**Fill in this information to identify the case:**

Debtor Ascend Elements, Inc.

United States Bankruptcy Court for the: Southern District of Texas (State)

Case number 26-90440

# Modified Official Form 410
# Proof of Claim

04/25

**Read the instructions before filling out this form. This form is for making a claim for payment in a bankruptcy case. Do not use this form to make a request for payment of an administrative expense. Make such a request according to 11 U.S.C. § 503.**

**Filers must leave out or redact** information that is entitled to privacy on this form or on any attached documents. Attach redacted copies or any documents that support the claim, such as promissory notes, purchase orders, invoices, itemized statements of running accounts, contracts, judgments, mortgages, and security agreements. **Do not send original documents;** they may be destroyed after scanning. If the documents are not available, explain in an attachment.

A person who files a fraudulent claim could be fined up to $500,000, imprisoned for up to 5 years, or both. 18 U.S.C. §§ 152, 157, and 3571.

**Fill in all the information about the claim as of the date the case was filed. That date is on the notice of bankruptcy** (Form 309) **that you received.**

## Part 1: Identify the Claim

1. **Who is the current creditor?**

Chonfar Engineering and Technology Co.,Ltd.

Name of the current creditor (the person or entity to be paid for this claim)

Other names the creditor used with the debtor

2. **Has this claim been acquired from someone else?**

☑ No

☐ Yes. From whom?

3. **Where should notices and payments to the creditor be sent?**

Federal Rule of Bankruptcy Procedure (FRBP) 2002(g)

| **Where should notices to the creditor be sent?** | **Where should payments to the creditor be sent?** (if different) |
|---|---|
| See summary page | |
| Contact phone +86 18807416905 | Contact phone |
| Contact email 451178764@qq.com | Contact email |

Uniform claim identifier (if you use one):

4. **Does this claim amend one already filed?**

☑ No

☐ Yes. Claim number on court claims registry (if known) Filed on MM / DD / YYYY

5. **Do you know if anyone else has filed a proof of claim for this claim?**

☑ No

☐ Yes. Who made the earlier filing?



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**Part 2: Give Information About the Claim as of the Date the Case Was Filed**

6. **Do you have any number you use to identify the debtor?**

☑ No

☐ Yes. Last 4 digits of the debtor's account or any number you use to identify the debtor: ___ ___ ___ ___

7. **How much is the claim?** $ 125750 . **Does this amount include interest or other charges?**

☑ No

☐ Yes. Attach statement itemizing interest, fees, expenses, or other charges required by Bankruptcy Rule 3001(c)(2)(A).

8. **What is the basis of the claim?**

Examples: Goods sold, money loaned, lease, services performed, personal injury or wrongful death, or credit card.

Attach redacted copies of any documents supporting the claim required by Bankruptcy Rule 3001(c).

Limit disclosing information that is entitled to privacy, such as health care information.

Engineering service and Procurement service

9. **Is all or part of the claim secured?**

☑ No

☐ Yes. The claim is secured by a lien on property.

**Nature or property:**

☐ Real estate: If the claim is secured by the debtor's principle residence, file a *Mortgage Proof of Claim Attachment* (Official Form 410-A) with this *Proof of Claim*.

☐ Motor vehicle

☐ Other. Describe: _____

**Basis for perfection:** _____

Attach redacted copies of documents, if any, that show evidence of perfection of a security interest (for example, a mortgage, lien, certificate of title, financing statement, or other document that shows the lien has been filed or recorded.)

**Value of property:** $_____

**Amount of the claim that is secured:** $_____

**Amount of the claim that is unsecured:** $_____ (The sum of the secured and unsecured amount should match the amount in line 7.)

**Amount necessary to cure any default as of the date of the petition:** $_____

**Annual Interest Rate** (when case was filed)_____%

☐ Fixed

☐ Variable

10. **Is this claim based on a lease?**

☑ No

☐ Yes. **Amount necessary to cure any default as of the date of the petition.** $_____

11. **Is this claim subject to a right of setoff?**

☑ No

☐ Yes. Identify the property: _____



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12. **Is all or part of the claim entitled to priority under 11 U.S.C. § 507(a)?**

A claim may be partly priority and partly nonpriority. For example, in some categories, the law limits the amount entitled to priority.

☑ No

☐ Yes. *Check all that apply:*

| | Amount entitled to priority |
|---|---|
| ☐ Domestic support obligations (including alimony and child support) under 11 U.S.C. § 507(a)(1)(A) or (a)(1)(B). | $_____ |
| ☐ Up to $3,800* of deposits toward purchase, lease, or rental of property or services for personal, family, or household use. 11 U.S.C. § 507(a)(7). | $_____ |
| ☐ Wages, salaries, or commissions (up to $17,150*) earned within 180 days before the bankruptcy petition is filed or the debtor's business ends, whichever is earlier. 11 U.S.C. § 507(a)(4). | $_____ |
| ☐ Taxes or penalties owed to governmental units. 11 U.S.C. § 507(a)(8). | $_____ |
| ☐ Contributions to an employee benefit plan. 11 U.S.C. § 507(a)(5). | $_____ |
| ☐ Other. Specify subsection of 11 U.S.C. § 507(a)(__) that applies. | $_____ |

* Amounts are subject to adjustment on 4/01/28 and every 3 years after that for cases begun on or after the date of adjustment.

13. **Is all or part of the claim entitled to administrative priority pursuant to 11 U.S.C. § 503(b)(9)?**

☑ No

☐ Yes. Indicate the amount of your claim arising from the value of any goods received by the debtor within 20 days before the date of commencement of the above case, in which the goods have been sold to the Debtor in the ordinary course of such Debtor's business. Attach documentation supporting such claim.

$_____

## Part 3: Sign Below

**The person completing this proof of claim must sign and date it. FRBP 9011(b).**

If you file this claim electronically, FRBP 5005(a)(3) authorizes courts to establish local rules specifying what a signature is.

**A person who files a fraudulent claim could be fined up to $500,000, imprisoned for up to 5 years, or both. 18 U.S.C. §§ 152, 157, and 3571.**

*Check the appropriate box:*

☐ I am the creditor.

☑ I am the creditor's attorney or authorized agent.

☐ I am the trustee, or the debtor, or their authorized agent. Bankruptcy Rule 3004.

☐ I am a guarantor, surety, endorser, or other codebtor. Bankruptcy Rule 3005.

I understand that an authorized signature on this *Proof of Claim* serves as an acknowledgement that when calculating the amount of the claim, the creditor gave the debtor credit for any payments received toward the debt.

I have examined the information in this *Proof of Claim* and have reasonable belief that the information is true and correct.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on date 04/25/2026
MM / DD / YYYY

/s/Yijie Luo
Signature

**Print the name of the person who is completing and signing this claim:**

Name: Yijie Luo
First name Middle name Last name

Title: BD Manager

Company: Chonfar Engineering and Technology Co., Ltd.
Identify the corporate servicer as the company if the authorized agent is a servicer.

Address

Contact phone _____ Email _____





# Verita (KCC) ePOC Electronic Claim Filing Summary

For phone assistance: Domestic (866) 927-7078 | International (310) 751-2651

**Debtor:**
26-90440 - Ascend Elements, Inc.
**District:**
Southern District of Texas, Houston Division

**Creditor:**
Chonfar Engineering and Technology Co.,Ltd.
Bluestar
No.360, Taohuaduan Road,
Dongjing Street, Yuhua District
Changsha city, Hunan, 410116
China
**Phone:**
+86 18807416905
**Phone 2:**
**Fax:**
**Email:**
451178764@qq.com

**Has Supporting Documentation:**
Yes, supporting documentation successfully uploaded
**Related Document Statement:**

**Has Related Claim:**
No
**Related Claim Filed By:**

**Filing Party:**
Authorized agent

**Other Names Used with Debtor:**

**Amends Claim:**
No
**Acquired Claim:**
No

**Basis of Claim:**
Engineering service and Procurement service

**Last 4 Digits:**
No

**Uniform Claim Identifier:**

**Total Amount of Claim:**
125750

**Includes Interest or Charges:**
No

**Has Priority Claim:**
No

**Priority Under:**

**Has Secured Claim:**
No
**Amount of 503(b)(9):**
No
**Based on Lease:**
No
**Subject to Right of Setoff:**
No

**Nature of Secured Amount:**
**Value of Property:**
**Annual Interest Rate:**
**Arrearage Amount:**
**Basis for Perfection:**
**Amount Unsecured:**

**Submitted By:**
Yijie Luo on 25-Apr-2026 8:27:35 p.m. Pacific Time
**Title:**
BD Manager
**Company:**
Chonfar Engineering and Technology Co., Ltd.

VN: AAF1BF882BE09C9D76A3C6F35D55BDDD

# Claims Explanation of Supporting documents

Ascend Elements (“AE”) made a management of change order (“MOC”) to Chonfar Engineering and Technology Co., Ltd.(“Chonfar”) for the engineering service contract between AE and Chonfar, on Feb 14 2025.

The MOC number is BS-PCS-006 co11, the brief content of this MOC is requiring Chonfar to make modification about the design deliverables of Chonfar, and the total fee amount of the MOC is $125,750. However, AE did not make the payment within one month after Chonfar completed the task and issued the invoice. Chonfar has mentioned this issue many times in past meetings with AE. AE has repeatedly evaded our requests by citing changes in the company's organizational structure and cash flow issues, hoping that we would understand them and give them more time to pay this MOC.

Due to internal reasons within AE, the payment has not been made, and AE's actions have seriously violated the payment cycle terms stipulated in the contract. Therefore, AE should immediately pay this amount, after the bankruptcy sale and liquidation process of AE

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# ASCEND ELEMENTS PROFESSIONAL SERVICES AGREEMENT FOR 2500MTPY NCM PRECURSOR PROJECT

This Professional Services Agreement (the "**Agreement**") sets forth terms under which., **Chonfar Engineering and Technology Co., Ltd.** a company organized under the laws of China with offices at **No.360 Taohuaduan Rd, Dongjingpu, Yuhua district, Changsha, Hunan Province P.R.C.** ("**Chonfar**") will, at the request of Ascend Elements, Inc., a Delaware corporation with offices at 133 Flanders Rd. Westborough, MA 01581 or an Affiliate ("**Ascend Elements**" or the "**Owner**") provide Services directly to Ascend Elements. This Agreement is effective as of August 1, 2022 ("Effective Date"). The parties agree as follows:

**1. Definitions.**

**"Action"** means a claim, suit, action, allegation, charge, or investigation, in each case brought by a third party, governmental authority or industry body.

"**Affiliate"** means an entity that, directly or indirectly, owns or controls, is owned or is controlled by or is under common ownership or control with a party hereto. As used herein, "control" means the power to direct the management or affairs of an entity and "ownership" means the beneficial ownership of fifty percent (50%) or more of the voting equity securities or other equivalent voting interests of an entity.

"**Anti-Corruption Laws**" means anti-corruption or anti-bribery Laws, including the United States Foreign Corrupt Practices Act of 1977.

"**Deliverables**" means the Deliverables indicated in SOW of the Agreement .

"**Law(s)**" means any and all laws, treaties, conventions, directives, regulations, rules, ordinances, and judicial decisions in courts and tribunals of competent jurisdiction applicable to the Services or a party, including any subsequent amendments, modifications and revisions thereto, or subsequent versions thereof.

**2. Services.** Chonfar will provide services ("**Services**") to Ascend Elements as described on one or more orders, purchase orders, proposals or statements of work signed by Chonfar and Ascend Elements that reference this Agreement (collectively the "**SOW**" or "**Statement of Work**"). Each SOW will become part of this Agreement upon execution by Chonfar and Ascend Elements. Any of Ascend Elements Affiliates may enter into separate SOWs with Chonfar for the provision of Services hereunder and each such SOW shall be deemed a legal obligation of the Affiliate and not that of Ascend Elements Environmental Solutions, Inc. and for all purposes hereunder Ascend Elements as used herein shall be deemed to mean such Affiliate. Chonfar will perform the Services in a prompt manner and at all times in accordance with the terms and conditions of the applicable SOW and this Agreement, including, without limitation, providing each Deliverable (if any) by no later than the delivery dates specified in the applicable SOW. At the direction of Ascend Elements, Chonfar will provide Services directly to Ascend Elements or to customers of Ascend Elements on Ascend Elements behalf. The price of the Services is the price stated in the SOW (the "**Price**").

**3. Subcontractors.** Chonfar will perform all Services only through the regular, full-time employees of Chonfar and may not subcontract any element of the Services without the prior express written consent of Ascend Elements. To the extent any such subcontractors are authorized by Ascend Elements, Chonfar will (i) remain directly responsible to Ascend Elements for the acts or omissions of each subcontractor and (ii) ensure that each subcontractor is bound in writing to terms equally as protective of Ascend Elements as the terms and conditions of this Agreement.

**4. Title – Risk of Loss.** Title and risk of loss to all Deliverables passes to Ascend Elements upon delivery of the Deliverables to Ascend Elements.

**5. Representations and Warranties.**

5.1 Chonfar's Representations and Warranties. Chonfar hereby represents and warrants to Ascend Elements that:

(a) Due Authority. Chonfar has full right and power to enter into and perform this Agreement without the consent of any third party, and its performance under this Agreement will not conflict with any other obligation Chonfar may have to any other party.

(b) Standard of Performance. Chonfar will perform the Services in a timely, professional and workmanlike manner and with a degree of quality equal to or higher than applicable industry standards for similar services. In addition, all Services and each Deliverable will conform in all material respects with the description and any other requirements set forth in the applicable SOW.

(c) Compliance with Laws. Chonfar will ensure that the Services (including all Deliverables, if any) and Chonfar's performance of its obligations under this Agreement are in compliance at all times with all applicable Law.

(d) Licenses. Chonfar shall obtain, at its sole cost, all licenses, permits, certificates and authorizations necessary (i) for Chonfar to do business in all jurisdictions where any part of this Agreement is to be performed, and (ii) in connection with Chonfar's performance hereunder, and give all notices required under applicable Law.

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(e) Employment Law Compliance. At all times during performance of this Agreement, Chonfar shall remain in full compliance with all applicable Laws regarding the employment of Chonfar's employees who are assigned to perform Services in connection with this Agreement, including, without limitation, all wage and hour obligations (including overtime compensation when applicable), the federal Fair Labor Standards Act (if applicable).

(f) Payroll. Chonfar further understands and agrees that it shall have exclusive control over timekeeping and payroll for all Chonfar's employees, and that it shall maintain all records and make all wage and other payments to employees in full compliance with applicable Laws. Ascend Elements shall have no role in paying or determining the compensation of Chonfar employees.

(g) No Litigation. There are no pending Actions, and Chonfar is not aware of any threatened Actions, pertaining to Chonfar, the Services or the deliverables. Each party will notify the other party promptly if a Party becomes aware of any actual or threatened Actions that would reasonably be expected to affect its ability to fully perform its duties under this Agreement.

(h) Non-Solicitation of Personnel. During the term of this Agreement and for a period of one (1) year thereafter, Chonfar and its Affiliates will not, directly or indirectly, solicit or encourage any employee or consultant of Ascend Elements or its Affiliates to leave for any reason, including, without limitation, to accept employment or an engagement with any other company; provided that an employee or consultant being hired or engaged directly as a result of a general solicitation to the public shall not be deemed to be a violation of this provision.

5.2 Remedy of Defects. Chonfar will, without charge, correct any non-conformity, defect or malfunction in any Deliverable reported by Ascend Elements within thirty (30) days of receipt of written notice from Ascend Elements. The remedies set forth in this Section 5.2 will be non-exclusive

**6. Ownership of Deliverables.** Chonfar agrees that all Deliverables will be the sole and exclusive property of Ascend Elements. Chonfar will and hereby does irrevocably assign to Ascend Elements all right, title and interest in and to the Deliverables and all related intellectual property rights.

**7. Payment.** In exchange for Chonfar's obligations under this Agreement, Ascend Elements will pay Chonfar the Price according to the payment terms set forth in the SOW All undisputed payments are due in U.S. Dollars within sixty (60) days of Ascend Elements receipt of an invoice. Ascend Elements will not be liable for any taxes that Ascend Elements are required by Law to pay and Chonfar fails to invoice. Ascend Elements may withhold amounts disputed in good faith while the parties attempt to resolve the dispute, and this will not constitute a breach. Chonfar will not invoice Ascend Elements until Ascend Elements acceptance of the Services or Deliverables (as applicable) in accordance with the applicable SOW. Ascend Elements will not reimburse Chonfar for any expenses unless such expenses are specified in the applicable SOW. When specified in the applicable SOW, Ascend Elements will reimburse reasonable, pre-approved (in writing) travel and related expenses incurred by Chonfar in performing the Services, but only in accordance with Ascend Elements then-current travel and expense policies, including, without limitation, the furnishing of copies of receipts and other customary documentation for any expenses for which Chonfar requests reimbursement. Ascend Elements will have no obligation to pay any fees or expenses that Chonfar fails to invoice within ninety (90) days after the fees or expenses were incurred. Chonfar acknowledges that this Section 7 sets forth the only compensation that Chonfar is entitled to receive in exchange for the Services and the Deliverables, and Chonfar will not be entitled to any other payments, reimbursements, royalties or consideration of any kind. Any changes to the Scope of Work shall be in writing in the form of a change request as set forth in Appendix 6.

**8. Term and Termination.**

8.1 Term. This Agreement remains in effect until terminated in accordance with this Section 8.

8.2 Termination. Either party may terminate this Agreement if the other party: (a) fails to cure any breach of this Agreement (including any applicable SOW) within thirty (30) days after written notice of such breach; (b) ceases operation without a successor; or (c) seeks protection under any bankruptcy, receivership, trust deed, creditors arrangement, composition or comparable proceeding, or if any such proceeding is instituted against such party (and not dismissed within sixty (60) days thereafter). In addition, either party may terminate this Agreement at any time when there is no SOW in effect for at least one hundred eighty (180) days upon ten (10) days' advance written notice to the other party. Notwithstanding anything to the contrary, Ascend Elements may terminate this Agreement, including any and all SOWs, for convenience at any time upon fifteen (15) days' advance written notice to the other party. Any termination hereunder by Ascend Elements for a breach by Chonfar which is subsequently determined not to be a breach shall be treated as a termination for convenience. In the event Ascend Elements terminates a Statement of Work (whether terminated for convenience or otherwise), Ascend Elements' only liability will be to pay Chonfar the fees due under the SOW with respect to Services provided through the date of termination.

8.3 Effect of Termination. Upon any expiration or termination of this Agreement for any reason, or upon earlier request by Ascend Elements, Chonfar will promptly deliver to Ascend Elements all Deliverables (in whatever state of completion) and return or (if directed by Ascend Elements) destroy all Confidential Information and derivatives thereof. Except for termination for convenience, the termination of this

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Agreement is not an exclusive remedy and the exercise of either party of any remedy under this Agreement will be without prejudice to any other remedies it may have under this Agreement, by law or otherwise. Sections 5 (Representations and Warranties), 6 (Ownership of Deliverables), 9 (Independent Contractor), 11 (Confidential Information), 12 (Access to Ascend Elements Facilities), 13 (Publicity and Records), 14 (Indemnification), 15 (Limitation of Liability), 16 (Bankruptcy), 19 (General) and the provisions of this Section 8 will survive any expiration or termination of this Agreement.

**9. Independent Contractor.** Chonfar will be solely responsible and liable for any compensation due to Chonfar's employees, agents or permitted subcontractors and employment-related taxes, insurance premiums or other employment benefits required to be provided to Chonfar's employees, agents or permitted subcontractors under applicable foreign, federal, state and local laws, statutes, orders and regulations. Neither Chonfar nor any of Chonfar's employees, agents or permitted subcontractors will be eligible for any benefits from Ascend Elements (including, without limitation, vacation or illness payments, stock awards, bonus plans, profit sharing, health insurance or retirement benefits) normally provided by Ascend Elements to its employees. Chonfar will defend, indemnify and hold harmless Ascend Elements, its Affiliates and its and their officers, directors, and employees from and against all Actions and all related losses, liabilities, damages, expenses and costs (including attorneys' fees and court costs) arising from or relating to any liability imposed on Ascend Elements or its Affiliates to pay any withholding taxes, social security, unemployment or disability insurance or similar items in connection with compensation received by Chonfar pursuant to this Agreement. Chonfar will perform services on behalf of Ascend Elements in the capacity of independent contractor, and not as an employee, partner, agent or joint venture partner. Ascend Elements will not be responsible for the payment of any duties or taxes imposed on the income or profits of Chonfar. Neither party will make any commitment, by contract or otherwise, binding upon the other or represent that it has any authority to do so.

**10. Insurance.** Chonfar shall maintain the insurance coverage set forth in Exhibit A, attached hereto, throughout the Term of the Agreement

**11. Confidential Information.** Other than in the performance of the Agreement, Chonfar nor Chonfar's agents, employees, or subcontractors will use or disclose to any person or entity any Confidential Information (as defined below) of Ascend Elements, whether in written, oral, electronic or other form, that is obtained from Ascend Elements or otherwise prepared or discovered either in the performance of this Agreement or while on Ascend Elements premises. "Confidential Information" means any and all information designated by Ascend Elements as confidential or proprietary, all information or data concerning or related to Ascend Elements products or services (including the discovery, invention, research, improvement, development, manufacture, or sale thereof), processes, or business operations (including sales, costs, profits, pricing methods, organization, and employee and customer lists), including any information of the foregoing nature received from Ascend Elements related to Ascend Elements customers or suppliers, and any other information that is of such a nature that a reasonable person would believe it to be confidential or proprietary. The Deliverables constitute Confidential Information of Ascend Elements. The provisions of this Section 11 relating to use and disclosure will not apply to any information that: (i) is rightfully known to Chonfar prior to disclosure by Ascend Elements, (ii) is rightfully obtained by Chonfar from any third party without restrictions on disclosure, (iii) is or becomes available to the public without restrictions, (iv) is independently developed by Chonfar without violating its obligations under this Agreement, or (v) is disclosed with the prior written approval. Chonfar may make disclosures to the extent required by law or court order, provided that Chonfar notifies Ascend Elements in advance and cooperates in any effort to obtain confidential treatment. Chonfar acknowledges that unauthorized use or disclosure of Confidential Information may cause substantial harm for which damages alone may not be a sufficient remedy.

In event of actual or threatened unauthorized use or disclosure by Chonfar, its employees, agents, or subcontractor, Ascend Elements will be entitled to seek appropriate equitable relief in addition to whatever other remedies it might have at law. The obligations set forth in this Section will survive any expiration or termination of this Agreement.

**12. Access to Ascend Elements Facilities**. If applicable, to the extent Chonfar is granted access to Ascend Elements facilities, Chonfar will comply with any safety, control, protection, and other policies and guidelines as Ascend Elements may provide from time-to-time and will be solely liable for its acts or omissions while at any site, including, without limitation, those resulting in personal injury or property damage.

**13. Publicity and Records.** Chonfar will not publicize or disclose the existence or terms of this Agreement to any third party without the prior written consent of Ascend Elements, except as may be required by Law. No references to Ascend Elements, its Affiliates, trade names, trademarks, service marks, brands, marks, logos, codes, drawings or specifications will be used in any of Chonfar's advertising, promotional efforts or any publicity of any kind, without Ascend Elements prior written consent, which consent may be withheld in Ascend Elements sole discretion in accordance with Ascend Elements policy that may be changed from time to time. In particular, no press releases will be made without the mutual written consent of each party. Written consent from Ascend Elements shall only be valid if issued by an authorized representative. Chonfar will keep and maintain complete and

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accurate records in connection with its performance of the Services, providing of the Deliverables and all fees charged to Ascend Elements under this Agreement and will retain these records for at least three (3) years after the amounts documented in these records become due. Ascend Elements may audit such systems, procedures and records during regular business hours upon reasonable advance notice and subject to reasonable confidentiality procedures.

**14. Indemnification.**

(a) Each party will defend, indemnify and hold harmless to other party, its Affiliates and its officers, directors, employees, customers, agents, attorneys and insurers from and against any and all third party Actions and all related losses, liabilities, damages, expenses and costs (including reasonable attorneys' fees and court costs) to the extent arising from or relating to: (i) any breach or alleged breach of any representation, warranty, covenant or other provision of this Agreement (including any SOW); (ii) any violation of law; (iii) infringement or misappropriation of patent, copyright, trade secrets or other intellectual property rights of any third party; (iv) any injury including bodily injury, disability or death, personal injury or property damage or any damages, resulting from a Product which is defective in materials, design or workmanship, sustained by Ascend Elements or by Ascend Elements agents, subcontractors or employees; or (v) any injury including bodily injury, disability or death, personal injury or property damage or any damages, regardless of fault, sustained by Chonfar, or by Chonfar's agents, subcontractors or employees.

**15. Limitation of Liability**. In no event shall Ascend Elements aggregate liability arising out of or related to this Agreement, whether arising out of or related to breach of contract, tort (including negligence) or otherwise exceed the lesser of: (i) Chonfar's actual damages, or (ii) the total aggregate invoiced amount by Ascend Elements to Chonfar for Services performed in accordance with this Agreement in the month before such liability is assessed or the month before termination of the Agreement, whichever is earlier. NOTWITHSTANDING ANYTHING TO THE CONTRARY, ASCEND ELEMENTS WILL NOT BE LIABLE TO CHONFAR FOR INDIRECT, EXEMPLARY, PUNITIVE, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES OR LOSSES, OR FOR LOST PROFITS OR BUSINESS OPPORTUNITIES, UNDER ANY LEGAL THEORY (INCLUDING NEGLIGENCE).

**16. Bankruptcy.** The parties agree that, in the event of the commencement of bankruptcy proceedings by or against a party under applicable Law, the other party will be entitled, at its option, to retain all of its rights under this Agreement pursuant to applicable Law.

**17. Anti-Corruption; Morals.**

(a) Chonfar represents and warrants to Ascend Elements that Chonfar and Chonfar personnel are currently complying, and have at all times complied with, and will comply with all Anti-Corruption Laws. After Chonfar's reasonable inquiry, neither Chonfar nor Chonfar personnel have during the five (5) years prior to the Effective Date: (1) taken any direct or indirect action that would result in a violation of any applicable Federal or State Anti-Corruption Laws, including, for purposes of securing an improper advantage, the making, offering or authorizing any bribe, facilitation or other payment, gift, entertainment, rebate, or any other thing of value to any government official or employee, political party or official, or candidate, a public international organization, a commercial entity or individual, whether tangible or intangible, to secure an improper advantage, (2) been under, an administrative, civil or criminal investigation, in connection with alleged or possible violations of applicable Federal or State Anti-Corruption Laws, or (3) received notice from, or made a voluntary disclosure to, any governmental entity regarding alleged or possible violations of any applicable Federal or State Anti-Corruption Laws; and to Chonfar's knowledge, its financial records are sufficiently accurate and complete to demonstrate its compliance with the applicable Federal or State Anti-Corruption Laws, represent actual bona fide transactions, and have been maintained in accordance with sound business practices, including the maintenance of adequate internal accounting controls. If Chonfar suspects any breach of this provision, to the fullest extent permitted by applicable Federal or State Anti-Corruption Laws, Chonfar will promptly notify Ascend Elements in writing of its suspicions and cooperate with Ascend Elements in the resolution of issues raised.

(b) If Chonfar or any of its officers, directors, board members, principals, employees, agents, or representatives of Chonfar commits any act which, in the reasonable and good faith opinion of Ascend Elements, would disparage or impair the reputation and/or integrity of Ascend Elements (including, without limitation, being convicted of any felony or a crime involving moral turpitude, ethical violations or any other act of moral turpitude) or fails to comply with the Code of Conduct Policy for Business Partners, Ascend Elements shall have the right to terminate this Agreement without liability to Chonfar upon thirty (30) days written notice.

**18. Non-Exclusivity.** This Agreement shall not be construed as granting to Chonfar the exclusive right to provide the Services for Ascend Elements. Ascend Elements reserves the right to contract with other parties for such Services as it deems necessary. The Parties further agree that Ascend Elements is not obligated to purchase any minimum amount of Services from Chonfar under this Agreement.

**19. General.** Chonfar may not assign this Agreement without the prior written consent of Ascend Elements and any attempt to do so will be void. Notwithstanding the foregoing, Ascend Elements may assign this Agreement to (a) an Affiliate or (b) any other entity in connection with a reorganization, merger, consolidation, acquisition, or other restructuring involving all

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or substantially all of the voting securities or assets of Ascend Elements. Ascend Elements shall provide notice of the transfer to Chonfar in thirty (30) days before the formal change. All rights, benefits, and protections granted to Ascend Elements pursuant to this Agreement extend to its Affiliates. Any notice or consent under this Agreement will be in writing, which may be delivered personally or via mailed, by prepaid, certified mail or overnight courier, to the address specified below. No provision of this Agreement will be waived by any act, omission or knowledge of a party or its agents or employees except by an instrument in writing expressly waiving such provision and signed by a duly authorized officer of the waiving party. None of the following constitutes a waiver or estoppel of any right, remedy, power, privilege or condition by Ascend Elements arising from this Agreement: (a) any failure or delay in exercising any right, remedy, power, or privilege or in enforcing any condition under this Agreement, or (b) any act, omission, or course of dealing between the Parties. If any provision of this Agreement is adjudged by any court of competent jurisdiction to be unenforceable or invalid, that provision will be limited or eliminated to the minimum extent necessary so that this Agreement will otherwise remain in full force and effect. This Agreement will be deemed to have been made in, and will be construed pursuant to the laws of the MA and the United States without regard to conflicts of laws provisions thereof, and without regard to the United Nations Convention on the International Sale of Goods. Any suit or proceeding arising out of or relating to this Agreement will be venued in a court of appropriate jurisdiction in Middlesex County, MA. Ascend Elements will be entitled to reasonable attorneys' fees, costs and expenses in addition to any other relief to which it may be entitled. Any amendments to this Agreement or any SOW will be effective only if made in writing signed by a representative of the respective parties. Both parties agree that this Agreement (including any executed SOWs) is the complete and exclusive statement of the mutual understanding of the parties, and supersedes and cancels all previous written and oral agreements and communications relating to the subject matter of this Agreement. This Agreement may be executed in counterparts, each of which will be deemed an original and all of which together will be considered one and the same agreement. The counterparts of this Agreement may be executed and delivered by facsimile or other electronic signature by any of the parties to any other party and the receiving party may rely on the receipt of such document so executed and delivered by facsimile or other electronic means as if the original had been received.

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Accepted and agreed to as of the Effective Date by the authorized representative of each party:

**Chonfar Engineering and Technology Co., Ltd.**

Signature:

Print Name: Luo MingCong

Print Title: 能源环境院院长

Date: 7/27/2022

Notice Address:

No.360 Taohuaduan Rd, Yuhua district, Changsha, Hunan Province P.R.C.

Attention:

Email:luomingcong@sinochem.com

**Ascend Elements, Inc.**

Signature: DocuSigned by: Andrew Aberdale

Print Name: Andrew Aberdale

Print Title: CFO

Date: 7/25/2022

Notice Address:

133 Flanders Rd. Westborough, MA 01581

Attention: Legal Department

Email: llochhead@ascendelements.com

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**Exhibit A**

Prior to commencement of provision of Products or Vendor entering Ascend Elements operation or performing work for Ascend Elements, and annually thereafter, a Certificate of Insurance ("COI") evidencing the following insurance carried by the Vendor at its own expense must be presented in an acceptable form to Ascend Elements:

**COVERAGE LIMIT REQUIREMENTS**

**Commercial General Liability (including Products/Completed Operations and Umbrella/Excess Liability):**

Commercial General Liability (CGL) and Umbrella/Excess Liability Insurance in an amount not less than $3,000,000 per occurrence and $3,000,000 annual aggregate.

**Workers' Compensation & Employers Liability:**
Workers' Compensation insurance in compliance with applicable statutory requirements, as well as Employers' Liability insurance in an amount not less than $ 1,000,000 each accident.

**Automobile Liability:**

Automobile Liability insurance for bodily injury and property damage, including coverage for owned, non-owned and hired vehicles in an amount not less than $1,000,000 Combined Single Limit. All Vendor personnel who drive personal or company vehicles onto Ascend Elements premises must show proof of Automobile Liability insurance.

**Contractors Pollution Liability Insurance:**
If applicable to the products or services being provided by Vendor, a policy covering the liability arising out of any sudden and/or non-sudden pollution or impairment of the environment, including cleanup costs and defense, that arise from the operation, in an amount not less than $2,000,000 per Pollution Condition Limit of Liability.

**Errors & Omissions / Professional Liability:**

When Vendor is providing a professional service, Ascend Elements requires such coverage in an amount not less than $1,000,000 per occurrence and aggregate.

**Fidelity Insurance:**

When a Vendor is providing services which could result in the loss of money and/or securities, Ascend Elements requires the placement and evidence of $5,000,000 per occurrence and aggregate of Fidelity Insurance with a client property amendment, as well as Ascend Elements listed as a "Loss Payee".

**Technology Errors and Omissions Insurance (where applicable):**
When a Vendor is providing IT products or services to Ascend Elements, during the term of the agreement Vendor shall procure and maintain Technology Errors and Omissions insurance in an amount not less than $5,000,000 per claim and aggregate.

**Cyber Insurance (where applicable):**

If a Vendor has access to Confidential Information or personally identifiable information, Vendor shall carry Privacy and Network Security (also known as Cyber) insurance in the amount of not less than $5,000,000 for each claim and in the aggregate. Such policy shall include coverage for all costs incurred to respond to the theft, loss, unauthorized disclosure, wrongful collection or access to information, and all damages resulting from such breach, including fines and penalties imposed.

*In addition to showing the limits of liability specified above for each coverage, the certificate of insurance must provide:

（a.）A waiver of subrogation where allowed by law in favor of Ascend Elements;

（b.）Coverage for Ascend Elements and Affiliates as an additional insured where allowed by law. A copy of the CGL additional insured endorsement must be attached to the certificate of insurance. Ascend Elements reserves the right to reject any such endorsement that provides less coverage to Ascend Elements than would be afforded by the standard additional insured endorsements issued by the Insurance Services Office (ISO).

（c.）A statement that Ascend Elements will receive 30 days' notice if any coverages are cancelled.

（d.）Coverage should be on a primary and non-contributory basis

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Vendor shall require all approved subcontractors to maintain insurance that satisfies the requirements set forth herein. Upon request by Ascend Elements, Vendor shall provide Ascend Elements a complete copy of the policies carried by Vendor and Vendor's approved subcontractors.

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ASCEND ELEMENTS

# Statement of Work

This Statement of Work (hereinafter "SOW"), effective as of August 1, 2022 (the "SOW Effective Date"), is between Ascend Elements, Inc. ("**Ascend Elements**") and Chonfar Engineering and Technology Co., Ltd. ("**Chonfar**"), pursuant to the terms in the Professional Services Agreement between the Parties having an Effective Date of August 1, 2022 (the "**Agreement**"). This SOW is subject to the terms in the Agreement except as expressly set forth otherwise in this SOW. The Parties agree as follows:

## 1. Scope of this SOW

1.1 Ascend Elements intends to build up a new production facility which will produce 2.5 metric tons NCM precursor per year from battery black mass. The location of project is in SouthEastern, USA. The project will comprise below function/building:

- Black mass leaching and purification, which Chonfar will perform the engineering design based on the process inputs provided by Ascend Elements.
- Precursor production workshop.
- Waste water treatment workshop.
- Utilities and auxiliary facilities, which Chonfar will provide needed conditions and design inputs to the third-party engineering contractor entrusted by Ascend elements--
    - o DI water unit
    - o Compressed air unit
    - o Central control room
    - o MCC ( Process units MCC design is in Chonfar's scope)
    - o N2 generation system
    - o Pits and containment
    - o Tank farm
    - o Boiler

Based upon the understanding of work scope and ANNEX1 - Process Scheme of 2.5MTPY NCM Precursor, Chonfar shall perform the tasks as following:

- Process design
- Detailed design
    - o Process design. Chonfar will guarantee the product quality as per chapter 1.3 of ANNEX1, providing the feedstock meeting the criteria defined in table 1 of ANNEX1 - Process Scheme of 2.5MTPY NCM Precursor Project
    - o Chonfar will deliver the documents defined in this SOW (paragraph 3.4) which can enable Ascend Elements to operate the project smoothly
    - o Civil and architecture conditions for the third-party engineering contractor entrusted by Ascend elements
    - o Automation and instrumentation design, including automatic valves
    - o Electrical design
    - o 3D model based on the architecture model by the third-party engineering contractor entrusted by Ascend elements. During this design phase, Chonfar will provide 3D modelling of each unit in scope and perform 30%, 60% and 90% modelling reviews
    - o Maintenance design
    - o Remote technical support during construction phase
- Chemical commissioning and trainings, 6 man-months labor included
- Contractor shall cooperate with U.S. local engineering firm complete the

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detailed engineering, implement/respond the code related engineering document review comments. Split of engineering cope between Chonfar and US engineering firm is shown in below table.

| Units | Discipline | Contractor | US engineering firm |
|---|---|---|---|
| Process units | Process | Design | Review, approval |
| | Pipping | Design | Review, approval |
| | Electrical | Design | Review, approval |
| | Instrument | Design | Review, approval |
| | Mechanical | Design | Review, approval |
| | Civil, structure | Provide design input | Design |
| Utility units | All disciplines | Provide utility requirements | Design |

1.2 The requirements and expectation of this project from Ascend Elements including:

- Provide clear plans, strategies and professional resources to ensure timely completion of project without compromising Safety, Quality and Cost
- Technical support Ascend Elements smooth and successful commissioning and start-up, hand-over and close-out ready for production

In order to meet the expectation of this project, Chonfar shall develop the best execution strategy accessible including but not limited to:

- Provide a team experienced in related industry
- During the primary design phase, work with Ascend Elements closely, use the experience from the previous project to help to expedite the project progress
- Incorporate the project experience from current project, optimize the project schedule
- Remain fully compliant with both Ascend Elements and Chonfar HSE requirements

Communicate efficiently and timely with the third-party engineering contractor entrusted by Ascend Elements

1.3 All communication between Chonfar and Ascend Elements shall either be in English or include an English translation. All deliverables shall be in English.

**1.4 Process guarantees and acceptance.**

Vendor shall provide the performance guarantee as set out in Appendix 3 section 1.1 and 1.2. The SAT procedure will be mutually agreed-upon between Vendor and Ascend Elements no less than sixty (60) days prior to the anticipated SAT. The acceptance criteria shall be based on the performance guarantees defined above. Both parties acknowledge that the system may be operated outside of the conditions listed in Appendix 3 Section 1.1 for short periods of time without such conditions invalidating the process guarantee. The SAT shall include but not limited to the following:

- Last seven (7) consecutive days.

- Upon completion of a successful test, Vendor shall submit an SAT report to Ascend Elements.

- Ascend Element shall review the report within five (5) business days and confirm its agreement in writing or will specify the reasons that such guarantees have not been satisfied.

For downtime of less than six (6) hours during the SAT, a pause in the testing will occur, and testing will resume once the conditions resulting in the downtime has been corrected. The testing shall continue until the cumulative duration has been achieved. If the downtime is larger than 6 hours the test may be cancelled or rescheduled. If the SAT

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is cancelled or rescheduled due to an item under Ascend Elements' responsibility, the SAT shall not be considered failed due to Vendor.

After completion of the SAT if the equipment designed by Vendor fails to comply with the performance guarantee requirements, then the SAT shall be considered failed. After any failed SAT Vendor shall provide a proposal to Ascend Elements within five (5) days outlining the corrective actions which may be taken to meet the required performance, including an estimation of the time to implement such corrective actions, as well as an estimate of the cost. If such proposal is accepted by Ascend Elements a subsequent SAT shall be performed. For avoidance of doubts, Ascend Elements reserves the right to refuse implementing the proposed corrective actions at its sole discretion.

Each subsequent SAT shall have the same duration, seven (7) consecutive days. Subsequent SAT's will be performed tentatively less than one (1) month after the corrections have been implemented. If failure(s) persists after a subsequent SAT, the cost associate with that subsequent SAT shall be at Vendor's expense. Vendor shall have one (1) month to apply corrective action and one (1) month after the corrections have been implemented to demonstrate the performance guarantees have been met. No more than three (3) SAT shall be performed.

If all SAT fail or if Ascend Elements refuses to implement the corrective actions submitted by Vendor after a failed SAT, Ascend Elements will retain the final 5% payment (Milestone 1.1.6). In addition, Vendor shall repay to Ascend Elements all the monies spent by Ascend Elements to rectify the performances of the plant as well as the cost associated to the execution of the subsequent SAT. This will constitute Ascend Elements sole and exclusive remedy. After confirmed receipt of such payment by Vendor, the Vendor shall be released from all further obligations under the Contract.

Ascend Elements shall use commercially reasonable efforts to operate the Equipment until it passes SAT.

## 2. Schedule and Milestones

**Milestone 1**

**September 1, 2022** - Complete Front End Loading Layout, Process Flow Diagram, and Mass Balance.

**Milestone 2**

**October 1, 2022** - Complete Requisition for Quotation and Datasheet of process equipment.

**Milestone 3**

**February 26, 2023** - Complete construction drawing design.

## 3. Deliverables

3.1 The depth of engineering deliverables shall meet Petrochemical Plant Detail Engineering Depth Standard SPMP-STD-EM2005-2016 or relevant standard.

3.2 Chonfar will use the standard checking, review and approval processes that apply to the project for all engineering deliverables and their associated supporting documents and analyses. All checking is to be documented, recorded and filed for future reference.

3.3 Chonfar will develop project standards to make sure that all engineering designs are

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compliance to Ascend Elements' standard, the national standards, codes, and regulations of the United States, as well as state and local regulations, and that these regulations are clearly defined for implementation during this project. In case of any conflict with the local laws, codes, standards and regulations, the order of precedence will follow:

- United States Laws and Regulations applicable at the location of the site
- 
- Ascend Elements Standard
- Project Specifications
- Good Industrial Practice

Chonfar confirms below regulations and standard shall be applied to this project:

- Pipping design as per ASTM and ASME 31.3/36.1 if applicable
- B.L tie-in points with ANSI flanges
- Motors: IP55. Control panel enclosure: Nema 4/4X.
- 40 CFR 63, National Emission Standards for Hazardous Air Pollutants for Source Categories.
- 40 CFR 63, Subparts G and H ("HON rule") for emissions of VOC to air from process vents, tanks, wastewater, fugitive components, and other sources.
- NEC 500 National Electrical Code
- IEEE Institute of Electrical and Electronics and Engineers 835, 841, 1584
- GAP Guideline 2.5.2 for the plot plan design
- ASCE/SEI 7-10 Minimum Design Loads for Buildings and Other Structures
- IBC-2012 International Building Codes
- ACI 318-11 Building Code Requirements for Structural Concrete
- FAA Advisory Circular 70 Obstruction Marking and Lighting
- 40 CFR 68 – Protection of Environment Chemical Accident Prevention Provisions
- ANSI Z358.1 American National Standard for Emergency Eyewash and Shower Equipment
- ADA Americans with Disabilities Act
- ACI American Concrete Institute (among others, ACI CT CT-13 "ACI Concrete Terminology")
- Kentucky Stormwater Management Manual
- American Welding Society (AWS)
- 29 CFR 1910.119
- Occupational Safety & Health Act (OSHA)
- International Building Code (IBC)
- American Institute of Steel Construction (AISC)
- Air-Conditioning, Heating, and Refrigeration Institute (AHRI)
- American Society of Mechanical Engineers (ASME)
- American Society of Civil Engineers (ASCE)
- National Fire Protection Association (NFPA)
- American National Standards Institute (ANSI)
- NFPA 70, National Electric Code (NEC)
- American Society for Testing Materials (ASTM)
- American Society of Heating Refrigeration and Air Conditioning Engineers (ASHRAE)
- International Society of Automation (ISA)
- American Petroleum Institute (API)

3.4 Chonfar shall provide the following deliverables: refer to ANNEX 6.

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## 4. Chonfar's Project Team

The members of Chonfar's project team shall have commercial and technical qualifications and capabilities to perform the Services as per Article 1.1. Chonfar shall exercise its best efforts to furnish competent employees for fulfillment of these contract obligations. Ascend Elements shall require employees to comply with all Ascend Elements regulations and policies and shall promptly remove those who do not comply or who may otherwise be unacceptable to Ascend Elements. Chonfar shall dismiss immediately upon receipt of notification, employees, which, in Ascend Elements' sole opinion, are unsatisfactory for the services to be performed hereunder. Such personnel shall be replaced with individuals satisfactory to Ascend Elements as soon as possible. If within the first five (5) working days, any one of Chonfar's employees, in Ascend Elements' sole judgement, does not demonstrate adequate capability to satisfy job requirements, then Ascend Elements may have such employee removed at no charge for the time spent by such employee on the job. Chonfar shall provide an organization chart for the employees which shall be attached as ANNEX 2.

## 5. Price and Payment

| Content | Amount (USD) | Remarks |
|---|---|---|
| **1. Construction drawing design** | 748,000 | Including the wastewater treatment, sodium sulfate crystallization unit, and metal sulfate product crystallization units. |
| **2. Design transformation** | 90,000 | |
| American standard conversion | 90,000 | Convert all design in line with the standards applied in US. |
| **3. Technical guidance for chemical commissioning** | 192,000 | |
| Field technical guidance | 158,000 | 3 person-times, totally 180 working days. |
| Travel and visa expenses | | By the owner. |
| Technical procedures, equipment maintenance and operation procedures, safety regulations, shift system, process control plan. | 34,000 | Technical guidance for chemical commissioning. |
| **4.Procurement services** | 50,000 | |
| **In total** | 1,080,000 | |

All pricing and payments shall be in U.S. dollars, unless otherwise agreed.

## 6. Payment Terms

- From the day contract was signed, Ascend Elements shall pay 30% of the total

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amount to Chonfar within 60 working days.

- When Chonfar issues all available design deliverables without finalizing the design of all equipment, Ascend Elements shall pay 30% of the total amount within 60 working days.
- When Chonfar issues final design deliverables, Ascend Elements shall pay 20% of the total amount within 60 working days.
- When the engineers start the commissioning work on site (United States), Ascend Elements shall pay 10% of the total amount within 60 working days.
- When the Acceptance teste is, Ascend Elements shall pay 10% of the total amount within 60 working days.

**All payments shall be net value without any deduction of taxes, duties, banking charges in the US. Each party shall be solely responsible for any applicable taxes, duties and banking charges.**

**7. Miscellaneous**

ANNEX1 - Process Scheme of 2500MTPY NCM Precursor Project and the ANNEX2 - 2500MTPY PCAM Project Quotation as a part of the agreement - ASCEND ELEMENTS PROFESSIONAL SERVICES AGREEMENT FOR 2.5MTPY NCM PRECURSOR PROJECT, have the same effectiveness with this Statement of Work.

Order of document precedence:

SOW
Professional Services Agreement
Project Quotation
Process Scheme

In witness whereof, the Parties have executed this SOW, effective as of the SOW Effective Date.

Ascend Elements, Inc.

By: DocuSigned by: Andrew Aberdale

Name: Andrew Aberdale

Title: CFO

Chonfar Engineering and Technology Co., Ltd.

By: 罗明彭

Name: Mingcong Luo

Title: 能源环境院院长

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ANNEX1

# 2500 吨/年三元前驱体项目

# 工艺方案

# Process Scheme of 2500 MPTY NCM Precursor Project

中蓝长化工程科技有限公司

Chonfar Engineering and Technology Co., Ltd.

2022.5

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# 1 Production scale and product scheme 生产规模及产品方案

## 1.1 Project content 项目背景

The project owned by Ascend Elements is designed to apply co-precipitation technology to produce the NCM precursor of active battery material and lithium carbonate from the feedstock lithium-ion battery black mass. The project mainly aims to achieve a capacity of 2,500 metric tons NCM precursor (mole ratio of nickel/cobalt/manganese 622/811/532) per year, and therefore comprises the process units Black Mass Leaching, Leachate Impurity Removal, Metal Sulfate adjustment, Precursor Synthesis, Precursor Purification, Ammonia Recovery, Lithium Precipitation, Sodium Sulfate Crystallization, and its supporting facilities. Targeted startup date is at 3rd quarter of 2023.

建设单位 Ascend Elements 筹建本项目，旨在采用共沉淀技术将锂电池黑粉原料生产为镍钴锰三元前驱体以及碳酸锂。本项目的产能目标主要为年产 2500 公吨三元前驱体（镍/钴/锰的摩尔比为 622/811/532），为此工艺单元将包含黑粉浸出、浸出液除杂、硫酸盐调配、前驱体合成、前驱体纯化、废水脱氨、锂沉淀、硫酸钠结晶，以及附属设施。项目投产日期为 2023 年第三季度。

## 1.2 Feedstock specifications 原料规格

Ascend Elements has worked with multiple lithium battery suppliers whose spent battery are varying from Nickel : Cobalt : Manganese 1:1:1 to 8:1:1, the plant shall have enough feedstock flexibilities, can be operated at different feed black mass from various battery chemistry. Black mass impurity composition is listed in below table:

Ascend Elements 已同多家锂电池供应商合作，其废电池的镍：钴：锰比例为 1:1:1 至 8:1:1，本项目拟建装置应具有足够的原料适应性，可运行处理多种化学组成的电池黑粉原料。黑质杂质成分如下表所示：

| Mg | Li | F | VOC | C | O | Cu | Fe | Al | P | PVDF | $H_2O$ | Na | NMC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.1% | 4.6% | 1.3% | 2.4% | 44.2% | 7.2% | 0.5% | 0.05% | 0.1% | 0.3% | 2.1% | 0.3% | 0.3% | 36.1% |

Note, the unit is weight percentage, %wt.

## 1.3 Products and specification 产品及规格

Below two types of precursors in different size shall be produced in the plant.

本装置可生产以下两种不同粒径的前驱体。

| | |
|---|---|
| Small material D50 of 6 microns | D10>3.0 μm |
| | 4< D50 < 7 μm |
| | D90<20.0 μm |
| Large material D50 of 12 microns | D10>4.0 μm |

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| | |
|---|---|
| | 11 < D50 < 13 μm |
| | D90<27.5 μm |

The precursor quality shall meet cathode sintering feedstock requirement, and impurity composition meet specified requirement on Sulfur and Sodium, and the specification listed in below table.

前驱体品质应满足作为锂电正极烧结原料的需要，且杂质组成满足以下特定硫、钠需求和下表所列规格。

Specific requirements on Sulfur and Sodium: Na<300 ppm, Sulfur<800 ppm.

硫、钠的指定要求：钠<300 ppm，硫<800 ppm。

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三元正极材料前驱体 622 标准 Ternary cathode material precursor 622 standard

文件编号 File No: ZY/WI-SY-05

| 项　　目<br>Item | 单位<br>Unit | 指　　标<br>Indicator | 测试方法<br>Testing method |
|---|---|---|---|
| Ni+Co+Mn | % | ≥61.5 | ICP/AAS |
| Ni | % | 38.0±1.5 | |
| Co | % | 12.6±0.5 | |
| Mn | % | 11.6±0.5 | |
| Fe | % | ≤0.005 | |
| Cu | % | ≤0.005 | |
| Ca | % | ≤ 0.01 | |
| Mg | % | ≤ 0.01 | |
| Na | % | ≤ 0.02 | |
| $SO_4^{2-}$ | % | ≤0.3 | |
| $Cl^-$ | % | ≤0.3 | |
| $H_2O$ | % | ≤1.0 | 水份仪 moisture meter |
| D10 | μm | ≥5.0 | 激光粒度仪 Laser particle size analyzer |
| D50 | μm | 9.0-12.0 | |
| D90 | μm | ≤20.0 | |
| 比表面积 | $m^2/g$ | 4.0-9.0 | BET 仪 BET meter |
| PH 值 PH value | | 7.0-9.0 | 酸度计 PH meter |
| 振实密度 Tap density | $g/cm^3$ | ≥2.10 | 振实密度仪 Tap Density Meter |
| 松装密度 Bulk Density | $g/cm^3$ | ≥1.50 | 松装密度仪 Bulk Density Meter |
| 外观 Exterior | 黑灰色、无结块、无杂物 Black gray, no agglomeration, no debris | | 目测 Visual inspection |

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## 三元正极材料前驱体 532 标准 Ternary cathode material precursor 532 standard

文件编号 File No：ZY/WI-SY-06

| 项　　目 Item | 单位 Unit | 指　　标 Indicator | 测试方法 Testing method |
|---|---|---|---|
| Ni+Co+Mn | % | ≥61.5 | ICP/AAS |
| Ni | % | 31.5±1.0 | |
| Co | % | 12.5±0.5 | |
| Mn | % | 17.2±0.8 | |
| Fe | % | ≤0.005 | |
| Cu | % | ≤0.005 | |
| Ca | % | ≤ 0.01 | |
| Mg | % | ≤ 0.01 | |
| Na | % | ≤ 0.02 | |
| $SO_4^{2-}$ | % | ≤0.3 | |
| $Cl^-$ | % | ≤0.3 | |
| $H_2O$ | % | ≤1.0 | 水份仪 Moisture meter |
| D10 | μm | ≥5.0 | 激光粒度仪 Laser particle size analyzer |
| D50 | μm | 9.0-11.0 | |
| D90 | μm | ≤20.0 | |
| 比表面积 specific surface area | $m^2/g$ | 4.0-11.0 | BET 仪 BET meter |
| PH 值 PH value | | 7.0-9.0 | 酸度计 PH meter |
| 振实密度 Tap density | $g/cm^3$ | ≥2.10 | 振实密度仪 Tap Density Meter |
| 松装密度 Bulk Density | $g/cm^3$ | ≥1.50 | 松装密度仪 Bulk Density Meter |
| 外观 Exterior | 黑灰色、无结块、无杂物 Black gray, no agglomeration, no debris | | 目测 Visual inspection |

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三元正极材料前驱体 811 标准 Ternary cathode material precursor 811 standard

文件编号 File No: ZY/WI-SY-07

| 项　　目 Item | 单位 Unit | 指　　标 Indicator | 测试方法 Testing method |
|---|---|---|---|
| Ni+Co+Mn | % | ≥61.5 | ICP/AAS |
| Ni | % | 48.5±1.0 | |
| Co | % | 6.5±0.5 | |
| Mn | % | 6.5±0.8 | |
| Fe | % | ≤0.005 | |
| Cu | % | ≤0.005 | |
| Ca | % | ≤ 0.01 | |
| Mg | % | ≤ 0.01 | |
| Na | % | ≤ 0.02 | |
| $SO_4^{2-}$ | % | ≤0.3 | |
| $Cl^-$ | % | ≤0.3 | |
| $H_2O$ | % | ≤1.0 | 水份仪 Moisture meter |
| D10 | μm | ≥5.0 | 激光粒度仪 Laser particle size analyzer |
| D50 | μm | 9.0-11.0 | |
| D90 | μm | ≤20.0 | |
| 比表面积 specific surface area | $m^2/g$ | 4.0-11.0 | BET 仪 BET Meter |
| PH 值 PH Value | | 7.0-9.0 | 酸度计 PH meter |
| 振实密度 Tap density | $g/cm^3$ | ≥2.10 | 振实密度仪 Tap Density Meter |
| 松装密度 Bulk Density | $g/cm^3$ | ≥1.50 | 松装密度仪 Bulk Density Meter |
| 外观 Exterior | 黑灰色、无结块、无杂物 Black gray, no agglomeration, no debris | | 目测 Visual inspection |

Lithium carbonate product meet the standard of GB/T11075 $Li_2CO_3$ -0 Grade.
碳酸锂产品符合 GB/T11075 $Li_2CO_3$-0 级标准。
Sodium Sulfate product meets the Standard: GB/T 6009-2014 Class III.
硫酸钠产品符合 GB/T 6009-2014 三级标准。

## 1.4 产品方案 product scheme

One production line will be designed to produce 2,500 metric tons precursor per year. Precursor product can meet the particle and composition requirements stated in section 1.3, and mole ratio of nickel, cobalt and manganese can be 622 / 811 / 532.

设计一条生产线以达到年产 2,500 公吨前驱体的产能。前驱体产品可满足 1.3 节所述粒度和组分要求，且镍钴锰的摩尔比可为 622 / 811 / 532。

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According to the requirements of the RFQ. the process flow scheme shall consist of black mass leaching and purification, NCM precursor synthesis, ammonia recovery, lithium extraction from wastewater, evaporation crystallization, drying and packaging, excluding the extraction process.

根据招标文件要求，工艺流程方案应包含黑粉浸出及净化、三元前驱体合成、氨水回收、废水提锂、蒸发结晶、干燥包装等工序，不含萃取工艺。

## 1.5 设计范围及工艺包 Design scope and process package

Based on the understanding of RFQ, Chonfar will develop the process package of precursor production but will not be responsible for the process performance of black mass leaching and purification. Ascend Elements should provide effective process inputs with sufficient depth so that Chonfar can complete the engineering design of black mass leaching and purification with high quality.

根据招标文件，中蓝长化将完成前驱体生产的工艺包开发，但不负责黑粉浸出和除杂的工艺性能。关于黑粉浸出和除杂，Ascend Elements 应提供有效并具备足够深度的工艺输入，再由中蓝长化完成高质量的工程设计。

Chonfar guarantees the precursor product quality meets the requirements stated in section 1.3 under the preconditions of specified feedstock solutions for synthesis specifications listed in table-1 (chapter 1.7).

基于合成反应原料溶液可以满足表-1 指标的前提，中蓝长化保证前驱体产品品质达到 1.3 节所述指标。

## 1.6 主要技术经济指标 Main technical and economic indicators

- Operation basis 运行制度：
- Annual working day 300 days a year
- Daily shift 3 shifts a day
- Daily working hour 24 hours a day
- Guaranteed yield rate (metal mass in product/inputted metal mass in feedstock) 保证回收率（产品中金属量/投入原料中的金属量）

Total nickel recovery ≥99%

Total cobalt recovery ≥98%

Total manganese recovery ≥95%

Total lithium recovery ≥85%

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## 1.7 工艺风险及建议 Process risk and suggestions

In China, almost all NMC precursor manufacturers use battery grade nickel, cobalt, manganese crystal to make up solution as the feedstock of precursor syntheses, and even use battery black mass as the raw material of metal, solvent extraction process must be employed to remove impurities and get purified nickel, cobalt and manganese sulphate solution.

在中国，NMC 合成大多采用市场外购电池级硫酸镍钴锰晶体经溶解配液进入反应釜进行合成，而利用黑粉作为原材料，也是采用萃取工艺进行深度除杂，将镍钴锰分别萃取出来再进反应釜生产。

In this project, leachate of black mass will be purified without solvent extraction process and then be fed to precursor syntheses reactor, which can rarely find industrial scale demonstrated case. It is challenging to confirm whether the purified solution processed without solvent extraction can be used to produce qualified precursor, as the black mass varies from batch to batch. On the basis of our experience, the impurities concentration of feedstock metal sulphate solution should meet the specifications listed in table-1.

本项目采用黑粉浸出、净化后溶液直接进入反应釜生产前驱体在中国国内没有工程应用案例。黑粉原料来源复杂多变，浸出液不经过萃取除杂工艺能否满足进入反应釜的条件是最大的挑战。根据我公司经验，进入反应釜前的金属混合液及液体杂质成分应满足表-1 中的要求。

表 1 金属混合液进合成前液成份及杂质要求
Table 1 Composition and impurities requirements of metal sulphate solution for precursor syntheses

| Constituent % | | Note |
|---|---|---|
| $Ni^{2+}$ （g/l） | 120 | |
| $Co^{2+}$ （g/l） | | |
| $Mn^{2+}$ （g/l） | | |
| Fe（g/l） | ≤0.01 | |
| Ca（g/l） | ≤0.03 | |
| Si（g/l） | ≤0.008 | |
| Cu（g/l） | ≤0.02 | |
| Zn（g/l） | ≤0.002 | |
| Cd（g/l） | ≤0.002 | |
| Pb（g/l） | ≤0.002 | |
| K（g/l） | ≤0.005 | |
| Al（g/l） | ≤0.03 | |
| As（g/l） | ≤0.001 | |

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| | | |
|---|---|---|
| Cr（g/l） | ≤0.001 | |
| ~~Na（g/l）~~ | ~~≤0.5~~ | |
| Mg（g/l） | ≤0.03 | |
| 氯化物 chloride | ≤0.2 | |
| 氨氮 Ammonia nitrogen（g/l） | ≤1 | |
| 油 oil（ppm） | ≤5 | |

In Ascend Elements' planning, 65% metal for the syntheses of precursor will be fed from black mass and the rest 35% metal will be fed from battery grade crystal metal sulphate. Chonfar foresees the scenario that the metal feedstock will be 100% from the dissolving of crystal metal sulphate in case purified leachate of black mass would not be able to meet the requirements. Therefore, Chonfar suggest to size the battery grade crystal metal sulfate to be able to feed all the metal needed for precursor syntheses.

Ascend Elements 对本项目的原料组成规划为 65%金属来自于电池黑粉，35%为电池级硫酸盐晶体。中蓝长化考虑一旦净化液杂质不能满足要求，那么需要配置更多的镍钴锰晶体液混合进入反应釜系统，因此建议设计产线具备反应原料 100%由镍钴锰硫酸盐晶体配制的能力。

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# 2 工艺线路 process route

## 2.1 工艺线路简介 Introduction to process line

The process mainly includes three sections: leaching & purification, precursor syntheses, and lithium recovery, as illustrated in below scheme process flow diagram.

工艺主要包括三部分内容: 1)浸出、净化 2)反应合成 3）废水提锂，详见工艺方案流程图。

**1）浸出净化 Leaching purification**

Black mass leaching and purifications will apply the process developed by Ascend Elements.

黑粉浸出和除杂将采用 Ascend Elements 所开发的工艺。

**2）反应合成 Precursor syntheses**

Depending on the type of raw materials and the different requirements of nickel cobalt manganese ratio of precursor, prepare the mixed solution of nickel, cobalt and manganese sulphate solution, as well as the sodium hydroxide, aqua ammonia solution for use.

视原料类型和镍钴锰三元前驱体主成分配比的不同要求，配制一定比例和浓度的镍钴锰混合盐溶液备用；配制一定浓度的氢氧化钠、氨水溶液备用。

- Precursor syntheses 前驱体合成

Dose three types of raw solution and inject nitrogen gas to synthesize precursor with the control of flow rate of feedstock solution, reaction temperature, pH, agitation density and residency of reaction solution.

加入三种原料溶液，并通入惰性气体，控制原料液流量、反应温度、pH 值、搅拌强度以及物料的停留时间，合成镍钴锰三元前驱体。

- Solid/liquid separation and impurity washing 固液分离、杂质分离

Filter the intermediate precursor slurry and then washing the cake with caustic solution and hot DI water, to separate mother solution and impurities from the precursor particles. Off-spec precursor will be recycled with leaching process.

对前驱体中间浆料进行过滤、碱洗、热水洗等操作，将杂质成分与主成分分离，得到一定含水率的粉体。不合格产品经返溶等工序重新进入合成工序。

- Drying 干燥

Dry the moist precursor with plate dryer under predetermined atmosphere, and then treat the dry precursor with mixing, screening and magnet remover to get product precursor.

含水前驱体在特定温度和气氛下送入盘式干燥机进行干燥，干燥后经过混料、

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筛分、除磁工序，可作为产品出售。

**3）Lithium recovery from wastewater**

The lithium concentration of syntheses mother solution in this project is as low as 2~3g/l, which is similar to the phosphate and iron removed leachate of LFP. Based on China's experience in lithium recovery, lithium containing mother solution can firstly be treated with ammonia stripping, afterwards with heavy metal removal, and then with evaporation to separate crystal $Na_2SO_4$ from the waste water. Then precipitate the lithium in the mother liquid which is separated from crystal $Na_2SO_4$ slurry. The overall recovery rate of lithium can be as high as 85%. The crude lithium carbonate can be upgraded to battery grade with washing, carbonation, purification, decomposition, crushing, mixing, screening, magnetic removal, drying and packaging.

AE is evaluating the front end lithium recovery process. If front end lithium recovery process is selected, Bluestar will modify the design accordingly.

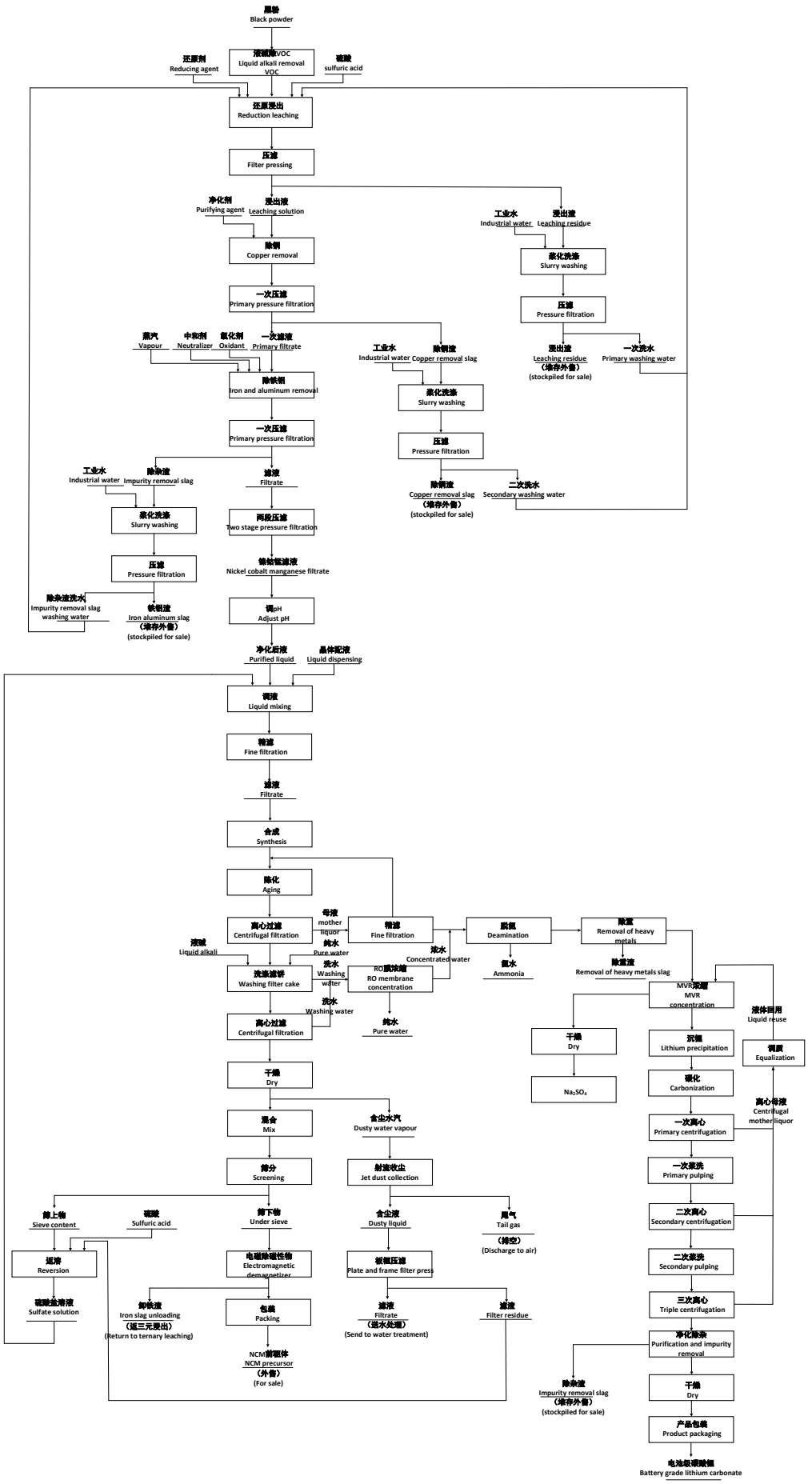
本项目合成母液成锂浓度较低 2~3g/l，与国内磷酸铁锂浸出后沉磷酸铁滤液中锂含量类似，根据国内沉锂回收经验，NMC 反应后的含锂母液经过精滤后进入脱氨塔进行脱氨，脱氨后的废水再进行除重金属，除重后母液进入蒸发系统，析出元明粉，元明粉经过干燥包装出售。母液再沉锂，锂直收率可以控制在80%左右，母液经处理返加前端工序，锂综合回收率≥85%。通过离心洗涤之后，碳酸锂再经过碳化、净化、热分解、破碎、混料、筛分、除磁、干燥和包装等工序，得到电池级碳酸锂产品。

工艺线路下图(to be updated)

The scheme process flow diagram is shown as below.

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# 2500t / a NMC precursor project

# Proposal to Ascend Elements

# 2500t/a NMC 前驱体项目建议书

**Chonfar Engineering and Technology Co., Ltd.**
**中蓝长化工程科技有限公司**

**June 2th, 2022**
**2022 年 6 月 2 日**

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## I. Content of project

## I.项目内容

The project is designed to use co-precipitation technology to produce battery grade precursor (Ni, Co, and Mn) from Lithium-Ion battery black mass leachate. Total designed capacity of this project is 10,000 metric tons per year, and phase 1 is designed to produce 2,500 metric tons NCM precursor 622/811/532 per year. The capacity of phase 2 is 7,500 tons NCM precursor.

The process unit included in this project design are:

- Black Mass Leaching-
- Leachate Impurity Removal-
- Metal sulfate adjustment-
- Precursor synthesis-
- Precursor purification-
- Ammonia Recovery-
- RO water Recovery-
- Removal of heavy metals-
- Lithium Precipitation-
- Sodium Sulfate Crystallization -

In the metal sulfate adjustment process, depending on the composition of raw leachate of black mass and the requirements of mole ratio of nickel, cobalt, and manganese, a solution mixture of nickel, cobalt and manganese is prepared for use; meanwhile a solution of sodium hydroxide and ammonia solution is prepared for use.

本项目采用共沉淀技术从锂离子电池黑色质量渗滤液中生产电

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池级前体（镍、钴、锰），目标为 10kta，第一阶段容量为 2500 吨 NMC 前体 622/811/532，第二阶段容量为 7500 吨 NMC 前体。

本项目设计中采用的工艺流程为：

黑质浸出

渗滤液杂质去除

金属硫酸盐调节

前体合成

前体纯化

氨回收

纯水回收

重金属脱除

锂沉淀

硫酸钠结晶

在金属硫酸盐调整工序中，根据原料类型和镍钴锰三元素复合中间体的主成分比例的不同要求，配制一定比例和浓度的镍钴锰混合盐溶液备用；配制一定浓度的氢氧化钠和氨溶液备用。

**II .Company introduction**

**II .公司简介**

Chonfar Engineering and Technology Co., Ltd., founded in 1978, is a comprehensive engineering technology service-oriented enterprise integrating scientific research, design, survey, supervision, consulting and general contracting. The company covers an area of 932872 square foot and has a registered capital of 18853991 dollars. At present, there are nearly 500 regular employees, including 1 National Engineering Survey and design master, 5 experts enjoying the government allowance of the State Council, 32 professor level senior engineers, 132 senior engineers, 211 engineers and 274 registered engineers. They have mastered a number of key core technologies in the fields of potassium, phosphorus, lithium,

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environmental protection and fine chemical industry, and have users in nearly 30 provinces, cities and regions across the country, as well as in the autonomous region and Turkey, Bolivia, Canada, Australia, Ethiopia, Congo (Brazzaville), Thailand, Laos. We are a subsidiary of Sinochem Holdings Limited

Sinochem Holdings Corporation Ltd. (“Sinochem Holdings”) is formed through the restructuring of Sinochem Group Co., Ltd. ("Sinochem Group") and China National Chemical Corporation Ltd. ("ChemChina"). It is a leading state-owned enterprise under the supervision of State-owned Assets Supervision and Administration Commission of the State Council. Headquartered in Beijing, Sinochem Holdings has approximately 220,000 employees.

Sinochem Holdings owns production bases and R&D facilities in more than 150 countries and regions around the world with a full-fledged marketing network. Upon restructuring, Sinochem Holdings boasts 16 listed companies both at home and abroad, i.e. Yangnong Chemical (600486.SH), Adama (000553.SZ), Adisseo (600299.SH), Sinochem International (600500.SH), Luxi Chemical (000830.SZ), Haohua Tech (600378.SH), Elkem (ELK.OL), Pirelli (PIRC.MI), China Jinmao (00817.HK)

中蓝长化工程技术有限公司成立于 1978 年，是一家集科研、设计、勘察、监理、咨询、总承包为一体的综合性工程技术服务型企业。该公司占地面积为 932872 平方英尺，注册资本为 18853991 美元。目前，现有正式职工近 500 人，其中全国工程勘察设计硕士 1 人，享受国务院政府津贴的专家 5 人，教授级高级工程师 32 人，高级工程师 132 人，工程师 211 人，注册工程师 274 人。他们掌握了钾、磷、锂、环保、精细化工等领域的关键核心技术，用户遍布全国近 30 个省、市、地区、自治区、土耳其、玻利维亚、加拿大、澳大利亚、刚果（布

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拉柴维尔）、泰国、老挝，我们是中化控股有限公司的子公司

中化控股有限公司（“中化控股”）是由中化集团有限公司（“中化集团”）和中国化工有限公司（“中国化工”）重组而成。是国务院国有资产监督管理委员会监管下的国有龙头企业。总部位于北京的中化控股公司拥有约 22 万名员工。

中化控股在全球 150 多个国家和地区拥有生产基地和研发设施，拥有成熟的营销网络。经重组后，中化控股拥有国内外 16 家上市公司。阳农化工(600486。SH)，Adama(000553。SZ), Adisseo (600299.中化国际(600500。鲁西化工股份有限公司（000830）。SZ)，浩华科技(600378 年。SH)，Elkem(ELK。OL)，倍耐力(PIRC。中国金茂(00817。HK)

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## Ⅲ.Cooperative Customer

| No<br>序号 | Customer name<br>客户名称 | Project size<br>项目规模 | Scope of work<br>工作范围 | Company website<br>公司网址 |
|---|---|---|---|---|
| 1 | Henan Yuguang Zinc Industry Co. LTD<br>河南豫光锌业有限公司 | Annual 10,000 ton lithium battery ternary precursor project<br>10000 吨/a 锂电池三元前驱体项目 | Engineering consultation<br>工程咨询 | http://www.ygzn.com.cn |
| 2 | Wanhua Chemical (Yantai) Battery Material Technology Co., Ltd.<br>万华化学（烟台）电池材料公司 | Waste battery dismantling and black powder resource recovery project<br>废旧电池拆解及黑粉资源化项目 | Engineering design<br>工程设计 | http://www.whchem.com |
| 3 | Anhui Lvwo Recycling Energy Technology Co., LTD<br>安徽绿沃循环能源科技有限公司 | 12,000t / a lithium battery ternary precursor project<br>12000t/a 锂电池三元前驱体项目 | Engineering design<br>工程设计 | http://www.lvwoxunhuan.com |
| 4 | QingHaiSalt Lake Industry Co.,Ltd. (Stock code:000792)<br>青海盐湖工业有限公司<br>（股票代码：000792） | 200,000 t/a brine lithium extraction project<br>20 万吨/年卤水锂萃取项目 | EPC<br>总承包 | https://www.qhyhgf.com/gsjj |
| 5 | Yichun Yinli new energy Co., Ltd<br>宜春银锂新能源有限公司 | 100,000 t/a lithium ore extraction project<br>10 万吨/年锂矿开采项目 | EPC<br>总承包 | http://www.ycylne.com/index.html |
| 6 | MCC-Ramu New energy material Co., Ltd<br>中冶瑞木新能源科技有限公司 | Wastewater treatment for 40,000t/a lithium battery ternary precursor project<br>4 万 t/a 三元前驱体建设项目配套废水处理项目 | EPC<br>总承包 | http://www.mcc-energy.com.cn |

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| | | | | |
|---|---|---|---|---|
| 7 | Hunan Changyuan lithium Co., Ltd (Stock code:688779)<br>长远锂科金驰能源材料有限公司 | First wastewater treatment for 15,000t/a lithium battery ternary precursor project<br>一期 1.5 万 t/a 三元前驱体建设项目配套废水处理项目 | EPC<br>总承包 | http://www.cylico.com/ |
| 8 | Hunan Changyuan lithium Co., Ltd (Stock code:688779)<br>长远锂科金驰能源材料有限公司 | Second wastewater treatment for 15,000t/a lithium battery ternary precursor project<br>二期 1.5 万 t/a 三元前驱体建设项目配套废水处理项目 | EPC<br>总承包 | http://www.cylico.com/ |
| 9 | Henan Kelong Group<br>河南科隆新材料有限公司 | Wastewater treatment for 30000t/a lithium battery ternary precursor project<br>3 万 t/a 三元前驱体建设项目配套废水处理项目 | EPC<br>总承包 | http://www.hnkl.com.cn/ |

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## Ⅳ.Introduction to project team members

Project manager: Mr. Jianbo Zhao, Master degree of Metallurgy, Senior Engineer, Project Manager. He has led the design of projects owned by Henan Yuguang Zinc Industry Co. LTD and Anhui Lvwo Recycling Energy Technology Co., LTD, and has 10 years design and commissioning experience in NCM precursor industry.

项目经理：赵剑波，冶金专业硕士研究生，高级工程师、项目经理。主持设计过豫光锌业、安徽绿沃项目设计工作，在三元前驱体行业有十年的设计和调试经验，擅长三元前驱体合成以及相关废水处理的产线设计。

Process leader: Mr. Wenping Feng, PhD of chemical engineering. As the Project manager of projects owned by Qinghai Salt Lake Industry Co., Ltd., Yichun Yinli new energy Co. Ltd , and Yongxing Special Stainless Steel Co., Ltd and other projects, he has rich working experience in lithium salt extraction process to ensure the smooth operation of the project.

冯文平先生：化学工程博士。作为青海盐湖实业有限公司、伊春银力新能源有限公司、永兴特种不锈钢有限公司等项目的项目经理，他在锂盐提取工艺方面拥有丰富的工作经验，确保了项目的顺利运行。

Process leader: Mr. Sheng Xu，Master degree of chemical engineering, has been engaged in the design of lithium extraction project from Salt Lake and ore for a long time. Sheng led the process design in the projects owned by Qinghai Salt Lake Industry Co., Ltd. and Yichun Yinli new energy Co., Ltd.

工艺负责人：徐盛，化工专业，硕士研究生，长期从事盐湖提锂和矿石提锂项目设计工作，主持设计的项目主要有青海盐湖和银锂项目。在该项目中担任主要设计工作。

Mr. Libo Qin: Professional in electrical instrument, will be responsible for the configuration of electrical and instrument in the project,

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to ensure the stable operation of overall project.

精通电气仪表，负责所有项目的电气和仪表配置，确保所有项目的稳定运行。

## Ⅳ. Quotation Scope

## IV.报价范围

Chonfar's work is to design the production facilities for 2,500 metric tons precursor per year, and the scope of work mainly includes process design (from purified black mass leachate to precursor product and lithium carbonate by-product), construction drawing design, American standard conversion, Pilot production guidance and procurement services.

中蓝长化将设计年产 2500 吨三元前驱体的生产设计，工作范围主要包括工艺设计(从净化后黑粉浸出液至前驱体产品及碳酸锂副产品)、施工图设计、美标转化、试生产指导和采购服务。

The process inputs of battery black mass leaching and purification section will be provided by AE company. The impurity concentration of the purified leachate must be less than the requirements stated in the Process Scheme of 2500MPTY NCM Precursor Project proposed by Chonfar. Other process design in the scope of work will be responsible by Chonfar. Chonfar will provides battery limit conditions required by the third-party engineering contractor entrusted by AE.

浸出和净化工段的工艺包由 AE 公司提供，净化后的液体杂质含量必须少于我公司技术方案中提出的要求，其他工艺由中蓝长化提供。

中蓝长化负责招标范围内的所有施工图设计工作，并提供美方项目总包单位所需的界区条件。

## Ⅵ. List of Deliverables

## VI.可交付成果清单

See the following table for the list of deliverables of this project.

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本项目的可交付成果清单见下表。

**List of deliverables**

**可交付成果清单**

| | Subject 主题 | Deliverables 可交付成果 | Remarks 备注 |
|---|---|---|---|
| 1 | Process file<br>工艺文件 | | |
| | | Equipment list 设备一览表 | Included in the design<br>包括在设计中 |
| | | Process description 工艺说明 | Included in the design<br>包括在设计中 |
| | | Utilities consumption 公用工程消耗清单 | Included in the design<br>包括在设计中 |
| | | Chemical consumption<br>化学品消耗清单 | Included in the design<br>包括在设计中 |
| | | P&ID 工艺及仪表流程图 | Included in the design<br>包括在设计中 |
| | | Sewage list 污水清单 | Included in the design<br>包括在设计中 |
| | | process flow diagram（PFD）工艺流程图 | Included in the design<br>包括在设计中 |
| | | Datasheet of all process equipment<br>所有工艺设备的工艺数据表 | Included in the design<br>包括在设计中 |
| | | RFQ (Requisition for quotation) for process equipment 设备请购书 | Included in the design<br>包括在设计中 |
| | | Datasheet of equipment package 包装数据表 | Included in the design<br>包括在设计中 |
| | | Process emission calculation report<br>工艺排放计算报告 | The local format provided by the owner shall be included in the design, and the experimental data shall be coordinated.<br>设计中应包含业主提供的本地格式，并协 |

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| | | | |
|---|---|---|---|
| | | | 调实验数据。 |
| 2 | Equipment layout drawing<br>设备布置图 | | |
| | | Equipment layout 设备布置图 | Included in the design<br>包括在设计中 |
| | | Cutaway view 剖视图 | Included in the design<br>包括在设计中 |
| 3 | Laboratory<br>实验室 | | |
| | | Analysis manual, including sample frequency and test standard<br>分析手册，包括样品频率和测试标准 | Included in the design<br>包括在设计中 |
| | | Laboratory equipment list<br>实验室设备清单 | Included in the design<br>包括在设计中 |
| | | Laboratory layout 实验室布局 | Included in the design<br>包括在设计中 |
| 4 | Environment<br>环境 | | |
| | | Datasheet of waste gas treatment unit, data of treated gas for emission permitting 排放装置数据表、空气许可证申请数据 | Local requirements shall be provided by the owner and included in the design.<br>当地的要求应由业主提供，并包含在设计中。 |
| | | Inquiry of waste gas treatment unit<br>排放处理单元查询 | Local requirements shall be provided by the owner and included in the design.<br>当地的要求应由业主提供，并包含在设计中。 |
| | | Datasheet of wastewater treatment | Local requirements |

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| | | | |
|---|---|---|---|
| | | plant, data of treated water for emission permitting<br>污水处理装置数据表、用水许可证申请数据 | shall be provided by the owner and included in the design.<br>当地的要求应由业主提供，并包含在设计中。 |
| | | Request for quotation and inquiry of wastewater treatment unit<br>排放处理装置报价询价 | Local requirements shall be provided by the owner and included in the design.<br>当地的要求应由业主提供，并包含在设计中。 |
| 5 | Safety 安全 | | |
| | | Datasheet of safety relief valve (PSV)<br>安全泄压阀（PSV）数据表 | Included in the design<br>包括在设计中 |
| | | HAZOP report<br>HAZOP 研究报告 | Included in the design<br>包括在设计中 |
| 6 | Electric part<br>电气部分 | | |
| | | Engineering specifications for electric design 电气设计说明 | Included in the design<br>包括在设计中 |
| | | Detailed electric load of the device and statistics of electric consumption<br>装置用电负荷明细及用电量统计 | Included in the design<br>包括在设计中 |
| | | Material take-off and cable list<br>电气设备材料表、电缆敷设表 | Included in the design<br>包括在设计中 |
| | | Zoning map of explosive hazard<br>爆炸危险区域划分图 | Included in the design<br>包括在设计中 |
| | | Power Distribution Plan, cable tray layout and sectional view<br>配电平面图、电缆桥架（电缆沟）平剖面图 | Included in the design |

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| | | | |
|---|---|---|---|
| | | Power System Diagram<br>动力系统图 | Included in the design<br>包括在设计中 |
| | | Typical Installation Drawing<br>典型安装图 | Included in the design<br>包括在设计中 |
| 7 | Instrumentation<br>仪器仪表 | | |
| | | Engineering specifications for instrument<br>仪表专业设计说明 | Included in the design<br>包括在设计中 |
| | | Instrument index 仪表索引表 | Included in the design<br>包括在设计中 |
| | | I/O index (including DCS, SCADA, CCS, SIS, GDS, etc.)<br>I/O 索引表（包括：DCS、SCADA、CCS、SIS、GDS 等） | Included in the design<br>包括在设计中 |
| | | Instrument datasheet 仪表数据表 | Included in the design<br>包括在设计中 |
| | | Instrument Layout 仪表布置图 | Included in the design<br>包括在设计中 |
| | | Hook-up drawing 仪表安装图 | Included in the design<br>包括在设计中 |
| | | List of alarm, cause & effect matrix cable connection table, MTO<br>报警、联锁保护设定值、因果表、电缆连接表、材料表 | Included in the design<br>包括在设计中 |
| | | Automation control logics<br>控制方案 | Included in the design<br>包括在设计中 |
| | | Control room plan, instrument pipeline plan and instrument supply pipeline plan<br>控制室平面图、仪表管线平面布置图、仪表供气管道平面布置图 | Included in the design<br>包括在设计中 |
| | | Instrument cable tray (slot box) laying direction diagram, instrument measurement pipeline connection | Include in the design<br>包括在设计中 |

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| | | | |
|---|---|---|---|
| | | diagram, safety instrument system logic block diagram.<br>仪表电缆桥架（槽盒）敷设走向图、仪表测量管路连接图、安全仪表系统逻辑框图。 | |
| 9 | Piping 管道 | | |
| | | Engineering specifications for piping<br>管道专业设计说明 | Included in the design<br>包括在设计中 |
| | | Insulation specification<br>绝热保温设计说明 | Included in the design<br>包括在设计中 |
| | | Line list<br>管线清单 | Included in the design<br>包括在设计中 |
| | | Pipeline classification<br>管道等级表 | Included in the design<br>包括在设计中 |
| | | 3D model<br>三维模型 | Included in the design<br>包括在设计中 |
| | | Piping layout<br>管道布置图 | Included in the design<br>包括在设计中 |
| | | List of valves, including models and specifications<br>阀门清单，包括型号和规格 | Included in the design<br>包括在设计中 |
| | | Material Take-off<br>材料统计 | Included in the design<br>包括在设计中 |
| | | Isometric drawing with bill of materials<br>ISO 工程图纸和材料清单 | Included in the design<br>包括在设计中 |
| | | List of special piping material<br>特殊管件一览表 | |
| 9 | Mechanics<br>机械 | | |
| | | Specification of equipment<br>设备规格 | Include in the design<br>包括在设计中 |
| | | Equipment data sheets<br>设备数据表 | Include in the design<br>包括在设计中 |

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| | | | |
|---|---|---|---|
| | | Equipment outline drawing<br>设备外形图 | Include in the design<br>包括在设计中 |
| | | Equipment loading layout<br>土建工程设计设备荷载 | Include in the design<br>包括在设计中 |
| | | Coating specification<br>涂装规范数据表 | Include in the design<br>包括在设计中 |
| 10 | Trial production guidance<br>试生产指导 | | |
| | | Technical specification（SOP）<br>技术规范（操作规程） | |
| | | Equipment maintenance operation procedures<br>设备维护操作程序 | |
| | | Safety production regulations<br>安全生产规程 | |
| | | Work Shift arrangement<br>工作班次安排 | |
| | | Process control plan<br>工艺控制计划 | |

## Ⅶ. Quotation Table for Technical Services

## VII.技术服务报价表

(1) Quotation scheme:

(1)报价方案：

This quotation is itemized for four parts of technical services: process design (from purified black mass leachate to precursor product and lithium carbonate by-product), construction drawing design, American standard transformation, chemical commissioning guidance and procurement

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services. See the table below for details:

本报价单分为施工图设计、美标转换、试生产指导和采购服务四部分。详见下表：

| Content<br>内容 | Quotation amount<br>(10，000 dollars)<br>报价金额<br>（万美元） | Remarks<br>备注 |
|---|---|---|
| **1. Construction drawing design**<br>**1、施工图设计** | 74.8 | Including the wastewater treatment, sodium sulfate crystallization unit, and metal sulfate product crystallization units.<br>包括废水处理、硫酸钠结晶单元、金属硫酸盐产品结晶单元。 |
| **2. Design transformation**<br>**2、设计转化** | 9 | |
| American standard conversion<br>美国标准转换 | 9 | The owner is responsible for the transformation of our technical drawings into American standards, and we can also do the transformation of American standards at an additional charge<br>业主负责将我们的技术图纸转换为美国标准，我们也可以额外收费转换美国标准 |

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| | | |
|---|---|---|
| **3. Technical guidance for chemical commissioning**<br>**3、试生产指导** | 19.2 | |
| Field technical guidance<br>现场技术指导 | 15.8 | 3 person-times, totally 180 working days.<br>3人次，共180个工作日。 |
| Travel and visa<br>旅行和签证 | By the owner<br>由业主提供 | By the owner<br>由业主提供 |
| Technical procedures, equipment maintenance and operation procedures, safety regulations, shift system, process control plan.<br>技术规程、设备维护操作规程、安全规程、交接班制度。 | 3.4 | Equipment commissioning, trial production and production guidance<br>设备调试、试生产、生产指导 |
| **4.Procurement services**<br>**4、采购服务** | 5 | |
| **add up to**<br>**总计** | 108 | |

Note: For the construction drawing design, the total man-days are calculated according to 8 hours as one man-day, the total design period is 150 weekdays, the unit price of the design engineer's weekdays is USD500/ (person * days), and the on-site technical guidance is USD600/ (person * days). The final total contract price shall be adjusted according to the needs of the US side.

注：施工图设计总工日按 8 小时为一个工日计算，总设计周期为 150 个工作日，设计工程师工日单价为 500 美元/（人*天），现场技术指导为 600 美元/（人*天）。最终的总合同价格，根据美方需求进行调整。

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## Ⅷ. Performance guarantee

## Ⅷ.性能保证

Chonfar promises to combine the industry-leading advanced technology with professional engineering design to ensure that the investment and operating costs of the project reach the industry-leading level. Under the condition that the metal salt solution meets the requirements of table-2 in the process flow scheme, the unit can produce the following two precursors with different particle sizes.

中蓝长化承诺将本行业领先的先进技术结合到专业的工程设计中，确保本项目的投资及运营成本达到行业领先水平。在金属盐溶液满足工艺流程方案中表-2 的条件下，本装置可生产以下两种不同粒径的前驱体。

| | |
|---|---|
| Small material D50 of 6 microns | D10>3.0 μm |
| | 4< D50 < 7 μm |
| | D90<20.0 μm |
| Large material D50 of 12 microns | D10>4.0 μm |
| | 11 < D50 < 13 μm |
| | D90<27.5 μm |

The precursor quality can meet cathode sintering feedstock requirement, and impurity composition meet specified requirement on Sulfur and Sodium, and the specification listed in below table.

前驱体品质满足作为锂电正极烧结原料的需要，且杂质组成满足以下特定硫、钠需求和下表所列规格。

Specific requirements on Sulfur and Sodium: Na<300 ppm, Sulfur<800 ppm.

硫、钠的指定要求：钠<300 ppm，硫<800 ppm。

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## Ⅸ.Contract payment method：

## Ⅸ.合同付款方式：

1. From the day contract was signed, Ascend Elements shall pay 30% of the total amount to Chonfar within 20 working days.

2. When Chonfar issues all available design deliverables without finalizing the design of all equipment, Ascend Elements shall pay 30% of the total amount within 20 working days.

3. When Chonfar issues final design deliverables, Ascend Elements shall pay 25% of the total amount within 20 working days.

4. When the engineers starts the commissioning work on site (United States), Ascend Elements shall pay 10% of the total amount within 20 working days.

5. When the commissioning is completed and accepted by Ascend Elements, Ascend Elements shall pay 5% of the total amount within 20 working days.

1、合同签订后，业主应在 20 个工作日内支付总金额的 30%。

2、 中蓝长化提交设备设计定稿前所有可完成的设计交付文件时，业主应在 20 个工作日内支付总金额的 30%。

3、 中蓝长化提交最终版设计交付文件时，业主应在 20 个工作日内支付总金额的 25%。

4、调试人员到美国开始调试后，业主应在 20 个工作日内支付总金额的 10%。

5、调试完成后，业主应在 20 个工作日内支付总金额的 5%。

## Ⅹ. Design progress plan

## Ⅹ.设计进度计划

The technology is advanced, mature and reliable, and there are many

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industrialized factories in China. However, due to the construction of the project in the United States, in this project, in addition to the determination of raw materials and clear specifications and standards, in order to ensure the rationality and accuracy of the selection of design parameters, the owner also needs to provide raw materials for verification experiments to verify the technological process and related parameters. With the support of the verification experiment, it is estimated that the construction drawing design can be completed in 5 months (22 weeks) according to the schedule. See table for the implementation schedule of the construction drawing design of specific projects.

技术先进、成熟、可靠，中国有很多的工业化工厂。但由于本项目在美国的建设，在本项目中，除了确定原材料和明确的规格和标准外，为了保证设计参数选择的合理性和准确性，业主还需要提供原材料进行验证实验来验证工艺流程及相关参数。在验证实验的支持下，预计施工图设计可在 5 个月（22 周）内完成。

## XI. Description of technical service quotation

## XI.技术服务报价单说明

The technical service quotation scope is drawn up according to the demand put forward by Party A and the actual demand of project construction and commissioning, which needs further confirmation by Party A. After Party A determines the service scope, the final technical service quotation will be further determined by both parties through negotiation.

技术服务报价范围根据甲方提出的需求和工程建设调试的实际需求制定，需甲方进一步确认，甲方确定服务范围后，由双方协商确定。

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ANNEX 3



## 1. Project Introduction

Ascend Elements, Inc., a company duly organized and existing under the laws of the State of Massachusetts, whose mailing address is 54 Rockdale St, Worcester, MA 01606, USA (below as "AE").

AE is going to build a project to recover precious metals (Ni, Co, Mn and Li) from spent NMC type Lithium-Ion battery. The project capacity is 15,000 tons black powder per year, the black powder is produced by shredding NMC battery. Targeted startup date would be in Q2 of 2023.

### 2.3 Codes and Standards

The DETAIL ENGINEERING and further works on the project shall be based on the national standards, codes, and regulations of the USA, as well as state and local regulations. The engineering firm shall cooperate with U.S. local engineering firm complete the detailed engineering, implement/response the code related engineering document review comments. The legal regulations and technical rules are listed below

- Pipping design as per ASTM and ASME 31.3/36.1 if applicable
- B.L tie-in points with ANSI flanges
- Motors: IP55. Control panel enclosure: Nema 4/4X.
- 40 CFR 63, National Emission Standards for Hazardous Air Pollutants for Source Categories.
- 40 CFR 63, Subparts G and H ("HON rule") for emissions of VOC to air from process vents, tanks, wastewater, fugitive components, and other sources.
- NEC 500 National Electrical Code
- IEEE Institute of Electrical and Electronics and Engineers 835, 841, 1584
- GAP Guideline 2.5.2 for the plot plan design
- ASCE/SEI 7-10 Minimum Design Loads for Buildings and Other Structures
- IBC-2012 International Building Codes
- ACI 318-11 Building Code Requirements for Structural Concrete
- FAA Advisory Circular 70 Obstruction Marking and Lighting

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- 40 CFR 68 – Protection of Environment Chemical Accident Prevention Provisions
- ANSI Z358.1 American National Standard for Emergency Eyewash and Shower Equipment
- ADA Americans with Disabilities Act
- ACI American Concrete Institute (among others, ACI CT CT-13 “ACI Concrete Terminology”)
- Kentucky Stormwater Management Manual
- American Welding Society (AWS)
- 29 CFR 1910.119
- Occupational Safety & Health Act (OSHA)
- International Building Code (IBC)
- American Institute of Steel Construction (AISC)
- Air-Conditioning, Heating, and Refrigeration Institute (AHRI)
- American Society of Mechanical Engineers (ASME)
- American Society of Civil Engineers (ASCE)
- National Fire Protection Association (NFPA)
- American National Standards Institute (ANSI)
- NFPA 70, National Electric Code (NEC)
- American Society for Testing Materials (ASTM)
- American Society of Heating Refrigeration and Air Conditioning Engineers (ASHRAE)
- International Society of Automation (ISA)
- American Petroleum Institute (API)

## 2. BEDD - Basic engineering design data

### 3.1. Units

All the engineering documents shall use **imperial units except weight in metric, use English language.**

- Mass flow: ton per day, t / d
- Length: inch, or feet, ft.

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- Pressure: pounds per square inch, psi or $lbf/in^2$
- Volumetric flow for liquid: US gallons per minute, gpm
- Volumetric flow for gas: Standard cubic feet per hour, SCFH
- Energy(heat): British Thermal Unit, BTU
- Heat Capacity: BTU per pound, Fahrenheit
- Density: pound per cubic feet, $lb / ft^3$
- Enthalpy: BTU per pound, BTU / lb
- Viscosity: pressure * time, cP
- Surface Tension, force per inch, lbf / in
- Revolution (Rotation): revolutions per minute, rpm
- Frequency: Cycle per Second, Hz
- Voltage: Volt, V
- Resistance: Ohm, W
- Current: Amps (Ampere), A
- Power, horsepower, hp
- Apparent Power, horsepower, hp, Kilovolt Ampere, kVA
- Noise (Sound), decibel (A scale), dB(A)
- Moment of Force, force * length, lbf*ft
- Air Humidity, percent relative humidity, % RH
- Heat Transfer Coefficient, Power/area temperature, BTU / hr $ft^2$ °F
- Fouling Factor: Area*Temperature / power, $ft^2$ °F hr / BTU

### 3.2. Operating hours and flexibility

7day-24h, annual working hour is 7,200h， Plant design life is 20 years.

Operating flexibility is 60-100%.

### 3.3. Site Condition

- Outdoor temperature range: -10.5~35℃ (13~95℉)
- Average July high temperature 89.8ºF

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- Average January low temperature 25.8ºF
- Max. temperature recorded 110 ºF
- Min. temperature recorded -22 ºF

By road, max weight: 180,000 lbs, max L x W x H = 200’ x 26’ x 15’, 2 points support

Hold 300,000 lbs, max L x W x H = 100’ x 26’ x 15’, continuous support

Standard 40’ HQ container L x W x H =39.4’ x 7.2’ x 9.8’

Earthquake spectral response acceleration at short (0.2 sec.) periods 0.101g (Hold)

### 3.4. Design Conditions

#### 3.4.1 Design Pressure

The design pressure is the pressure for which equipment shall be mechanically designed. To avoid activation of the safety devices by minor pressure fluctuations during plant operation, a minimum pressure margin between the maximum normal operating pressure and the design pressure shall be observed as per the following schedule.

| Max. operating pressure | Design Pressure |
|---|---|
| <14.5 psig | Min 29 psig |
| 14.5-145 psig | Operating pressure + 14.5 |
| >145 psig | Operating pressure + 10% |

Storage vessels subject to internal pressure: As per API 650 and 620 requirements.

Pressure vessels subject to external pressure: Refer to ASME Section VIII Div. 1 / Div. 2

#### 3.4.2 Design Temperature

The design temperature is the temperature for which equipment is mechanically designed.

| Max. operating temperature | Design temperature |
|---|---|
| <125 ºF | 175 ºF |
| >125ºF | Operating temperature + 50 |

### 3.5. Battery Limit Definition

All the incoming steams are delivered by trucks, the battery limits are at the unloading points

| **Incoming stream** | **Provided via** | **Battery limits** |
|---|---|---|
| Black mass | Superack | Process unit |

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| | | |
|---|---|---|
| Liquid chemicals [1] | Tank truck, 45,000 lbs/truck, ISO tank, | Tank farm |
| P207, C272, P507 | ISO tank? | Process unit |
| PAM, PAC | IBC tote, 275 gallons/tank | Utility units |
| City water | Pipeline | |
| Natural gas | Pipeline | |
| Electricity (Hold) | | |

**Note**

1) Includes 31% hydrogen peroxide, 98% sulfuric acid, 37% hydrochloric acid, 32% sodium hydroxide, ect.

| **Outgoing stream** | **Provided via** | **Battery limits** |
|---|---|---|
| Solid products [1] | 1 Ton Supersack | Process unit |
| Solid by-products [2] | 1 Cub. Yard, 7,000 lbs self-dumping forklift hopper | Tank farm |
| Solid waste, sludge of wastewater unit | 1 Cub. Yard, 7,000 lbs self-dumping forklift hopper | Process unit |
| Process wastewater | Pipeline to ditch | Utility units |
| Sanitary wastewater | Pipeline to ditch | |

**Note**

1) Includes Nickle Sulphate Hexahydrate, Cobalt Sulphate Heptahydrate, Manganese Sulphate Monohydrate.
2) Includes Iron/aluminium slag, Graphite, Sodium Sulphate,

### 3.6. Utility specification

Utility details

| No. | Parameter | Requirements |
|---|---|---|
| 1 | **LOW PRESSURE STEAM** | |
| | Pressure, psig | 50-72 |
| | Temperature, °F | 298-318 |
| 2 | **UTILITY WATER** | |
| | Pressure, psig | 50-55 |
| | Temperature, °F | Ambient Temperature |

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| No. | Parameter | Requirements |
|---|---|---|
| 3 | **CIRCULATING COOLING WATER** | |
| | Supply Pressure, psig | >60 |
| | Return Pressure, psig | >30 |
| | Supply Temperature, °F | 91 |
| | Return Temperature, °F | 109 |
| 4 | **TREATED WATER (DEMINERALIZED WATER)/Consumption, Material Balance** | |
| | Pressure, psig | 60-70 |
| | Temperature, °F | Ambient Temperature |
| | Purity | Conductivity<10µS/cm |
| 5 | **INSTRUMENT AIR (**Oil-free compression**)** | |
| | Pressure, psig | 80-90 |
| | Temperature, °F | Ambient Temperature |
| | Water dew point, °F | -40 @ distribution pressure |

**Natural Gas Specification (Hold)**

Natural Gas from the local Pipeline is used as steam boiler fuel gas.

| Parameters | Unit | Specification for design |
|---|---|---|
| $CH_4$ | Vol% | 94.7 |
| $C_2H_6$ | Vol% | 3.84 |
| $C_3H_8$ | Vol% | 0.82 |
| $C_4H_{10}$ | Vol% | 0.15 |
| $CO_2$ | Vol% | 0.25 |
| $N_2$ | Vol% | 0.24 |
| Total moisture | ppmw | 5 |
| Total sulfur | ppmv | 5 |
| LHV | Btu/lb | 21160 |
| Temperature | °F | 70.0 |
| Pressure | Psig | 200 |

### 3.7. Electrical system

480V 3ph, 208/120V, 60Hz

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120/240 1ph

SAS (safety and automation system) shall remain in operation for minimum 30 minutes after total electrical power loss.

DC-power supply for control of switchgears shall remain in operation for 30 minutes after total electrical power loss.

| | Range, hp | Voltage, V | Phase, ϕ |
|---|---|---|---|
| Switchgear Control / MV/HV Motor Control | | 125VDC | |
| Instrumentation: Control | | | 1 |
| Instrumentation: Supply | | 120 | 1 |
| Lighting | | 120 | 1 |
| Electrical Heat Tracing process | | 120 | 1 |
| UPS (Output) | | 120 | 1 |
| Motors | <1 | 120<br>208<br>480 | 1<br>3<br>3 |
| Motors | 1 to 240 | 480 | 3 |
| Motors | >240 | 4,160 | 3 |
| Motors space heater | | 120 (240V rated) | 1 |

### 3.8. Instrumentation

Select UL certified instruments**.**

### 3.9. Fire Fighting

Requirements: According NFPA and local government requirements.

### 3.10. Boiler

One Steam Boiler / no stand-by boiler will be foreseen, natural gas is fuel.

### 3.11. Environmental Protection

### 3.11. 1 Noise Control

| | Unit | OSHA requirements |
|---|---|---|
| Allowable exterior noise level | dB(A) | <85 |
| Allowable noise level inside compressor shelters | dB(A) | <90 |

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OSHA allows a mean noise level of 90 dB(A) for an 8h shift

### 3.11. 2 Air Emissions

| Pollutant | Unit | Emission Limitation |
|---|---|---|
| NOx | Ib/MMbtu HHV Fuel Gas | 0.01 |
| CO | ppmv in stack 0% $H_2O$ and 3% O2 | 10.0 |
| PM10 and PM2.5 | Ib/MMscf (million metric scf) | 7.6 |
| VOC | Ib/MMscf (million metric scf) | 5 |
| $SO_2$ | ppmv in stack 0% $H_2O$ and 3% O2 | 5 |
| $NH_3$ | ppmv in stack 0% $H_2O$ and 3% O2 | 10 |

### 3.11. 3 Liquid Effluent Quality Requirements

| Pollutant | Daily Maximum (mg/L) | Monthly Average (mg/L) | Daily Maximum (lbs/d) |
|---|---|---|---|
| BOD | 80 | 30 | |
| TSS | 150 | 46 | |
| pH | 6-9 | 6-9 | |
| Total copper | 3000 (hold) | 1000 (hold) | |
| Total Nickel | 3000 (hold) | 1000 (hold) | |
| Total Zinc | 2000 (hold) | 1000 (hold) | |

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**ANNEX 4**

**Electrical Instrument Requirement**

## 1.1 Introduction

This guideline defines the Electrical Instrument Requirement to be used for all units and sub-units within the Apex 1 Plant

## 1.2 Motor Requirements

1.2.1 Motor Design

- Motor shall be designed for a minimum of 20 years of service.
- Motor shall be suitable for both indoor or outdoor
- The motor shall be designed to meet the overspeed requirements specified in NEMA MG -1, Subclause 12.52.
- The motor efficiency shall be according to NEMA MG-1, Table 12-12, determined in accordance with IEEE Std. 112-1991, subclause 6.4 Method B.
- Explosion Proof rated enclosure shall be used for Division 1 locations.
- Space heater shall be equipped for motors above 20 HP.
- The noise level of the motor shall be according to IEEE 841 Section 6.8.

1.2.2 Horsepower and Voltage

Motors shall be rated in accordance with below Table

| | **Range, hp** | **Voltage, V** | **Phase, ϕ** |
|---|---|---|---|
| Motors | <1 | 120 | 1 |
| Motors | 1 to 240 | 480 | 3 |
| Motors | >240 | 4,160(Hold) | 3 (Hold) |
| Motors space heater | | 120 (240V rated) | 1 |

1.2.3 Enclosures

Motor enclosures shall be as specified on the equipment data sheets. Corrosion resistant hardware shall be utilized. In general, they will be as follows.

a. Motor <1 HP

· TEFC (Totally Enclosed Fan Cooled) or TENV (Totally Enclosed, Non-Vented) for non-hazardous and Class 1, Division 2 Areas

b. 1 HP Through 240 HP

· TEFC (Totally Enclosed Fan Cooled) for non-hazardous and Division 2 hazardous area Meet IEEE 841 Standard. Nameplates for motors shall list IEEE 841.

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**1.3 Instruments Requirements**

Select UL listed instruments, FM certification is acceptable.
10% spare I/O for control panel shall be provided, AC for control panel shall be provided if required per calculation.
Control Panel: Automation Control System with Allen Bradley or Siemens PLC automation.
The field instruments, outdoor panels and its accessories shall have an ingress protection of NEMA 4x (National Electrical Manufacturers Association)

1.3.1 Temperature Measurements

RTD type Pt 100 for temperatures -300 °F to 550 °F. 4-20 mA signal output if necessary.
Demonstration unit shall be °F

Accuracy:
Temperature Gauges: better than ± 1.5% of full scale
Thermocouple type K and R: tolerance class 1 as per ASTM-E230
RTD as per ASTM-E1137

1.3.2 Pressure Measurements

Bourdon tube type pressure gauge should be used for pressure > 15 psig.
Diaphragm type pressure gauge only can be used when pressure <15 psig.
Demonstration unit shall be psig

Accuracy:
Pressure gauges better than ± 2.5% of full scale
Pressure transmitter better than ± 0,25%of adjusted span

1.3.3 Level Measurements

Any level transmitter installed on vessels, except storage tanks, shall have an integrated indicator and where necessary an additional level gauge (glass or magnetic level gauge by piping).
For all level measurements the Range shall be 0 to 100%.

Accuracy:
Level measurements in process vessels better than ± 5.0% of full scale

1.3.4 Flow Measurements

Were a low-pressure drop is required an Annubar Elements, Low Loss Venturi or a flow nozzle shall be used.
For process fluide transfer line Ultrasonic flow measurements shall be used.
Accuracy:

Orifice plates, venturi tubes; nozzles >50% range better than ± 2.0% of full scale for liquids
better than ± 2.0% of full scale for gas
Annubar measurements better than ± 5.0% of full scale

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Ultrasonic measurements better than ± 3.0% of full scale
Rotameters better than ± 5.0% of full scale

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## ANNEX 5
## Engineering Deliverables List

| | Discipline | Deliverables |
|---|---|---|
| 1 | Process | |
| | | Equipment list |
| | | Process description |
| | | Utility consumption |
| | | Chemical consumption summary |
| | | P&IDs (searchable format) |
| | | Heat and material balances |
| | | Effluent list |
| | | Block Flow Diagram (BFD) |
| | | Process Flow Diagram |
| | | Process data sheet for all process equipment |
| | | Data Sheet for package process |
| | | Process Emissions Calculation Report |
| | | Effluent and byproduct list |
| | | Process data sheet for all process equipment. |
| 2 | Plot Plan | |
| | | Process equipment layout |
| | | Layout Section drawings |
| 3 | Lab | |
| | | Analysis Manual with sample frequency and test standards |
| | | Laboratory equipment list |
| | | Laboratory layout |
| 4 | Environment | |
| | | Emission treatment unit data sheet, data for Air Permit Application |
| | | Emission treatment unit Request for Quote RFQ |
| | | Wastewater treatment unit data sheet, data for Water Permit Application |
| | | Emission treatment unit Request for Quote RFQ |
| 5 | Safety | |
| | | Pressure Safety Device data sheet (Device will cover vacuum breakers, conservation vents, rupture disks along with relief valves), Including basis of design. |
| | | HAZOP study report, Close-out Report |
| | | Perform risk based HazOp with documented requirements for Safety Instrumented System (SIS) including:<br>o Safety Requirements Specification (SRS)<br>o Safety Integrity Levels (SIL) |
| 6 | Electrical | |
| | | ELECTRICAL LOAD SUMMARY AND POWER BALANCE |

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| | | |
|---|---|---|
| | | Emergency Power Requirements |
| | | SINGLE LINE DIAGRAM |
| | | SPECIFICATION AND DATASHEET FOR MOTOR |
| | | SPECIFICATION FOR PACKAGE EQUIPMENT |
| | | Material Take-off (MTO) |
| | | Electrical Equipment Layout Drawings |
| | | Motor List |
| | | Electrical Hazardous Area Classification Map |
| 7 | Instrument | |
| | | Instrument list |
| | | Control Description, Including functional specification |
| | | PLC wiring logic drawing |
| | | Instrument Specifications |
| | | Instrument Data Sheets (including control valves, gauges, on-line analyzers, etc.) |
| | | PLC/DCS/SIS Configuration, Panels Layout (RIEs), and Programming |
| | | Alarm and Set Point List/Trip Schedule |
| | | Process Automation and Controls Network Configuration (DCS, SIS, HMIs, MCCs, PLCs, VFDs, Etc.) |
| | | Safety Functions and Safety Logic |
| | | Instrument List with I/O Type and I/O Assignments |
| | | Control System/Panel Power Schematics |
| | | I/O Schematics or Instrumentation Wiring/Loop Diagrams |
| | | Process MCCs and Motor Controls |
| | | Equipment Installation Details (J Box, Mounting Details, Etc.) |
| | | Cable / Conduit Schedule |
| | | Electrical Raceway / Conduit Layout including Field Terminal/Junction Boxes |
| 8 | Pipping | |
| | | Pipe specification, line list |
| | | 3D models with piping layouts of Navisworks file |
| | | Valve list including model, specification |
| | | Tie-in list, battery limit interface drawings |
| | | MTO (including Piping, Insulation, Painting, Cathodic Protection, Specialty Piping Parts) |
| | | ISO drawings with Bill of Material, Detail Drawing of Special Fabricated Items if any |
| | | Piping Class Index, Piping Class |
| | | Piping Design Support Standard Details |
| | | Specification for pipe tracing, insulation, and jacketing |
| 9 | Mechanical | |
| | | Equipment Specification |
| | | Mechanical Equipment Data Sheets |

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| | | |
|---|---|---|
| | | Engineering Drawings (static equipment) Guide Drawings as input for vendor drawings |
| | | Equipment loads for civil design |
| | | Painting Specification Data Sheets |
| 10 | Numbering and Symbology | |

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# APEX 1 Project
# Unit Numbering Procedure

## Ascend Elements, Inc.

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **2** | **SP** | | | | | | |
| **1** | **SP** | **03/21/22** | | **BT** | **04/01/22** | | Complete, ready for use |
| Rev. | Name | Date | Name | Name | Date | Status | Remark, kind of revision |
| | Prepared, revised | | Checked | Approved | | | |

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# 1. Introduction

This guideline defines the numbering system to be used for all units and sub-units within the Apex 1 Plant.

# 2. Unit Numbering

This is a three-character numerical code that identifies the units within the boundaries of the plant, as follows.

110 Metal Extraction Leaching
120 Extraction
130 Metal Extraction Lithium Precipitation
131 Li MVR
140 Crystallization
141 Co MVR
142 Mn MVR
143 Ni MVR
200 pCAM (Common)
210 Precursor Leaching
211 Black Mass Roasting
212 Black Mass Leaching and Purification

220 Metal Adjustment and Precursor Synthesis
230 Precursor Separation and Packaging
231 Precursor Separation and Drying
232 Precursor Post-treatment (blending, sieving, magnetic removal and packaging)

240 Ammonia Recovery
250 Precursor Lithium Precipitation
300 CAM (Common)
310 CAM Dry Mixing
320 CAM Sintering
330 CAM Sizing
340 CAM Coating
350 CAM Blending and Packaging
360 CAM LiOH drying and milling
410 Graphite Purification
420 Graphite Filtration
430 Graphite Drying and Packaging
010 Labs
020 Demineralized Water Treatment
030 Cooling Water System
040 Boiler and Steam System
050 Instrument and Plant Air System

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060 Process Wastewater Treatment
- 061 Metal Extraction Sodium Sulfate MVR
- 062 Saltwater Evaporation
- 063 Precursor Heavy Metal Removal Waste Water
- 064 Precursor Waste Water RO
- 065 Precursor Sodium Sulfate MVR

070 Tank Farm
080 Warehouse
091 Control Room
092 Electrical Substation(s)
093 Oxygen generation
094 Nitrogen evaporation
095 CO2-free air generation
000 – Miscellaneous (including offices)

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# 3. Equipment Identification

| 1 | - | E | E | E | - | 1 | 1 | 0 | 0 | 1 | | A | / | B | / | C |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| a | | b | b | b | | c | c | c | d | d | | e | | | | |

Example: 1 - E -1101 A/B

*Heat Exchanger I in Unit 110, sequential number 01, two exchangers parallel (A/B)*

| | | | |
|---|---|---|---|
| a | Project phase number | 1 digit | |
| b | Equipment code | 1 to 3 letters | Refer to paragraph 7 |
| c | Unit System (Unit No.) | 3 digits | |
| d | Sequence Number | 2 digits | |
| e | Suffix | 1 letter | |

# 4. Pipeline Identification

| | | | |
|---|---|---|---|
| a | Unit System (Unit No.) | 3 digits | |
| b | Service Code | 4 digits max. | Refer to paragraph 6 |
| c | Sequence Number | 3 digits max | |
| d | Line Size | 5 digits max. | |
| e | Pipe Material Specification | 3 digits max. | See details below |
| f | Insulation Code | 7 digits max. | Refer to 4.3 |
| g | Phase Number | 1 digit | |

Painting see Painting specification

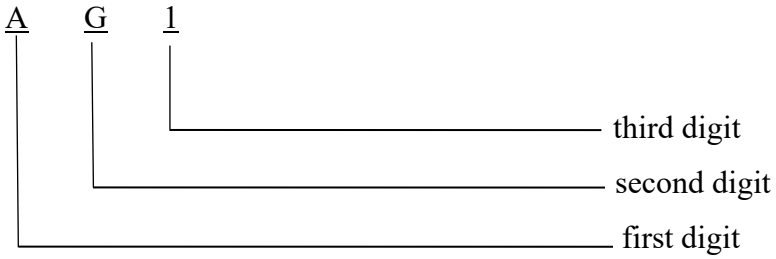
| **1** | **-** | **1** | **1** | **0** | **-** | **B** | **F** | **W** | **-** | **0** | **0** | **1** | **-** | **1** | | **1** | **/** | **2”** | **-** | **A** | **G** | **1** | **-** | **W** | **T** | **1** | | **1** | **/** | **2”** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **g** | | **a** | **a** | **a** | | **b** | **b** | **b** | **b** | **-** | **c** | **c** | **c** | | **d** | **d** | **d** | **d** | **d** | **-** | **e** | **e** | **e** | **-** | **f** | **f** | **f** | **f** | **f** | **f** | **f** |

Example: 1-110-BFW-001-1 ½”-AG1-WT1 ½”

**Definition of pipe material specification code:**

4.1 – Overview

The pipe material specification code consists of 3 digits (« eee »), the first digit is the letter representing the pressure grade, the second digit is the material code, and the third digit is the number to distinguish other types under the same material code,




4.2 - First digit

The first digit is the Pressure class meaning the following table

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| Character | Flange nominal pressure | Flange Standard |
|---|---|---|
| A | 150LB | ASME B16.5 |
| B | 300LB | |
| C | 400LB | |
| D | 600LB | |
| E | 900LB | |
| F | 1500LB | |
| G | 2500LB | |

4.3 Second and third digit

The second and third digits represent the body material with letters

G1 - PVC PLASTIC PIPE
G2 – CPVC PLASTIC PIPE
G3 - for HDPE PLASTIC PIPE
G4 - PTFE. PLASTIC PIPE
G5 - PP PLASTIC PIPE
C1 - CARBON STEEL A106B
C2 - HIGH TEMPERATURE CARBON STEEL
C3 - GALVANIZED CARBON STEEL
C4 - PTFE LINED CARBON STEEL
C5 - CARBON STEEL (BOILER BLOWDOWN)
S1 - STAINLESS STEEL TP304L
S2 - STAINLESS STEEL TP304
S3 - STAINLESS STEEL 316L
S4 - STAINLESS STEEL TP316L
H1 - Lining and internal anti-corrosion
A1 - ALUMINUM PIPE

4.4 Insulation Codes

| | |
|---|---|
| W1 | Heat Insulation Without Insulation of Flange Connection |
| W2 | Heat Insulation With Insulation of Flange Connection |
| WP1 | Heat Insulation As Personnel Protection |
| ET | Heat Insulation With Electrical Heat Tracing |
| ST | Heat Insulation With Steam Trace Heating |
| WT1 ½” | Heat Insulation / Insulation thickness |

Note: it is convenient to count thermal insulation materials

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# 5. Instrument Identification

| | | |
|---|---|---|
| a | Phase number | 1 digits |
| b | Function identifier (ISA S5.1) | 4 digits max. |
| c | Unit System (Unit No.) | 3 digits |
| d | Sequence Number | 2 digits |
| e | Suffix | 1 digit |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | - | P | I | C | A | - | 0 | 1 | 0 | 0 | 1 | A |
| a | | b | b | b | b | | c | c | c | d | d | e |

Example: 1-PICA-01001A

# 6. Service Codes

| Process Fluid | | | |
|---|---|---|---|
| AM | Acid Mist | LiS | Lithium Sulfate |
| CAS | Aqueous Ammonia Solution | NAS | Sodium Sulfide |
| CC | Calcium Chloride | NG | Natural Gas |
| CFC | Ferric Chloride | NiS | Nickel Sulfate |
| LCD | Liquid carbon dioxide | NiSR | Nickel sulfate raffinate |
| CO2 | Carbon Oxide | NPW | Process Water |
| CoS | Cobalt Sulfate | OPL | Organic Phase Liquid |
| CoSL | Cobalt sulfate solution | MS | Manganese sulfate |
| MaS | magnesium sulphate | MSS | Manganese sulfate solution |
| CS | Copper Sulfide | P204 | P204 |
| CSB | Sodium Bisulfate | P507 | P507 |
| CSC | Sodium Chloride | PC | Process Condensate |
| LSH | Liquid Sodium Hydroxide | PG | Process Off-gas |
| CSS | Sodium Sulfate | PS | Purification Slurry |
| CTP | Trisodium Phosphate | SA | 98% Sulfuric Acid |
| EA | Exhaust to Atmosphere | SA0 | 0.2 N Sulfuric Acid |
| HP | Hydrogen Peroxide | SA1 | 1.2 N Sulfuric Acid |
| HC | 31% Hydrochloric Acid | SA3 | 3 N Sulfuric Acid |
| HC1 | 1.2 N Hydrochloric Acid | SC | Sodium Carbonate |
| HC3 | 3 N Hydrochloric Acid | SSS | Sodium Sulfite Solution |
| HC6 | 6 N Hydrochloric Acid | TG | Tail Gas |
| LES | Leachate Slurry | WO | White Oil |
| LiC | Lithium Carbonate | LiCS | Lithium Carbonate Solution |
| PL | Filter press liquid | PLA | Conditioned liquid |
| CW | Concentrated water | OE | Extract oil |
| PLP | Liquid after precipitation | PL | 1st washing solution |
| PL | 2nd washing solution | PL | 3rd washing solution |
| PL | 4th washing solution | PL | 1st Slag washing water |

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| | | | |
|---|---|---|---|
| PLS | 2nd Slag washing water | CML | Concentrated mother liquor |
| Utility Fluid | | | |
| BD | Boiler Blow Down | LPC | Low Pressure Condensate |
| BFW | Boiler Feedwater | LPS | Low Pressure Steam |
| CA | Combustion Air | N2 | Nitrogen |
| CHW | Chilled Water | OD | Overflow Drain |
| CWR | Cooling Water Return | PA | Plant Air |
| CWS | Cooling Water Supply | PW | City Potable Water |
| DC | Dust Collection | RO | Reverse Osmosis Water |
| DI | DI Water | SAN | Sanitary Sewer |
| DW | distilled water | | |
| FW | Fire Fighting Water | SD | Storm Drain |
| HPC | High Pressure Condensate | SW | Rainwater |
| HPS | High Pressure Steam | WW | Wastewater |
| IA | Instrument Air | LPC | Low Pressure Condensate |
| TW | Cooling water for mechanical seal | SWW | Saponification wastewater |
| RWS | Chilled water supply | RWR | Return chilled water |

# 7. Equipment Codes

| | |
|---|---|
| A | AGITATOR, MIXER |
| AC | AIR COMPRESSOR |
| AD | AIR DRYER |
| B | BOILER |
| BW | BLOWER |
| CT | COOLING TOWER |
| DA | DEAERATOR |
| DCF | DUST COLLECTOR FILTER |
| DSH | DESUPERHEATER |
| F | FILTER |
| FMH | FLEXIBLE METAL HOSE |
| FS | FILL STATION |
| G | GEARBOX |
| GM | BEAD MILL |
| H | HOPPER |
| E | HEAT EXCHANGER |
| EA | AIR COOLER |
| EH | ELECTRICAL HEATER |
| FP | FILTER PRESS |
| HO | HOT OIL PUMP SKID |
| I | INTERNALS |
| J | EJECTOR, THERMO-COMPRESSOR JACKET SECTION |
| L | LOADING ARM |
| M | MOTOR |
| N | ELECTRICAL EQUIPMENT |
| N2 | NITROGEN GENERATION SKID |

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| | |
|---|---|
| P | PUMP |
| PSV | PRESSURE SAFETY VALVE |
| PU | PACKAGE UNIT |
| R | REACTOR |
| RD | RUPTURE DISC |
| RO | REVERSE OSMOSIS SKID |
| S | STACK, SILENCER |
| STR | STRAINER |
| T | STORAGE TANK |
| TOX | THERMAL OXIDIZER |
| TR | STEAM TRAP |
| V | DRUM, VESSEL, SEPARATOR |
| VB | VORTEX BREAKER |
| W | WEIGHT SCALE |
| WS | WATER SOFTENER |
| Y | CHEMICAL DOSING SKID |

# 8. Electrical Equipment Codes

| | |
|---|---|
| NA | Annunciator Panel |
| NB | Battery |
| NC | Control Board / Panel |
| ND | DC-System (Direct Current System) |
| NE | Miscellaneous Electrical Equipment |
| NF | Fire Alarm Device |
| NH | Electrical Heating |
| NI | Intercommunication Equipment |
| NK | Capacitor |
| NL | Lighting Panel |
| NM | Motor Control Center (low voltage) |
| NO | Power Outlet (welding, maintenance) |
| NP | Panel (Distribution Panel, Panel for Socket Outlets, etc.) |
| NS | Switchgear (medium voltage) |
| NT | Transformer |
| NU | UPS-System (Uninterrupted Power Supply) |

Examples:

1-NCE-04711-01 identifying frequency converter panel for variable speed motor number 01 of air cooler E-04711 located in substation (substation identified by unit number 00) of phase 1 project

| | | |
|---|---|---|
| NO-02001 | Outlet | number 01 in unit 20 |
| NS-00001 | MV-switchgear | number 01 in substation |
| NM-00003 | LV-MCC | number 03 in Substation |
| NT-00001A | Transformer | No. 01A in Substation |

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**ANNEX 7**

# Project Name

# Engineering document numbering procedure

# Ascend Elements, Inc.

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **0** | **Benoit Tranape** | **06/13/22** | | **Dan** | **Russel** | | Issued for Internal review |
| Rev. | Name | Date | Name | Name | Date | Status | Remark, kind of revision |
| | Prepared, revised | | Checked | Approved | | | |

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ANNEX 7

# 1. Scope of procedure

This procedure defines the system of numbering for any advanced manufacturing engineering (AME)document. Manufacturing facilities are included in the scope of this document.

# 2. Document number structure

Each AME document shall use the following code structure:

**AAAA-BB-C-DDD-EEE-FFF-GGG-H**

Each tag category is further detailed below:

**AAA or AAAA: covers the Project name**.

Example:

- BAS1 for Base 1
- BAS2 for Base 2
- APX1 for APEX1
- AME: covers all facilities

**BB: covers the Company name** (i.e. which is originating the document).

Example:

- AE: Ascend Element
- SS: SSOE
- BS: Blue Star
- EN: Enco
- Botree: BO

**C: covers the project Phase**

- 0: Common
- 1: phase 1
- 2: phase

Some manufacturing plants will be built in several phases, some in one phase. If the plant is built in one phase, “0” will be used for the phase code

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# AAAA-BB-C-DDD-EEE-FFF-GGG-H

**DDD: covers the Unit name**.
Example for APEX 1 (this section is specific to each manufacturing plant):

- 110 Metal Extraction Leaching
- 120 Extraction
- 130 Lithium Precipitation
- 131 Li MVR
- 140 Crystallization
- 141 Co MVR
- 142 Mn MVR
- 143 Ni MVR
- 200 pCAM (Common)
- 210 Precursor Leaching
- 220 Precursor Synthesis
- 230 Precursor Separation and Packaging
- 240 Ammonia Recovery
- 250 Precursor Lithium Precipitation
- 300 CAM (Common)
- 310 CAM Dry Mixing
- 320 CAM Sintering
- 330 CAM Sizing
- 340 CAM Coating
- 350 CAM Blending and Packaging
- 360 CAM LiOH drying and milling
- 410 Graphite Purification
- 420 Graphite Filtration
- 430 Graphite Dry and Packaging
- 020 Demineralized Water Treatment
- 030 Cooling Water System
- 040 Boiler and Steam System
- 050 Instrument and Plant Air System
- 060 Process Wastewater Treatment
- 061 Sodium Sulfate MVR
- 062 Saltwater Evaporation
- 070 Tank Farm
- 080 Warehouse
- 091 Control Room
- 092 Electrical Substation(s)
- 093 Oxygen generation
- 094 Nitrogen evaporation095 CO2-free air generation
- 010 - Labs
- 020 – Warehouse
- 030 – Offices
- 000 - Miscellaneous

**EEE: covers the Discipline**
Example:

- CIV: Civil
- ELE: Electrical
- EHS: Environment, Health and Safety
- MCH: Mechanical
- PCS: Process
- PCO: Pre-commissioning and Commissioning
- PCT: Process Control
- PMC: Project Management / Project Control
- QMS: Quality Management
- OPR: Operation
- STR: Structural

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# AAAA-BB-C-DDD-EEE-FFF-GGG-H

**FFF: covers the type of document**
Example:

- BFD: Block Flow Diagram
- CAL: Calculation
- DTS: Data-sheet
- DWG: Drawing
- HZP: HAZOP
- LST: List
- MAN: Manual
- MST: Method Statement
- PDE: Process Description
- PFD: Process Flow Diagram
- PID: Process and Instrumentation Diagram
- PLA: Plan
- PRO: Procedure
- PTP: Performance Test Procedure
- SCH: Schedule
- SOP: Standard Operating Procedure
- SPC: Specification

Note: Single line drawing will use the “DWG” code.

**GGG: Serial number**

This is a serial number assigned sequentially based on the next available number in the Master Documentation Registry (MDR). In order to generate the code the author of the document shall request a number to document control administrator (HOLD):

- 001
- 002
- Etc

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**AAAA-BB-C-DDD-EEE-FFF-GGG-H**

**H: covers the document Revision**

The revision code shall be updated after each revision of the document. The following codes shall be used:

- 0/1/2: Issued for comments
- A/B/C: Issued for Implementation

Example of document name: **APX1-AE-0-300-PCS-PDE-001-A**

- APX1: Apex 1
- AE: Prepared by AE
- 0: Common to all phases
- 300: CAM
- PCS: Process discipline
- PDE: Process description
- Sequence number: Serial number 001
- A: Issued for implementation

## 3. Document code registration

Once the document has been created the document control administrator (HOLD) shall update the MDR system.

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ANNEX 8

**1. Change request**

A change means any change or modification to the Agreement, including without limitations changes or modifications to the Statement of Work. A change can be added to or removed from the original Agreement.

A Change Request describes a requested or suggested change in the Statement of Work (including but not limited to the project specifications), and can be either initiated by Ascend Elements ("AE") or by Vendor.

2. **Change order**

Ascend Elements shall have the right at any time prior to the delivery date by written direction to make reasonable changes in the specifications, drawings, packaging, quantities, time, place and method of delivery, for goods or services covered by this Agreement.

If Vendor believes that such change affects the price or delivery date for such goods or services, Vendor shall so notify Ascend Elements in writing (with adequate supporting documentation) within 5 calendar days after receipt of said direction. Vendor shall suspend performance of the change unless thereafter released in writing by Ascend Elements to perform such change and Ascend Elements and Vendor shall mutually agree in writing upon an equitable adjustment in the price and/or delivery date to reflect the effect of such change. Vendor's request for any price and/or delivery date adjustments shall be deemed waived unless submitted in writing within 5 calendar days after Vendor receives direction to make such changes. Vendor shall not suspend performance of the unaffected portion of this Agreement while Ascend Elements and Vendor are in the process of making such changes and any related adjustments or at any time thereafter unless so instructed in writing by Ascend Elements. Vendor shall have no obligation to proceed with such change order until Vendor and Ascend Elements agree in writing to such changes. Once both Vendor and Ascend Elements have reached a mutual agreement, Vendor shall perform such change in accordance with the terms of this Agreement. No substitutions shall be made in this Agreement without prior written authority of Ascend Elements. No agreement or understanding modifying the terms and condition of this Agreement shall be binding upon Ascend Elements nor will extra compensation be paid by Ascend Elements unless the agreement or understanding is made in writing and signed by Ascend Elements.

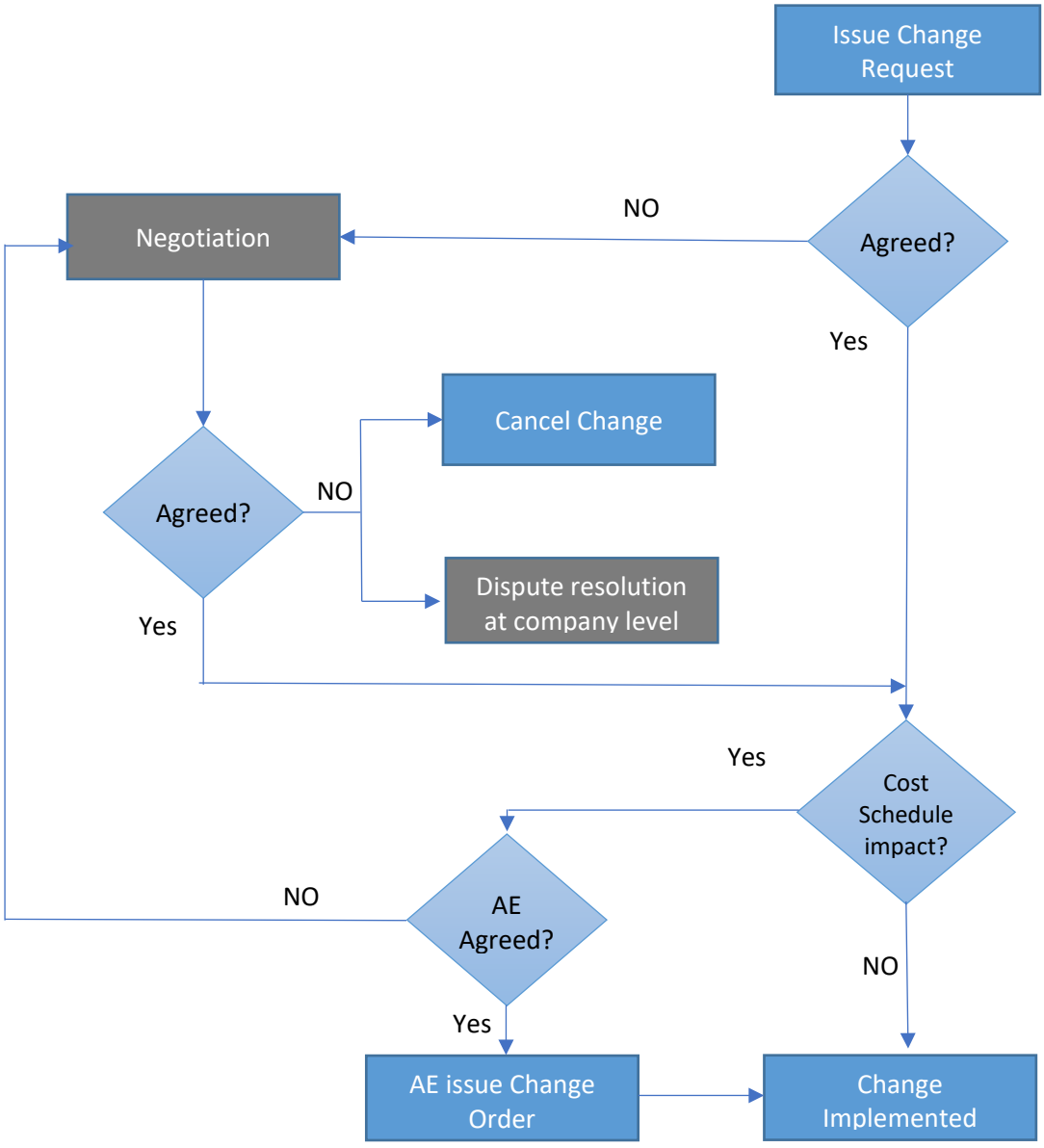
For avoidance of doubt a Change Request does not necessarily imply a change order.

**3. Management of Change workflow**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **1** | **SP** | **03/10/22** | | | | | Complete, ready for review |
| Rev. | Name | Date | Name | Name | Date | Status | Remark, kind of revision |
| | Prepared, revised | | Checked | Approved | | | |

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**MOC number**:

**Date Change Requested**:
**Response Requested by:**

## Subject:

## Change Description:

## Impact on:

| | |
|---|---|
| Safety | Plant Reliability |
| Schedule | Cost |
| Permitting | Others: |

## Attachments:

1.
2.
3.

| Ascend Elements Inc. Approval | Contractor Approval |
|---|---|
| _____ | _____ |

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In order to ensure successful project delivery, SSOE requests that when submitting 3D files from the following applications they be provided with the following formats and methods:

## AutoCAD Plant 3D

| | |
|---|---|
| .DWG | Before sending the file, the EXPORTTOAUTOCAD file should be run |
| .IGES | Run EXPORTTOAUTOCAD, open the DWG in AutoCAD, QSELECT all block references, EXPLODE all blocks, run IGESEXPORT to export the solids to a neutral format<br><br>https://knowledge.autodesk.com/support/autocad-plant-3d/troubleshooting/caas/sfdcarticles/sfdcarticles/What-is-the-best-way-to-export-an-AutoCAD-Plant-3D-model-to-IGES.html |

## Autodesk Revit

| | |
|---|---|
| .RVT | Must include linked files if applicable. |
| .RFA | If the family utilizes a type catalog, the accompanying .txt file is required. If using shared parameters, the shared parameter files are requested. |

## Autodesk Inventor

| | |
|---|---|
| .IAM | Must include the parent .IAM and all referenced files |
| .IPT | If this was created using the shrinkwrap command, the result must be solid geometry |
| .IGES | If this was created using the shrinkwrap command, the result must be solid geometry |
| .STEP 214 | If this was created using the shrinkwrap command, the result must be solid geometry |
| .x_t | If this was created using the shrinkwrap command, the result must be solid geometry |

## SolidWorks

| | |
|---|---|
| .SLDASM | Must include the parent SLDASM as well as all referenced files. |
| .SLDPRT | Do not save a SLDASM as a SLDPRT |
| .IGES | Do not save a SLDASM as a SLDPRT prior to this conversion |
| .STEP 214 | Do not save a SLDASM as a SLDPRT prior to this conversion |

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**ANNEX 10**

# Standard PID Arrangement – Centrifugal Pumps

## Ascend Elements, Inc.

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 0 | **Mason Kolb** | **6/17/22** | | | | | Issued for Internal review |
| Rev. | Name | Date | Name | Name | Date | Status | Remark, kind of revision |
| | Prepared, revised | | Checked | Approved | | | |

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## 1. Objective & Scope

This document will detail the standard PID arrangement for centrifugal pumps and will cover the following:

- Instruments and valves to be included on a PID for a standard centrifugal pump.
- Design and PID layout of standard centrifugal pumps.

Mechanical seals arrangement are not covered by the scope of this document.

## 2. List of Instruments and Valves

2.1. The following is a list of all standard equipment that Ascend Elements expects to be provided on a PID for a standard pump:

- Strainer at pump inlet (e.g. Y strainer)
- Drain valve at pump inlet
- Reducers at the inlet and outlet of the pump where necessary based on the pump spec sheet.
- Pump auto start/stop controllers to prevent dry running and overflow of downstream tank.
- Check valve at pump outlet.
- Pressure gauge or pressure transmitter at pump outlet with isolation valve (in some cases a diagram may be considered).
- Vent valve at pump outlet, located at a high point in the line to remove air from the discharge line during start-up.
- used.
-

## 3. Information to be included

3.1. Vendor to include the following with centrifugal pumps

- Flow rate
- Discharge header

## 4. Diagrams

Below are two examples of pump layouts that are appropriate to use for PIDs

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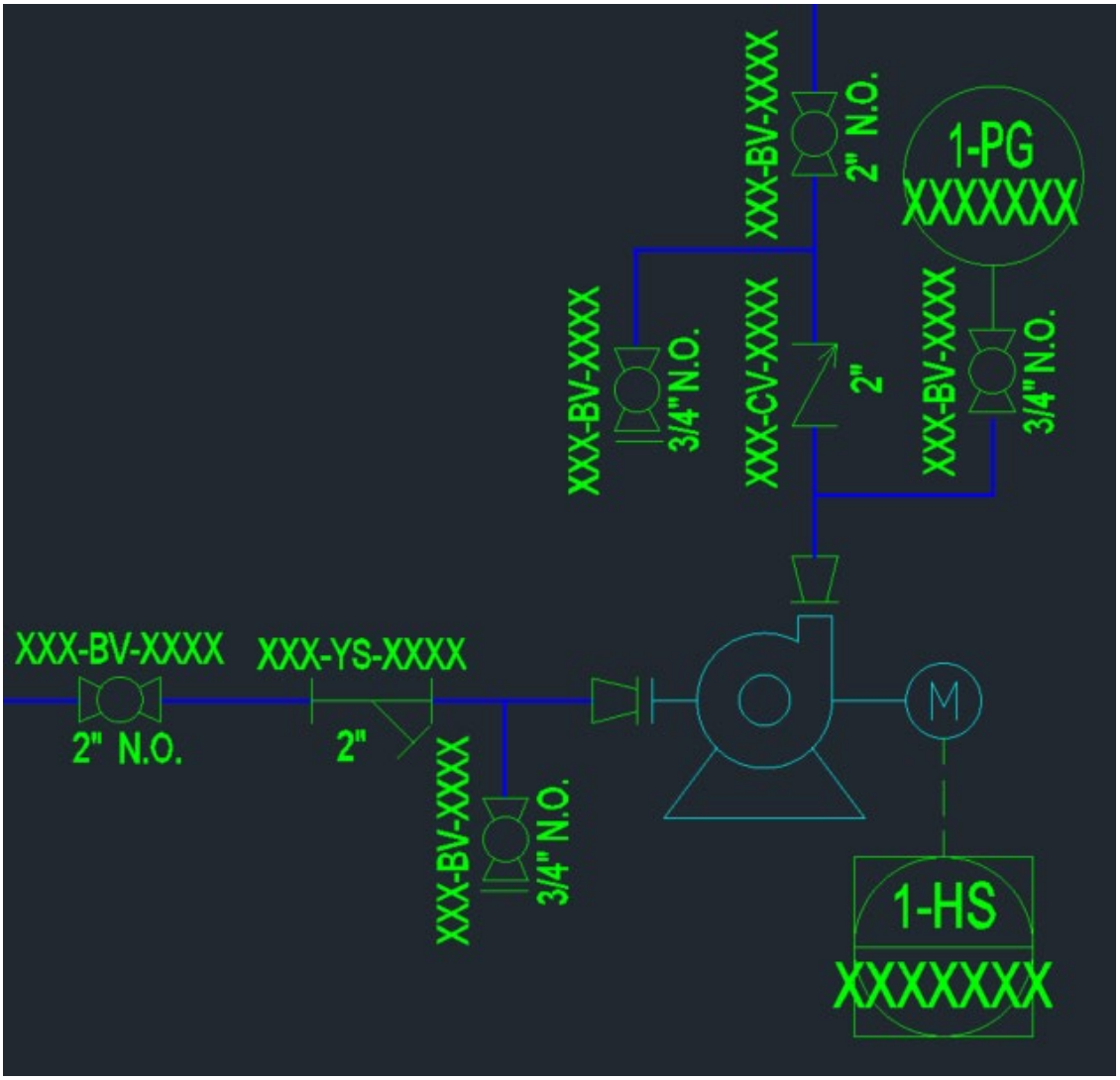



*Figure 1: Example of Standard Pump*

Symbol legend is included below:

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 0 | **Mason Kolb** | **6/17/22** | | | | | Issued for Internal review |
| Rev. | Name | Date | Name | Name | Date | Status | Remark, kind of revision |
| | Prepared, revised | | Checked | Approved | | | |

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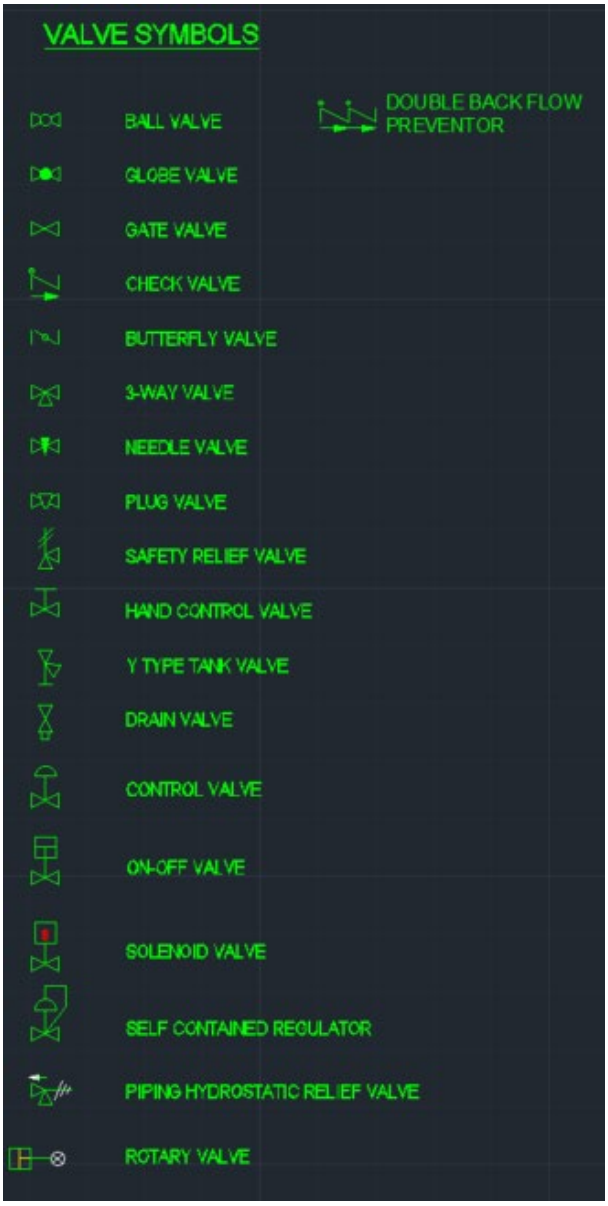



*Figure 2: Valve Symbols*




*Figure 3: instruments Symbols*

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **0** | **Mason Kolb** | **6/17/22** | | | | | Issued for Internal review |
| Rev. | Name | Date | Name | Name | Date | Status | Remark, kind of revision |
| | Prepared, revised | | Checked | Approved | | | |

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*Figure 4: Instruments Symbols (continued)*

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ANNEX 11

# Project Name
# Standard PID Arrangement – Tanks

## Ascend Elements, Inc.

| Rev. | Name | Date | Name | Name | Date | Status | Remark, kind of revision |
|---|---|---|---|---|---|---|---|
| | | | | | | | |
| **0** | **Mason Kolb** | **06/17/22** | | | | | Issued for Internal review |
| | Prepared, revised | | Checked | Approved | | | |

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## 1. Objective & Scope

This document will detail the standard PID arrangement for tanks and will cover the following:

- Instrument and valves to be included on a PID for a standard tank.
- Design and PID layout of standard tanks.

## 2. List of Instruments and Valves

The following is a list of all standard equipment that Ascend Elements expects to be provided on a PID for a standard tank:

- Tank nozzle size in NPS (Nominal Pipe Size).
- Tank nozzle #.
- On/Off inlet valves at tank feed lines to automatically isolate tank when a high level is reached.
- Side level gauge for manual readings.
- Level measurement: as a minimum, two level controllers or one level controller and two level switches will directly control inlet on/off valve, the inlet pump shut down/start, and the outlet pump shut down/start (as applicable).
- Devices for over pressure and vacuum conditions (if risk of over pressure or vacuum exists).
- Tank drain valve to be able to drain the tank for maintenance purposes.
- Isolation valve between side mounted level gauge and tank for maintenance purposes.
    - Labeled on PID as CSO (Car Sealed Open).
- All tanks shall be slopped or raised to the discharge and drain. Symbol to indicate tank slop/raised.

## 3. Information to be included on PID

- Process data.
- Tank diameter.
- Tank height.
- Tank volume.
- Normal liquid line to be shown on tank in millimeters.
- High liquid line to be shown on the tank in millimeters.
- Insulation symbol or heat tracing requirement (include temperature to trace to).

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## 4. Diagrams

Below are two examples of tank layouts that are appropriate for use for PIDs

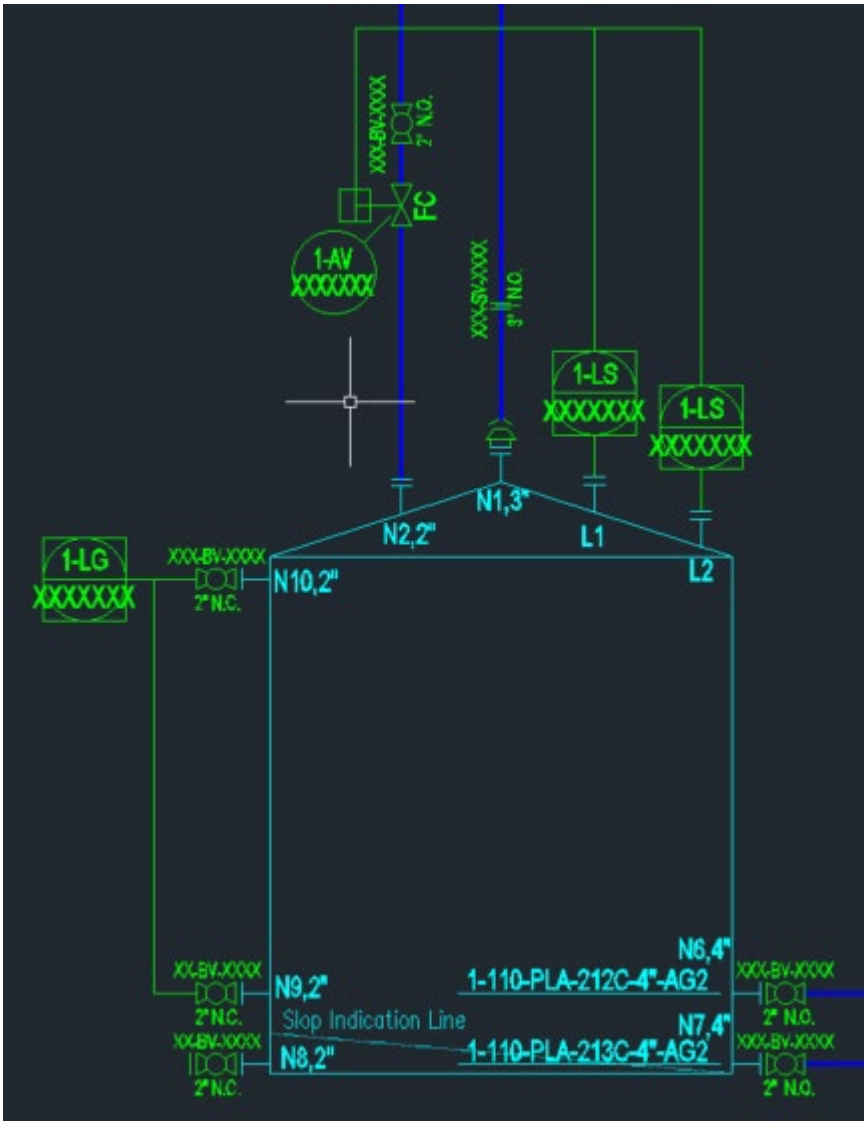



*Figure 1: Example of Standard Tank*

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **0** | **Mason Kolb** | **06/17/22** | | | | | Issued for Internal review |
| Rev. | Name | Date | Name | Name | Date | Status | Remark, kind of revision |
| | Prepared, revised | | Checked | Approved | | | |

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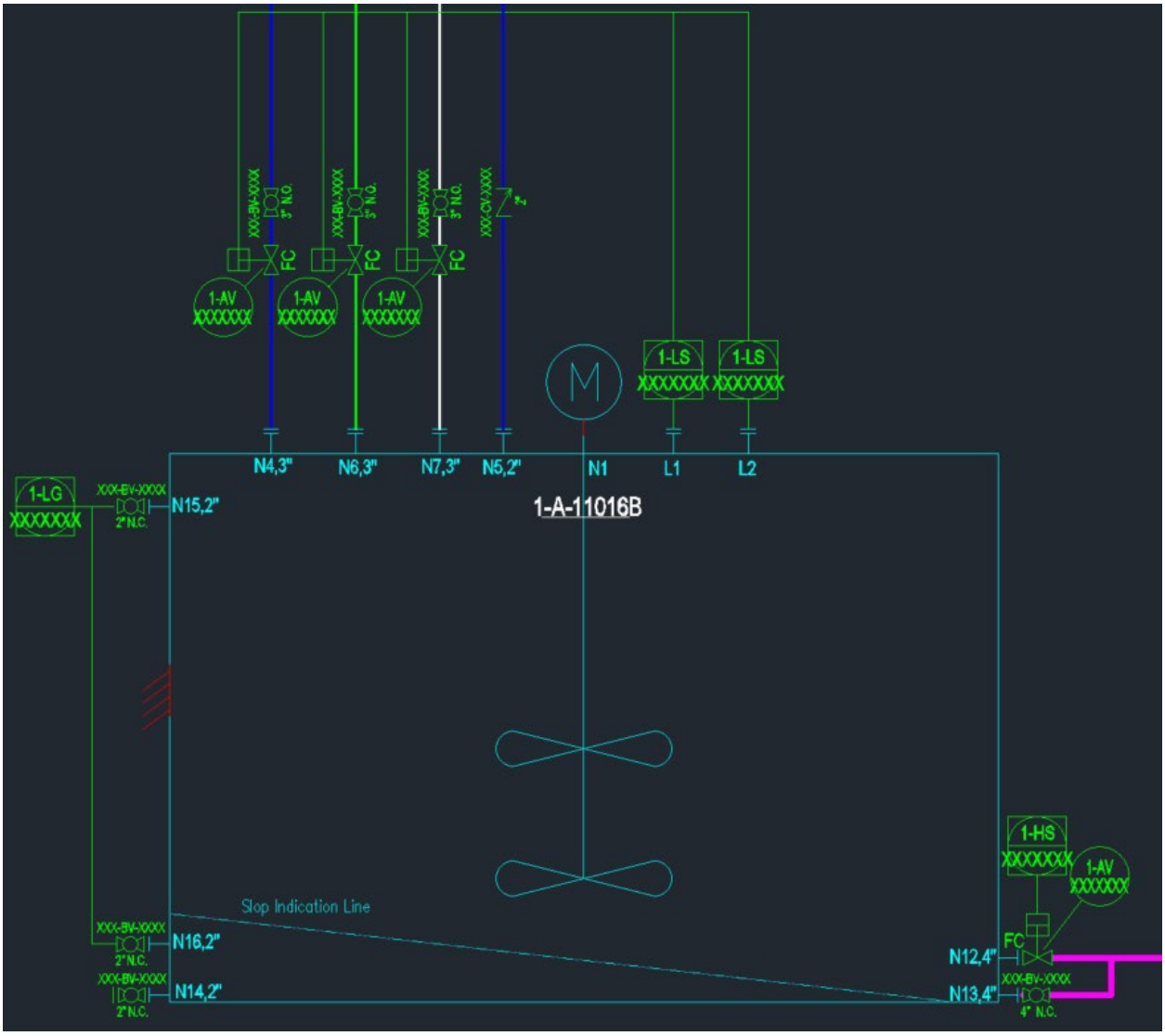



*Figure 2: Example of tank with Agitator*

Symbol legend is included below:

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **0** | **Mason Kolb** | **06/17/22** | | | | | Issued for Internal review |
| Rev. | Name | Date | Name | Name | Date | Status | Remark, kind of revision |
| | Prepared, revised | | Checked | Approved | | | |

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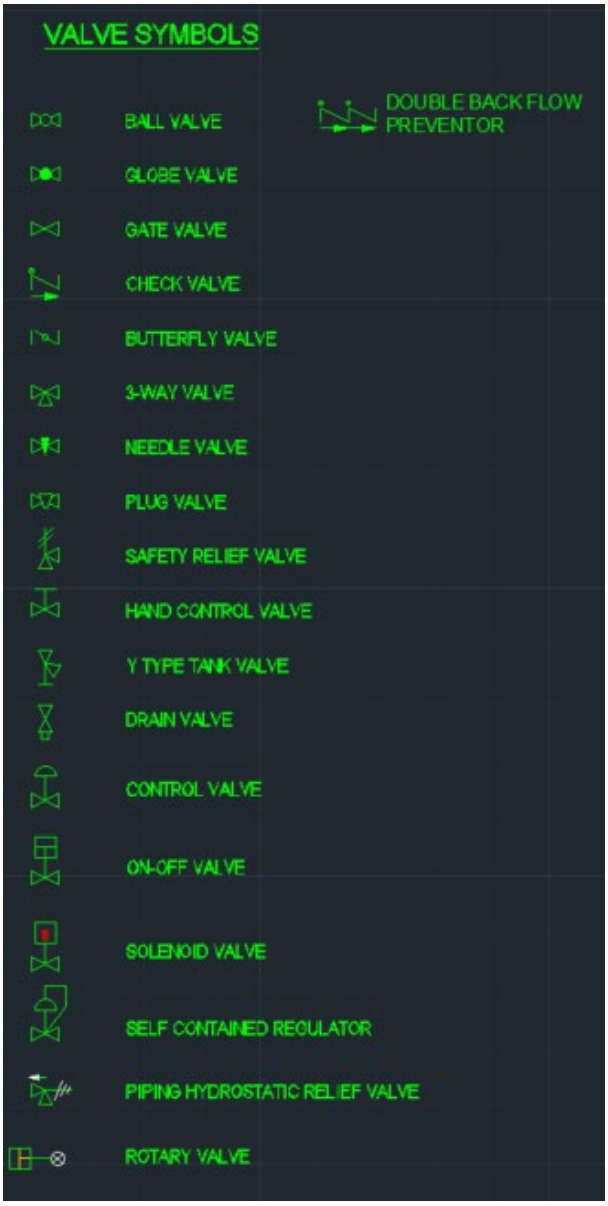



*Figure 3: Valve Symbols*




*Figure 4: Instruments Symbols*

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **0** | **Mason Kolb** | **06/17/22** | | | | | Issued for Internal review |
| Rev. | Name | Date | Name | Name | Date | Status | Remark, kind of revision |
| | Prepared, revised | | Checked | Approved | | | |

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*Figure 5: Instrument Symbols (continued)*

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# ASCEND ELEMENTS PROFESSIONAL SERVICES AGREEMENT FOR ITEMS SOURCED IN CHINA

This Professional Services Agreement (the "**Agreement**") sets forth terms under which., **Chonfar Engineering and Technology Co., Ltd.** a company organized under the laws of China with offices at **No.360 Taohuaduan Rd, Dongjingpu, Yuhua district, Changsha, Hunan Province P.R.C.** ("**Chonfar**") will, at the request of Ascend Elements, Inc., a Delaware corporation with offices at 133 Flanders Rd. Westborough, MA 01581 or an Affiliate ("**Ascend Elements**" or the "**Owner**") provide Services directly to Ascend Elements. This Agreement is effective as of August 1, 2022 ("Effective Date") and is sole applicable to Items sourced in China. The parties agree as follows:

**1. Definitions.**

**"Action"** means a claim, suit, action, allegation, charge, or investigation, in each case brought by a third party, governmental authority or industry body.

"**Affiliate"** means an entity that, directly or indirectly, owns or controls, is owned or is controlled by or is under common ownership or control with a party hereto. As used herein, "control" means the power to direct the management or affairs of an entity and "ownership" means the beneficial ownership of fifty percent (50%) or more of the voting equity securities or other equivalent voting interests of an entity.

"**Anti-Corruption Laws**" means anti-corruption or anti-bribery Laws, including the United States Foreign Corrupt Practices Act of 1977.

"**Deliverables**" means the Deliverables indicated in SOW of the Agreement .

"**Law(s)**" means any and all laws, treaties, conventions, directives, regulations, rules, ordinances, and judicial decisions in courts and tribunals of competent jurisdiction applicable to the Services or a party, including any subsequent amendments, modifications and revisions thereto, or subsequent versions thereof.

**2. Services.** Chonfar will provide services ("**Services**") to Ascend Elements as described on one or more orders, purchase orders, proposals or statements of work signed by Chonfar and Ascend Elements that reference this Agreement (collectively the "**SOW**" or "**Statement of Work**"). Each SOW will become part of this Agreement upon execution by Chonfar and Ascend Elements. Any of Ascend Elements Affiliates may enter into separate SOWs with Chonfar for the provision of Services hereunder and each such SOW shall be deemed a legal obligation of the Affiliate and not that of Ascend Elements Environmental Solutions, Inc. and for all purposes hereunder Ascend Elements as used herein shall be deemed to mean such Affiliate. Chonfar will perform the Services in a prompt manner and at all times in accordance with the terms and conditions of the applicable SOW and this Agreement, including, without limitation, providing each Deliverable (if any) by no later than the delivery dates specified in the applicable SOW. At the direction of Ascend Elements, Chonfar will provide Services directly to Ascend Elements or to customers of Ascend Elements on Ascend Elements behalf. The price of the Services is the price stated in the SOW (the "**Price**"). If no price is included in the SOW, the Price shall be the price set out in Chonfar's published price list in force as of the date of the Effective Date of this Agreement.

**3. Subcontractors.** Chonfar will perform all Services only through the regular, full-time employees of Chonfar and may not subcontract any element of the Services without the prior express written consent of Ascend Elements. To the extent any such subcontractors are authorized by Ascend Elements, Chonfar will (i) remain directly responsible to Ascend Elements for the acts or omissions of each subcontractor and (ii) ensure that each subcontractor is bound in writing to terms equally as protective of Ascend Elements as the terms and conditions of this Agreement.

**4. Title – Risk of Loss.** Title and risk of loss to all Deliverables passes to Ascend Elements upon delivery of the Deliverables to Ascend Elements.

**5. Representations and Warranties.**

5.1 Chonfar's Representations and Warranties. Chonfar hereby represents and warrants to Ascend Elements that:

(a) Due Authority. Chonfar has full right and power to enter into and perform this Agreement without the consent of any third party, and its performance under this Agreement will not conflict with any other obligation Chonfar may have to any other party.

(b) Standard of Performance. Chonfar will perform the Services in a timely, professional and workmanlike manner and with a degree of quality equal to or higher than applicable industry standards for similar services. In addition, all Services and each Deliverable will conform in all material respects with the description and any other requirements set forth in the applicable SOW.

(c) Compliance with Laws. Chonfar will ensure that the Services (including all Deliverables, if any) and Chonfar's performance of its obligations under this Agreement are in compliance at all times with all applicable Law.

(d) Licenses. Chonfar shall obtain, at its sole cost, all licenses, permits, certificates and authorizations necessary (i) for Chonfar to do business in all jurisdictions where any part of this Agreement is to be performed, and (ii) in connection with Chonfar's performance hereunder, and give all notices required under applicable Law.

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(e) Employment Law Compliance. At all times during performance of this Agreement, Chonfar shall remain in full compliance with all applicable Laws regarding the employment of Chonfar's employees who are assigned to perform Services in connection with this Agreement, including, without limitation, all wage and hour obligations (including overtime compensation when applicable), the federal Fair Labor Standards Act(if applicable).

(f) Payroll. Chonfar further understands and agrees that it shall have exclusive control over timekeeping and payroll for all Chonfar's employees, and that it shall maintain all records and make all wage and other payments to employees in full compliance with applicable Laws. Ascend Elements shall have no role in paying or determining the compensation of Chonfar employees.

(g) No Litigation. There are no pending Actions, and Chonfar is not aware of any threatened Actions, pertaining to Chonfar, the Services or the deliverables. Each party will notify the other party promptly if a Party becomes aware of any actual or threatened Actions that would reasonably be expected to affect its ability to fully perform its duties under this Agreement.

(h) Non-Solicitation of Personnel. During the term of this Agreement and for a period of one (1) year thereafter, Chonfar and its Affiliates will not, directly or indirectly, solicit or encourage any employee or consultant of Ascend Elements or its Affiliates to leave for any reason, including, without limitation, to accept employment or an engagement with any other company; provided that an employee or consultant being hired or engaged directly as a result of a general solicitation to the public shall not be deemed to be a violation of this provision.

5.2 Remedy of Defects. Chonfar will, without charge, correct any non-conformity, defect or malfunction in any Deliverable reported by Ascend Elements within thirty (30) days of receipt of written notice from Ascend Elements. The remedies set forth in this Section 5.2 will be non-exclusive

**6. Ownership of Deliverables.** Chonfar agrees that all Deliverables will be the sole and exclusive property of Ascend Elements. Chonfar will and hereby does irrevocably assign to Ascend Elements all right, title and interest in and to the Deliverables and all related intellectual property rights.

**7. Payment.** In exchange for Chonfar's obligations under this Agreement, Ascend Elements will pay Chonfar the Price according to the payment terms set forth in the SOW. All undisputed payments are due in U.S. Dollars within sixty (60) days of Ascend Elements receipt of an invoice. Ascend Elements will not be liable for any taxes that Chonfar fails to invoice. Ascend Elements may withhold amounts disputed in good faith while the parties attempt to resolve the dispute, and this will not constitute a breach. Chonfar will not invoice Ascend Elements until Ascend Elements acceptance of the Services or Deliverables (as applicable) in accordance with the applicable SOW. Ascend Elements will not reimburse Chonfar for any expenses unless such expenses are specified in the applicable SOW. When specified in the applicable SOW, Ascend Elements will reimburse reasonable, pre-approved (in writing) travel and related expenses incurred by Chonfar in performing the Services, but only in accordance with Ascend Elements then-current travel and expense policies, including, without limitation, the furnishing of copies of receipts and other customary documentation for any expenses for which Chonfar requests reimbursement. Ascend Elements will have no obligation to pay any fees or expenses that Chonfar fails to invoice within ninety (90) days after the fees or expenses were incurred. Chonfar acknowledges that this Section 7 sets forth the only compensation that Chonfar is entitled to receive in exchange for the Services and the Deliverables, and Chonfar will not be entitled to any other payments, reimbursements, royalties or consideration of any kind. Any changes to the Scope of Work shall be in writing in the form of a change request as set forth in Appendix 6.

**8. Term and Termination.**

8.1 Term. This Agreement remains in effect until terminated in accordance with this Section 8.

8.2 Termination. Either party may terminate this Agreement if the other party: (a) fails to cure any breach of this Agreement (including any applicable SOW) within thirty (30) days after written notice of such breach; (b) ceases operation without a successor; or (c) seeks protection under any bankruptcy, receivership, trust deed, creditors arrangement, composition or comparable proceeding, or if any such proceeding is instituted against such party (and not dismissed within sixty (60) days thereafter). In addition, either party may terminate this Agreement at any time when there is no SOW in effect for at least one hundred eighty (180) days upon ten (10) days' advance written notice to the other party. Notwithstanding anything to the contrary, Ascend Elements may terminate this Agreement, including any and all SOWs, for convenience at any time upon fifteen (15) days' advance written notice to the other party. Any termination hereunder by Ascend Elements for a breach by Chonfar which is subsequently determined not to be a breach shall be treated as a termination for convenience. In the event Ascend Elements terminates a Statement of Work (whether terminated for convenience or otherwise), Ascend Elements' only liability will be to pay Chonfar the fees due under the SOW with respect to Services provided through the date of termination.

8.3 Effect of Termination. Upon any expiration or termination of this Agreement for any reason, or upon earlier request by Ascend Elements, Chonfar will promptly deliver to Ascend Elements all Deliverables (in whatever state of completion) and return or (if directed by Ascend Elements) destroy all Confidential Information and derivatives thereof. Except for termination for convenience, the termination of this Agreement is not an exclusive remedy and the exercise of

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either party of any remedy under this Agreement will be without prejudice to any other remedies it may have under this Agreement, by law or otherwise. Sections 5 (Representations and Warranties), 6 (Ownership of Deliverables), 9 (Independent Contractor), 11 (Confidential Information), 12 (Access to Ascend Elements Facilities), 13 (Publicity and Records), 14 (Indemnification), 15 (Limitation of Liability), 16 (Bankruptcy), 19 (General) and the provisions of this Section 8 will survive any expiration or termination of this Agreement.

**9. Independent Contractor.** Chonfar will be solely responsible and liable for any compensation due to Chonfar's employees, agents or permitted subcontractors and employment-related taxes, insurance premiums or other employment benefits required to be provided to Chonfar's employees, agents or permitted subcontractors under applicable foreign, federal, state and local laws, statutes, orders and regulations. Neither Chonfar nor any of Chonfar's employees, agents or permitted subcontractors will be eligible for any benefits from Ascend Elements (including, without limitation, vacation or illness payments, stock awards, bonus plans, profit sharing, health insurance or retirement benefits) normally provided by Ascend Elements to its employees. Chonfar will defend, indemnify and hold harmless Ascend Elements, its Affiliates and its and their officers, directors, and employees from and against all Actions and all related losses, liabilities, damages, expenses and costs (including attorneys' fees and court costs) arising from or relating to any liability imposed on Ascend Elements or its Affiliates to pay any withholding taxes, social security, unemployment or disability insurance or similar items in connection with compensation received by Chonfar pursuant to this Agreement. Chonfar will perform services on behalf of Ascend Elements in the capacity of independent contractor, and not as an employee, partner, agent or joint venture partner. Ascend Elements will not be responsible for the payment of any duties or taxes imposed on the income or profits of Chonfar. Neither party will make any commitment, by contract or otherwise, binding upon the other or represent that it has any authority to do so.

**10. Insurance.** Chonfar shall maintain the insurance coverage set forth in Exhibit A, attached hereto, throughout the Term of the Agreement

**11. Confidential Information.** Other than in the performance of the Agreement, Chonfar nor Chonfar's agents, employees, or subcontractors will use or disclose to any person or entity any Confidential Information (as defined below) of Ascend Elements, whether in written, oral, electronic or other form, that is obtained from Ascend Elements or otherwise prepared or discovered either in the performance of this Agreement or while on Ascend Elements premises. "Confidential Information" means any and all information designated by Ascend Elements as confidential or proprietary, all information or data concerning or related to Ascend Elements products or services (including the discovery, invention, research, improvement, development, manufacture, or sale thereof), processes, or business operations (including sales, costs, profits, pricing methods, organization, and employee and customer lists), including any information of the foregoing nature received from Ascend Elements related to Ascend Elements customers or suppliers, and any other information that is of such a nature that a reasonable person would believe it to be confidential or proprietary. The Deliverables constitute Confidential Information of Ascend Elements. The provisions of this Section 11 relating to use and disclosure will not apply to any information that: (i) is rightfully known to Chonfar prior to disclosure by Ascend Elements, (ii) is rightfully obtained by Chonfar from any third party without restrictions on disclosure, (iii) is or becomes available to the public without restrictions, (iv) is independently developed by Chonfar without violating its obligations under this Agreement, or (v) is disclosed with the prior written approval. Chonfar may make disclosures to the extent required by law or court order, provided that Chonfar notifies Ascend Elements in advance and cooperates in any effort to obtain confidential treatment. Chonfar acknowledges that unauthorized use or disclosure of Confidential Information may cause substantial harm for which damages alone may not be a sufficient remedy.

In event of actual or threatened unauthorized use or disclosure by Chonfar, its employees, agents, or subcontractor, Ascend Elements will be entitled to seek appropriate equitable relief in addition to whatever other remedies it might have at law. The obligations set forth in this Section will survive any expiration or termination of this Agreement.

**12. Access to Ascend Elements Facilities**. If applicable, to the extent Chonfar is granted access to Ascend Elements facilities, Chonfar will comply with any safety, control, protection, and other policies and guidelines as Ascend Elements may provide from time-to-time and will be solely liable for its acts or omissions while at any site, including, without limitation, those resulting in personal injury or property damage.

**13. Publicity and Records.** Chonfar will not publicize or disclose the existence or terms of this Agreement to any third party without the prior written consent of Ascend Elements, except as may be required by Law. No references to Ascend Elements, its Affiliates, trade names, trademarks, service marks, brands, marks, logos, codes, drawings or specifications will be used in any of Chonfar's advertising, promotional efforts or any publicity of any kind, without Ascend Elements prior written consent, which consent may be withheld in Ascend Elements sole discretion in accordance with Ascend Elements policy that may be changed from time to time. In particular, no press releases will be made without the mutual written consent of each party. Written consent from Ascend Elements shall only be valid if issued by an authorized representative. Chonfar will keep and maintain complete and accurate records in connection with its performance of the

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Services, providing of the Deliverables and all fees charged to Ascend Elements under this Agreement and will retain these records for at least three (3) years after the amounts documented in these records become due. Ascend Elements may audit such systems, procedures and records during regular business hours upon reasonable advance notice and subject to reasonable confidentiality procedures.

**14. Indemnification.**

(a) Each party will defend, indemnify and hold harmless to other party, its Affiliates and its officers, directors, employees, customers, agents, attorneys and insurers from and against any and all third party Actions and all related losses, liabilities, damages, expenses and costs (including reasonable attorneys' fees and court costs) to the extent arising from or relating to: (i) any breach or alleged breach of any representation, warranty, covenant or other provision of this Agreement (including any SOW); (ii) any violation of law; (iii) infringement or misappropriation of patent, copyright, trade secrets or other intellectual property rights of any third party; (iv) any injury including bodily injury, disability or death, personal injury or property damage or any damages, resulting from a Product which is defective in materials, design or workmanship, sustained by Ascend Elements or by Ascend Elements agents, subcontractors or employees; or (v) any injury including bodily injury, disability or death, personal injury or property damage or any damages, regardless of fault, sustained by Chonfar, or by Chonfar's agents, subcontractors or employees.

**15. Limitation of Liability**. In no event shall Ascend Elements aggregate liability arising out of or related to this Agreement, whether arising out of or related to breach of contract, tort (including negligence) or otherwise exceed the lesser of: (i) Chonfar's actual damages, or (ii) the total aggregate Invoiced amount by Ascend Elements to Chonfar for Services performed in accordance with this Agreement in the month before such liability is assessed or the month before termination of the Agreement, whichever is earlier. NOTWITHSTANDING ANYTHING TO THE CONTRARY, ASCEND ELEMENTS WILL NOT BE LIABLE TO CHONFAR FOR INDIRECT, EXEMPLARY, PUNITIVE, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES OR LOSSES, OR FOR LOST PROFITS OR BUSINESS OPPORTUNITIES, UNDER ANY LEGAL THEORY (INCLUDING NEGLIGENCE).

**16. Bankruptcy.** The parties agree that, in the event of the commencement of bankruptcy proceedings by or against a party under applicable Law, the other party will be entitled, at its option, to retain all of its rights under this Agreement pursuant to applicable Law.

**17. Anti-Corruption; Morals.**

(a) Chonfar represents and warrants to Ascend Elements that Chonfar and Chonfar personnel are currently complying, and have at all times complied with, and will comply with all Anti-Corruption Laws. After Chonfar's reasonable inquiry, neither Chonfar nor Chonfar personnel have during the five (5) years prior to the Effective Date: (1) taken any direct or indirect action that would result in a violation of any applicable Federal or State Anti-Corruption Laws, including, for purposes of securing an improper advantage, the making, offering or authorizing any bribe, facilitation or other payment, gift, entertainment, rebate, or any other thing of value to any government official or employee, political party or official, or candidate, a public international organization, a commercial entity or individual, whether tangible or intangible, to secure an improper advantage, (2) been under, an administrative, civil or criminal investigation, in connection with alleged or possible violations of applicable Federal or State Anti-Corruption Laws, or (3) received notice from, or made a voluntary disclosure to, any governmental entity regarding alleged or possible violations of any applicable Federal or State Anti-Corruption Laws; and to Chonfar's knowledge, its financial records are sufficiently accurate and complete to demonstrate its compliance with the applicable Federal or State Anti-Corruption Laws, represent actual bona fide transactions, and have been maintained in accordance with sound business practices, including the maintenance of adequate internal accounting controls. If Chonfar suspects any breach of this provision, to the fullest extent permitted by applicable Federal or State Anti-Corruption Laws, Chonfar will promptly notify Ascend Elements in writing of its suspicions and cooperate with Ascend Elements in the resolution of issues raised.

(b) If Chonfar or any of its officers, directors, board members, principals, employees, agents, or representatives of Chonfar commits any act which, in the reasonable and good faith opinion of Ascend Elements, would disparage or impair the reputation and/or integrity of Ascend Elements (including, without limitation, being convicted of any felony or a crime involving moral turpitude, ethical violations or any other act of moral turpitude) or fails to comply with the Code of Conduct Policy for Business Partners, Ascend Elements shall have the right to terminate this Agreement without liability to Chonfar upon thirty (30) days written notice.

**18. Non-Exclusivity.** This Agreement shall not be construed as granting to Chonfar the exclusive right to provide the Services for Ascend Elements. Ascend Elements reserves the right to contract with other parties for such Services as it deems necessary. The Parties further agree that Ascend Elements is not obligated to purchase any minimum amount of Services from Chonfar under this Agreement.

**19. General.** Chonfar may not assign this Agreement without the prior written consent of Ascend Elements and any attempt to do so will be void. Notwithstanding the foregoing, Ascend Elements may assign this Agreement to (a) an Affiliate or (b) any other entity in connection with a reorganization, merger, consolidation, acquisition, or other restructuring involving all or substantially all of the voting securities or assets of Ascend

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Elements. Ascend Elements shall provide notice of the transfer to Chonfar in thirty (30) days before the formal change. All rights, benefits, and protections granted to Ascend Elements pursuant to this Agreement extend to its Affiliates. Any notice or consent under this Agreement will be in writing, which may be delivered personally or via mailed, by prepaid, certified mail or overnight courier, to the address specified below. No provision of this Agreement will be waived by any act, omission or knowledge of a party or its agents or employees except by an instrument in writing expressly waiving such provision and signed by a duly authorized officer of the waiving party. None of the following constitutes a waiver or estoppel of any right, remedy, power, privilege or condition by Ascend Elements arising from this Agreement: (a) any failure or delay in exercising any right, remedy, power, or privilege or in enforcing any condition under this Agreement, or (b) any act, omission, or course of dealing between the Parties. If any provision of this Agreement is adjudged by any court of competent jurisdiction to be unenforceable or invalid, that provision will be limited or eliminated to the minimum extent necessary so that this Agreement will otherwise remain in full force and effect. This Agreement will be deemed to have been made in, and will be construed pursuant to the laws of the MA and the United States without regard to conflicts of laws provisions thereof, and without regard to the United Nations Convention on the International Sale of Goods. Any suit or proceeding arising out of or relating to this Agreement will be venued in a court of appropriate jurisdiction in Middlesex County, MA. Ascend Elements will be entitled to reasonable attorneys' fees, costs and expenses in addition to any other relief to which it may be entitled. Any amendments to this Agreement or any SOW will be effective only if made in writing signed by a representative of the respective parties. Both parties agree that this Agreement (including any executed SOWs) is the complete and exclusive statement of the mutual understanding of the parties, and supersedes and cancels all previous written and oral agreements and communications relating to the subject matter of this Agreement. This Agreement may be executed in counterparts, each of which will be deemed an original and all of which together will be considered one and the same agreement. The counterparts of this Agreement may be executed and delivered by facsimile or other electronic signature by any of the parties to any other party and the receiving party may rely on the receipt of such document so executed and delivered by facsimile or other electronic means as if the original had been received.

[THIS SPACE INTENTIONALLY LEFT BLANK. SIGNATURE PAGE FOLLOWS]

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Accepted and agreed to as of the Effective Date by the authorized representative of each party:

在生效日期之前由双方的授权代表接受并同意：

**Chonfar Engineering and Technology Co., Ltd.**

Signature: 罗明聪

Print Name: Luo MingCong

Print Title: 能源环境院院长

Date: 7/27/2022

Notice Address:

No.360 Taohuaduan Rd, Yuhua district, Changsha, Hunan Province P.R.C.

Attention:

Email:luomingcong@sinochem.com

**Ascend Elements, Inc.**

Signature: DocuSigned by: Andrew Aberdale

Print Name: Andrew Aberdale

Print Title: CFO

Date: 7/25/2022

Notice Address:

133 Flanders Rd. Westborough, MA 01581

Attention: Legal Department

Email: llochhead@ascendelements.com

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**Exhibit A**

Prior to commencement of provision of Products or Chonfar entering Ascend Elements operation or performing work for Ascend Elements, and annually thereafter, a Certificate of Insurance ("COI") evidencing the following insurance carried by the Chonfar at its own expense must be presented in an acceptable form to Ascend Elements.

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ASCEND ELEMENTS

# Statement of Work

This Statement of Work (hereinafter "SOW"), effective as of August 1, 2022 (the "SOW Effective Date"), is between Ascend Elements, Inc. ("**Ascend Elements**") and Chonfar Engineering and Technology Co., Ltd. ("**Chonfar**"), pursuant to the terms in the Professional Services Agreement between the Parties having an Effective Date of August 1, 2022 (the "**Agreement**"). This SOW is subject to the terms in the Agreement except as expressly set forth otherwise in this SOW. The Parties agree as follows:

## 1. Scope of this SOW

1.1 To assist in the procurement of equipment Sourced in China (the "**Items**") as per Appendix 5 for a 15,000 MPTY Metal Extraction line for Ascend Elements, Chonfar shall perform the following described services ("Services"):

a. preparation of documents necessary for Vendor(s) selection, including potential Vendor list, Request for Quotation (RFQ),etc.; RFQ packages shall be issued to Ascend Elements for review before issuing to Vendors.

b. conducting and submitting commercial bid analysis (CBA) and technical bid analysis (TBA) report to the Ascend Elements for vendor(s) selection decision making, including list of final responders, list of technical clarification etc. Whereas the Ascend Elements shall make final decision in written within 15 days after receiving Chonfar' s report, in case no written decision were made within 15 days, the report shall be deemed as accepted by the Ascend Elements;

c. assisting Ascend Elements to conduct contract negotiation with selected Vendor(s), including negotiation of commercial and technical requirements / agreements;

d. assisting Ascend Elements to analysis the China VAT tax impact on equipment contracting price with different Vendor (s);

e. review Vendor's technical documents;

f. process inspection and final work inspection of Items at the workshop within China, and issuance of inspection report and inspection release note;

g. assisting Ascend Elements with selection of third party inspectors and coordinating with inspection activities by such third parties inspectors, whereas the fees and costs related to third party inspectors shall be borne by the Ascend Elements;

h. assisting with all transportation, transportation insurance and custom clearance related matters as follow:

- for transportation and Customs Clearance within China, raise packing requirements, coordinate inland transportation plan, etc;
- for transportation and Customs Clearance outside China, assisting with selection of transportation agency, preparation Customs Clearance documents etc. whereas the fees and costs related to transportation and Customs Clearance shall be borne by Ascend Elements;

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i. monitoring timely performance of Vendor(s) and service provider(s), and provide a weekly procurement report to Ascend Elements;

j. Communicating with Vendor(s), and third-party service provider(s) to solving and resolving all matters and other issues during warranty period of items.

k. organizing and attending the kick-off meeting, design review meeting, final review meeting and other meetings, if any, related to the procurement of Items.

1.2 In order to allow Chonfar to perform the Services indicated under above 1.1, Ascend Elements agrees to entrust Chonfar and authorize Chonfar with the powers to monitor the execution of the Purchase Orders and third-party Service Orders relevant to the Items listed in Appendix 5.

1.3 The final Vendor selection and third-party service provider selection is the responsibility of Ascend Elements. Ascend Elements at its sole discretion reserves the right to reject all responders within fifteen (15) days after receiving Chonfar's documents as defined in 1.1a and 1.b, and to select a Vendor outside China on his own. If Ascend Element decides to select a Vendor outside China, and after Chonfar submits the deliverables listed in 1.1.a and the technical bid analysis defined in 1.1.b, Ascend Element will owe 10% of the service fee associated to this Item price listed in appendix 5, in order to compensate Chonfar for its time spent. If Ascend Element decides to select a Vendor outside China, and after Chonfar submits the deliverables listed in 1.1.a and 1.1.b (including the technical bid analysis and commercial bid analysis), Ascend Element will owe 30% of the service fee associated to this Item price listed in appendix 5, in order to compensate Chonfar for its time spent. For avoidance of doubt Ascend Elements will not owe any money to Chonfar until item 1.1.a deliverable and technical bid analysis as defined in 1.1.b are submitted by Chonfar.

A summary of the amount due by Ascend Elements per type of Item is per Appendix 5

1.4 All communication between Chonfar and Ascend Elements shall either be in English or include an English translation. All deliverables shall be in English.

1.5 Ascend Elements may add categories of Vendors to the scope of this agreement through a Change Order.

## 2. Schedule and Milestones

**Milestone 1**

**August 15, 2022** - Complete Qualified Vendor list, all equipment RFQ specification of each discipline.

**Milestone 2**

**September 30, 2022** - Complete contract technical appendix for each Item, Technical Comparison Analysis, Meeting Minutes of technical negotiation meeting, Technical Clarification, Commercial

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Comparison Analysis.

**Milestone 3**

**May 15th, 2023** - Complete equipment inspection report, custom clearance supporting documents, packing list.

**3. Deliverables**

Chonfar shall provide the following deliverables:

- Qualified Vendor list
- Request for quotation (RFQ)
- specification of each discipline,
- Final Responders List
- Technical Clarification (if any)
- Technical Comparison Analysis
- Commercial Comparison Analysis
- contract technical appendix for each equipment category
- Meeting Minutes of technical negotiation meeting
- Inspection report as per Appendix 1
- A weekly procurement report.
- Custom clearance supporting documents, packing list

**4. Chonfar's Project Team**

The members of Chonfar's project team shall have commercial and technical qualifications and capabilities to perform the Services as per Article 1.1. Chonfar shall exercise its best efforts to furnish competent employees for fulfillment of these contract obligations. Ascend Elements shall require employees to comply with all Ascend Elements regulations and policies and shall promptly remove those who do not comply or who may otherwise be unacceptable to Ascend Elements. Chonfar shall dismiss immediately upon receipt of notification, employees, which, in Ascend Elements' sole opinion, are unsatisfactory for the services to be performed hereunder. Such personnel shall be replaced with individuals satisfactory to Ascend Elements as soon as possible. If within the first five (5) working days, any one of Chonfar's employees, in Ascend Elements' sole judgement, does not demonstrate adequate capability to satisfy job requirements, then Ascend Elements may have such employee removed at no charge for the time spent by such employee on the job. Chonfar shall provide an organization chart for the employees which shall be attached as Appendix 2.

**5. Price and Payment**

The Price which Ascend Elements shall pay to Chonfar is 2.6% (two and 60/100 percent) of the total actual cost of the Items procured by Ascend Elements and supported by Purchase Orders signed by the Ascend Elements and selected Vendor(s). The total actual cost of all Purchase Orders based on all Items to be procured in Appendix 5 is estimated to be TWENTY-THREE MILLION SEVEN HUNDRED SIXTY-SEVEN THOUSAND AND EIGHT HUNDRED TWENTY-FIVE 00/100 US DOLLARS, FOB Liner Terms Shanghai Seaport, China according to INCOTERMS 2020 ($23,767,825.00). The Price of Services shall not include any costs related to the manufacture, inspection, packing, transportation, insurance, Customs Clearance, erection, commissioning etc. of the Items.

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All pricing and payments shall be in U.S. dollars, unless otherwise agreed. **In no event shall Ascend Elements payments to Chonfar exceed $650,000 for Services performed under this Statement of Work. If the scope of work is increased, the additional service fee will be determined by Change Procedure.**

## 6. Payment Terms

- Down payment of $60,000 - Within thirty (30) Business Days after signing this Statement of Work and Ascend Elements receives the invoice issued by Chonfar.
- 35% of the actual Item cost purchased by Ascend Elements in China - Within thirty (30) Business Days after receiving all equipment engineering drawings from Vendors' and meet the design schedule per 15,000 MTPY Metal Extraction Design contract between Ascend Elements and Seller, and Ascend Elements receives the invoice issued by Chonfar.
- 40% of the actual Item cost purchased by Ascend Elements in China - Within thirty (30) Business Days after arrival of all the equipment listed in Appendix 5 at China designated port, and Ascend Elements receives the invoice issued by Chonfar.
- 10% of the actual Item cost purchased by Ascend Elements in China - Within thirty (30) Business days after all the equipment listed in Appendix 5 arrive at Ascend Elements plant, and Ascend Elements receives the invoice issued by Chonfar.
- 5% of the actual Item cost purchased by Ascend Elements in China - Within thirty (30) Business days after pass seven (7) continuous days of SAT, commissioning, and startup completion, and Ascend Elements receives the invoice issued by Chonfar.

**All payments shall be net value without any deduction of taxes, duties, banking charges in the US. Each party shall be solely responsible for any applicable taxes, duties and banking charges.**

## 7. Miscellaneous

The Equipment Warranty will be provided by the equipment manufacturer, but Chonfar shall use best efforts to support Ascend Elements with communication of any equipment warranty related matters.

In witness whereof, the Parties have executed this SOW, effective as of the SOW Effective Date.

| | |
|---|---|
| Ascend Elements, Inc. | Chonfar Engineering and Technology Co., Ltd. |
| By: DocuSigned by: Andrew Aberdale | By: |
| Name: Andrew Aberdale | Name: Mingcong Luo |
| Title: CFO | Title: 能源环境院院长 |

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# 15,000 MTPY NMC
# Metal Extraction Project

## MVR设备验收单
## MVR Acceptance Sheet

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| CHKD | | | | |
| APPR. | | Item No： | Distribution | REV.：0 |
| 日 期 | 2022.05.11 | | | |

ASCEND ELEMENTS

中蓝长化工程科技有限公司
Chonfar Engineering and Technology Co., Ltd.

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| 中蓝长化工程科技有限公司 Chonfar Engineering and Technology Co., Ltd. | 15,000 MTPY NMC Metal Extraction Project | 阶段PHASE | Detailed Design | | | | | | | 版REV. |
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MVR验收项目Acceptance items of MVR

单位名称Company name：

| 时间 Time | | | | 地点place | |
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| 参加人员Participants | 姓名Name | 联系方式Contact | 检测工具Testing tools | 备注Note | |
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第一阶段验收内容 1st Acceptance content

| 部件名称Part name | 技术文件要求参数 Required parameters of technical | 实际现场检测参数Actual field test parameters | 是否符合要求 Whether it meets the requirements | 备注Note |
|---|---|---|---|---|
| 加热室 Heating chamber | | | | |
| 分离器Separator | | | | |
| 预热器Preheater | | | | |
| 不凝气冷却器Non condensable gas cooler | | | | |
| 蒸馏水冷却器Distilled water cooler | | | | |
| 蒸馏水罐Distilled water tank | | | | |
| 汽液分离罐Vapor liquid separator | | | | |
| 过滤器Filter | | | | |

第二阶段验收内容 2nd Acceptance content

| 部件名称Part name | 技术文件要求参数 Required parameters of technical documents | 实际现场检测参数Actual field test parameters | 是否符合要求 Whether it meets the requirements | 备注Note |
|---|---|---|---|---|
| 离心式蒸汽风机Centrifugal steam fan | | | | |
| 电机Electric machinery | | | | |
| 变频器Frequency converter | | | | |
| 泵 Pump | | | | |
| 轴封水系统Shaft seal water system | | | | |
| 真空系统 vacuum system | | | | |
| 仪表、传感器 Instruments and sensors | | | | |
| 阀门valve | | | | |
| 电气、自控系统Electrical and automatic control system | | | | |
| 中控系统 Central control system | | | | |
| 备品备件 | | | | |
| 出厂检测 | | | | |

第三阶段验收内容 3rd Acceptance content

| 部件名称Part name | 技术文件要求参数 Required parameters of technical documents | 实际现场检测参数Actual field test parameters | 是否符合要求 Whether it meets the requirements | 备注Note |
|---|---|---|---|---|
| 装箱清单Packing list | | | | |
| 包装要求Packaging requirements | | | | |
| 其他other | | | | |

| 专业负责人 SPECI MGR | | | 项目经理ENG.MGR. | | | 审定 AUTHO. | | | 日期 DATE | |
|---|---|---|---|---|---|---|---|---|---|---|
| 设计 DESIGN | | | 校核 CHKD | | | 审核 APPR. | | | | |

注：1、应对设备接口法兰尺寸测量结果拍照，并进行记录
2、应对所有电机铭牌进行拍照
3、应对设备安装尺寸的测量结果拍照并记录结果
4、尽可能的对元器件，配件拍照
5、阀门等法兰接口设备须核对控制方式，压力等级，管径大小，接口标准等信息

Note: 1. The measurement results of equipment interface flange size shall be photographed and recorded
2. All motor nameplates shall be photographed
3. The measurement results of equipment installation dimensions shall be photographed and recorded
4. Take photos of components and accessories as much as possible
5. Valves and other flange interface equipment must check the control mode, pressure grade, pipe diameter, interface standard and other information

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# 15,000 MTPY NMC
# Metal Extraction Project

## 压滤机设备验收单
## Filter press Acceptance Sheet

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| REV. | | Explain | | |
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| Ascend Elements | | | | |
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| Design Phase | Detailed | Ascend Elements： | | |
| DESIGN | | | | |
| CHKD | | | | |
| APPR. | | Item No： | Distribution | REV.：0 |
| 日 期 | 2022.05.11 | | | |

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中蓝长化工程科技有限公司
Chonfar Engineering and Technology Co., Ltd.

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| 中蓝长化工程科技有限公司 Chonfar Engineering and Technology Co., Ltd. | 15,000 MTPY NMC Metal Extraction Project | 阶段PHASE | Detailed Design | | | | | | 版REV. |
|---|---|---|---|---|---|---|---|---|---|
| | | 专业SPECI | EP | 第SHEET | | 页 | | 共OF | 1 | 页 |
| | | 22Y05-EP-1 | | | | | | | | |

压滤机验收项目Acceptance items of Filter press

单位名称Company name：

| 时间Time | | 地点Place | |
|---|---|---|---|

| 参加人员Participants | 姓名Name | 联系方式Contact | 检测工具Testing tools | 备注Note |
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第一阶段验收内容 1st Acceptance content

| 部件名称Part name | 技术文件要求参数 Required parameters of technical | 实际现场检测参数Actual field test parameters | 是否符合要求 Whether it meets the requirements | 备注Note |
|---|---|---|---|---|
| 主梁main beam | | | | |
| 压紧板Compression plate | | | | |
| 止推板Thrust plate | | | | |
| 滤板Filter plate | | | | |
| 滤布Filter cloth | | | | |
| 滤饼filter cake | | | | |
| 滤室厚度Filter chamber thickness | | | | |
| 油缸座Cylinder seat | | | | |
| 液压油缸Hydraulic cylinder | | | | |
| 接液翻板Liquid receiving flap | | | | |

第二阶段验收内容 2nd Acceptance content

| 部件名称Part name | 技术文件要求参数 Required parameters of technical documents | 实际现场检测参数Actual field test parameters | 是否符合要求 Whether it meets the requirements | 备注Note |
|---|---|---|---|---|
| 整体重量Overall weight | | | | |
| 整体尺寸Overall size | | | | |
| 地基尺寸Foundation size | | | | |
| 泵Pump | | | | |
| 法兰flange | | | | |
| 电控系统Electric control system | | | | |
| 液压翻板系统Hydraulic flap system | | | | |
| 液压系统Hydraulic system | | | | |
| 拉板系统Pull plate system | | | | |
| 出厂检测Factory inspection | | | | |

第三阶段验收内容 3rd Acceptance content

| 部件名称Part name | 技术文件要求参数 Required parameters of technical | 实际现场检测参数Actual field test parameters | 是否符合要求 Whether it meets the requirements | 备注Note |
|---|---|---|---|---|
| 装箱清单Packing list | | | | |
| 包装要求Packaging requirements | | | | |
| 其他other | | | | |

| 专业负责人 SPECI MGR | | | 项目经理ENG.MGR. | | | 审定 AUTHO. | | | 日期 DATE | |
|---|---|---|---|---|---|---|---|---|---|---|
| 设计 DESIGN | | | 校核 CHKD | | | 审核 APPR. | | | | |

注：1、应对设备接口法兰尺寸测量结果拍照，并进行记录
2、应对所有电机铭牌进行拍照
3、应对设备安装尺寸的测量结果拍照并记录结果
4、尽可能的对元器件，配件拍照
5、阀门等法兰接口设备须核对控制方式，压力等级，管径大小，接口标准等信息

Note: 1. The measurement results of equipment interface flange size shall be photographed and recorded
2. All motor nameplates shall be photographed
3. The measurement results of equipment installation dimensions shall be photographed and recorded
4. Take photos of components and accessories as much as possible
5. Valves and other flange interface equipment must check the control mode, pressure grade, pipe diameter, interface standard and other information

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# 15,000 MTPY NMC
# Metal Extraction Project

## 搅拌器设备验收单
## Agitator Acceptance Sheet

| | | | | |
|---|---|---|---|---|
| | | | | |
| REV. | | Explain | | |
| | | | | |
| Ascend Elements | | | | |
| BlueStar Chonfar | | | | |
| Countersign | | Sign major | | |
| Design Phase | Detailed | Ascend Elements： | | |
| DESIGN | | | | |
| CHKD | | | | |
| APPR. | | Item No： | Distribution | REV.：0 |
| 日 期 | 2022.05.11 | | | |

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中蓝长化工程科技有限公司
Chonfar Engineering and Technology Co., Ltd.

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| 中蓝长化工程科技有限公司 Chonfar Engineering and Technology Co., Ltd. | 15,000 MTPY NMC Metal Extraction Project | 阶段PHASE | Detailed Design | | | | | | | 版REV. |
|---|---|---|---|---|---|---|---|---|---|---|
| | | 专业SPECI | EP | 第SHEET | | 页 | | 共OF | 1 | 页 |
| | | 22Y05-EP-1 | | | | | | | | |

搅拌器验收项目Acceptance items of Agitator

单位名称Company name：

| 时间Time | | 地点Place | |
|---|---|---|---|

| 参加人员Participants | 姓名Name | 联系方式Contact | 检测工具Testing tools | 备注Note |
|---|---|---|---|---|
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第一阶段验收内容 1st Acceptance content

| 部件名称Part name | 技术文件要求参数 Required parameters of technical | 实际现场检测参数Actual field test parameters | 是否符合要求 Whether it meets the requirements | 备注Note |
|---|---|---|---|---|
| 容器Container | | | | |
| 封头Head | | | | |
| 叶轮Impeller | | | | |
| 挡板Baffle | | | | |
| 装配和支撑数据 Assembly and support data | | | | |

第二阶段验收内容 2nd Acceptance content

| 部件名称Part name | 技术文件要求参数 Required parameters of technical documents | 实际现场检测参数Actual field test parameters | 是否符合要求 Whether it meets the requirements | 备注Note |
|---|---|---|---|---|
| 整体重量Overall weight | | | | |
| 整体尺寸Overall size | | | | |
| 电机electric machinery | | | | |
| 出厂检测 | | | | |

第三阶段验收内容 3rd Acceptance content

| 部件名称Part name | 技术文件要求参数 Required parameters of technical | 实际现场检测参数Actual field test parameters | 是否符合要求 Whether it meets the requirements | 备注Note |
|---|---|---|---|---|
| 装箱清单Packing list | | | | |
| 包装要求Packaging requirements | | | | |
| 其他other | | | | |

| 专业负责人 SPECI MGR | | | 项目经理ENG.MGR. | | | 审定 AUTHO. | | | 日期 DATE | |
|---|---|---|---|---|---|---|---|---|---|---|
| 设计 DESIGN | | | 校核 CHKD | | | 审核 APPR. | | | | |

注：1、应对设备接口法兰尺寸测量结果拍照，并进行记录
2、应对所有电机铭牌进行拍照
3、应对设备安装尺寸的测量结果拍照并记录结果
4、尽可能的对元器件，配件拍照
5、阀门等法兰接口设备须核对控制方式，压力等级，管径大小，接口标准等信息

Note: 1. The measurement results of equipment interface flange size shall be photographed and recorded
2. All motor nameplates shall be photographed
3. The measurement results of equipment installation dimensions shall be photographed and recorded
4. Take photos of components and accessories as much as possible
5. Valves and other flange interface equipment must check the control mode, pressure grade, pipe diameter, interface standard and other information

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# 15,000 MTPY NMC
# Metal Extraction Project

## 萃取槽设备验收单
## Extraction tank Acceptance Sheet

| | | | | |
|---|---|---|---|---|
| | | | | |
| REV. | | Explain | | |
| | | | | |
| Ascend Elements | | | | |
| BlueStar Chonfar | | | | |
| Counters ign | | Sign major | | |
| Design Phase | Detailed | Ascend Elements： | | |
| DESIGN | | | | |
| CHKD | | | | |
| APPR. | | Item No： | Distribution | REV.：0 |
| 日 期 | 2022.05.11 | | | |

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Chonfar Engineering and Technology Co., Ltd.

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| 中蓝长化工程科技有限公司 Chonfar Engineering and Technology Co., Ltd. | 15,000 MTPY NMC Metal Extraction Project | 阶段PHASE | Detailed Design | | | | | | 版REV. |
|---|---|---|---|---|---|---|---|---|---|
| | | 专业SPECI | EP | 第SHEET | | 页 | | 共OF | 1 | 页 |
| | | 22Y05-EP-1 | | | | | | | | |

萃取槽验收项目Acceptance items of Extraction tank

单位名称Company name：

| 时间 Time | | | | 地点place | |
|---|---|---|---|---|---|
| 参加人员Participants | 姓名Name | 联系方式Contact | 检测工具Testing tools | 备注Note | |
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第一阶段验收内容 1st Acceptance content

| 部件名称Part name | 技术文件要求参数 Required parameters of technical | 实际现场检测参数Actual field test parameters | 是否符合要求 Whether it meets the requirements | 备注Note |
|---|---|---|---|---|
| 萃取箱规格要求Specification requirements of extraction box | | | | |
| 萃取箱材质要求Material requirements of extraction box | | | | |
| 水密封Water seal | | | | |

第二阶段验收内容 2nd Acceptance content

| 部件名称Part name | 技术文件要求参数 Required parameters of technical documents | 实际现场检测参数Actual field test parameters | 是否符合要求 Whether it meets the requirements | 备注Note |
|---|---|---|---|---|
| 整体尺寸Overall size | | | | |
| 搅拌装置Mixing device | | | | |
| 电机electric machinery | | | | |
| 配电系统Distribution system | | | | |
| 备品备件spare parts | | | | |
| 出厂检测Factory inspection | | | | |

第三阶段验收内容 3rd Acceptance content

| 部件名称Part name | 技术文件要求参数 Required parameters of technical | 实际现场检测参数Actual field test parameters | 是否符合要求 Whether it meets the requirements | 备注Note |
|---|---|---|---|---|
| 装箱清单Packing list | | | | |
| 包装要求Packaging requirements | | | | |
| 其他other | | | | |

| 专业负责人 SPECI MGR | | | 项目经理ENG.MGR. | | | 审定 AUTHO. | | | 日期 DATE | |
|---|---|---|---|---|---|---|---|---|---|---|
| 设计 DESIGN | | | 校核 CHKD | | | 审核 APPR. | | | | |

注：1、应对设备接口法兰尺寸测量结果拍照，并进行记录
2、应对所有电机铭牌进行拍照
3、应对设备安装尺寸的测量结果拍照并记录结果
4、尽可能的对元器件，配件拍照
5、阀门等法兰接口设备须核对控制方式，压力等级，管径大小，接口标准等信息

Note: 1. The measurement results of equipment interface flange size shall be photographed and recorded
2. All motor nameplates shall be photographed
3. The measurement results of equipment installation dimensions shall be photographed and recorded
4. Take photos of components and accessories as much as possible
5. Valves and other flange interface equipment must check the control mode, pressure grade, pipe diameter, interface standard and other information

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# 15,000 MTPY NMC
# Metal Extraction Project

## 除油器设备验收单
## Oil Remover Acceptance Sheet

| | | | | |
|---|---|---|---|---|
| | | | | |
| REV. | | Explain | | |
| | | | | |
| Ascend Elements | | | | |
| BlueStar Chonfar | | | | |
| Countersign | | Sign major | | |
| Design Phase | Detailed | Ascend Elements： | | |
| DESIGN | | | | |
| CHKD | | | | |
| APPR. | | Item No： | Distribution | REV.：0 |
| 日 期 | 2022.05.11 | | | |

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|---|---|---|---|---|---|---|---|---|---|
| | | 专业SPECI | EP | 第SHEET | | 页 | | 共OF | 1 | 页 |
| | | 22Y05-EP-1 | | | | | | | | |

除油器验收项目Acceptance items of Oil Remover

单位名称Company name：

| 时间 Time | | | | 地点place | |
|---|---|---|---|---|---|
| 参加人员Participants | 姓名Name | 联系方式Contact | 检测工具Testing tools | 备注Note | |
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第一阶段验收内容 1st Acceptance content

| 部件名称Part name | 技术文件要求参数 Required parameters of technical | 实际现场检测参数Actual field test parameters | 是否符合要求 Whether it meets the requirements | 备注Note |
|---|---|---|---|---|
| 罐体Tank body | | | | |
| 过滤器filter | | | | |
| 分离器separator | | | | |
| 滤芯filter element | | | | |
| 反应槽Reaction tank | | | | |
| 油槽Oil sump | | | | |

第二阶段验收内容 2nd Acceptance content

| 部件名称Part name | 技术文件要求参数 Required parameters of technical documents | 实际现场检测参数Actual field test parameters | 是否符合要求 Whether it meets the requirements | 备注Note |
|---|---|---|---|---|
| 整体尺寸Overall size | | | | |
| 泵Pump | | | | |
| 电控系统Electric control system | | | | |
| 出厂检测Factory inspection | | | | |

第三阶段验收内容 3rd Acceptance content

| 部件名称Part name | 技术文件要求参数 Required parameters of technical documents | 实际现场检测参数Actual field test parameters | 是否符合要求 Whether it meets the requirements | 备注Note |
|---|---|---|---|---|
| 装箱清单Packing list | | | | |
| 包装要求Packaging requirements | | | | |
| 其他other | | | | |

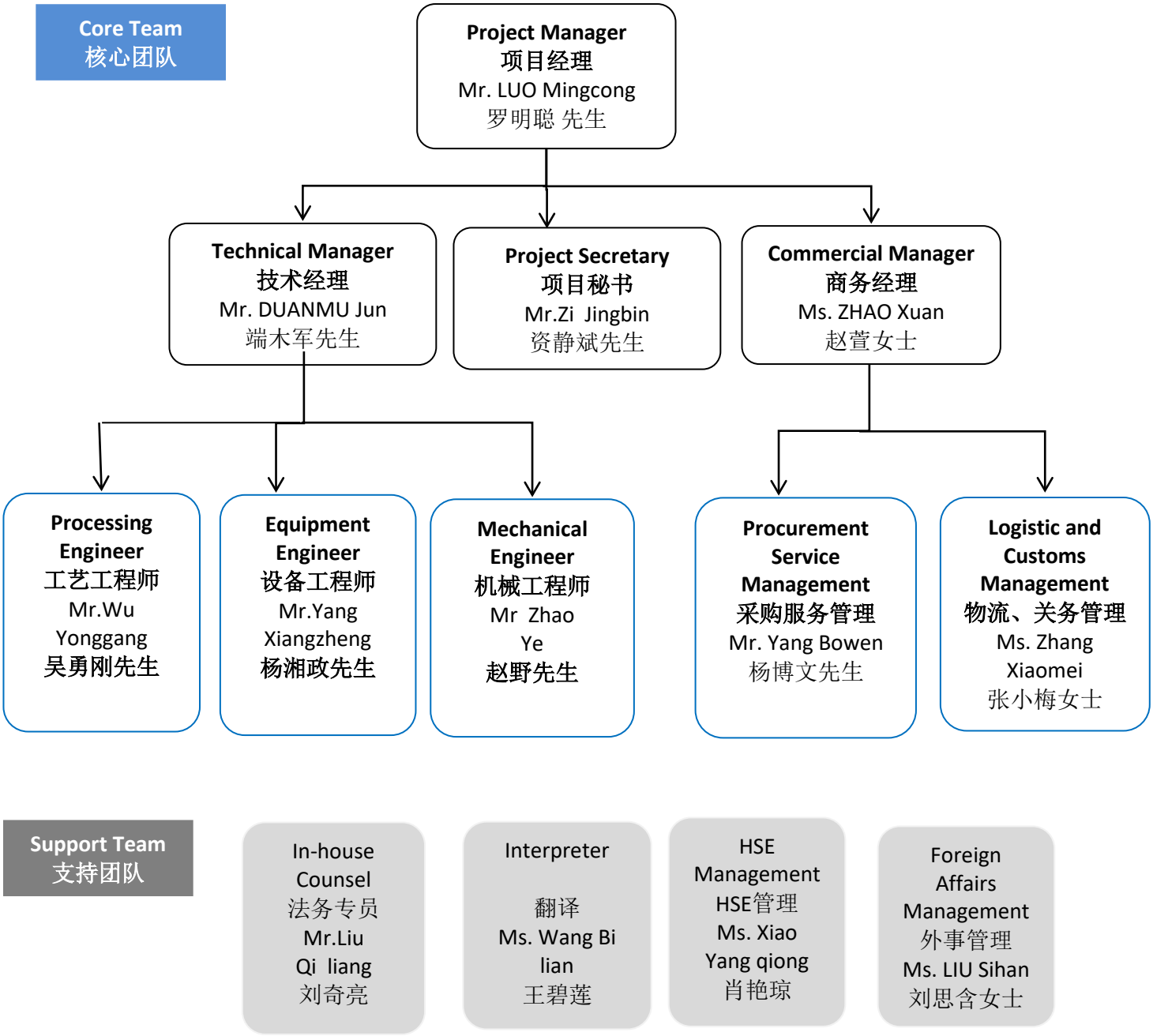
| 专业负责人 SPECI MGR | | | 项目经理ENG.MGR. | | | 审定 AUTHO. | | | 日期 DATE | |
|---|---|---|---|---|---|---|---|---|---|---|
| 设计 DESIGN | | | 校核 CHKD | | | 审核 APPR. | | | | |

注：1、应对设备接口法兰尺寸测量结果拍照，并进行记录
2、应对所有电机铭牌进行拍照
3、应对设备安装尺寸的测量结果拍照并记录结果
4、尽可能的对元器件，配件拍照
5、阀门等法兰接口设备须核对控制方式，压力等级，管径大小，接口标准等信息

Note: 1. The measurement results of equipment interface flange size shall be photographed and recorded
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**Appendix 1: Structure of Project Team**
**附件1：项目组组织机构图**



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# 端木军

| | | | | | |
|---|---|---|---|---|---|
| 姓　名<br>Name | 端木军<br>Mujun Duan | 年 龄<br>Age | 50 | 学历<br>Education | 博士<br>Doctor |
| 职　称<br>Title | 高级工程师<br>Senior engineer | 职 务<br>Post | 中化商务有限公司贸易综合部市场总监<br>Marketing Director, Trade General Department of Sinochem Business Co., Ltd | 拟在本项目任职<br>Propose to work in this project | 技术经理<br>echnical Manager |
| 职业资格<br>Vocational qualification | 博士后研究员<br>Postdoctoral researcher | | | | |
| 毕业学校<br>School of Graduation | 2010 年毕业于美国克莱姆森大学 工业工程系 博士学位<br>He graduated from Clemson University in 2010 PhD degree in the Industrial Engineering Department | | | | |
| 主要工作经历 Main work experience | | | | | |
| 时　间<br>Time | 参加过的类似项目<br>Participated in similar projects | | | 担任职务<br>Post | |
| 1994.8-2002.2 | 中国运载火箭遥测系统设计制造（China Academy of Launch Vehicle Technology ）(telemetry system)<br>Design and manufacture of Chinese carrier rocket telemetry system （China Academy of Launch Vehicle Technology)(telemetry system) | | | 课题组长<br>设备研发、制造管理、装备加工制造寻源、器件寻源与采购<br>Team leader<br>Equipment research and development, manufacturing management, | |

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| | | |
|---|---|---|
| | | equipment processing and manufacturing source search, device source search and procurement |
| 2002.2-2002.7 | 法国施耐德低压电器有限公司（Schneider Electric Low Voltage Co., Ltd）<br>France Schneider Low Pressure Electrical Appliances Ltd<br>（Schneider Electric Low Voltage Co., Ltd） | 制造工程师<br>产品国产化，（Localization），本土供应商寻源评估，试制，国家标准审核（CCC）<br>Manufacturing engineer<br>Product localization, (Localization), local supplier source evaluation, trial production, national standard audit (CCC) |
| 2005.5-2005.12 | 诺基亚手机国产化<br>Nokia mobile phone localization | 高级工艺工程师<br>本土化产品试制、测试、生产线与供应链设计。<br>Senior Process Engineer<br>Localized product trial production, testing, production line and supply chain design. |

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|---|---|---|
| 2013.6-2014.7 | 波音飞机<br>Boeing aircraft | 高级制造工程师<br>波音 777，737，787 复合材料零件中国本土化寻源与制造。<br>Senior Manufacturing Engineer<br>Source search and manufacturing of Boeing 777,737,787 composite parts in China localization |
| 2016.3-2017.2 | 海尔集团工智能研究院<br>Haier Group Industrial Intelligence Research Institute | 技术创新平台总监<br>智能工厂供应商评估与寻源，生产线设计与智能化系统升级。<br>Director of Technology Innovation Platform<br>Intelligent factory supplier evaluation and source search, production line design and intelligent system upgrade. |
| 2017.3-2021.1 | 中国化工装备有限公司<br>China Chemical Equipment Company Limited | 科技部主任<br>智能工厂国际招标项目<br>Director of the Ministry of |

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| | | |
|---|---|---|
| | | Science and Technology<br><br>Intelligent factory international bidding project |
| 2021.1- 至今 | 中化商务有限公司<br>Sinochem Business Company Limited | 贸易综合部市场总监<br>石化装备供应链寻源与采购<br>Marketing Director, Trade Department<br><br>Source search and procurement of petrochemical equipment supply chain |
| | | |

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| | | | | | |
|---|---|---|---|---|---|
| 姓　名<br>Name | 赵萱<br>Zhao Xuan | 年 龄<br>Age | 39 | 学历<br>Education | 硕士研究生<br>Master Degree Candidate |
| 职　称<br>Title | 国际商务师<br>International business division | 职 务<br>post | 中化商务有限公司贸易综合部总经理<br>General Manager of Trade General Affairs Department of Sinochem Business Co., Ltd | 拟在本项目任职<br>Propose to work in this project | **商务经理**<br>**Commercial Manager** |
| 职业资格<br>Vocational qualification | 招标师 Tenderer | | | | |
| 毕业学校<br>Graduate school | 2005 年毕业于英国萨里大学国际商务管理专业，获得理学硕士学位<br>Graduated from the University of Surrey in International Business Management in 2005,Get a Master of Science degree. | | | | |
| 主要工作经历 Main work experience | | | | | |
| 时　间 Time | 参加过的项目<br>Projects you have participated in Similar projects | | | | 担任职务<br>positions |
| 2006 至 2012 年<br>From 2006 to 2012 | 东北特钢集团大连基地环保搬迁项目 Environmental protection relocation project of Dalian Base of Northeast Special Steel Group | | | | 商务经理；负责 12 条生产线相关进口合同谈判、进口合同执行/管理、国际物流管理等一揽子采购服务工作<br>Commercial Manager; responsible for the package procurement services of 12 production line related import contract negotiation, import contract execution/ management, international logistics |

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| | | |
|---|---|---|
| | | management and so on |
| 2009 至 2012 年<br>From 2009-2012 | 齐齐哈尔北方锻钢制造有限责任公司锻造产品升级改造项目<br>Qiqihar North Forging Steel Manufacturing Co., Ltd. forging product upgrading project | 商务经理；承担精锻机、快锻机、轨道式操纵机等锻造设备进口合同谈判、进口合同执行工作<br>Commercial Manager; responsible for the import contract negotiation and import contract execution of fine forging machine, fast forging machine and track control machine, etc |
| 2009 至 2011 年<br>From<br>2009- 2011 | 南京若尔通用航空有限公司罗宾逊 R22、罗宾逊 R44 直升机采购项目<br>Nanjing Ruoer General Aviation Co., LTD. Robinson R22, Robinson R44 helicopter procurement project | 商务经理；负责设备进口代理工作<br>Commercial Manager; responsible for equipment import agency |
| 2011 至 2012 年<br>From 2011-2012 | 青海盐湖集团金属镁一体化项目<br>Qinghai Salt Lake Group Magnesium Metal Integration Project | 商务经理；负责进口合同谈判工作<br>Commercial Manager; responsible for import contract negotiation |
| 2012 至 2015 年<br>From 2012-2015 | 中车长春美国项目采购服务<br>CRRC Changchun American Project Procurement Service | 商务经理：负责政策咨询、采购方案策划<br>Business Manager: responsible for policy consultation and procurement scheme planning |
| 2015 至 2016 年<br>From 2015-2016 | 塞尔维亚国家石油公司无缝钢管采购业务<br>Serbian National Oil Company seamless steel pipe procurement business | 商务负责人；负责供应商寻源、货物催交和出口 |

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| | | |
|---|---|---|
| | | Head of business; responsible for supplier source search, goods delivery and export |
| 2016 至 2018 年<br>From 2016-2018 | 拉萨布达拉通用航空产业发展有限公司直升机进口项目<br>Lasa Budala General Aviation Industry Development Co., Ltd Helicopter import project | 商务负责人；负责政策咨询和直升机进口工作<br>Head of business; responsible for policy consultation and helicopter import work |
| 2018 至 2021 年<br>From 2018-2021 | 中车唐山加拿大项目国际采购管理服务<br>CRRC Tangshan Canada Project International Procurement Management Service | 商务负责人：负责供应商管理、采购订单签署、催交催运等工作<br>Head of business: responsible for supplier management, purchase order signing and delivery, etc |
| 2018 至 2021 年<br>From 2018-2021 | 中化泉州 100 万吨/年乙烯及炼油改扩建项目<br>Sinochem Quanzhou 1 million tons / year ethylene and oil refining renovation and expansion project | 进口负责人：带领团队负责 7 套装置近 70 个进口合同谈判和执行。Import leader: led the team to be responsible for the negotiation and execution of nearly 70 import contracts for 7 sets of units. |
| 2019 至今<br>From 2019 to date | 中化高纤芳纶、UD 步和浆粕项目<br>Sinochem high fiber aramid, UD step and pulp meal project | 进口负责人：带领团队负责 3 套装置进口合同执行和采购咨询 Import leader: Lead the team to be responsible for the import contract execution and procurement consultation of 3 sets of units |

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| | | |
|---|---|---|
| 2020 至今<br>From 2020 to date | 北京燃气天津南港 LNG 项目<br>Beijing Gas, Tianjin south port LNG Project | 进口负责人：带领团队负责接收站甲供进口物资采购服务<br>Import leader: Lead the team to be responsible for the procurement service of import materials for terminal A |

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**Appendix 3 Procurement Requirements**

# 15,000 MTPY Metal Extraction Project

# Procurement Service Requirement

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**1. SCOPE OF SERVICE**

as per SOW of this Contract.

**2. TIME SCHEDULE**

2.1 The Contractor shall proceed with the performance of the Services in a prompt manner so as to attain the delivery of China Sourced Items within dates suitable for the Project execution, as it may be modified from time to time..

2.2 Contractor shall, periodically provide Owner with all the pertinent information relevant to the China Sourced Items, including any update on the relevant delivery dates.

2.3 In the event of any extraordinary occurrence which may have, in the reasonable opinion of the Contractor, an impact on the critical path of the Project execution, Contractor shall immediately notify Owner of such occurrence in order to enable Owner to evaluate the relevant consequences, study the most appropriate countermeasures and adjust the Project planning in accordance thereof. Owner shall then inform Contractor of such adjustment and the Parties shall then evaluate any consequence on the China Sourced Items delivery, performance of the Services and related time schedule. Upon agreement thereof by the Parties, Contractor shall promptly take the necessary actions towards the Vendors and/or Service Providers to implement the identified corrective measures.

**3. CONTRACTOR'S OBLIGATIONS**

3.1 The Contractor shall timely perform Services in accordance with the Contract and all applicable engineering requirements.

3.2 The Contractor shall:

- monitor the timely performance of the selected Vendors and/or Service Providers and inform Owner accordingly, proposing adequate remedial actions suggestions for Owner to make decision;
- inform Owner of any Vendor and/or Service Provider's request for changes and evaluate the same for Owner to make decision, as applicable;
- promptly report in writing to Owner of all claims made by Vendors and/or Service Providers in respect of China Sourced Items, giving full details of each claim, its evaluation as applicable and follow all instructions received from Owner for the resolution of the same;
- notify Owner in writing if any Vendor and/or Service Provider is prevented, hindered or delayed from or in performing any of its obligations under the Purchase Order or Service Order by an event of Force Majeure in China within three (3) working days after being notified of such event, give its evaluation of the event and follow all instructions received from Owner in relation thereof.
- Contractor shall report promptly in writing to Owner upon discovery of any error, omission or discrepancy in technical information, engineering data or other information furnished to Contractor by Owner or any third party in connection with this Contract.
- Contractor shall be deemed to be aware of and shall observe any applicable Chinese laws, statutory rules and regulations in effect at the Effective Date and acknowledges that those Chinese laws, rules and regulations, to the extent applicable, shall apply to the performance of Services. Contractor shall keep itself informed of and observe any

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Chinese laws, statutory rules and regulations published after the Effective Date that may affect the Services.

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If any Chinese laws, statutory rules, or regulations published after the Effective Date affect the Contractor's cost and/or time of performance of the Services, Contractor may request a Change Order in accordance with Article 16 of this Contract.

- Contractor warrants that all Services will be performed with care, skill and diligence, in accordance with the applicable professional standards currently recognized by such profession, in accordance with this contract and good engineering practice prevailing as of the Effective Date of this Contract and shall be responsible for the professional quality, technical accuracy and coordination of all reports, designs, drawings, plans and information contained therein.

- Should there be any deficiency in the manner in which Contractor performs the Services, Contractor shall take prompt and effective action to correct these deficiencies and shall inform the Owner thereof, so that the remaining portion of the Services is done in accordance with the provisions of this Contract.

- Contractor shall be responsible for performance of the Services in accordance with generally accepted industry practices. Contractor shall not subcontract any part of the Services except as Owner, in its sole discretion, agrees to in writing. All subcontractors employed by Contractor in connection with the Services shall be subject to prior written approval by Owner.

3.3 Contractor shall not:

- agree to any variations or modifications for China Sourced Items, the Purchase Order or Service Order, unless Contractor has first obtained prior written approval from Owner's Representative;

- suspend, terminate any Purchase Order or Service Order, unless Contractor has first obtained prior written approval from Owner's Representative.

- Communicate directly with the supplier without Owner's knowledge.

## 4. OWNER'S OBLIGATIONS

4.1 For each China Sourced Items to be purchased, the Purchase Order shall be signed by and between Owner and Vendor, and the Service Order shall be signed by and between Owner and Service Provider.

4.2 Review Chonfar's deliverables and make necessary feedback in time.

4.3 Pay the Service fee on time.

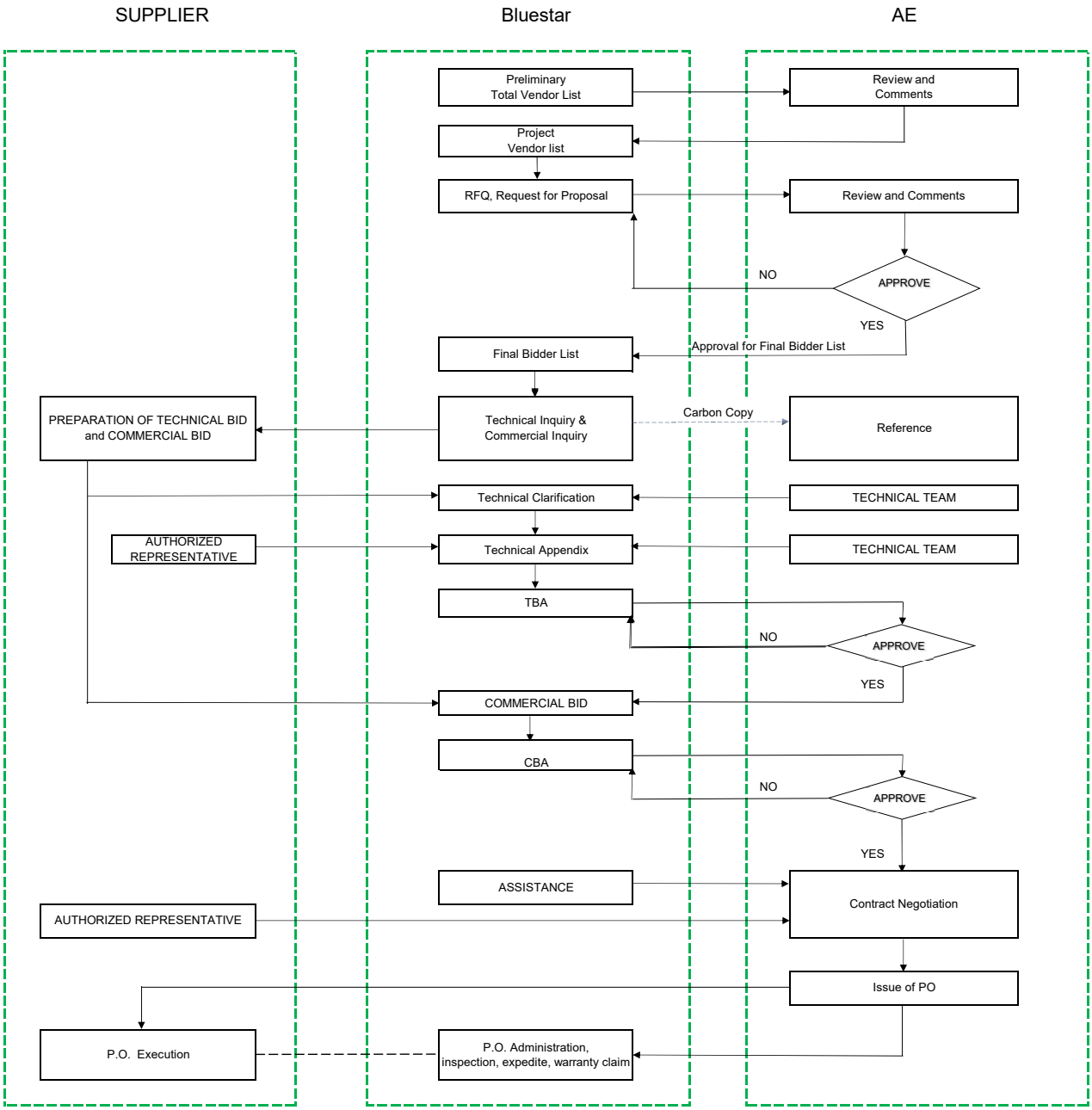
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ASCEND ELEMENTS

Date: Mar. 22nd, 2022
Rev: 1

**Appendix 4 PROJECT PROCUREMENT PROCESS CHART**

(Vendor Selection to P.O.)



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**Appendix 5 Equipment list and Estimate**

| | **15,000 MTPY NMC Metal Extraction Project Preliminary budget (All equipment)** | | | | | | |
|---|---|---|---|---|---|---|---|
| 序号 No. | 设备名称 Equipment name | 数量 quantity | USD(FOB), $ | Expected service fee, $ | 10% of Service fee, $ | 30% of Service fee, $ | 备注 Ntoe |
| 1 | 压滤设备 Filter press equipment | 33set | 1,692,307 | 44,000 | 4,400 | 13,200 | Demonstrate the feasibility of replacing filter press with |
| 3 | 萃取槽 Extraction tank | | 4,218,376 | 109,678 | 10,968 | 32,903 | |
| 5 | MVR系统+离心+干燥 MVR system + centrifugation + drying | 2套35吨MVR蒸发系统 2 sets of 35 ton MVR evaporation system3套金属盐结晶蒸发系统 3 sets of MVR metal salt evaporation system | 13,396,825 | 348,317 | 34,832 | 104,495 | |
| 7 | 废水处理系统 Waste water treatment system | 膜浓缩+预处理+1套10吨硫酸钠MVR蒸发系统+离心机+干燥设备 Membrane concentration + pretreatment + 1 set of 10 ton sodium sulfate MVR evaporation system+ Centrifuge + drying equipment | 4,460,317 | 115,968 | 11,597 | 34,790 | |
| | 合计 total | | 23,767,825 | 617,963 | | | The total price doesnot include the cost of procurement |

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## 1. Change request

A change means any change or modification to the Agreement, including without limitations changes or modifications to the Statement of Work. A change can be added to or removed from the original Agreement.

A Change Request describes a requested or suggested change in the Statement of Work (including but not limited to the project specifications), and can be either initiated by Ascend Elements ("AE") or by Vendor.

## 2. Change order

Ascend Elements shall have the right at any time prior to the delivery date by written direction to make reasonable changes in the specifications, drawings, packaging, quantities, time, place and method of delivery, for goods or services covered by this Agreement.

If Vendor believes that such change affects the price or delivery date for such goods or services, Vendor shall so notify Ascend Elements in writing (with adequate supporting documentation) within 5 calendar days after receipt of said direction. Vendor shall suspend performance of the change unless thereafter released in writing by Ascend Elements to perform such change and Ascend Elements and Vendor shall mutually agree in writing upon an equitable adjustment in the price and/or delivery date to reflect the effect of such change. Vendor's request for any price and/or delivery date adjustments shall be deemed waived unless submitted in writing within 5 calendar days after Vendor receives direction to make such changes. Vendor shall not suspend performance of the unaffected portion of this Agreement while Ascend Elements and Vendor are in the process of making such changes and any related adjustments or at any time thereafter unless so instructed in writing by Ascend Elements. Vendor shall have no obligation to proceed with such change order until Vendor and Ascend Elements agree in writing to such changes. Once both Vendor and Ascend Elements have reached a mutual agreement, Vendor shall perform such change in accordance with the terms of this Agreement. No substitutions shall be made in this Agreement without prior written authority of Ascend Elements. No agreement or understanding modifying the terms and condition of this Agreement shall be binding upon Ascend Elements nor will extra compensation be paid by Ascend Elements unless the agreement or understanding is made in writing and signed by Ascend Elements.

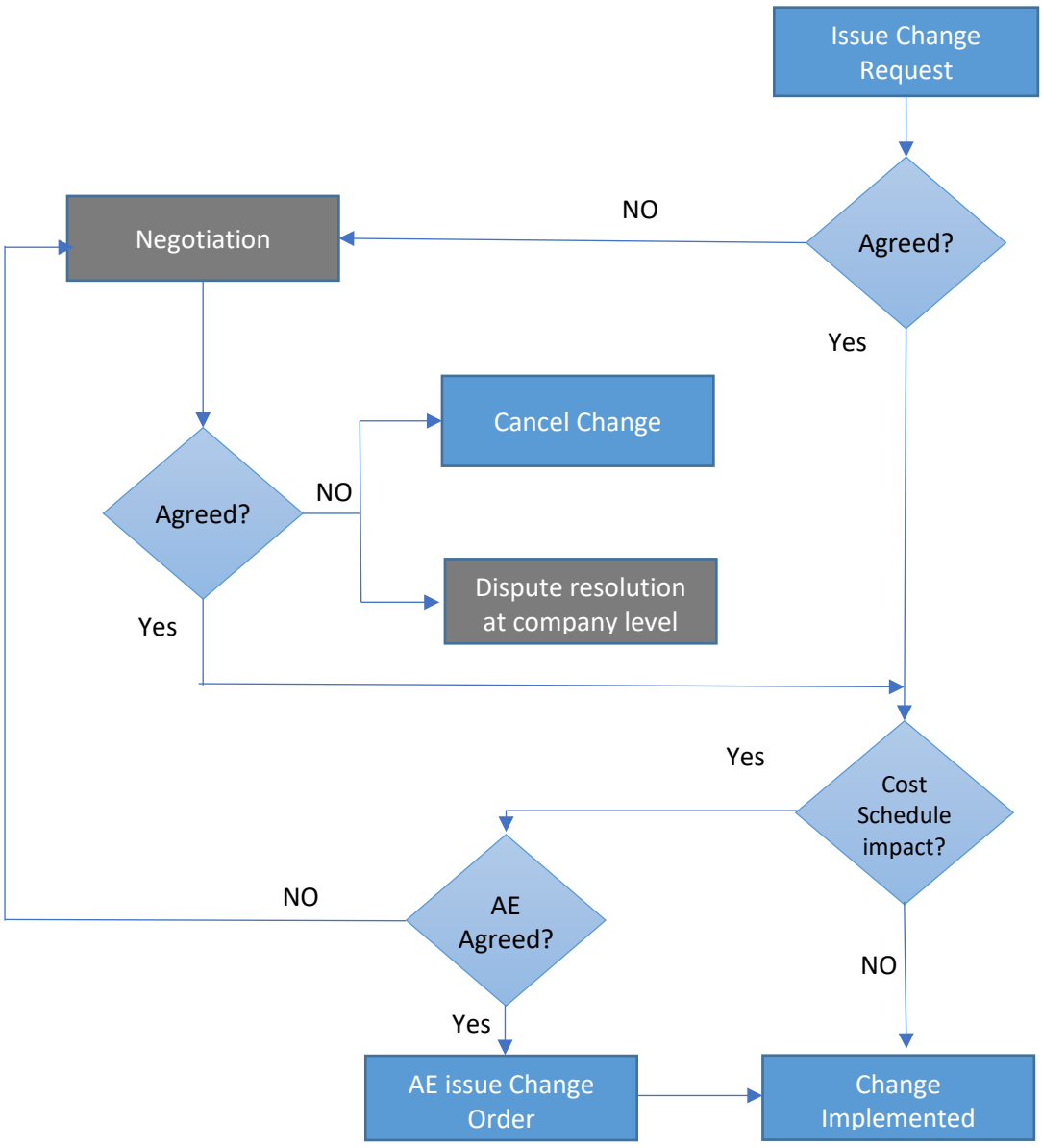
For avoidance of doubt a Change Request does not necessarily imply a change order.

## 3. Management of Change workflow

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **1** | **SP** | **03/10/22** | | | | | Complete, ready for review |
| Rev. | Name | Date | Name | Name | Date | Status | Remark, kind of revision |
| | Prepared, revised | | Checked | Approved | | | |

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**MOC number**:

**Date Change Requested**:
**Response Requested by:**

## Subject:

## Change Description:

## Impact on:

| | |
|---|---|
| Safety | Plant Reliability |
| Schedule | Cost |
| Permitting | Others: |

## Attachments:

1.
2.
3.

| Ascend Elements Inc. Approval | Contractor Approval |
|---|---|
| _____ | _____ |

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| ASCEND ELEMENTS | Contract Change Order Form | Supplier Name: Chonfar Engineering and Technology Co., Ltd. |
|---|---|---|
| Original Contract Name and Date: APX1-AE-1-200-PCS-BOD-001 Rev 1.0 | | Original PO#: 1630<br>Effective date: Feb.14.2025 |

MOC Number: BS-PCS-006 co11 Equipment Name: pCAM Engineering

**Subject:**

Supplier and SSOE problems lead to BS add new works.

**The Work is modified in Description as follows:**

This work are multiple tasks that were performed by Bluestar since April to December 2024. Details of this work listed below and next pages, the total man-hours have been reviewed and negotiated several rounds, Bluestar made concession of 786 hrs, the agreed total man-hours are 2012 hours.
1. Modify 3D model and extract isometric pipe drawings due to SSOE adjusted the platform and building structures.
2.Modify 3D model and extract isometric pipe drawings due to equipment vendor drawings updates, including Secondary dust collector, Pump, IAC vacuum feeders.
3. Pipe drawing updates for control valves, flow meters, safety valves, reducer, etc.
4. AE requests process modifications(Orifice plate, Sampling, Valves, etc.)
5. Integrate RO systems to Ammonia platform, including process, layout, E&I, pipping design.
Total cost for these changes is $125,750 USD.

**The Schedule is modified as follows:**

All of the above changes have been completed by Buestar.

**The Contract Price is modified as follows (with format $xxx,xxx.00):**

| | |
|---|---|
| Original Contract Price: | $ 2,480,000 |
| Changes Made by Prior Change Orders (Total): | $ 3,488,662 |
| Change Made by This Change Order: | $ 125,750 |
| TOTAL REVISED CONTRACT PRICE: | $ 3,614,412 |

**Additional Contacts:**

| | |
|---|---|
| Supply Chain Representative: | Mingcong Luo |
| AME Director: | Benoit Tranape |
| Project Director: | Luis Porras |

**This change also impacts:**

☑ Engineering Deliverables : P&ID, MTO, ISO drawings
☐ Permitting:
☐ Reliability
☐ Is a PHA needed?
☐ Others:

**Attachments:**

1. Detailed description of changes
2. Break down manhours of each change
3.

**Ascend Elements Inc. Approval**

DocuSigned by:
37EC7AE24B9243C...
Andrew Aberdale
CFO
3/31/2025

**Supplier Approval**

Mingcong Luo
能源环境设计院院长

**Conditions and Terms:**

No other changes to the Contract are made by this Change Order. All Contract terms not expressly modified by the Change Order remain unchanged.

The Supplier agrees that this Change Order constitutes its full and final adjustment for all costs, delays, disruptions, inefficiencies, accelerations, schedule impacts, or other consequences arising from the identified change, whether caused by the change itself, or by any claimed cumulative effect of changes made to the date of the Change Order, and that no further adjustments in compensation or time shall be sought or made with respect to the change.

Docusign Envelope ID: 65E761A0-E93A-48B6-86BF-2892796E8DB2

| ASCEND ELEMENTS | Contract Change Order Form | Supplier Name: Chonfar Engineering and Technology Co., Ltd. |
|---|---|---|
| Original Contract Name and Date: APX1-AE-1-200-PCS-BOD-001 Rev 1.0 | | Original PO#: 1630<br>Effective date: Feb.14.2025 |

MOC Number: BS-PCS-006 co11 Equipment Name: pCAM Engineering

**Subject:** Supplier and SSOE problems lead to BS add new works.

**The Work is modified in Description as follows:**

The piping and SSOE once again adjusted the clashes between the structure
1) MOC for 220 Clashes between piping and SSOE structural channel or rainwater pipe or fire pipe, total 23 pipes, see BS-PIP-016 for detail.
2) MOC for 212 Clashes between piping and SSOE structural beams or piping, total 8 pipes, see BS-PIP-018 for detail.
3) MOC for 250 Clashing with SSOE, tank area move east by 520mm, total 54 pipes, see BS-PIP-020 for detail.
4) MOC for 220 Clashes between piping and SSOE structural beams, total 204 pipes, see BS-PIP-021 for detail.
5) MOC for 220 Clashes between piping and SSOE structural beams, total 50 pipes, see BS-PIP-022 for detail.
6) MOC for 220 Clashes between piping and SSOE structural beams, total 12 pipes, see BS-PIP-030 for detail.
7) MOC for 212 Clash viewpoint modifications, total 22 pipes, see BS-PIP-031 for detail.
8) MOC for 212 Precision filter piping clashing with egress path, total 27 pipes, see BS-PIP-037 for detail.
9) MOC for 220 Modify the pipe position due to the TK structural beam repositioning, total 8 pipes, see BS-PIP-043 for detail.
10) MOC for 220 Clashes between piping and SSOE structural beams, total 109 pipes, see BS-PIP-047 for detail.

Equipment vendor drawings updated(Secondary dust collector, Pump, IAC)
1) MOC for 220 Secondary dust collector piping modification due to late vendor information, total 48 pipes, see BS-PIP-017 for detail.
2) MOC for 212 Pump model update, total 8 pipes,see BS-PIP-018 for detail.
3) MOC for 250 Pump vendor foundation information updating, total 19 pipes, see BS-PIP-020 for detail.
4) MOC for 220 Modification due to pump vendor information recevied, nozzle size misalign bettwen 3D model and vendor drawing, total 128 pipes, see BS-PIP-022 for detail.
5) MOC for 212 The IAC of the leaching workshop added the instrument air duct, total 13 pipes, see BS-PIP-037 for detail.
6) MOC for 220 IAC vendor requires Instrument Air Supply, total 15 pipes, see BS-PIP-038 for detail.
7) MOC for 212 Add pipe coonection with IAC as per Vendor latest infromation, total 2 pipes, see BS-PIP-044 for detail.
8) MOC for 212 Modify the IAC instrument air pipeline size, total 13 pipes, see BS-PIP-046 for detail.

**Conditions and Terms:**

No other changes to the Contract are made by this Change Order. All Contract terms not expressly modified by the Change Order remain unchanged.

The Supplier agrees that this Change Order constitutes its full and final adjustment for all costs, delays, disruptions, inefficiencies, accelerations, schedule impacts, or other consequences arising from the identified change, whether caused by the change itself, or by any claimed cumulative effect of changes made to the date of the Change Order, and that no further adjustments in compensation or time shall be sought or made with respect to the change.

Docusign Envelope ID: 65E761A0-E93A-48B6-86BF-2892796E8DB2

| ASCEND ELEMENTS | Contract Change Order Form | Supplier Name: Chonfar Engineering and Technology Co., Ltd. |
|---|---|---|
| Original Contract Name and Date: APX1-AE-1-200-PCS-BOD-001 Rev 1.0 | | Original PO#: 1630<br>Effective date: Feb.14.2025 |

MOC Number: BS-PCS-006 co11 Equipment Name: pCAM Engineering

**Subject:** Supplier and SSOE problems lead to BS add new works.

**The Work is modified in Description as follows:**

Drawing updates for control valves, flow meters, safety valves, reducer, etc.
1) MOC for 212 As per site requirement, ECC not available in us marketing, total 13 pipes, see BS-PIP-034 for detail.
2) MOC for 220 Change the safety valve outlet dimention as per vendor information, total 14 pipes, see BS-PIP-038 for detail.
3) MOC for 250 Flowmeter length modification, total 2 pipes, see BS-PIP-039 for detail.
4) MOC for 250 Valve material change from Plastic to lined valve, Adding support, total 4 pipes, see BS-PIP-039 for detail.
5) MOC for 220 Flowmeter length modification, total 70 pipes, see BS-PIP-038 and BS-PIP-041 for detail.
6) MOC for 220 Change the safety valve outlet dimention as per vendor information, total 5 pipes, see BS-PIP-041 for detail.

AE requests process modifications(Orifice plate, Sampling, Valves, etc.)
1) MOC for 212 Add orifice plate, total 23 pipes, see BS-PIP-023 for detail.
2) MOC for 212 Sample conenction cancelled, total 6 pipes, see BS-PIP-023 for detail.
3) MOC for 220 Add sampling connection on piping, total 15 pipes, see BS-PIP-025 for detail.
4) MOC for 212 Add orifice plate, total 19 pipes, see BS-PIP-028 for detail.
5) MOC for 250 Deleting Sampling as per requested, total 3 pipes, see BS-PIP-039 for detail.
6) MOC for 212 Sulfuric Acid Piping to 1st Leaching Reactors corrosion, Remote Control Valve Position Change, total 13 pipes, see BS-PIP-040 for detail.
7) MOC for 212 Change back to Rev C as per agreement (Sulfuric Acid Piping ), total 13 pipes, see BS-PIP-044 for detail.
8) MOC for 212 Modification of pipeline due to addition of explosive gun Change tie-in location from top of tank to the site, total 8 pipes, see BS-PIP-044 for detail.

RO system layout and piping design
1) MOC for 250 RO System, total 81 pipes, see BS-PIP-029 and BS-PIP-032 and BS-PIP-036 and BS-PIP-042 for detail.

**Conditions and Terms:**

No other changes to the Contract are made by this Change Order. All Contract terms not expressly modified by the Change Order remain unchanged.

The Supplier agrees that this Change Order constitutes its full and final adjustment for all costs, delays, disruptions, inefficiencies, accelerations, schedule impacts, or other consequences arising from the identified change, whether caused by the change itself, or by any claimed cumulative effect of changes made to the date of the Change Order, and that no further adjustments in compensation or time shall be sought or made with respect to the change.

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| Labor change cost due to changes | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| No. | Unit Numbering | item | Design man-hours（h | description | Check man-hours（h | description | Approve man-hours（h | Original | After Negotitaion |
| **1** | **212/220/250** | **The piping and SSOE once again adjusted the clashes between the structure** | **624** | | **120** | | **48** | **872** | 700 |
| | 212/220/250 | 3D model adjustment | 432 | 2engineers, 27 days, 8h/day | 40 | 1engineers,5days,8 h/day | 16 | | |
| | 212/220/250 | ISO drawing | 96 | 1 engineers, 12 days, 8h/day | 40 | 1engineers,5days,8 h/day | 16 | | |
| | 212/220/250 | MTO | 96 | 1 engineers, 12 days, 8h/day | 40 | 1engineers,5days,8 h/day | 16 | | |
| **2** | **212/220/250** | **Equipment vendor drawings updated( Pump, Secondary dust collector, IAC)** | **240** | | **48** | | **24** | **444** | 200 |
| | 212/220/250 | 3D model adjustment | 160 | 2engineers, 10 days, 8h/day | 16 | 1engineers,2days,8 h/day | 8 | | |
| | 212/220/250 | ISO drawing | 40 | 1 engineers, 5 days, 8h/day | 16 | 1engineers,2days,8 h/day | 8 | | |
| | 212/220/250 | MTO | 40 | 1 engineers, 5 days, 8h/day | 16 | 1engineers,2days,8 h/day | 8 | | |
| **3** | **212/220/250** | **Drawing updates for control valves, flow meters, safety valves, reducer, etc.** | **48** | | **12** | | **12** | **116** | 50 |
| | 212/220/250 | 3D model adjustment | 32 | 1engineers, 4 days, 8h/day | 4 | 1engineers,0.5days ,8h/day | 4 | | |
| | 212/220/250 | ISO drawing | 8 | 1 engineers, 1 days, 8h/day | 4 | 1engineers,0.5days ,8h/day | 4 | | |
| | 212/220/250 | MTO | 8 | 1 engineers, 1 days, 8h/day | 4 | 1engineers,0.5days ,8h/day | 4 | | |
| **4** | **212/220/250** | **AE requests process modifications(Orifice plate, Sampling, Valves, etc.)** | **320** | | **92** | | **50** | **462** | 462 |
| | 212/220/250 | P&ID | 64 | 1engineers, 8 days, 8h/day | 24 | 1engineers,3days,8 h/day | 16 | | |
| | 212/220/250 | Valve list | 32 | 1 engineers, 4 days, 8h/day | 16 | 1engineers,2days,8 h/day | 8 | | |
| | 212/220/250 | Special part list | 32 | 1engineers,4 days, 8h/day | 16 | 1engineers,2days,8 h/day | 8 | | |
| | 212/220/250 | 3D model adjustment | 128 | 2engineers, 8 days, 8h/day | 12 | 1engineers,1.5days ,8h/day | 6 | | |
| | 212/220/250 | ISO drawing | 32 | 1 engineers, 4 days, 8h/day | 12 | 1engineers,1.5days ,8h/day | 6 | | |
| | 212/220/250 | MTO | 32 | 1engineers,4 days, 8h/day | 12 | 1engineers,1.5days ,8h/day | 6 | | |
| **5** | **250** | **RO system layout and piping design** | **664** | | **120** | | **56** | **936** | 500 |
| | 250 | P&ID | 144 | 3engineers, 6 days, 8h/day | 40 | 1engineers,5days,8 h/day | 16 | | |
| | 250 | Line list | 40 | 1 engineers, 5 days, 8h/day | 16 | 1engineers,2days,8 h/day | 8 | | |
| | 250 | Equipment layout | 128 | 2engineers,8 days, 8h/day | 16 | 1engineers,2days,8 h/day | 8 | | |
| | 250 | 3D model adjustment | 224 | 2engineers, 14 days, 8h/day | 16 | 1engineers,2days,8 h/day | 8 | | |
| | 250 | ISO drawing | 64 | 2 engineers, 4 days, 8h/day | 16 | 1engineers,2days,8 h/day | 8 | | |
| | 250 | MTO | 64 | 2engineers,4 days, 8h/day | 16 | 1engineers,2days,8 h/day | 8 | | |
| **6** | | **Project management** | **320** | 1 engineer, 45days, 8h/day | | | | **360** | 100 |
| | | | 2216 | | 392 | | 190 | | 2012 |
| **7** | | man-hour | **2798** | | | | **h** | | |
| **8** | | Man hour cost (Price USD) | **62.5** | | | | **$/h** | | |
| **9** | **Total** | **change cost (Price USD)** | **174875** | | | | **$** | **199375** | **125,750** |
| Participants:Yonggang Wu\guanghui Xie\Zhihang Dong\Yong Li\Jianbo Chen\ Jia Zhang\ Hongjun Liu\Weiguan Liu\Huali Shu\Jingxiang Yang\Yijie Luo\Jianfeng Zheng\Jianbo Zhao\Di\Qianhong Deng\Ding Cui\Jiali Xiong\Jingbin Zi\Mingcong Luo | | | | | | | | | |

Docusign Envelope ID: 65E761A0-E93A-48B6-86BF-2892796E8DB2

Signed by:
Kevin Mulholland
A129F57C2AC0412...

Kevin Mulholland

Sr. Manager, Sourcing

Ascend Elements

3/4/2025

DocuSigned by:
Benoit Tranape
B5C1759EDF7E4D8...

Benoit Tranape

AME Director

Ascend Elements

3/4/2025

DocuSigned by:
shaowei pang
FE298BFDC4AA419...

shaowei pang

AME Manager

Shaowei

3/4/2025

Signed by:
Luis Porras
D40C592208E74AC...

Luis Porras

VP SCM

AE

3/10/2025

**Chonfar Engineering and Technology Co.,Ltd.**

**Proforma Invoice**

| | |
|---|---|
| 2025. April. 11th | Invoice Number:22Y18-PM70-10-2025-01 |

**10,000 MTPY pCAM Synthesis Project ,ASCEND ELEMENTS.**

PO：4500001831

| **Description** | **Amount USD** |
|---|---|
| Payment: MOC BS-PCS-006 co11 | 125,750.00 |
| Invoice Total | 125,750.00 |

**Payment Details**

| | |
|---|---|
| **Transfer To :** | Furong Sub-br, Hunan Branch, China Construction Bank |
| **SWIFT Code :** | PCBCCNBJHUX |
| **For Credit To :** | Chonfar Engineering and Technology Co.,Ltd. |
| **Account No:** | 43001531061050000887 |
| **Address of Beneficary:** | No.360 Taohuaduan Road ,Yuhua District, Changsha, Hunan |

Contact Details

| | |
|---|---|
| Operations Leader: | Qun Zhou |
| Telephone: | 86-731-85637212 |
| Facsimile: | 86-731-85637212 |

# Changed Purchase Order: 4500001831

Ascend Elements
133 Flanders Road
Westborough, MA 01581



CHONFAR ENGINEERING AND
TECHNOLOGY CO LTD
NO 360 TAOHUADUAN ROAD
YUHUA DISTRICT, CHANGSHA
410116
CHINA

**Purchase Order:** 4500001831
**Created on:** May 16, 2024
**Supplier ID:** 0001000580
**Payment Terms:** Net Due in 30 Days
**Incoterms Classify:**
**Purch Doc. Type:** Standard PO

**Ship-to Address:**
Ascend Elements, Inc.
6505 John Rivers Road
HOPKINSVILLE KY 42240
USA

| Item | ID | Description | Quantity | Delivery Date / Service Period | Net Price | Net Value |
|---|---|---|---|---|---|---|
| 00010 | | pCAM Engineering, Piping & structural | 1 EA | Dec 31, 2024 | 66,500.00 USD per 1 EA | 66,500.00 USD |
| 00020 | | Inline Sampling Valves, CO9 | 1 EA | Dec 31, 2024 | 6,350.00 USD per 1 EA | 6,350.00 USD |
| 00030 | | Purified Liquid ultrafilter process C08 | 1 EA | Dec 31, 2024 | 9,562.50 USD per 1 EA | 9,562.50 USD |
| 00040 | | H2 risk mitigation for leaching unit | 1 EA | Dec 31, 2024 | 20,700.00 USD per 1 EA | 20,700.00 USD |
| 00050 | | CO11 Problem lead to BS add new work | 1 EA | Dec 31, 2025 | 125,750.00 USD per 1 EA | 125,750.00 USD |
| | **Changes:**<br>Goods recipient changed<br>Schedule lines changed<br>New item | | | | | |
| | **Notes:**<br>Apex1 PO 1630-11 (4500001831) Problem lead to BS add new work. The total man-hours have been reviewed and negotiated several rounds, Bluestar made concession of 786 hrs, the agreed total man-hours are 2012 hours, additional cost is $125,750 USD. | | | | | |
| 00060 | | CO12 MOC 052, MOC 053, & MOC 057 | 1 EA | Dec 31, 2025 | 18,262.00 USD per 1 EA | 18,262.00 USD |
| | **Changes:**<br>Goods recipient changed<br>Schedule lines changed<br>New item | | | | | |
| | **Notes:**<br>Apex1 PO 1630-11 (4500001831) Problem lead to BS add new work. The total man-hours have been reviewed and negotiated several rounds, Bluestar made concession of 786 hrs, the agreed total man-hours are 2012 hours, additional cost is $125,750 USD. | | | | | |

# Changed Purchase Order: 4500001831

Ascend Elements
133 Flanders Road
Westborough, MA 01581



**Total Value:** 247,124.50 USD

Please email invoice to APinvoicing@ascendelements.com and reference this PO# on the invoice
For payment status please email: APinquiries@ascendelements.com

**Work Completed for MOC: BS-PCS-006 co11**

Submitted by: ____Bluestar_____

Name: _____Dong Zhi Hang_____

Signature: _____

Job Title: _____Piping Engineer_____

Date: _____2025, April 2_____

Confirmed by Ascend Elements Inc:

Name: _____Shaowei Pang_____

Signature: Shaowei Pang

Job Title: _____Project Manager_____

Date: 04/09/2025

**Completion List**

| No. | Unit Numbering | item | Completed & Uploaded |
|---|---|---|---|
| **1** | **212/220/250** | **The piping and SSOE once again adjusted the clashes between the structure** | ✓ |
| | 212/220/250 | 3D model adjustment | ✓ |
| | 212/220/250 | ISO drawing | ✓ |
| | 212/220/250 | MTO | ✓ |
| **2** | **212/220/250** | **Equipment vendor drawings updated(Tank, Pump, Precision Filter, Filter concentrator, Secondary dust collector, IAC, Tengtai)** | ✓ |
| | 212/220/250 | 3D model adjustment | ✓ |
| | 212/220/250 | ISO drawing | ✓ |

| | | | |
|---|---|---|---|
| | 212/220/250 | MTO | ✓ |
| **3** | **212/220/250** | **Drawing updates for control valves, flow meters, safety valves, reducer, etc.** | ✓ |
| | 212/220/250 | 3D model adjustment | ✓ |
| | 212/220/250 | ISO drawing | ✓ |
| | 212/220/250 | MTO | ✓ |
| **4** | **212/220/250** | **AE requests process modifications(Orifice plate, Sampling, Valves, etc.)** | ✓ |
| | 212/220/250 | P&ID | ✓ |
| | 212/220/250 | Valve list | ✓ |
| | 212/220/250 | Special part list | ✓ |
| | 212/220/250 | 3D model adjustment | ✓ |
| | 212/220/250 | ISO drawing | ✓ |
| | 212/220/250 | MTO | ✓ |
| **5** | **250** | **RO system layout and piping design** | ✓ |
| | 250 | P&ID | ✓ |
| | 250 | Line list | ✓ |
| | 250 | Equipment layout | ✓ |
| | 250 | 3D model adjustment | ✓ |
| | 250 | ISO drawing | ✓ |
| | 250 | MTO | ✓ |

## List of work completed

1. Below shows the email with the submitted documents

回复: update: All recent MOC documents on pipeline adjustment

董志航(Dong Zhihang 中蓝长化)
收件人 'David Tong'; 'Guihua Lu'
抄送 邓乾红(Deng Qianhong 中蓝长化); 章佳(Zhang Jia 中蓝长化); 资静斌(Zi Jingbin 中蓝长化); 罗毅杰(Luo Yijie 中蓝长化); 罗明聪(Luo Mingcong 中蓝长化); 吴勇刚(Wu Yonggang 中蓝长化); 'Shaowei Pang'

答复 全部答复 转发 ...
2024/11/1 (周五) 14:18

【外部邮件】FW: Apex -1 pcam Engineering Meeting
Outlook 项目

【外部邮件】转发: Pipe supports 1-T-25012
Outlook 项目

Hi Mr. Tong and Lu

这次是这段时间沉锂和合成车间的管道 MOC。原因见所附相关邮件。我暂存在下面的网址上，请尽快下载。
This time it's a pipeline MOC from the Precursor Lithium and Synthesis workshop during this time period. See attached related email for reasons. I have temporarily saved them on the following website, please download them as soon as possible.

https://we.tl/t-PYRGQaxlTj

Best Regards,
Zhihang Dong

**发件人:** 董志航(Dong Zhihang 中蓝长化)
**发送时间:** 2024 年 10 月 23 日 16:37
**收件人:** 'David Tong' <dtong@ascendelements.com>; 'Guihua Lu' <glu@ascendelements.com>
**抄送:** 邓乾红(Deng Qianhong 中蓝长化) <dengqianhong@sinochem.com>; 章佳(Zhang Jia 中蓝长化) <zhangjia1@sinochem.com>; 资静斌(Zi Jingbin 中蓝长化) <zijingbin@sinochem.com>; 罗毅杰(Luo Yijie 中蓝长化) <luoyijie@sinochem.com>; 罗明聪(Luo Mingcong 中蓝长化) <luomingcong@sinochem.com>; 吴勇刚(Wu Yonggang 中蓝长化) <wuyonggang3@sinochem.com>; 'Shaowei Pang' <spang@ascendelements.com>
**主题:** 回复: update: All recent MOC documents on pipeline adjustment

回复: update: All recent MOC documents on pipeline adjustment

董志航(Dong Zhihang 中蓝长化)
收件人 'David Tong'; 'Guihua Lu'
抄送 邓乾红(Deng Qianhong 中蓝长化); 章佳(Zhang Jia 中蓝长化); 资静斌(Zi Jingbin 中蓝长化); 罗毅杰(Luo Yijie 中蓝长化); 罗明聪(Luo Mingcong 中蓝长化); 吴勇刚(Wu Yonggang 中蓝长化); 'Shaowei Pang'

答复 全部答复 转发 ...
2024/10/23 (周三) 16:37

答复此邮件的时间为 2024/11/1 14:18。

Hi Mr. Tong and Lu

Attached is the latest ISO MOC for leaching plant, please check it.
附件是浸出车间最新的 ISO MOC，请查收。

Best Regards,
Zhihang Dong

**发件人:** 董志航(Dong Zhihang 中蓝长化)
**发送时间:** 2024 年 9 月 13 日 15:27
**收件人:** 'David Tong' <dtong@ascendelements.com>; 'Guihua Lu' <glu@ascendelements.com>
**抄送:** 邓乾红(Deng Qianhong 中蓝长化) <dengqianhong@sinochem.com>; 章佳(Zhang Jia 中蓝长化) <zhangjia1@sinochem.com>; 资静斌(Zi Jingbin 中蓝长化) <zijingbin@sinochem.com>; 罗毅杰(Luo Yijie 中蓝长化) <luoyijie@sinochem.com>; 罗明聪(Luo Mingcong 中蓝长化) <luomingcong@sinochem.com>; 吴勇刚(Wu Yonggang 中蓝长化) <wuyonggang3@sinochem.com>; 'Shaowei Pang' <spang@ascendelements.com>
**主题:** 回复: update: All recent MOC documents on pipeline adjustment

回复: update: All recent MOC documents on pipeline adjustment

董志航(Dong Zhihang 中蓝长化)

答复 | 全部答复 | 转发 | ...

收件人 'David Tong'; 'Guihua Lu'

2024/10/23 (周三) 16:31

抄送 邓乾红(Deng Qianhong 中蓝长化); 章佳(Zhang Jia 中蓝长化); 资静斌(Zi Jingbin 中蓝长化); 罗毅杰(Luo Yijie 中蓝长化); 罗明聪(Luo Mingcong 中蓝长化); 吴勇刚(Wu Yonggang 中蓝长化); 'Shaowei Pang'

BS-PIP-046 (212~213 until-10.14) .zip
29 MB

Hi Mr. Tong and Lu

Attached is the latest ISO MOC for leaching plant, please check it.
附件是浸出车间最新的 ISO MOC，请查收。

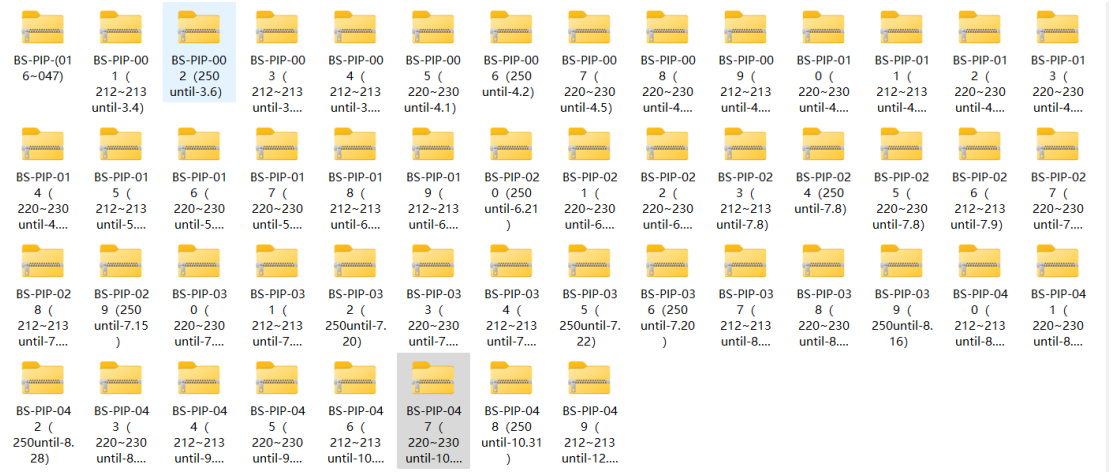
Best Regards,
Zhihang Dong

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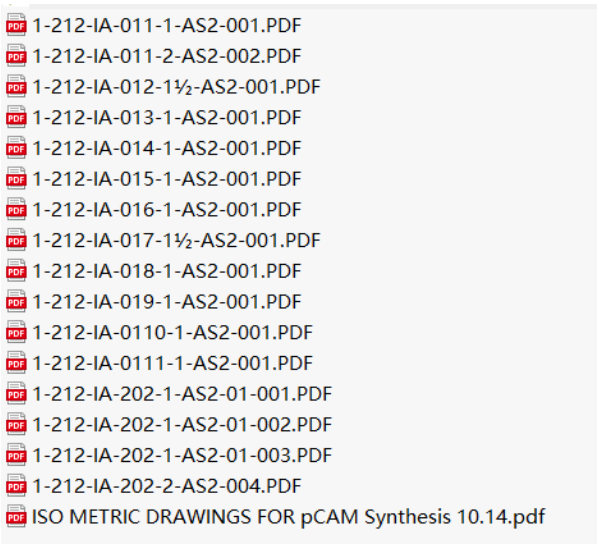
**发件人:** 董志航(Dong Zhihang 中蓝长化)
**发送时间:** 2024 年 9 月 13 日 15:27
**收件人:** 'David Tong' <dtong@ascendelements.com>; 'Guihua Lu' <glu@ascendelements.com>
**抄送:** 邓乾红(Deng Qianhong 中蓝长化) <dengqianhong@sinochem.com>; 章佳(Zhang Jia 中蓝长化) <zhangjia1@sinochem.com>; 资静斌(Zi Jingbin 中蓝长化) <zijingbin@sinochem.com>; 罗毅杰(Luo Yijie 中蓝长化) <luoyijie@sinochem.com>; 罗明聪(Luo Mingcong 中蓝长化) <luomingcong@sinochem.com>; 吴勇刚(Wu Yonggang 中蓝长化) <wuyonggang3@sinochem.com>; 'Shaowei Pang' <spang@ascendelements.com>
**主题:** 回复: update: All recent MOC documents on pipeline adjustment

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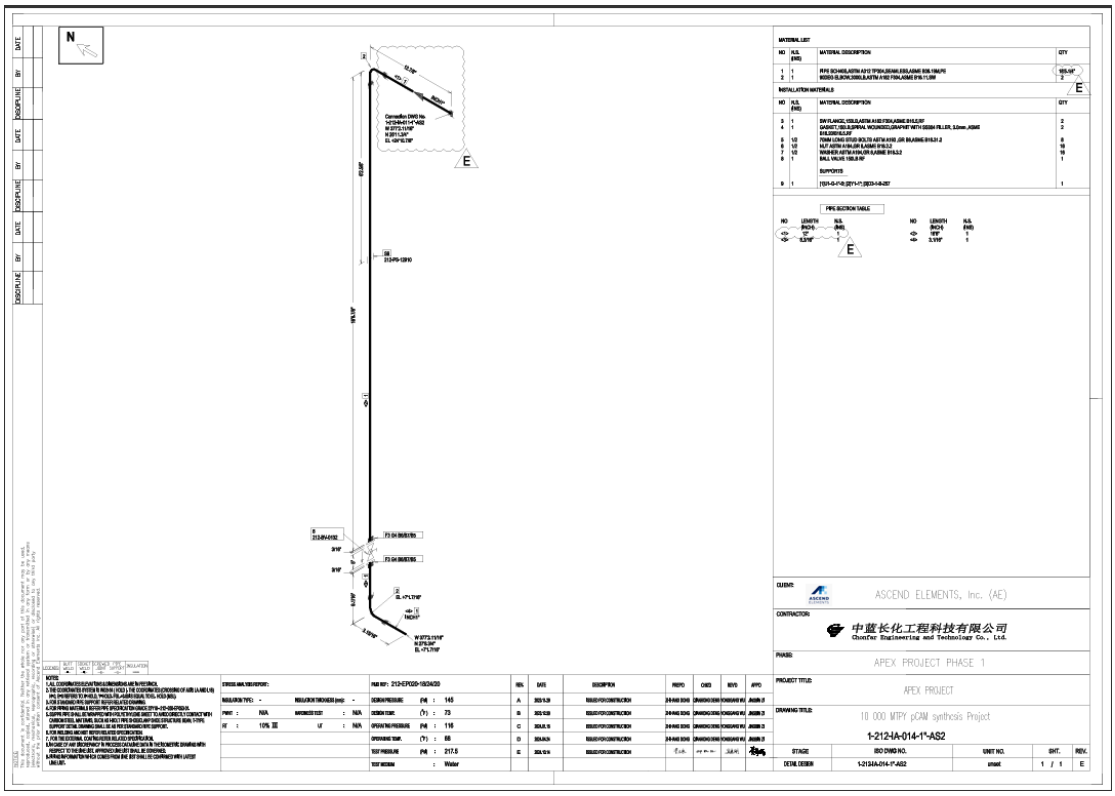
## 2. Below shows the submitted document folders

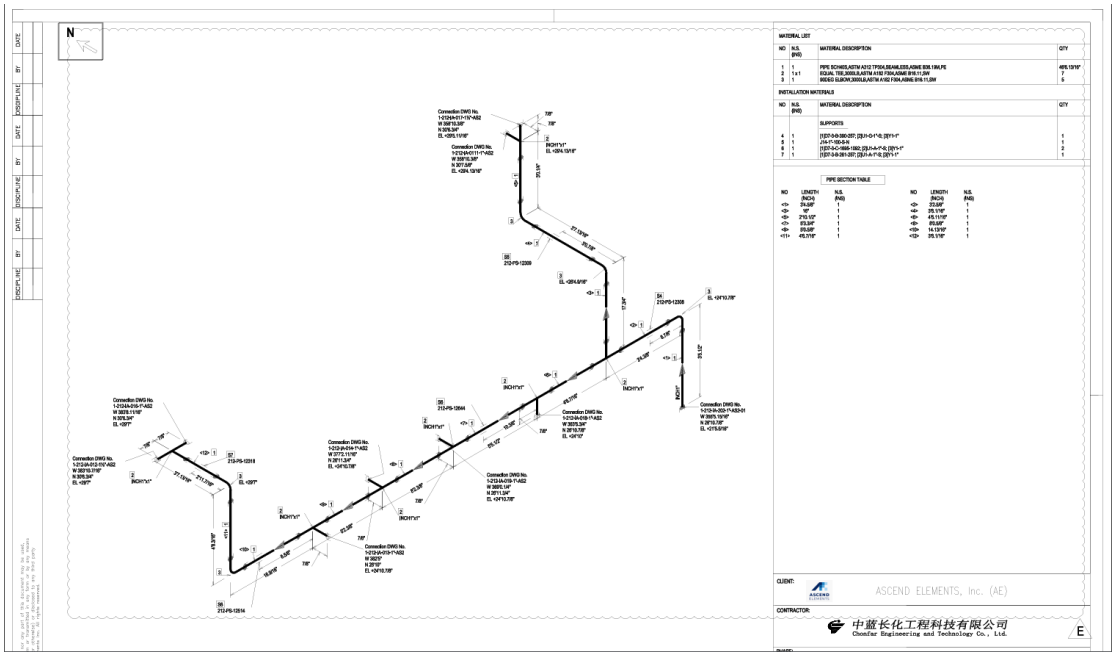



## 3. Below shows the drawings in one folder



4. Below shows some of the completed drawings



Docusign Envelope ID: 65E761A0-E93A-48B6-86BF-2892796E8DB2

| ASCEND ELEMENTS | Contract Change Order Form | Supplier Name: Chonfar Engineering and Technology Co., Ltd. |
|---|---|---|
| Original Contract Name and Date: APX1-AE-1-200-PCS-BOD-001 Rev 1.0 | | Original PO#: 1630<br>Effective date: Feb.14.2025 |

MOC Number: BS-PCS-006 co11 Equipment Name: pCAM Engineering

**Subject:**

Supplier and SSOE problems lead to BS add new works.

**The Work is modified in Description as follows:**

This work are multiple tasks that were performed by Bluestar since April to December 2024. Details of this work listed below and next pages, the total man-hours have been reviewed and negotiated several rounds, Bluestar made concession of 786 hrs, the agreed total man-hours are 2012 hours.
1. Modify 3D model and extract isometric pipe drawings due to SSOE adjusted the platform and building structures.
2.Modify 3D model and extract isometric pipe drawings due to equipment vendor drawings updates, including Secondary dust collector, Pump, IAC vacuum feeders.
3. Pipe drawing updates for control valves, flow meters, safety valves, reducer, etc.
4. AE requests process modifications(Orifice plate, Sampling, Valves, etc.)
5. Integrate RO systems to Ammonia platform, including process, layout, E&I, pipping design.
Total cost for these changes is $125,750 USD.

**The Schedule is modified as follows:**

All of the above changes have been completed by Buestar.

**The Contract Price is modified as follows (with format $xxx,xxx.00):**

| | |
|---|---|
| Original Contract Price: | $ 2,480,000 |
| Changes Made by Prior Change Orders (Total): | $ 3,488,662 |
| Change Made by This Change Order: | $ 125,750 |
| TOTAL REVISED CONTRACT PRICE: | $ 3,614,412 |

**Additional Contacts:**

| | |
|---|---|
| Supply Chain Representative: | Mingcong Luo |
| AME Director: | Benoit Tranape |
| Project Director: | Luis Porras |

**This change also impacts:**

☑ Engineering Deliverables : P&ID, MTO, ISO drawings
☐ Permitting:
☐ Reliability
☐ Is a PHA needed?
☐ Others:

**Attachments:**

1. Detailed description of changes
2. Break down manhours of each change
3.

**Ascend Elements Inc. Approval**

DocuSigned by:
37EC7AE24B9243C...
Andrew Aberdale
CFO
3/31/2025

**Supplier Approval**

Mingcong Luo
能源环境设计院院长

**Conditions and Terms:**

No other changes to the Contract are made by this Change Order. All Contract terms not expressly modified by the Change Order remain unchanged.

The Supplier agrees that this Change Order constitutes its full and final adjustment for all costs, delays, disruptions, inefficiencies, accelerations, schedule impacts, or other consequences arising from the identified change, whether caused by the change itself, or by any claimed cumulative effect of changes made to the date of the Change Order, and that no further adjustments in compensation or time shall be sought or made with respect to the change.

Docusign Envelope ID: 65E761A0-E93A-48B6-86BF-2892796E8DB2

| ASCEND ELEMENTS | Contract Change Order Form | Supplier Name: Chonfar Engineering and Technology Co., Ltd. |
|---|---|---|
| Original Contract Name and Date: APX1-AE-1-200-PCS-BOD-001 Rev 1.0 | | Original PO#: 1630<br>Effective date: Feb.14.2025 |

MOC Number: BS-PCS-006 co11 Equipment Name: pCAM Engineering

**Subject:** Supplier and SSOE problems lead to BS add new works.

**The Work is modified in Description as follows:**

The piping and SSOE once again adjusted the clashes between the structure
1) MOC for 220 Clashes between piping and SSOE structural channel or rainwater pipe or fire pipe, total 23 pipes, see BS-PIP-016 for detail.
2) MOC for 212 Clashes between piping and SSOE structural beams or piping, total 8 pipes, see BS-PIP-018 for detail.
3) MOC for 250 Clashing with SSOE, tank area move east by 520mm, total 54 pipes, see BS-PIP-020 for detail.
4) MOC for 220 Clashes between piping and SSOE structural beams, total 204 pipes, see BS-PIP-021 for detail.
5) MOC for 220 Clashes between piping and SSOE structural beams, total 50 pipes, see BS-PIP-022 for detail.
6) MOC for 220 Clashes between piping and SSOE structural beams, total 12 pipes, see BS-PIP-030 for detail.
7) MOC for 212 Clash viewpoint modifications, total 22 pipes, see BS-PIP-031 for detail.
8) MOC for 212 Precision filter piping clashing with egress path, total 27 pipes, see BS-PIP-037 for detail.
9) MOC for 220 Modify the pipe position due to the TK structural beam repositioning, total 8 pipes, see BS-PIP-043 for detail.
10) MOC for 220 Clashes between piping and SSOE structural beams, total 109 pipes, see BS-PIP-047 for detail.

Equipment vendor drawings updated(Secondary dust collector, Pump, IAC)
1) MOC for 220 Secondary dust collector piping modification due to late vendor information, total 48 pipes, see BS-PIP-017 for detail.
2) MOC for 212 Pump model update, total 8 pipes,see BS-PIP-018 for detail.
3) MOC for 250 Pump vendor foundation information updating, total 19 pipes, see BS-PIP-020 for detail.
4) MOC for 220 Modification due to pump vendor information recevied, nozzle size misalign bettwen 3D model and vendor drawing, total 128 pipes, see BS-PIP-022 for detail.
5) MOC for 212 The IAC of the leaching workshop added the instrument air duct, total 13 pipes, see BS-PIP-037 for detail.
6) MOC for 220 IAC vendor requires Instrument Air Supply, total 15 pipes, see BS-PIP-038 for detail.
7) MOC for 212 Add pipe coonection with IAC as per Vendor latest infromation, total 2 pipes, see BS-PIP-044 for detail.
8) MOC for 212 Modify the IAC instrument air pipeline size, total 13 pipes, see BS-PIP-046 for detail.

**Conditions and Terms:**

No other changes to the Contract are made by this Change Order. All Contract terms not expressly modified by the Change Order remain unchanged.

The Supplier agrees that this Change Order constitutes its full and final adjustment for all costs, delays, disruptions, inefficiencies, accelerations, schedule impacts, or other consequences arising from the identified change, whether caused by the change itself, or by any claimed cumulative effect of changes made to the date of the Change Order, and that no further adjustments in compensation or time shall be sought or made with respect to the change.

Docusign Envelope ID: 65E761A0-E93A-48B6-86BF-2892796E8DB2

| ASCEND ELEMENTS | Contract Change Order Form | Supplier Name: Chonfar Engineering and Technology Co., Ltd. |
|---|---|---|
| Original Contract Name and Date: APX1-AE-1-200-PCS-BOD-001 Rev 1.0 | | Original PO#: 1630<br>Effective date: Feb.14.2025 |

MOC Number: BS-PCS-006 co11 Equipment Name: pCAM Engineering

**Subject:** Supplier and SSOE problems lead to BS add new works.

**The Work is modified in Description as follows:**

Drawing updates for control valves, flow meters, safety valves, reducer, etc.
1) MOC for 212 As per site requirement, ECC not available in us marketing, total 13 pipes, see BS-PIP-034 for detail.
2) MOC for 220 Change the safety valve outlet dimention as per vendor information, total 14 pipes, see BS-PIP-038 for detail.
3) MOC for 250 Flowmeter length modification, total 2 pipes, see BS-PIP-039 for detail.
4) MOC for 250 Valve material change from Plastic to lined valve, Adding support, total 4 pipes, see BS-PIP-039 for detail.
5) MOC for 220 Flowmeter length modification, total 70 pipes, see BS-PIP-038 and BS-PIP-041 for detail.
6) MOC for 220 Change the safety valve outlet dimention as per vendor information, total 5 pipes, see BS-PIP-041 for detail.

AE requests process modifications(Orifice plate, Sampling, Valves, etc.)
1) MOC for 212 Add orifice plate, total 23 pipes, see BS-PIP-023 for detail.
2) MOC for 212 Sample conenction cancelled, total 6 pipes, see BS-PIP-023 for detail.
3) MOC for 220 Add sampling connection on piping, total 15 pipes, see BS-PIP-025 for detail.
4) MOC for 212 Add orifice plate, total 19 pipes, see BS-PIP-028 for detail.
5) MOC for 250 Deleting Sampling as per requested, total 3 pipes, see BS-PIP-039 for detail.
6) MOC for 212 Sulfuric Acid Piping to 1st Leaching Reactors corrosion, Remote Control Valve Position Change, total 13 pipes, see BS-PIP-040 for detail.
7) MOC for 212 Change back to Rev C as per agreement (Sulfuric Acid Piping ), total 13 pipes, see BS-PIP-044 for detail.
8) MOC for 212 Modification of pipeline due to addition of explosive gun Change tie-in location from top of tank to the site, total 8 pipes, see BS-PIP-044 for detail.

RO system layout and piping design
1) MOC for 250 RO System, total 81 pipes, see BS-PIP-029 and BS-PIP-032 and BS-PIP-036 and BS-PIP-042 for detail.

**Conditions and Terms:**

No other changes to the Contract are made by this Change Order. All Contract terms not expressly modified by the Change Order remain unchanged.

The Supplier agrees that this Change Order constitutes its full and final adjustment for all costs, delays, disruptions, inefficiencies, accelerations, schedule impacts, or other consequences arising from the identified change, whether caused by the change itself, or by any claimed cumulative effect of changes made to the date of the Change Order, and that no further adjustments in compensation or time shall be sought or made with respect to the change.

Docusign Envelope ID: 65E761A0-E93A-48B6-86BF-2892796E8DB2

| Labor change cost due to changes | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| No. | Unit Numbering | item | Design man-hours（h | description | Check man-hours（h | description | Approve man-hours（h | Original | After Negotitaion |
| **1** | **212/220/250** | **The piping and SSOE once again adjusted the clashes between the structure** | **624** | | **120** | | **48** | **872** | 700 |
| | 212/220/250 | 3D model adjustment | 432 | 2engineers, 27 days, 8h/day | 40 | 1engineers,5days,8 h/day | 16 | | |
| | 212/220/250 | ISO drawing | 96 | 1 engineers, 12 days, 8h/day | 40 | 1engineers,5days,8 h/day | 16 | | |
| | 212/220/250 | MTO | 96 | 1 engineers, 12 days, 8h/day | 40 | 1engineers,5days,8 h/day | 16 | | |
| **2** | **212/220/250** | **Equipment vendor drawings updated( Pump, Secondary dust collector, IAC)** | **240** | | **48** | | **24** | **444** | 200 |
| | 212/220/250 | 3D model adjustment | 160 | 2engineers, 10 days, 8h/day | 16 | 1engineers,2days,8 h/day | 8 | | |
| | 212/220/250 | ISO drawing | 40 | 1 engineers, 5 days, 8h/day | 16 | 1engineers,2days,8 h/day | 8 | | |
| | 212/220/250 | MTO | 40 | 1 engineers, 5 days, 8h/day | 16 | 1engineers,2days,8 h/day | 8 | | |
| **3** | **212/220/250** | **Drawing updates for control valves, flow meters, safety valves, reducer, etc.** | **48** | | **12** | | **12** | **116** | 50 |
| | 212/220/250 | 3D model adjustment | 32 | 1engineers, 4 days, 8h/day | 4 | 1engineers,0.5days ,8h/day | 4 | | |
| | 212/220/250 | ISO drawing | 8 | 1 engineers, 1 days, 8h/day | 4 | 1engineers,0.5days ,8h/day | 4 | | |
| | 212/220/250 | MTO | 8 | 1 engineers, 1 days, 8h/day | 4 | 1engineers,0.5days ,8h/day | 4 | | |
| **4** | **212/220/250** | **AE requests process modifications(Orifice plate, Sampling, Valves, etc.)** | **320** | | **92** | | **50** | **462** | 462 |
| | 212/220/250 | P&ID | 64 | 1engineers, 8 days, 8h/day | 24 | 1engineers,3days,8 h/day | 16 | | |
| | 212/220/250 | Valve list | 32 | 1 engineers, 4 days, 8h/day | 16 | 1engineers,2days,8 h/day | 8 | | |
| | 212/220/250 | Special part list | 32 | 1engineers,4 days, 8h/day | 16 | 1engineers,2days,8 h/day | 8 | | |
| | 212/220/250 | 3D model adjustment | 128 | 2engineers, 8 days, 8h/day | 12 | 1engineers,1.5days ,8h/day | 6 | | |
| | 212/220/250 | ISO drawing | 32 | 1 engineers, 4 days, 8h/day | 12 | 1engineers,1.5days ,8h/day | 6 | | |
| | 212/220/250 | MTO | 32 | 1engineers,4 days, 8h/day | 12 | 1engineers,1.5days ,8h/day | 6 | | |
| **5** | **250** | **RO system layout and piping design** | **664** | | **120** | | **56** | **936** | 500 |
| | 250 | P&ID | 144 | 3engineers, 6 days, 8h/day | 40 | 1engineers,5days,8 h/day | 16 | | |
| | 250 | Line list | 40 | 1 engineers, 5 days, 8h/day | 16 | 1engineers,2days,8 h/day | 8 | | |
| | 250 | Equipment layout | 128 | 2engineers,8 days, 8h/day | 16 | 1engineers,2days,8 h/day | 8 | | |
| | 250 | 3D model adjustment | 224 | 2engineers, 14 days, 8h/day | 16 | 1engineers,2days,8 h/day | 8 | | |
| | 250 | ISO drawing | 64 | 2 engineers, 4 days, 8h/day | 16 | 1engineers,2days,8 h/day | 8 | | |
| | 250 | MTO | 64 | 2engineers,4 days, 8h/day | 16 | 1engineers,2days,8 h/day | 8 | | |
| **6** | | **Project management** | **320** | 1 engineer, 45days, 8h/day | | | | **360** | 100 |
| | | | 2216 | | 392 | | 190 | | 2012 |
| **7** | | man-hour | **2798** | | | | **h** | | |
| **8** | | Man hour cost (Price USD) | **62.5** | | | | **$/h** | | |
| **9** | **Total** | **change cost (Price USD)** | **174875** | | | | **$** | **199375** | **125,750** |
| Participants:Yonggang Wu\guanghui Xie\Zhihang Dong\Yong Li\Jianbo Chen\ Jia Zhang\ Hongjun Liu\Weiguan Liu\Huali Shu\Jingxiang Yang\Yijie Luo\Jianfeng Zheng\Jianbo Zhao\Di\Qianhong Deng\Ding Cui\Jiali Xiong\Jingbin Zi\Mingcong Luo | | | | | | | | | |

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Kevin Mulholland

Sr. Manager, Sourcing

Ascend Elements

3/4/2025

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Benoit Tranape

AME Director

Ascend Elements

3/4/2025

DocuSigned by:
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shaowei pang

AME Manager

Shaowei

3/4/2025

Signed by:
Luis Porras
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Luis Porras

VP SCM

AE

3/10/2025

# Re: Re: RE: 【外部邮件】RE: Clarification-pCAM North Bluestar milestone payment issue discussion meeting

发起会议
2025-10-02 23:16:56

发件人： "David Tong"<dtong@ascendelements.com>

收件人： "罗毅杰(Luo Yijie 中蓝长化)"<luoyijie@sinochem.com> "Shaowei Pang"<spang@ascendelements.com>

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"Dustin Whiteley"<dwhiteley@ascendelements.com> "吴勇刚(Wu Yonggang 中蓝长化)"<wuyonggang3@sinochem.com>
"罗明聪(Luo Mingcong 中蓝长化)"<luomingcong@sinochem.com> .. [1还有2个联系人]

Dear Bluestar team:

First of all, we apologize for the delay in processing the payment for invoice MOC-11. Due to current cash flow constraints, AE is still in the process of arranging this payment.

Regarding Bluestar's request for AE to consider terminating all contracts and settling overdue fees related to project delays, AE has clarified that milestone payments are contingent upon the approval of deliverables by AE. Nevertheless, As outlined in the letter, AE agrees to pay $50,000 USD to cover the cost of Bluestar's engineering deliverables and associated project delays. The deliverable status was outlined in our letter dated July 7, 2025. We hope Bluestar can accept this proposal.

Thanks.

Regards

David Tong 童弈林

Engineering Lead

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