safety Officer		

16.7 Annexure-VII: Housekeeping score card

Annexure-VII														
	Package	AH P	Date:											
	Assessment Month													
HOUSE KEEPING REPORT														
S.N O	AREA	JOINT OBSERVATION										REMARKS		
		Housekeeping	Water washing	Equipment Cleaning	Sump pit Cleaning	Drain & settling pond Cleaning and/or covering	Cable tray	MCC panel cleaning	Roof & wall cleaning	Scrap removal	Road Cleaning		Score	
1	CONTROLROOMS ESP FLOOR	D	NA	D	NA	NA	NA	W	M	W	NA			
2	CONTROLROOMS HCSD FLOOR	D	NA	D	NA	NA	NA	W	M	W	NA			
3	BOTTOM ASH SYSTEM	D	W	D	W	M	M	W	M	W	D			
4	ECO HOPPER FLOOR	W	NA	W	M	NA	M	W	M	M	NA			
5	APH HOPPER FLOOR	W	NA	W	M	NA	M	W	M	M	NA			
6	ESP+FF ZERO METER	D	W	W	M	NA	M	W	M	M	NA			
7	ESP+FF 3 METER	W	NA	D	M	NA	M	W	M	M	NA			
8	ESP 13 METER	W	NA	W	M	NA	M	W	M	M	NA			
9	ESP +FF TOP	W	NA	M	M	NA	M	W	M	M	NA			
10	CONVEYING PIPE RACK	W	NA	W	M	M	M	W	M	M	NA			
11	SILO TOP	W	M	W	M	M	M	W	M	M	NA			
12	SILO 6.9 MTR	D	NA	D	M	M	M	W	M	M	NA			
13	SILO ZERO METER	D	W	W	M	M	M	W	M	M	NA			
14	DWB 6.9 MTR	W	M	W	M	M	M	W	M	M	NA			
15	DWB ZERO MTR	W	M	W	M	M	M	W	M	M	NA			
16	SURGE TANK ZERO METER	W	M	W	M	M	M	W	M	M	NA			
17	HCSD AREA ZERO METER	D	W	W	M	M	M	W	M	M	NA			
18	HCSD CONVEYING PIPE LINES	M	NA	M	M	M	M	W	M	M	NA			
19	ROADS and/or DRAINS	W	M	NA	NA	M	NA	W	NA	M	M			
20	Drier floor	D	W	D	W	NA	W	W	W	W	NA			
21	Compressor floor	D	W	D	W	NA	W	W	W	W	D			
22	TOILETS	D	D	D	NA	NA	NA	W	M	D	NA			
23	Rain water pond	M	De-silting to be done after every 3 months											
Average score														
D – Daily, W – Weekly, M – Monthly, NA – Not Applicable														
SCORE CRITERIA		SCORE		REMARKS										
POOR		< 3												
AVERAGE		4-6												

	GOOD	7~8	
	VERY GOOD	9	
	EXCELLENT	10	

16.8 Annexure-VIII: HR compliance

Annexure-VIII			
AHP HR COMPLIANCE			
	Package	AHP	
Assessment Month			
Sr. No	Important Provisions of Laws		
1	Payment of Wages by 10th of every month		
2	EPF remittance by 15th of every month.		
3	Issuance of wage slip one day before wage disbursement		
4	Maintenance of all the registers under Factories Act & Contract Labour Act.		
5	Display of abstract in Punjabi & English Language		
6	Wage disbursement intimation to Principle Employer		
7	Payment of Minimum Wages to all the employees		
8	Payment of Bonus to all the employees		
9	Payment of Overtime Wages wherever applicable		
10	Payment of leave with wages to all the employees as per Punjab Factories Rules.		
11	Ensure weekly of after evry 06 days to all the employees.		
TOTAL SCORE WILL BE FIVE IF ALL POINTS COVERED OTHERWISE SCORE WILL BE ZERO			

16.9 Annexure-IX: Additional services

SR. NO.	Planned shutdown jobs	UOM	BOQ	Rate (INR)/UOM
1	REPAIR,APPLY OF CASTABLE REFRACTORY AT BOTOM ASH HOPPER	TON	240	
2	ANNUAL OVERHAULING OF CLINKER GRINDER INCLUDING TOOTH REPLACEMENT	EA	6	
3	ANNUAL OVERHAULING OF SCC TENSION SYSTEM WITH PUMP SYSTEM	EA	3	
4	ANNUAL OVERHAULING SCC HYDRAULIC POWER PACK WITH PUMP SYSTEM	EA	3	
5	SCC HYDRAULIC MOTOR REPLACEMENT SPROCKET AND HUB	SET	3	
6	ANNUAL OVERHAULING OF SLURRY PUMP	EA	6	
7	ANNUAL AGITATOR OVERHAULING	EA	9	
8	FF BAG REPLACEMENT WITH CAGE	EA	18600	
9	ANNUAL COMPRESSOR OVERHAULING	EA	19	
10	ANNUAL COMBINED AIR DRIER OVERHAULING	EA	4	
11	ANNUAL OVERHAULING OF DRY ASH UNLOADING SYSTEM	EA	12	
12	ANNUAL OVERHAULING OF DOUBLE PADDLE MIXER	EA	4	

13	ANNUAL OVERHAULING OF MIXING TANK WITH AGITATOR	EA	4
14	ANNUAL OVERHAULING OF CONVEYOR BELT WITH GEAR BOX AND ROLLERS	EA	6
15	ANNUAL OVERHAULING OF DEWATERING BIN	EA	6
16	ANNUAL OVERHAULING OF ESP (4 PASS)	LOT	3
17	ANNUAL OVERHAULING OF FABRIC FILTER BAG HOUSE (4 PASSES)	LOT	3
18	ANNUAL OVERHAULING OF CONVEYING SYSTEM	LOT	3
19	PIPE FABRICATION AND ERECTION NB 200-NB 350 (CS)	MTR	6000
20	STRUCTRAL FABRICATION FOR MODIFICATION	MT	84
21	PIPE ERECTION NB 80 – NB 150 (CS)	MTR	500
22	PAINTING	SQM	5000
23	ASH PIPE ROLLING NB 200 – NB 350 (CS)	MTR	6000
24	SILO INSIDE INSPECTION AND RECTIFICATION	NOS	3

Attachment 2 of schedule 1

17. Bidding Tables with Breakup & Backup

S.No.	Heads	Cost(INR)
1	AHP O&M Service fees(monthly)	
2	Manning positions(Nos)	
3	Annexure-X (Job rates) as per UOM	

Annexures to Bidding Heads

1. Manning positions: Grade wise and utility wise
2. List of tools and tackles, machinery, consumables with individual costing
3. Addition wise Breakup

18. Qualifying Criteria

The participating vendor should meet the below mentioned criteria:-

1. Has experience of handling Ash handling facility > 1000 Ton per day (Ash handling plant) O&M for at least 3 years.
2. Has annual turnover > INR 20 Cr
3. ISO 9001, 14001, 18001 certified

Documents to be submitted with bid

1. Provide list of references of previous contracts handled and complete Customer List Handled or being handled
2. Furnish the order copy of the latest order received on similar grounds
3. ISO 9001, 14001, 18001 Certificates
4. HSE Policy & past safety record—Fatal and LTIFR for previous three years
5. Annual Audited Report of last 3 years : P&L Statements and Balance Sheet
6. List of available Tools, tackles and equipment(s) which can be immediately deployed for this plan.

19. COMPENSATION SCHEDULE

19.1 COMPLETENESS OF PRICING

All rates, sums, charges and prices referred to in this Schedule:

- (a) are stated in Indian rupees (INR).
- (b) are considered complete and fully inclusive in respect of the services being provided and no additional rates, sums, charges or prices shall be paid, except as expressly stated in the Agreement;
- (c) shall remain fixed and firm and shall not be subject to amendment for any cause, except as expressly stated in the Agreement.

The cost of any item where the price is left blank shall be deemed included elsewhere.

19.2 Taxes

The prices and rates set out in this Schedule II (Compensation Schedule) are:

- (a) inclusive of all Indian direct taxes (including without limitation personnel taxes, withholding taxes and corporate taxes) now or hereafter levied or imposed on the Service Provider; and
- (b) inclusive of all non-Indian taxes (whether direct or indirect) now or hereafter levied or imposed on the Service Provider; and
- (c) Inclusive of all taxes/levies/duties as applicable except for Service Tax which shall be paid over and above the below mentioned charges as per applicable rates, current rate is []%.

19.3 Withholding Tax

TDS shall be deducted as per the applicable rates under Income Tax Act and same shall be in Service Provider's account only.

19.4 Mobilization period and Payment Terms for the contract--

19.4.1 Mobilization Period:

- 19.4.1.1 Mobilization Period" means a period of 30 days starting from the Date of issuance of Purchase order or the date of issuance of LOI. The Mobilization Period can be extended provided Owner gives 1 month's upfront notice to the O&M Contractor indicating that the Handover has been shifted.
- 19.4.1.2 Liquidated Damages (LD): LD of 1.25% per week of delay in mobilisation of manning positions, LD deductible will be prorated to the number of un-mobilised manning positions from the committed minimum manning positions for the contract per month. Such LD will limited to 5% of the monthly service fees finalised.
- 19.4.1.3 The O&M Contractor shall pay the premium payable on such insurance policy (ies), so as to keep them in force and valid from the date of commencement of the Mobilization Period till the expiry of the Term or the termination of this O & M Service Agreement and furnish the certified true copies of the same to the Owner. Each insurance policy shall provide that the same shall not be cancelled or terminated unless 30 days clear notice of cancellation is provided to Owner in writing. If at any time, the O&M Contractor fails to purchase and maintain in full force and effect any of the aforesaid insurances, the Owner may at its own option purchase and maintain such insurance and all sums incurred by Owner in respect thereof shall be reimbursed by O&M Contractor forthwith on demand, failing which the same shall be recovered by the Owner by exercising right of set off or otherwise.

19.4.2 Payment terms-- towards Monthly O&M fee:

- 19.4.2.1 Unless otherwise specified by the Owner, the O & M Contractor shall raise invoices for 100% amount within the thirtieth (30th) Day of each month. The invoice duration shall be from 21st day of preceding month to 20th day of the month in which invoice is being raised. The same shall be payable after thirty (30) days and before forty five (45) days of receipt of the complete invoices from the O&M Contractor.
- 19.4.2.2 The time period shall commence from the first day of submission of complete invoice(s) in original to Owner's-EIC and in duplicate to finance department
- 19.4.2.3 Payment shall be made after adjusting all amounts as per applicable "Adjustment for Incentives/Liquidated Damages/Penalties".
- 19.4.2.4 The invoices shall be signed by the O & M Contractor's authorized signatory along with all necessary documents required as follows:
- a) HR Clearance Certificate for the last month's manpower deployment basis as per "HR Compliances and Procedures
 - b) No Dues/Claim Certificate as per "No Dues/Claim Certificates"
- 19.4.2.5 Post payment audit: The Owner reserves the right to carry out a post payment audit and to enforce recovery, if any found as a result of such examination. The deductions shall be made for payments pertaining to the contractor and with mutual consent.

19.4.3 Adjustment for Liquidated Damages/Penalties

4.1.3.1 The O&M Contractor will be provided with the calculation of Liquidated damages in respect of KPIs to the Owner in accordance with "Incentives & penalties".

4.1.3.2 Adjustment for the same shall be made from the monthly invoice based on the calculations/verification of Owner's EIC. The decision of the Owner shall be final & binding in this matter.

19.4.3.1 Disputed Payments of Liquidated Damages

19.4.3.1.1 At any time prior to ninety (90) Days after the date of receipt of an invoice or the receipt of a calculation of Liquidated Damages by a Party, such receiving Party may serve notice (a "Payment Dispute Notice") on the other Party that the amount of such invoice or the amount of Liquidated Damages, as the case may be, is in Dispute.

19.4.3.1.2 Each Payment Dispute Notice shall specify the invoice or calculation amount concerned, the amount in Dispute and the basis of the Dispute thereof. All undisputed amounts shall be paid within the relevant period provided in this O&M Service Agreement.

19.4.3.1.3 Upon the final resolution of the Dispute, any amounts determined to be owed or to have been paid but not owed by the paying Party, as the case may be, shall be paid by the owing Party or repaid by the receiving Party to the paying Party, as the case may be.

Schedule II

APPENDIX A: VEDANTA SUSTAINABILITY CLAUSES

1. Health, Safety and Environment (HSE) Systems Designation of Supervisor: The Contractor shall specify one of its employee as the Site HSE Supervisor who shall be responsible for attending HSE matters at all levels at the site of work, including emergency response.

Attendance of contractor: The contractor shall ensure that its site HSE supervisor is present at the place of work and performs supervisory functions at all times whenever four or more workers of the contractor or its sub-contractors are present at the place of work. Statutory Compliance: Contractor shall identify, document and comply with all pertinent Health, Safety and Environment (HSE) laws and regulations, approvals, licenses and permits which are applicable to the services and conduct of activities.

Contractor shall conduct internal inspections and record to ensure full implementation of requirements and compliance with the system at the site. Contractor shall provide documentary evidence that it has complied with the system, on company's demand.

Contractor Site management plan: The contractor should comply to his submitted plan in his bid document on how to manage and improve the work site.

2. Hazard and Risk Assessment

Pre and post Job Safety assessments: Contractor is responsible and accountable for ensuring effective procedures and assessment systems are in place to meet all HSE conditions.

Prior to the commencement of any operation/activity, Contractor must undertake a hazard and risk assessment, such as a job safety analysis or job risk analysis including control and mitigation process. The risk assessment should cover the following aspects of workplace

1. General Safety and Environmental Management Procedures
2. Waste Disposal
3. Equipment Decommissioning
4. Water Discharges
5. Material Storage/Spills
6. Storm Water Management
7. Use of Asbestos, Lead, CFCs and other objectionable chemicals.
8. Hot working, gas welding, etc
9. All electrical works
10. Work at heights including scaffolding
11. Demolition
12. Construction work of any kind
13. Transport management
14. Tank cleaning or testing
15. Confined space, etc

3. Awareness, Competency and Behavior

Awareness: Before commencement of any Services, Contractor shall at its own expense ensure that Contractor's Personnel have been given the necessary HSE training including training in hazard identification, risk analysis, safe working behavior etc. The HSE training shall include a briefing explaining the nature of the part of the Services

they will be performing, a job safety analysis and description of the hazards, which may be encountered during the performance of the particular tasks, which they are required to perform. During such training, Contractor shall emphasize the fact that each person has an obligation to stop an act or task if it is unsafe. Contractor shall ensure that Contractor's Personnel attend refresher courses to maintain familiarity with current procedures. Contractor shall provide evidence of completion of all training and competency assessments upon request by Company.

All Contractors' Personnel arriving on the site shall attend the Contractor's or Company's HSE inductions including a review of the site's safety procedures including Permit to Work and evacuation.

Contractor shall ensure safety meeting schedule, including but not limited to pre shift safety meetings, safety toolbox meeting, safety committee meetings and management review meetings.

Competency: The contractor shall ensure that all of its supervisory personnel performing work possess any specific competencies or qualifications, experience, responsibility and authorities required by applicable occupational health and safety laws, and shall provide proof of same satisfactory to company upon request.

Behavior: The contractor should provide adequate guidance so that contractor's personnel works to reduce workplace incidents and improve safe performance at all times. The contractor shall ensure that his staff conducts in a fit and proper manner whilst on site. Failure to do this may result in the removal or exclusion of such persons from the site.

4. Change Management:

If there is a change in site supervisor and contractor management personnel, it shall be notified to designated contractor manager as a part of Management of Change (MOC) process. This also includes reassess hazards and risk where the changes occur to the work scope, plant and equipment and the working environments.

5. Incident Reporting

Reporting: Any accident, injury, near misses, fire, explosion, spill of chemicals, environment degradation etc involving Company or Contractor's personnel, property or any third party property shall be reported immediately to Company, irrespective of whether injury to a person or damage to property or equipment resulted.

Access to site: If Company exercises its right to conduct its own investigation; Contractor shall provide Company with all reasonable assistance to allow & to complete its investigation.

Learnings: Contractor shall implement the learnings from incident to prevent a recurrence. Contractor must share lessons learned with Contractor's Personnel.

6. Safety Interaction

The contractor must conduct regular safety interactions of its Personnel in accordance with the Company's safety interaction process. The number and frequency of safety interactions to be performed will be at the discretion of the Company Representative. Quality assessments of the safety interactions will be undertaken by the Company's HSE Personnel.

The Service Provider must conduct investigations into incidents, accidents and injuries by its Personnel or involving its equipment and property in accordance with the Company's incident investigation process. Action items must be created to prevent recurrence and be closed out before due dates.

7. Emergency Drills

Contractor shall participate in emergency response drills to test the effectiveness of its emergency procedures and equipments and the knowledge and proficiency of Contractor's Personnel. Contractor will provide with their emergency response plan (ERP) which must be adoptable to suit the site.

8. Cardinal Rule*

Contractor shall ensure that all Contractors' Personnel follow the five safety cardinal rules. The rules are:

" Do not override or interfere with any Safety Provision nor let anyone else override or interfere regardless of seniority.

" Personal Protective Equipments (PPEs) applicable to the given task must be adhered to.

" Always follow isolation and lock out procedure

" No person will be allowed to work if under the influence of alcohol or drugs

" Report all injuries and illness On violation of cardinal rules, yellow card will be issued to the concerned personnel and disciplinary action will be taken which may result in suspension of personnel also.

* (Cardinal rules may vary from company to company)

9. Personal Protective Equipment Contractor shall, at its own expense, supply Contractor's Personnel, where required, in connection with the safe performance of the Services, with adequate protective clothing and other protective equipment including first aid which shall be maintained in good condition or replaced, and shall be worn at all times where required to manage potential injury hazards associated with a work activity under this Contract.

Contractor shall ensure that his personnel have been trained in the correct use and application of PPE. All such training shall be documented and available to company on request.

10. Equipment, Tools, Tackles and Resources

Contractor shall ensure that all plant, tools and equipment used by Contractor's Personnel in the performance of the Services are suitable for use for the particular task or tasks for which they are to be used, are maintained in safe and operable condition and that users of the plant, tools and equipment are trained, experienced and where necessary, licensed and certified to operate them.

Contractor shall maintain a register of all lifting equipment and tackle. Contractor shall, upon request, provide certification of inspection within the previous twelve months for all cranes and lifting slings and tackle before the equipment is used for the Work, and/or shall carry out such tests and inspections as are requested by applicable regulatory authorities. Safe Working Load (SWL) and radius charts shall be available for all lifting equipment and shall be marked on the equipment. Contractor shall ensure pre-inspection of lifting tools tackles including wire rope slings, clamps, shackles, hooks etc before taking up the job. Company reserves the right to require,

Contractor to inspect any lifting gear that does not meet the requirements stated above. All equipment shall be stored and operated in accordance with the manufacturer's specification and guidelines.

Contractor shall maintain up to date copies of all tests and maintenance certificates relating to cranes, lifting beams pulley blocks and lifting gear, and shall make them available to the Company upon demand.

All tools & tackles required for the execution of the job shall be arranged by contractor. Also a periodic audit would be undertaken to assess the condition of such tools and tackles.

While using their equipment and carrying out any job, if any equipment / installation belonging to company or any other agency at site is damaged by contractor, it will be made good at the risk and cost of contractor.

Detailed risk assessments shall be conducted for all equipment to identify all foreseeable hazards and determine the most appropriate controls to mitigate the risks associated in using in accordance with HSE laws and regulation.

Vehicles operating in company premises shall observe all parking and speed restrictions, road signs and traffic rules as per company policy.

11. Material Safety Data Sheets

The contractor shall maintain, at the job site, Material Safety Data Sheets for all hazardous materials and products taken onto the job site.

Products are stored in appropriate containers clearly labelled prior to sending to site, all hazard substances are risk assessed to determine their safety requirements and suitability for use.

12. Work Permits

Contractor shall follow the site Permit to Work (PTW) system for carrying out hazardous activities that includes following (but not limited to) activities. The contractor shall not perform any of such activities without first obtaining and displaying the applicable work permit at the project site.

a. Hot work

b. Confined space entry

c. Working at height

d. Breaking into piping

e. Lockout / Tagout / isolation etc.

f. excavation or drilling into the ground or a concrete building slab using powered equipment

g. Hazardous substance handling, etc.

h. Excavation / trenching

i. Chemical management MSDS's

j. Any government related permit

13. Health and Fitness

Each contract employee shall undergo a pre-employment medical check and periodical medical examination (PME) as per the company guidelines by a company approved doctor/ medical personnel and cleared for the type of work he/ she will undertake, prior to the commencement of work.

Contractor shall ensure that all Contractors' Personnel are able to perform the essential functions of their respective assignments and shall certify the same to Company if so requested by Company or if required by law. Contractor's medical assessment process shall equal or exceed the requirements of Company's medical assessment procedure.

Contractor shall ensure health assessment, monitoring and management of contract personnel exposure to noise, dust and other physical hazards that have the potential to be harmful to health.

14. Disease

Contractor shall ensure that any of Contractor's Personnel who exhibit any symptoms of any severe infectious disease that is communicable by air or surface contact immediately make appropriate arrangements to be medically assessed and removed from the Site until they have received medical clearance and can provide proof of such clearance.

15. Hygiene and Housekeeping

Contractor shall ensure that Contractor's Personnel maintain high standards of hygiene and housekeeping on the Site. Contractor shall conduct routine hygiene and housekeeping inspections on the site to ensure that standards are maintained.

Contractor shall collect and segregate scraps generated by their activities or services by creating separate bins and finally deposit or utilize as per the directions of COMPANY.

16. Environment Protection

Contractor shall ensure proper collection and storage of used oil and waste oil generated at site. The used oil and waste oil collected so shall be disposed off in compliance to law. Any oil/grease soaked cotton waste would be collected from site of work and suitably disposed as per the guidelines.

Contractor shall use appropriate Personnel protective equipments and follow requisite procedure for handling, transportation and storage of Hazardous wastes inside the plant including disposal sites owned by company.

Contractor shall be solely responsible for damage caused to the surrounding/ environment during transit.

Contractor shall ensure optimum use of water, energy and other resources while providing services and also work for loss prevention in the form of leakages, spills, overflows, wastages etc

Contractor shall be solely responsible for the legal actions that may be initiated consequent to environmental hazards as aforesaid. Contractor would ensure that spillages, leakages and overflows etc are attended immediately on notice or on intimation.

17. Smoking

Contractor's Personnel shall not smoke at the work site except within designated smoking areas.

18. Contractor Accommodation

Where the Contractor's Personnel provides accommodation for contract workers, the accommodation shall be appropriate for its location and be clean, safe and, at a minimum, meet the basic needs of workers. In particular, the provision of accommodation shall meet national legislation and shall have the minimum following:

" Provision of sanitary, laundry and cooking facilities and potable water

" Safe location w.r.t health, hygiene and fire risks.

" Provision of first aid, medical facilities and proper ventilation.

" Building material shall be suitably inflammable, have smoke and fire alarms fitted and include other safety checks to prevent fire.

19. Clearance of Site

On a continuous basis consistent with Good Industry Practice during the progress of the Works the Contractor shall clear away and remove pursuant to the directions of the Owner from the Site all scrap, debris, other waste materials. The Contractor shall, leave on the Site for the Owner such temporary works as instructed by the Owner, free of charge.

The Contractor shall at all times and particularly after completion of the Works, keep the Site and the Facility in a clean, safe and workman like condition and shall dispose of all rubbish (other than hazardous materials or other materials which may contaminate ground-water, for which other arrangements shall be made by the Contractor) in accordance with Good Industry Practice.

20. Removal of unsafe Workers

The contractor shall document any identified instances of noncompliance with safety requirements by its workers and subcontractors. Where any worker or subcontractor breaches safety requirements and thereby presents a threat of serious injury or death to any person, the contractor shall remove that worker or subcontractor from the project site for the duration of the project.

21. Subcontracting

The Contractor shall be able to demonstrate that he has applied selection procedures that ensure that his subcontractors are demonstrably competent to perform the works safely. The Contractor shall provide to the Location Manager the names of sub-contractors he intends to appoint in advance of entering into a contract with any such sub-contractor. The requirements of this booklet, the contract specification, the contract health and safety plan, the risk assessments and method statements shall be imposed upon sub-contractors by the Contractor.

22. Monitoring

Compliance check by contractor: The Contractor shall monitor his safety performance and that of his sub-contractors to ensure compliance with standards set in the contract. The frequency of monitoring will be dependent upon the risk profile and number of persons employed.

Root Cause of incidents: All accidents shall be investigated to establish the basic causes and to recommend appropriate improvements in control. Details of all accidents, together with the associated investigation and recommendations, shall be passed to the company as soon as deemed reasonable.

Audit by company: The Company reserves the right to audit all aspects of the management of health and safety on site at any time. Deficiency identified during any inspection / audit shall be entered into an appropriate action register that summarize the deficiency, the required actions, the person to whom that action have been assigned and date by which the action shall be completed.

The contractor shall be responsible to ensure all actions are completed, verified and closed within stipulated timeframes.

Monitoring by company: The Company reserves the right to allocate weight age and set safety KPIs in the contractor's scorecard. The scorecard performance shall be reviewed periodically.

23. Contractor Queries

The queries should be normally directed to company's designate as specified in contract. The site specific "contractor safety management manual" can also be referred for any clarifications when in doubt. The details on specific processes, plants and machineries and related hazards are detailed in this manual.

APPENDIX B: CODE OF CONDUCT



Supplier Code of Conduct

This Supplier Code of Conduct is applicable to all 'Suppliers' globally. 'Supplier' here refers to suppliers/ service providers/ vendors/ traders / agents/ consultants/ contractors/ joint venture partners/ third parties including their employees, agents and other representatives, who have a business relationship with and provide, sell, seek to sell, any kinds of goods or services to Vedanta Resources Plc or any of its subsidiaries, affiliates, divisions ("Vedanta").

This Code sets forth the basic requirements that we ask our Suppliers to respect and adhere to when conducting business with Vedanta. This Code embodies Vedanta's commitment to internationally recognized standards, including the Core Conventions of the International Labour Organization, United Nations' Universal Declaration of Human Rights as well as prevalent industry standards, and all other relevant and applicable statutory requirements concerning Environment Protection, Minimum Wages, Child Labour, Anti-Bribery, Anti-Corruption, Health and Safety, whichever requirements impose the highest standards of conduct.

▪ **LABOUR & HUMAN RIGHTS**

Adhering to all Labour Laws and Human Rights Laws, Suppliers shall:

- Comply with all applicable local, state and national laws regarding human rights.
- Comply with the Company's Human Rights Policy.
- Ensure that all their employees are hired on their own free will and guarantee that all their operations are free from forced, bonded, compulsory, indentured, prison labour or any other form of compulsory labour and child labour.
- Ensure that all its employees are provided equal employment opportunities, an environment conducive to their growth, free from any form of discrimination and harassment.
- Ensure compliance with minimum working hours and minimum wages prescribed by applicable laws and regulations.
- Comply with all slavery and human trafficking laws. Suppliers must ensure they have taken steps to ensure their business operations are free from slavery and human trafficking practices both internally and within their supply chains and other external business relationships.
- Ensure that employees are not be charged any fees or costs for recruitment, directly or indirectly;
- Not confiscating or withholding worker identity documents or other valuable items, including work permits and travel documentation of any of its workers/ employees.

▪ **HEALTH, SAFETY & ENVIRONMENTAL SUSTAINABILITY**

- The Supplier shall provide its employees with a safe and healthy working environment and comply with all applicable laws and regulations regarding working conditions.
- Supplier shall follow all Environmental, Health and Safety and other operational policies of the Company while executing any work or contract at the company site.
- Supplier shall follow all laws of the land including laws on Environment sustainability and protection while executing any work for the Company.

▪ **BUSINESS INTEGRITY**

Anti-Bribery: The Supplier shall not, directly or through intermediaries, take any recourse to any unethical behaviour (implicit or explicit), or offer or promise any personal or improper advantage in order to obtain or retain a business or other advantage from a third party, whether public or private, including with any employee of Vedanta. More specifically:

- Shall not offer or accept bribe or use other means of obtaining undue or improper advantage, offer or accept any kickbacks, and shall not take any actions to violate or cause its business partners to violate any applicable anti-bribery laws and regulations including the Foreign Corrupt Practices Act of USA (FCPA), Bribery Act of United Kingdom and Prevention of Corruption Act of India.
- Shall not take any advantage of any family/ social/ political connections to obtain favorable treatment or for the advancement of business or obtaining any favours. Merit shall be the sole attribute of association with Vedanta.
- Shall not enter into a financial or any other relationship with a Vedanta employee that creates any actual or potential conflict of interest for Vedanta. The Supplier is expected to report to Vedanta any

situation where an employee or professional under contract with Vedanta may have an interest of any kind in the Supplier's business or any kind of economic ties with the Supplier.

- Shall not offer any gift, hospitality or entertainment for the purpose of obtaining any advantage, order or undue favor.

Unfair Trade Practices: Supplier shall desist from any unfair or anti-competitive trade practices.

- **REPORTING OF UNETHICAL PRACTICES AND GRIEVANCE ADDRESSAL MECHANISM**

The Supplier shall ensure that an effective grievance procedure has been established to ensure that any worker/ employee, acting individually or with other workers, can submit a grievance without suffering any prejudice or retaliation of any kind.

Suppliers shall also forthwith report any unethical activity or discrimination if practiced by any Vedanta employee/other Suppliers as per Vedanta whistle-blower policy (uploaded on the company website).

- **INTELLECTUAL PROPERTY**

The Supplier shall take appropriate steps to safeguard and not infringe any Vedanta confidential and proprietary information/intellectual property/ technology which come to its knowledge during the course of its business relationship/ dealings with Vedanta. In case of sub-contracting, sharing of confidential information should be made with the consent of Vedanta.

- **THIRD PARTY REPRESENTATION**

The Suppliers shall not be authorized to represent Vedanta or to use Vedanta's brands without the written permission of Vedanta. Third parties and their employees who are authorized to represent Vedanta are expected to abide by the Vedanta's Code of Conduct & Business Ethics Policy in their interaction with, and on behalf of Vedanta including the confidentiality of information shared with them and to sign a non-disclosure agreement to support confidentiality of information.

- **PROHIBITION ON INSIDER TRADING**

If the Supplier becomes aware of material, non-public information relating to Vedanta or its business, it may not buy or sell Vedanta securities or engage in any other action to take advantage of that information, including passing that information on to others. In addition, if the Supplier becomes aware of material, non-public information about any other company, including Vedanta customers, suppliers, vendors or other business partners, that is obtained by virtue of the supplier's interaction with Vedanta, then the Supplier shall not buy or sell that company's securities or engage in any other action to take advantage of that information, including passing that information on to others.

- **SUPPLIER'S COMPLIANCE COMMITMENT**

Vedanta expects the Supplier to adhere to all applicable laws and regulations and in particular comply with this Code in letter and spirit. It is the Supplier's responsibility to read and understand the contents of this Code and Vedanta's Code of Conduct & Business Ethics Policy. As a condition of doing business with Vedanta, the Supplier must comply with this Code and agree to uphold such values during its business association with Vedanta.

The Supplier shall maintain adequate documentation to demonstrate compliance with the principles of this Code, and allow access to Vedanta to check compliance upon request with reasonable notice.

The Supplier shall notify Vedanta regarding any known or suspected improper behaviour by the Supplier relating to its dealings with Vedanta, or any known or suspected improper behaviour by Vedanta employees.

Please contact the concerned Head commercial/ Company Secretary if you have any questions about this Code.