



Announcement of PTT Public Company Limited

Registration Number 0107544000108

PR No. 1120015282

Subject: Bid for NEW PCHE FOR BAHX DEMETHANIZER LOWERUPPER SIDE REBOILER (3203E003E004)
REPLACEMENT

As PTT Public Company Limited intends to invite written Bid for NEW PCHE FOR BAHX DEMETHANIZER LOWERUPPER SIDE REBOILER (3203E003E004) REPLACEMENT

Place of delivery at PTT Rayong Gas Separation Plant, 555 Sukhumvit Road, Mab Ta Phut, Muang, Rayong 21150

Within 5 times as article 8 of TOR

according to the conditions/detail/drawing and the documentation attached to the announcement, which shall be considered as part of this Instruction to Bid, as follows:

Terms of Reference	1 Set
Form of Power of Attorney	1 Page
Form of Bank Guarantee	1 Page
PTT Supplier Sustainable Code of Conduct	1 Set
Letter of Confirmation on Qualifications to Do Business with PTT	1 Page
Sample contract	1 Set

Pre-Bid Conference for clarification shall be held at Microsoft Team : Native Speaker [THAI] ** (We will provide access link of meeting attendance to vendor that registered only) on 18 February 2021 Registration for the Conference shall be during 14:00 to 14:15 and conference shall commence at 14:15 hours. (Speaker MR. SAKOL SEELSONGLA Employee ID No. 570165 Tel. 038-676231 (sakol.s@pttplc.com))

The bidder who does not attend the pre-bid conference shall be ineligible to tender.

Submission of Bid Price, evidence and technical documents shall be on 12 March 2021 at 09:00 - 15:00 hour, as follows:

- Procurement section , GSP Procurement & Inventory Management, Division. Gas Separation Plant Rayong, 555

Sukhumvit Road, Mabtapud, Muang, Rayong 21150

Person who is interested may purchase Bid Documents at the price of Baht - per set (Vat included) from 09 February 2021 to 16 February 2021 during 09:00 - 17:00 (NOTE : (NOTE : To reduce the spread of coronavirus disease 20 19 (COVID-19), The vendor who interested this bid, please provide the "Memorandum of Association" and "Email who intend the bid clarification" via Email : prangchanok.p@pttplc.com within specific date & time as above)) hours as follows:



Announcement of PTT Public Company Limited

Registration Number 0107544000108

PR No. 1120015282

Subject: Bid for NEW PCHE FOR BAHX DEMETHANIZER LOWERUPPER SIDE REBOILER (3203E003E004)
REPLACEMENT

- Procurement section , GSP Procurement & Inventory Management, Division. Gas Separation Plant Rayong, 555
Sukhumvit Road, Mabtapud, Muang, Rayong 21150
(MISS PRANGCHANOK PALAKAWONG Tel. 038-676178)

Announced on 09 February 2021

(MR. KRITSARA KHONGNUAL)

Procurement Section Head

Procurement section



Subject : NEW PCHE FOR BAHX DEMETHANIZER LOWERUPPER SIDE REBOILER (3203E003E004) REPLACEMENT

By : MR. TANYA JAKAWALNORASING
MR. TEERAPAT RATTANASUWAN

Create date : 22 January 2021
Rev.2
SAP PR No.1120015282

Division/Department : Process Engineering and
Optimization Division

Related standard systems					
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Quality	Safety	Health	Environment	Lab	Energy

Terms Of Reference

PTT Public Company Limited (hereinafter called “PTT”) would be interested to hire vendor to provide and install Printed Circuit Heat Exchanger (PCHE) for BAHX Demethanizer Lower/Upper Side Reboiler (3203E003/E004) replacement of the existing of Ethane Gas Separation Plant (ESP) as following as following

1. Objective

The PTT Public Company (PTT), Gas Separation Plant, Mab Ta Pud, Rayong province, Thailand 21150 requires Printed Circuit Heat Exchanger (PCHE) for BAHX Demethanizer Lower/Upper Side Reboiler (3203E003/E004) replacement of the existing of Ethane Gas Separation Plant (ESP) as following

2. Bidder Qualifications

- 2.1 Bidder shall carry out the business involving the works to be offered.
- 2.2 Bidder shall not be the person with the previous record of the Contract being terminated by PTT as the result from committing the corrupted act.
- 2.3 Bidder shall not be a litigant in any arbitration dispute with PTT, whether the Bidder is appeared in PTT Approve Vendor List (PTT AVL) or not, unless otherwise the dispute has been resolved.
Bidder in Clause 2.2 and 2.3 shall include their shareholders and directors.
- 2.4 Bidder shall not be a person with a previous record of abandoning any work undertaken as declared by PTT and The Comptroller General’s Department.
- 2.5 Bidder shall be the person or persons who purchased/received the Bid Documents and may not assign to other persons the right to submit the Bid.

In the case of the Bidder being a partnership/ consortium/ joint venture, the mentioned Purchaser/ Receiver must be a party of the said partnership/ consortium/ joint venture. Hence, the Bidder in the form of partnership/ consortium/ joint venture shall be obligated as a joint debtor to PTT.

(Remark: A partnership/ consortium/ joint venture shall not be permitted to submit the Bid except it is stated clearly in the Terms of Reference that a partnership/ consortium/ joint venture is allowed to do so.)



Subject : NEW PCHE FOR BAHX DEMETHANIZER LOWERUPPER SIDE REBOILER (3203E003E004) REPLACEMENT		
By : MR. TANYA JAKAWALNORASING MR. TEERAPAT RATTANASUWAN	Create date : 22 January 2021 Rev.2 SAP PR No.1120015282	Division/Department : Process Engineering and Optimization Division

Related standard systems					
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Quality	Safety	Health	Environment	Lab	Energy

2.6 On the day of the auction, should not have any joint interest with other bidders or is not a person who will cause obstruction for a fair auction.

2.7 The bidders shall enclose the Letter of Confirmation on Qualifications to Do Business with PTT on each bid.

2.8 The Bidder shall provide the following reference Documents to ensure the qualification of Bidder.

2.8.1 The Bidder shall be the official authorized representative or authorized distributor of any manufacturers which is currently have the capability to produce Printed Circuit Heat Exchanger (PCHE) with the minimum sizing of 8 MW , by using the official authorized letter as an evidence.

2.8.2 Bidder shall provide all necessary documents to indicate the past experiences of Bidder’s Representative Manufacturer to design and fabricate PCHE in Gas Separation Plant /Oil Refinery Plant / Petrochemical Plant design without any failures as specified as following.

a) The Experience of at least 3 (Three) projects for Engineering Design, Fabrication and Commissioning of the whole PCHE for Gas Separation, Refinery, Power Plant or Petrochemical Plants in last 5 (Five) years.

b) The Experience of at least one project for Engineering Design, Fabrication and Commissioning PCHE for BAHX replacement for Gas Separation, Refinery, Power Plant or Petrochemical Plants by using Technical Engineering Documents as an evidence.

2.8.3 Bidder shall provide the documents that can manifest the potential of Manufacturing Facilities or the Capability Details of Bidder’s Representative Manufacturing to manufacture the PRODUCT to meet all PTT requirements within delivery time.

2.8.4 Subcontractor of Bidder who is responsible for PRODUCT installation at PTT’s site shall have the minimum experiences as specified as following and shall be approved by PTT

a) The Experience at least one project of Installation, Replacement or Maintenance of Heat Exchanger / Pressure Vessel / Boiler & Fire Heater & WHRU Equipment for Gas Separation Plant / Oil Refinery Plant / Petrochemical Plant in last 5 (Five) Years

b) The subcontractor shall have never been received any official probation letter or warning letter of unsatisfactory/poor performance from Gas Separation Plant / Oil Refinery Plant and Petrochemical Plant.

2.9 Site Visit and Pre-Bid Conference



Subject : NEW PCHE FOR BAHX DEMETHANIZER LOWERUPPER SIDE REBOILER (3203E003E004) REPLACEMENT					
By : MR. TANYA JAKAWALNORASING MR. TEERAPAT RATTANASUWAN		Create date : 22 January 2021 Rev.2 SAP PR No.1120015282		Division/Department : Process Engineering and Optimization Division	
Related standard systems					
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Quality	Safety	Health	Environment	Lab	Energy

Bidders will be invited to attend a pre-bid conference and site visit at the GAS SEPARATION PLANT, Map Ta Phut, Rayong. The pre-bid conference and site visit will be the only meeting for the Bidder with PTT prior to Bid Submission. The purpose is to enable the Bidders to acquaint themselves with all matters that may affect the Bid.

After the Site Visit and pre-bid conference the Bidder shall be deemed to have fully informed himself on the Site conditions, the means of access, the possibilities of accommodation and other matters which may influence the Bid. Any lack of knowledge of local matters will not relieve the Bidder from his obligations and responsibilities regarding his Bid or any Subsequent award of contract.

For Site visit, The Bidders must confirm by a letter of the representatives including full name, position and a copy of ID card or passport at least seven (7) days before the site visit. The representative must come on time in order to attend the safety training program at safety training room in the plant about 1 hour before visit site.

Bidder shall submit in writing not later than three (3) Days before the visit any queries he intends to raise during the pre-bid conference. He should also advise any specific points regarding the site that he wishes to inspect.

Bidder’s personnel is permitted to enter PTT’s premises during the site visit only on the condition that PTT accepts no liability with respect to the site visit and that the Bidder maintains full responsibility for any injury, loss and damage to his personnel and their properties.

3. Bid Evidence

Bid shall be enclosed in sealed envelope consisting of separate envelopes as follows:

(3.1) Envelope of bid qualification

(3.1.1) In case of Bid by a trading entity, there shall be enclosed a copy of a value added tax certificate and a copy of a commerce registration certificate, certified by the owner or manager and affixed with the official seal (if any).

(3.1.2) In case of Bid by a company or partnership registered in Thailand, there shall be enclosed a certificate of incorporation issued by the Ministry of Commerce which is not more than 6 (six) months recent as from the date after the day of issuance up to the date of submitting Bid document. Unless it is an original, such certificate shall be affixed with a signature of the authorized person and the official seal of the company or partnership in authentication thereof.

(3.1.3) In case of Bid by a company or partnership registered in a foreign country, Bidder shall enjoy no immunity or



Subject : NEW PCHE FOR BAHX DEMETHANIZER LOWERUPPER SIDE REBOILER (3203E003E004) REPLACEMENT					
By : MR. TANYA JAKAWALNORASING MR. TEERAPAT RATTANASUWAN		Create date : 22 January 2021 Rev.2 SAP PR No.1120015282		Division/Department : Process Engineering and Optimization Division	
Related standard systems					
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Quality	Safety	Health	Environment	Lab	Energy

protection allowing non-submission to Thai court, unless such privileges and immunities have been waived by the instruction of Bidder’s government..

(3.1.4) In the case where the authorized person of the sole trading entity, company or partnership authorizes another person to sign and/or submit Bid Documents, there shall be enclosed a valid power of attorney clearly and correctly stating the authorization.

(3.1.5) Certified copy of Thai ID./passport of the authorized signatory or copy of Thai ID./passport of grantee and grantor attached to a power of attorney.

(3.1.6) In the case where registration of value added tax has been effected, there shall be enclosed a copy of VAT Certificate (Form Bhor. Por. 20).

(3.1.7) Letter of Confirmation on Qualifications to Do Business with PTT

(3.1.8) In case of Bid by a company or partnership registered in a foreign country, there shall be enclosed

- 1) Certificate of Incorporation and/or Memorandum of Association and/or any other documents likewise issued by the competent agency/organization, which enables to identify the authorized person including Bidder’s registered objectives that accord with the procurement work.
- 2) Articles of Associations (If any)
- 3) Power of Attorney) (If any)
- 4) Certificate of specimen signature or other documents that present signature.(If any)

(3.1.8.1) The list of documents in (3.1.8) 1) - 3) must be notarized by Notary Public and legalized by Thai Embassy or Thai consulate which has the jurisdiction, not more than 1 year recent as from the date after the day of notarization and legalization up to the date of submitting Bid document.

(3.2) Envelope of technical documents :

(3.2.1) Technical Proposal Envelope / 1 (one) Copy 1 Original / 1 Digital Copy

- a) Attachment No. 01: All Pre – Qualification documents required as specified in 2.8
- b) Attachment No. 02: Information on Bidder, which shall identify the information as following



Subject : NEW PCHE FOR BAHX DEMETHANIZER LOWERUPPER SIDE REBOILER (3203E003E004) REPLACEMENT					
By : MR. TANYA JAKAWALNORASING MR. TEERAPAT RATTANASUWAN		Create date : 22 January 2021 Rev.2 SAP PR No.1120015282		Division/Department : Process Engineering and Optimization Division	
Related standard systems					
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Quality	Safety	Health	Environment	Lab	Energy

- Names and functions of the authorized representative(s) of the Bidder
- Organization chart of Bidder’s company showing details of Bidder’s corporate organization and giving details of registration in Thailand

c) Attachment No. 03: Technical Proposal Technical information to be submitted as following

- Process description and design basis
- Preliminary General Arrangement, Preliminary 3D model drawings, Overall Dimensions and weights.
- Equipment /Process Data Sheet
- Typical Installation and erection sequence and duration of the package

d) Attachment No. 04: Project Execution Proposal, which shall contain the Work Schedule, Project execution plan and Key personnel

(3.3) Envelope of proposal :

(3.3.1) Price Commercial Proposal Envelope 1 (one) Copy 1 Original

a) Attachment No. 05: Priced Breakdown Commercial Proposal, which shall contain all prices including Engineering Design cost, Fabrication Cost, Delivery Cost, Installation Cost, etc.

Remark; Failure to submit any of documents mentioned in 3.1,3.2 shall lead to rejection of the Bid unopened

Remark; CONTRACTOR shall be responsible for all prevailing taxes, duties, fees, permits and the like inside and outside Thailand.

Remark; All monetary values submitted by the Bidder shall be in Thai Baht or US Dollars. To facilitate evaluation and comparison, PTT will convert the bid prices to Thai Baht at the selling rate of “the reference exchange rates” published by the Bank of Thailand of the bid submission date.

4. Bid Submission

- 4.1 Bidder shall fill the unit price or price of each item as well as the total price in the original Bid form issued by PTT or the quotation form of Bidder which shall have the contents in accordance with the Bid form issued by



Subject : NEW PCHE FOR BAHX DEMETHANIZER LOWERUPPER SIDE REBOILER (3203E003E004) REPLACEMENT

By : MR. TANYA JAKAWALNORASING
MR. TEERAPAT RATTANASUWAN

Create date : 22 January 2021
Rev.2
SAP PR No.1120015282

Division/Department : Process Engineering and
Optimization Division

Related standard systems

<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Quality	Safety	Health	Environment	Lab	Energy

PTT, which shall include, but not be limited to, date of quotation, name of Bidder, subject of quotation, unit price or price of each item and the total price, and the wordings stating that Bidder shall comply with the terms and conditions of PTT. The Bidding Price shall exclude value added tax, be in THB or US Dollars., cover all expenditures incurred until delivery. The amount in number and word shall clearly be stated. Any deletion or correction shall be initialed by the authorized person and affixed with an official seal (If any). Where the unit price or price of each item is inconsistent with the total price, or there is discrepancy between the “number” and “word”, then, the provisions of the Civil and Commercial Code shall vern such inconsistency or discrepancy. Bid shall be valid for a period as determined by PTT. Unless otherwise determined by PTT, Bid shall be valid for a period of not less than 90 days as from date after the day of the Bid submission or according to conditions determined by PTT and upon the Bidder irrevocably submitting bid documents according to Clause 3 and may not be withdrawn.

- 4.2 Upon the expiry of submitting the proposal and bidding, the submission of proposal and bidding to PTT is forbidden.
- 4.3 PTT procurement committee will check the qualifications of the bidder, if the bidder has a joint benefit with other bidders. In the event, the bidders have a joint benefit with other bidders, they shall be disqualified from the procurement.

5. Bid Security

Bidder is not required to place Bid Security.

6. Bid Evaluation Criteria

- 6.1 For the consideration of this bidding submitting, PTT will consider by using the rules on price and performance
- 6.2 PTT will consider by giving points to each topic and the weight. The total weight shall be equivalent to the percentage as following;
 - (1) Total Commercial Score shall be equivalent to 15 percentage
 - (2) Total Technical Score shall be equivalent to 85 percentage



Subject : NEW PCHE FOR BAHX DEMETHANIZER LOWERUPPER SIDE REBOILER (3203E003E004) REPLACEMENT

By : MR. TANYA JAKAWALNORASING
MR. TEERAPAT RATTANASUWAN

Create date : 22 January 2021
Rev.2
SAP PR No.1120015282

Division/Department : Process Engineering and
Optimization Division

Related standard systems

<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Quality	Safety	Health	Environment	Lab	Energy

Topic of Consideration	Weight	Criteria for Consideration
1. Total Commercial Score	15	Commercial Score = $100 - ((\text{Quoted Price} - \text{Lowest Quoted Price}) / \text{Lowest Quoted Price}) * 100$
2. Total Technical Score	85	1. Project Reference (40% of Total Technical Score) 2. PCHE design and performance guarantee (30% of Total Technical Score) 3. PCHE replacement solution and methodology (30% of Total Technical Score)

- 6.3 In the event the bidder does not qualify as per clause 2, the evidences submitted are incorrect or incomplete as per clause 3 or the price is incorrect as per clause 4, the PTT procurement committee shall not consider the bidder unless the bidder’s specification or the purchased products ’s price is incomplete or the details are different from the company’s conditions which is not an essential matter and does not cause disadvantage to the other bidders or there is a slight error, the PTT procurement company shall consider to ease the disqualification of that bidder
- 6.4 PTT reserves the right to not to ease the consideration of the following bidders;
- (1) Does not have the name in the list of the people buying or receiving auction documents from PTT
 - (2) Has proposed details that differ from the company’s condition which are essential or are a disadvantage to other bidders.
- 6.5 In the event, the bidders have wrongfully proposed for the bidding such as submitting false documents or has appointed an ordinary person or legal entity in his behalf, the company shall revoke the auction and punish the bidder, no matter if the bidder is been chosen or not.



Subject : NEW PCHE FOR BAHX DEMETHANIZER LOWERUPPER SIDE REBOILER (3203E003E004) REPLACEMENT		
By : MR. TANYA JAKAWALNORASING MR. TEERAPAT RATTANASUWAN	Create date : 22 January 2021 Rev.2 SAP PR No.1120015282	Division/Department : Process Engineering and Optimization Division

Related standard systems					
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Quality	Safety	Health	Environment	Lab	Energy

In the event, the bidder has proposed a low price, and it can be determined that the work cannot be operated as per the scope of work, PTT procurement committee will let the bidder submit the clarification together with the evidences to ensure that the work will be complete. If the clarification is unsound, PTT will reject the proposal or the price of the bidder. The bidder shall not claim for damages or expenses from PTT. PTT’s discretion shall be final

- 6.6 Prior to affixing the signature in the agreement, PTT may revoke the auction if it appears the bidder who won the bidding or who is chosen has joint benefits, has advantage with other bidders, is an obstruction for the competition, mutually represent other bidder or bid officer or it appears that the bidder is wrongfully proposing the bid.

7. Contract and Performance Security

7.1 Successful Bidder chosen by PTT shall contact PTT

(1) In case of the procurement which is not over 5,000,000 (five million) Baht or is not required to proceed under PTT conditions to be done in a form of a contract, the Successful Bidder which PTT agrees to perform Hire shall contact PTT to receive Work Order within 7 days from the date after the day notified by PTT (In the case of no Contractual Guarantee) or within 15 days from the date after the day notified by PTT (In the case with Contractual Guarantee)

(2) In case of the procurement which is above 5,000,000 (five million) Baht or is required to proceed under PTT conditions to be done in a form of a contract, successful bidder chosen by PTT shall contact PTT to receive letter of intent within 7 days from the date after the day notified by PTT and to contact PTT to enter into a contract with PTT within a period determined in such letter of intent.

In the event of non-compliance with the said clause 7.1 (1) or 7.1 (2), PTT shall confiscate the security (if any) If PTT needs to acquire substitution procurement from another person at a higher price, Bidder shall be responsible to pay PTT the difference within 30 days from the day after the date of notice thereof by PTT. PTT also reserve the right to claim any other damages arising therefore.



Subject : NEW PCHE FOR BAHX DEMETHANIZER LOWERUPPER SIDE REBOILER (3203E003E004) REPLACEMENT		
By : MR. TANYA JAKAWALNORASING MR. TEERAPAT RATTANASUWAN	Create date : 22 January 2021 Rev.2 SAP PR No.1120015282	Division/Department : Process Engineering and Optimization Division

Related standard systems					
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Quality	Safety	Health	Environment	Lab	Energy

- 7.2 In execution of a Contract or Work Order, Successful Bidder is required to place the Contractual Guarantee. In the case where the Contractual Guarantee is required and unless otherwise stipulated in the details attached to Work Order, Successful Bidder chosen by PTT (hereinafter called “Contractor”) shall submit to PTT, cash or Bank Guarantee or Thai government Bond or PTT Bond or PTT debenture 5percent of the price of the Contract or Work Order (the fraction remaining shall be round up) to ensure the performance of its obligations under Contract/ Work Order. The Contractual Guarantee shall be returned when Contractor has been discharged from all obligations under the Contract/ Work Order.
- 7.3 Contractor shall be responsible to pay revenue stamp required for the Contract or Work Order at the rate stipulated in the Thai Revenue Code.
- 7.4 In case where Successful Bidder fails to enter into the Contract within the period of time specified by PTT or the Contractor fails to comply with the terms or conditions under the contract without reasonable cause, such person, upon PTT’s consideration, will be regarded as abandoner and his name will be removed from the Approved Vendor List of PTT.

8. Delivery

- 8.1 The contractor shall deliver the job to the PTT five times as following milestone;
 - 1st milestone : First issue of Engineering Documents to PTT
 - 2nd milestone : Issue of purchase orders of major materials with Certificated
 - 3rd milestone : Issue of PRODUCT arrived at PTT Gas Separation Plant
 - Remark : The maximum period of 1st to 3rd milestone is limited to 400 days (Counting continuous everyday),starting from the date after the Contractor has acknowledged a Letter Of Intent from PTT
 - 4th milestone :Completed installation work at PTT Gas Separation Plant
 - Remark : The maximum period of Product installation at PTTGSP is limited within 10 days Counting continuous everyday),starting from the date after the Contractor has acknowledged a Notice to proceed from PTT



Subject : NEW PCHE FOR BAHX DEMETHANIZER LOWERUPPER SIDE REBOILER (3203E003E004) REPLACEMENT					
By : MR. TANYA JAKAWALNORASING MR. TEERAPAT RATTANASUWAN	Create date : 22 January 2021 Rev.2 SAP PR No.1120015282	Division/Department : Process Engineering and Optimization Division			
Related standard systems					
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Quality	Safety	Health	Environment	Lab	Energy

5th : milestone : Completed performance test run (PTR) and final document submission to PTT within 14 days after the Contractor has acknowledged a Notice to proceed from PTT

8.2 The delivery term is DDP at PTTGSP AS PER INCOTERMS 2010

9. Place of delivery

The contractor shall deliver the job at the PTT Rayong Gas Separation Plant, 555 Sukhumvit Road, Mab Ta Phut, Muang, Rayong 21150. AS PER INCOTERMS 2010

10. Payment

10.1 PTT shall make the payment

five time to the Contractor on the thirtieth (30th) days after PTT’s Acceptance Committee has accepted the service successfully

1st Payment : 20% of Contract Price upon First issue of Engineering Documents to PTT

2nd Payment : 20% of Contract Price upon issue of purchase orders of major materials with Certificated

3rd Payment : 20% of Contract Price upon the PRODUCT are arrived at PTT Gas Separation Plant

4th Payment : 30% of Contract Price upon the installation Completed at PTT Gas Separation Plant

- a) The installation shall not later than 12 months after PRODUCT receipt
- b) Completed Commissioning

5th Payment : 10% of Contract Price upon

- a) Completed PERFORMANCE ACCEPTANCE TEST (PTR)
- b) Submission Final Documents as specified in18.3.4

In case PTT cannot achieve the Process Operating Condition for Performance Test as agreed. The Performance Guarantee Points such as Heat Transfer Rate and Pressure Drop for each stream need to Re - Calculate



Subject : NEW PCHE FOR BAHX DEMETHANIZER LOWERUPPER SIDE REBOILER (3203E003E004) REPLACEMENT		
By : MR. TANYA JAKAWALNORASING MR. TEERAPAT RATTANASUWAN	Create date : 22 January 2021 Rev.2 SAP PR No.1120015282	Division/Department : Process Engineering and Optimization Division

Related standard systems					
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Quality	Safety	Health	Environment	Lab	Energy

proportional in corresponding to the appropriate points at the real insufficient conditions by the Contractor with PTT Together within 60 days after completed the installation of new PRODUCT.

Unless otherwise agreed in the Contract, PTT shall make payment to Contractor the 30th day after the date PTT examines and accepts materials on each milestone under the Contract. Contractor shall submit an invoice together with appropriate supporting documents to PTT within 15 (fifteen) days from the date after the day of PTT's acceptance of such materials/work. If Contractor submits the same later than such period, the payment due date shall be extended for a period equal to the number of days of such delay.

10.2 The payment shall be made by bank transfer to the account as designated by contractor.

10.3 Payment shall be subject to deduction of penalty and/or amount disputed.

11. Penalty

11.1 DELAYED PENALTY

11.1.1 Should Contractor fail to complete the delivery of PRODUCT, within the period of time stipulated refer to article 10.1 Payment (1st-3rd Payment Milestone), after allowance for any extension of time which may be granted under the provision of article 18.5 Force Majeure. Contractor shall pay to PTT the penalty for each day of delay at the rate of 0.1% (zero point one percent) per day of the Contract price of the undelivered portion of PRODUCT from the day following the due date of delivery specified in the Contract up to the actual date of delivery PRODUCT to PTT correctly and completely. In purchasing PRODUCT assembled in one set, if the shortage of any part making it impossible for PRODUCT to be used wholly as the assembly set, it shall be deemed that PRODUCT has never been delivered, for which penalty shall be imposed in full on the cost of the whole set.

11.1.2 Should Contractor fail to complete the installation, within the specified period refer to article 10.1 Payment (4th Payment Milestone), Contractor shall pay to PTT the penalty for each day of delay at the rate of 0.1% (zero point one percent) per day of the Contract price starting from the date that exceed the limited period specified in the Contract up to the actual date of completed the installation.

11.1.3 PTT shall have the right to deduct the penalty from any payments due or to become due to Contractor. The payment or deduction of such penalty shall not relieve Contractor from its obligation to deliver the PRODUCT, or from any other



Subject : NEW PCHE FOR BAHX DEMETHANIZER LOWERUPPER SIDE REBOILER (3203E003E004) REPLACEMENT					
By : MR. TANYA JAKAWALNORASING MR. TEERAPAT RATTANASUWAN		Create date : 22 January 2021 Rev.2 SAP PR No.1120015282		Division/Department : Process Engineering and Optimization Division	
Related standard systems					
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Quality	Safety	Health	Environment	Lab	Energy

obligations or liabilities under this Contract. In case that PTT may purchase emergency quantity of PRODUCT from any other qualified supplier, if the purchase price of emergency quantities purchased as above are greater than the price as stipulated herein, including terms then Contractor shall reimburse for the difference in purchase price to PTT within 15 (fifteen) calendar days upon receipt of notification.

11.1.4 If PTT considers that Contractor is unable to continue its performance of the Contract, or the penalty will exceed 10% of the Contract Price, PTT may, without prejudice to any other rights and remedies of PTT (including PTT’s right to claim against the performance security in whole or in part as may be deemed advisable by PTT), terminate the whole or part of Contract, as PTT may deem it appropriate.

NOTE 1: The maximum penalty according to article 11.1. shall be limited at 10% (Ten percent) of Contract Value.

11.2 PENALTY FOR PERFORMANCE

11.2.1 Apart from the delay penalty under clause article 11.1.1 – 11.1.2 of this TOR, Contractor also Guarantees performance of the Goods as per article 11.2.2 – 11.2.4

11.2.2 Guarantees for the PRODUCT shall be based on the COMPLETED DATA SHEET SUBMITTED FROM THE MANUFACTURER, and The Heat Transfer Rate shall not less than and the Pressure Drop Allowable shall not over than the PTT’s existing Datasheet which specify in Attachment No.08

11.2.3 In case PTT cannot achieve the Operating Condition for Performance Test as agreed. The Performance Guarantee need to Re - Calculate proportional in corresponding to the appropriate Heat Transfer Rate at the real insufficient conditions.

11.2.4 In case PTT can achieve the process condition as agree, but the performance of the PRODUCT cannot achieve as specify in the COMPLETED DATASHEET SUBMITTED FROM THE MANUFACTURER. The Contractor shall pay the penalty to PTT as the penalty rate specify as following formula;

$$(((\text{Overall heat transfer coefficient from Datasheet} - \text{Actual overall heat transfer coefficient}) / \text{Overall heat transfer coefficient from Datasheet}) \times 100\%) \times \text{Total Contract Value}$$



Subject : NEW PCHE FOR BAHX DEMETHANIZER LOWERUPPER SIDE REBOILER (3203E003E004) REPLACEMENT					
By : MR. TANYA JAKAWALNORASING MR. TEERAPAT RATTANASUWAN		Create date : 22 January 2021 Rev.2 SAP PR No.1120015282		Division/Department : Process Engineering and Optimization Division	
Related standard systems					
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Quality	Safety	Health	Environment	Lab	Energy

For the Actual Heat rate; PTT will calculate via HYSYS Simulation Program (Peng Robinson Fluid Package) by using this below input data (3 days every hour);

- a) Inlet main flow of this heat exchanger (FI037),
- b) Inlet temperature (TI081)
- c) Outlet temperature (TI023)
- d) Feed Gas Composition of this Unit

PFD of this unit is in Attachment No.10. PROCESS FLOW DIAGRAM OF COLD BOX E03-04

NOTE 2: The maximum penalty according to article 11.2. shall be limited at 5% (Five percent) of Contract Value. The CONTRACTOR has an option to pay the penalty of article 11.2 by cash or PTT will seize the Bank Guarantee instead.

NOTE 3: There is NO penalty clauses in case the actual Heat Rate is higher than the Manufacturer’s Datasheet Specification.

NOTE 4: In case more than one stream cannot achieve the specification on proposed datasheet, the total penalty shall be as following;

TOTAL PENALTY = [%X + %Y] x TOTAL CONTRACT VALUE

When “X, Y”: The percentages of actual heat transfer rate compare with the Datasheet specification of any insufficient streams.

NOTE 5: The calculation shall round any numbers to one decimal place.

12. Liability

- Limitation of Liabilities

Notwithstanding the foregoing, CONTRACTOR's maximum liability to PTT (including without limitation liability resulting from breach of contract, tort, negligence, breach of statutory duty, misrepresentation or otherwise for any loss, damage, costs or expenses, or injury ("Damages") sustained by PTT and arising out of or in connection with this Contract) shall not exceed the total contract value. Nothing in this paragraph shall exclude or limit the Contractor’s liability to PTT for fraud or fraudulent concealment, gross negligence or willful misconduct.



Subject : NEW PCHE FOR BAHX DEMETHANIZER LOWERUPPER SIDE REBOILER (3203E003E004) REPLACEMENT		
By : MR. TANYA JAKAWALNORASING MR. TEERAPAT RATTANASUWAN	Create date : 22 January 2021 Rev.2 SAP PR No.1120015282	Division/Department : Process Engineering and Optimization Division

Related standard systems					
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Quality	Safety	Health	Environment	Lab	Energy

- Consequential Damages

Notwithstanding any other provision in this Contract or elsewhere to the contrary, Contractor shall not be liable for any special, incidental, indirect or consequential loss or damage of any nature, arising at any time, from any cause whatsoever, including loss of revenue or profit.

13. Governing Law

The Contract shall be

governed by and interpreted in accordance with the laws of the Kingdom of Thailand.

14. Warranty and Guarantee

14.1 The contractor shall warrant its work products for below detail following the date the PTT's committee has accepted the service successfully in accordance with the conditions set by the PTT.

14.2 The contractor shall deliver the warranty certificate to the PTT with the supplies/ equipment. (if any)

14.3 Contractor undertakes all guarantees of all PRODUCT of contractor's manufacture against defective workmanship and materials for thirty-six (36) months from the date of completed commissioning date WITHOUT ANY FAILURES or Forty-four (44) months from shipment, whichever comes first.

14.4 Contractor shall guarantee to PTT that all PRODUCT furnished by Contractor shall be new, of the most suitable grade and fit for their specified purposes. Without limitation of any other rights or remedies of PTT, if any defects in the PRODUCT arises within the period stated herein, after the date which PTT's acceptance committee have inspected and issued acceptance report for the PRODUCT in the last delivery to Contractor, Contractor shall upon receipt of written notice of such defect promptly, at no cost to PTT, repair or replace PRODUCT within the time determined by PTT. Should Contractor fails to or refuse to carry out the repair or replacement of PRODUCT within such time, PTT is entitled to repair or replace PRODUCT at expenses of CONTRACTOR

14.5 In the event of a defect or breach of any or all contractor's guarantees herein above and such defect or breach having been notified by PTT to contractor within guarantee period, then Contractor shall immediately and in no event later than 7 (seven) days of receipt of said notice and at Contractor's own expense provide all services and make every effort to investigate the



Subject : NEW PCHE FOR BAHX DEMETHANIZER LOWERUPPER SIDE REBOILER (3203E003E004) REPLACEMENT		
By : MR. TANYA JAKAWALNORASING MR. TEERAPAT RATTANASUWAN	Create date : 22 January 2021 Rev.2 SAP PR No.1120015282	Division/Department : Process Engineering and Optimization Division
Related standard systems		
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Quality	Safety	Health
		<input type="checkbox"/>
		Environment
		<input type="checkbox"/>
		Lab
		<input type="checkbox"/>
		Energy

defect or breach of guarantee and propose adequate means of making good or correcting the defect or breach , shall take into account all possible means of minimizing hardship or damage caused to PTT in consequence of the defect or breach and the making good or correcting such defect or breach. During the investigation the Contractor shall continually keep PTT informed about its finding and shall be available for meeting action to be taken. As soon as possible and in no event later than 7 (seven) days after notification of the defect or breach by PTT to the Contractor, the Contractor shall make a written proposal to PTT stating all measures Contractor intend to take and the estimated duration of such measures.

14.6 Subject to PTT’s approval of proposals made by contractor according to article 14.5 herein above about the adequate measures to be taken by, Contractor shall immediately and with due diligence make good or correct all said defect or breach by repair or replacement or addition or alteration of any item of equipment and provide corrective engineering services or any other activities or services necessary and required in the respective situation to make good or correct the product to the satisfaction of PTT.

14.7 Any and all costs and expenses incurred by contractor for making good and correcting the defect or breach shall be borne by Contractor including but not limited to the cost for repair and replacement of items of equipment or material, customs duties, taxes and port charges, transportation of or materials from or to the site, dismantling and removal from the site and export of any defective item of equipment or material, installation, commissioning and any costs or expenses for modification, or repetition of design, engineering, and etc..

14.8. Should the Contractor neglect or refuse to supply a proposal under the article 14.5 to PTT immediately after the date of notification of the defect or breach by PTT, or should the Contractor fail to start or continue to make good or correct immediately any defect or breach of guarantee under article 14.3. , PTT may take over and correct or make good or arrange for making good or correcting any defect or breach of guarantee itself and the cost thereof shall be borne and paid by Contractor without any loss of rights by PTT with respect to any guarantees under article 14.3.

14.9 In the event that Contractor can prove that the defect claimed by PTT is due entirely to particular causes other than failure of Contractor to meet the guarantees under article 14.3. , the provisions herein above shall apply, but the making good or corrective work shall be treated as a change requested by PTT.

14.10 If in pursuance of this article 14., the Contractor makes good or corrects any components or parts of the product, the



Subject : NEW PCHE FOR BAHX DEMETHANIZER LOWERUPPER SIDE REBOILER (3203E003E004) REPLACEMENT		
By : MR. TANYA JAKAWALNORASING MR. TEERAPAT RATTANASUWAN	Create date : 22 January 2021 Rev.2 SAP PR No.1120015282	Division/Department : Process Engineering and Optimization Division
Related standard systems		
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Quality	Safety	Health
		<input type="checkbox"/>
		Environment
		<input type="checkbox"/>
		Lab
		<input type="checkbox"/>
		Energy

provisions of this article shall apply to any and all corrected, repaired or replaced work for a period of 12 (twelve) months from the date such corrections, repairs or replacements are put into operation and accepted by PTT after appropriate test to be agreed upon.

14.11 The guarantee period referred to in article 14.3. herein above shall be extended for the product set and any individual component or part of the product by any period of time the product or the respective section thereof are out of operation due to the defect or breach of guarantees by Contractor. The period of extension for the product or the respective section thereof shall be calculated from the date of notification of such defect or breach by PTT to Contractor until the product or the section thereof are put into operation after repair and / or replacement and accepted by PTT after appropriate tests to be agreed upon.

15. Advance Payment

No Advance Payment

16. PTT Supplier Sustainable Code of Conduct) (When the contract having the value from 2 million Baht)

Successful Bidder who agrees to work, shall accept and conform with the “PTT Supplier Sustainable Code of Conduct” .PTT reserves the right to inspect if Bidder is in compliance. With the PTT Code of Conduct.

Vendors who have a plan to run business with PTT must act along PTT regulations and conditions, sustainable practice for PTT groups’ vendors, including:

- 16.1 Vendors must run firms strictly along involved rules which covered business ethics, social responsibility, security and environment, for example, labor protection law, safety law, and environmental law. Moreover, vendors must run business with transparency, honesty and must not violate the intellectual property rights.
- 16.2 Vendors must have qualifications related to ESG Interception Criteria including:
 - (1) Vendors must not be appeared on corrupted company list of PTT at the period of form’s submission.
 - (2) Vendors must have involved work permits along the defined laws.
 - (3) Vendors must not be judged to false in term of financial, environment, security and labor court. Furthermore, vendors must not be found in list of personality, juristic person and company that run business against Thai laws within 3 years before launching the auctions.



Subject : NEW PCHE FOR BAHX DEMETHANIZER LOWERUPPER SIDE REBOILER (3203E003E004) REPLACEMENT		
By : MR. TANYA JAKAWALNORASING MR. TEERAPAT RATTANASUWAN	Create date : 22 January 2021 Rev.2 SAP PR No.1120015282	Division/Department : Process Engineering and Optimization Division
Related standard systems		
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Quality	Safety	Health
		<input type="checkbox"/>
		Environment
		<input type="checkbox"/>
		Lab
		<input type="checkbox"/>
		Energy

- (4) Vendors must have firms’ policies to will not hire youth labor that age below 15 years old.
- (5) Vendors must have enterprises’ policies to pay labor’s compensation at least the defined legal minimum wage. In addition, vendors must not force employees to work more than the legal defined hours.
- (6) Vendors must have SSHE management system in working place along the defined law and concern about employee’s safety.
- (7) Vendors must have management system of working area and also environmental liability, for instance, the leaking of dangerous substance in soil and underground water.

17. Contractor’s performance evaluation

- 17.1 PTT shall evaluate vendors after the completion of the delivery of products/services in each delivery period, based on their work performance.
- 17.2 PTT reserves the right to use the vendor evaluation’s result in order to determine the bidder’s qualification for the next PTT’s bidding.
- 17.3 In the case of any vendors in the PTT Approved Vendor List(PTT AVL) is given graded “D” from the vendor evaluation under a specific type of work, PTT reserves the right to delist such vendors from type of work hereunder. The vendors shall not be permitted to register with PTT AVL under such type of work for at least 3 years from the delisted date.
- 17.4 If the vendor has any queries with regards to the vendor evaluation, the vendor shall submit the request in writing to the procurement unit of PTT for the explanation of such evaluation. The copy of the purchase order/contract and work result must be attached to the request. The vendor can access the system *pttvm.pttplc.com* for the results of vendor evaluation

18. Scope of work

18.1 Definitions

The following definitions will apply to the Agreement between the Contractor and PTT:



Subject : NEW PCHE FOR BAHX DEMETHANIZER LOWERUPPER SIDE REBOILER (3203E003E004) REPLACEMENT		
By : MR. TANYA JAKAWALNORASING MR. TEERAPAT RATTANASUWAN	Create date : 22 January 2021 Rev.2 SAP PR No.1120015282	Division/Department : Process Engineering and Optimization Division

Related standard systems					
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Quality	Safety	Health	Environment	Lab	Energy

- 18.1.1 “PTT “shall mean the PTT Public Company Limited, its successors and assignees.
- 18.1.2 “CONTRACTOR” shall mean the any representatives whose award the project who shall be liable for PTT for any and all obligations and responsibilities under this contract.
- 18.1.3 “PRODUCT” shall mean the Printed Circuit Heat Exchanger (PCHE), DEMETHANIZER LOWER/UPPER SIDE REBOILER (3203E003/E004) FOR ESP.
- 18.1.4 “INSPECTION” shall mean any work to be performed by visual check, dimension Check, condition check, NDT, etc. to the Parts which the results of those will influence to the decision for calibration, reuse, repair or replacement of Parts.
- 18.1.5 “SITE” shall mean the areas where the Work shall be performed as indicated in the specifications and situated at PTT, Gas Separation Plant, Mab Ta Pud in the Rayong Province / Thailand.
- 18.1.6 “PERFORMANCE ACCEPTANCE” shall mean the condition achieved when PRODUCT has achieved READY FOR START UP and has satisfactorily passed the performance tests.
- 18.1.7 “NOTICE OF AWARD” shall mean the Notice by PTT to the successful Bidder evidencing that he has been appointed by PTT as CONTRACTOR.

18.2 Scope of Work

The Contractor shall be responsible for all the work on product as the following:

- 18.2.1 Engineering and Documenting
- 18.2.2 Procurement and Manufacturing
- 18.2.3 Inspection and tests at shop according to PTT Project Specification as a minimum.
- 18.2.4 Inland transportation to site’s PTT GSP, Rayong, Thailand
- 18.2.5 Installation and commissioning at site, PTT GSP, Rayong, Thailand
- 18.2.6 Others as necessary



Subject : NEW PCHE FOR BAHX DEMETHANIZER LOWERUPPER SIDE REBOILER (3203E003E004) REPLACEMENT

By : MR. TANYA JAKAWALNORASING
MR. TEERAPAT RATTANASUWAN

Create date : 22 January 2021
Rev.2
SAP PR No.1120015282

Division/Department : Process Engineering and
Optimization Division

Related standard systems

<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Quality	Safety	Health	Environment	Lab	Energy

18.3 Scope of Supply

18.3.1 Equipment item number and quantity

No.	Item	Q'ty	Description
1	3203E003/E004	1 Set	DEMETHANIZER LOWER/UPPER SIDE REBOILER (3203E003/E004) FOR ESP (Printed Circuit Heat Exchanger (PCHE) with Structural Steel)

18.3.2 Engineering Design and Unit foundation

18.3.2.1 The Contractor shall design the Printed Circuit Heat Exchanger (PCHE) in accordance with PTT's Process Data sheet as the technical data reference in Attachment No.8

18.3.2.2 The Design & Fabrication process shall comply with the International Standard and PTT's Engineering Standard

18.3.2.3 The Design calculation & Simulation result shall be done by Contractor base on Inhouse Simulation Program, or HTRI, or ASPENEDR and need to submit to PTT for Approval

18.3.2.4 The Contractor shall design product based on the existing foundation support and Piping Arrangement but if any change or modification is required, Contractor shall re-design and submit the engineering documents to PTT for approval and all new construction shall be done by contractor.

18.3.3 Project Management

The Contractor shall be responsible for

18.3.3.1 Project Kick Off Meeting

18.3.3.2 Planning and scheduling of the Project

18.3.3.3 Manpower and Resource Planning

18.3.3.4 Project Status Reporting in Monthly basis which including the overall progress as following



Subject : NEW PCHE FOR BAHX DEMETHANIZER LOWERUPPER SIDE REBOILER (3203E003E004) REPLACEMENT

By : MR. TANYA JAKAWALNORASING
MR. TEERAPAT RATTANASUWAN

Create date : 22 January 2021
Rev.2
SAP PR No.1120015282

Division/Department : Process Engineering and
Optimization Division

Related standard systems					
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Quality	Safety	Health	Environment	Lab	Energy

- S-Curve Report (%Actual & % Plan)

- Activity

18.3.3.5 Project Control and Tracking

18.3.4 Documents and Drawings

Documents and Drawings are specified as following:

18.3.4.1 Prepare and Provide the Outline Drawing including General Assembly Drawing.

18.3.4.2 Prepare and Provide all details documents as following.

- Strength Calculation Sheet
- Welding Procedure Specification (WPS), Procedure Qualification Record (PQR) and Weld Map
- Name Plate Drawing
- Fabrication Specification
- Material Certificated
- Movement and Allowable Nozzle Force and Moment
- Sub-Vendors List
- Inspection Test Plan and Inspection Test Procedure
- Thermal Calculation and Completed Data Sheet
- Other Documents

18.3.4.3 Prepare and Provide any changes or new in details of Drawing & Specification.

18.3.4.4 Prepare and provide for all details of Complete Bill of Material for the new equipment, the part drawing and part list is required to be attached.

18.3.4.5 Prepare and Provide the erection and lifting procedure for installation.

18.3.4.6 Prepare and Provide the Standard of procedure for Storage.



Subject : NEW PCHE FOR BAHX DEMETHANIZER LOWERUPPER SIDE REBOILER (3203E003E004) REPLACEMENT

By : MR. TANYA JAKAWALNORASING
MR. TEERAPAT RATTANASUWAN

Create date : 22 January 2021
Rev.2
SAP PR No.1120015282

Division/Department : Process Engineering and
Optimization Division

Related standard systems					
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Quality	Safety	Health	Environment	Lab	Energy

18.3.4.7 Documents herein Article 18.3.4.1 – 18.3.4.6 and necessary documents shall be submitted electronically to PTT for Approval

- PTT shall consider approving or commenting on the transmittal letter within 7 (Seven) working Days from the date of receipt. If the pending period of consideration is exceeding 7 wordays, The Contractor may continue the work as it was accepted without any comments by PTT.

18.3.5 Witness of PTT’s Delegates

18.3.5.1 The Contractor shall, at request of the PTT for Approval and witness, provide the schedule of Final Pressure Test of Product at least 45 (Forty-Five) days before the commencement date.

18.3.6 Raw Materials for Production shall be come from

- Japan
- South Korea
- West Europe
- North America

18.3.7 The Country of Origin / Country of manufacturer for all production shall be from

- Japan
- South Korea
- West Europe
- North America

Note: Except for Structural Steel of an Equipment



Subject : NEW PCHE FOR BAHX DEMETHANIZER LOWERUPPER SIDE REBOILER (3203E003E004) REPLACEMENT

By : MR. TANYA JAKAWALNORASING
MR. TEERAPAT RATTANASUWAN

Create date : 22 January 2021
Rev.2
SAP PR No.1120015282

Division/Department : Process Engineering and
Optimization Division

Related standard systems					
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Quality	Safety	Health	Environment	Lab	Energy

18.3.8 Accessories of product shall be including

- Transportation packaging
- Blind plate for shipment
- Internal Insulation (Pearlite)
- One Set of bolts & nuts with Gaskets for each of Connecting Flanges

18.3.8.1 The Equipment shall be painted followed by PTT ES.92-06 as refer in **Attachment No.9**

18.3.8.2 Corrosion protection of internal surface:Nitrogen purging, Pressure: 0.05 MPaG

- The Contractor shall arrange to have clear markings on each package as required by PTT with weight, length and height of each package, and Product shall be packed securely enough to prevent deteriorations knocking or causing any damage from transportation or weather conditions while the PRODUCT is on transit, for which Contractor shall be solely responsible until PRODUCT arrives at the destination under the Contract
- The product shall be shipped with a positive nitrogen pressure of 0.05 MPaG as measured by pressure gauges provided for shipment.

18.3.9 Installation & Commissioning Work

18.3.9.1 PTT shall inform the schedule and the date of installation to CONTRACTOR within 30 (Thirty) Days before the date of start working day.

18.3.9.2 Contractor shall responsible for installation work that includes equipment, Special tools for erection or dismantle, transportation, manpower and etc.

18.3.9.3 Contractor shall provide Field Service Engineer to perform as the Supervisor for the commissioning work at site.



Subject : NEW PCHE FOR BAHX DEMETHANIZER LOWERUPPER SIDE REBOILER (3203E003E004) REPLACEMENT

By : MR. TANYA JAKAWALNORASING
MR. TEERAPAT RATTANASUWAN

Create date : 22 January 2021
Rev.2
SAP PR No.1120015282

Division/Department : Process Engineering and
Optimization Division

Related standard systems

<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Quality	Safety	Health	Environment	Lab	Energy

- The Field Service Engineer shall be arrived on site at least 1 (One) days before the execution date of Commissioning Day.
- In case of PTT is not satisfied with the performance of Field Service Representative. PTT shall have the right to ask for others.
- Field Service Representative shall be able to communicate in English language, if not Contractor shall be providing an interpreter for smooth and clear communication.

18.3.9.4 PTT shall responsible for system isolation and including the external Insulation (All piping Insulation).

18.3.9.5 Contractor shall be responsible for all scope of scaffolding works at site.

18.3.9.6 At least two weeks before the execution date of Maintenance, The Contractor together with PTT, shall arrange the Kick-Off meeting to summarize the installation plan, and other preparation tasks.

18.3.9.7 Maintenance execution duration are not over than 10 days including remove the existing unit and replace/install with the new PRODUCT. Contractor shall be responsible for disconnecting and remove old cold box and move to the area that PTT prepared at PTTGSP site

18.3.9.8 During Installation at PTT Gas Separation Plant, Contractor shall be governed by and interpreted in accordance with the laws of the Kingdom of Thailand.

18.3.10 Applicable Regulation and Code Attachment The material, design, fabrication, inspection and test are made in accordance with the followings.

- ASME Sec. VIII Div.1 LATEST EDITION
- PTT ENGINEERING STANDARD as specified in **Attachment No.9**
- Piping (Flange) --- ASME B31.3 Latest Edition
- Others --- Manufacturer’s standard



Subject : NEW PCHE FOR BAHX DEMETHANIZER LOWERUPPER SIDE REBOILER (3203E003E004) REPLACEMENT		
By : MR. TANYA JAKAWALNORASING MR. TEERAPAT RATTANASUWAN	Create date : 22 January 2021 Rev.2 SAP PR No.1120015282	Division/Department : Process Engineering and Optimization Division

Related standard systems					
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Quality	Safety	Health	Environment	Lab	Energy

18.4 Bid Evaluation Criteria

18.4.1 For the consideration of this bidding submitting, PTT will consider by using the rules on price and performance.

18.4.2 PTT will consider by giving points to each topic and the weight. The total weight shall be equivalent to the percentage as following;

18.4.2.1 Performance in proposal paper and presentation shall be equivalent to 85 Percent (Weighted Score)

18.4.2.1.1 Performance Evaluation shall be equivalent to 85 percent; performance in proposal paper and presentation shall be evaluated Proposed work execution plan by Bidder, including detailed description and activities required for the completion of the scope of work and deliver PTT’ needs as following topics;

- i. Project Reference (40 points)
- ii. PCHE design and performance guarantee (30 Points)
- iii. PCHE replacement solution and methodology (30 points)

Remarks: The proposal presentation date and venue will be based on the announcement sent via the invitation email. PTT reserves the right to abstain the right of Bidder from bidding if the Bidder is not present on the proposal presentation date.

18.4.2.2 Commercial evaluation shall be equivalent to 15 Percent (Weighted Score)

18.4.2.2.1 Commercial evaluation; The Bidders shall be commercially evaluated based on competitive scoring system as the following criteria;

i. Scoring Score

Lowest Quoted Price 100

Quoted Price (Not Lowest) will be scoring as a relative percentage to the Lowest Quoted Price as the formula below;

$$\text{“Quoted Price (Not Lowest) Score} = 100 - ((\text{Quoted Price (Not Lowest)} - \text{Lowest Quoted Price}) / \text{Lowest Quoted Price}) * 100\text{”}$$

Bidder are required to submit the commercial proposal that covers all the steps covered in TOR.



Subject : NEW PCHE FOR BAHX DEMETHANIZER LOWERUPPER SIDE REBOILER (3203E003E004) REPLACEMENT		
By : MR. TANYA JAKAWALNORASING MR. TEERAPAT RATTANASUWAN	Create date : 22 January 2021 Rev.2 SAP PR No.1120015282	Division/Department : Process Engineering and Optimization Division

Related standard systems					
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Quality	Safety	Health	Environment	Lab	Energy

Note: PTT reserves the right not to select the Bidder who proposes the lowest quoted price. Hence, the awarding shall be based on the Highest score, which is subjected to the scoring of price and performance evaluations.

The criteria for scoring each topic is as following detailed below;

No.	Topic	Score
1	Project Reference	40
	The Bidders shall submit the proof of success projects (X) reference that have relevant objectives and technical requirements of the PCHE replacement for BAHX project for Oil & Gas industry. Tier I: X = 3	20
	The Bidders shall submit the proof of success projects (X) reference that have relevant objectives and technical requirements of the PCHE replacement for BAHX project for Oil & Gas industry. Tier II: 3 > X < 5	30
	The Bidders shall submit the proof of success projects (X) reference that have relevant objectives and technical requirements of the PCHE replacement for BAHX project for Oil & Gas industry. Tier III: 5 > X	40
2	PCHE design and performance guarantee	30
	The Bidders shall submit the process datasheet that has the design of overall heat transfer coefficient and design conditions including pressure drop matching (no deviation) with the process datasheet that PTTGSP provided in "ATTACHMENT No. 08"	20
	The Bidders shall submit the process datasheet that has the higher in design of overall heat	30



Subject : NEW PCHE FOR BAHX DEMETHANIZER LOWERUPPER SIDE REBOILER (3203E003E004) REPLACEMENT

By : MR. TANYA JAKAWALNORASING
MR. TEERAPAT RATTANASUWAN

Create date : 22 January 2021
Rev.2
SAP PR No.1120015282

Division/Department : Process Engineering and Optimization Division

Related standard systems

Quality
 Safety
 Health
 Environment
 Lab
 Energy

	transfer coefficient and lowers in pressure drop comparing with the process datasheet that PTTGSP provided in "ATTACHMENT No. 08".	
3	PCHE replacement solution and methodology	30
	The Bidders propose the solution and the methodology for replacement of the existing BAHX with new PCHE that has major modification work to the existing pipeline, equipment, and platform.	10
	The Bidders propose the solution and the methodology for replacement of the existing BAHX with new PCHE that has minor modification work to the existing pipeline, equipment, and platform.	20
	The Bidders propose the solution and the methodology for replacement of the existing BAHX with new PCHE that has no modification work to the existing pipeline, equipment, and platform.	30
	Total Technical Point	100
	Total Technical Score (Total Technical Point*85%)	
	Lowest Quoted Price Point	100
	Quoted Price (Not Lowest) Point = 100 - (((Quoted Price (Not Lowest) - Lowest Quoted Price) / Lowest Quoted Price) * 100	
	Total Commercial Score (Quoted Price Point*15%)	

18.5 Force Majeure

18.5.1 If either PTT or CONTRACTOR is rendered unable in whole or in part, by Force Majeure, to perform or comply with any obligation of the Contract, upon giving notice and full particulars to the other party, such obligation shall be



Subject : NEW PCHE FOR BAHX DEMETHANIZER LOWERUPPER SIDE REBOILER (3203E003E004) REPLACEMENT		
By : MR. TANYA JAKAWALNORASING MR. TEERAPAT RATTANASUWAN	Create date : 22 January 2021 Rev.2 SAP PR No.1120015282	Division/Department : Process Engineering and Optimization Division

Related standard systems					
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Quality	Safety	Health	Environment	Lab	Energy

suspended during the continuance of the inability so caused and such party shall be relieved of liability for failure to perform the same during such period.

18.5.2 Both PTT and CONTRACTOR shall make all efforts to eliminate the situation of Force Majeure as soon as possible. If the situation of Force Majeure cannot be eliminated within a period of 1 (one) month, the parties shall meet to find a suitable solution taking into account the interests of both parties and if a suitable solution cannot be achieved after the condition of Force Majeure continues for a period of 3 (three) months either party may terminate the Contract.

18.5.3 For the purpose of this Article 18.5, Force Majeure shall have the same meaning as enacted in the applicable Thai Civil and Commercial Code such as acts of God, acts of government including, but not limited to, the imposition of economic sanctions, governmental priorities including, allocations, regulations, or orders affecting materials or facilities, act of civil or military authority, war, civil commotion, explosion, fire or earthquake, strikes, lock-outs. In such event, Contractor’s time for performance shall be equitably extended.

18.6 Attachment

Attachment No.	Document Name
01	QUALIFICATION DOCUMENTS 1.1 OFFICIAL AUTHORIZED REPRESENTATIVE LETTER FROM MANUFACTURER 1.2 PAST EXPERIENCE & WORK REFERENCE 1.3 MANUFACTURING FACILITY DETAILS 1.4 SUB-CONTRACTOR EXPERIENCE
02	INFORMATION ON BIDDER 2.1 COMPANY PROFILE 2.2 ORGANIZATION CHART OF BIDDER’S COMPANY



Subject : NEW PCHE FOR BAHX DEMETHANIZER LOWERUPPER SIDE REBOILER (3203E003E004) REPLACEMENT

By : MR. TANYA JAKAWALNORASING
MR. TEERAPAT RATTANASUWAN

Create date : 22 January 2021
Rev.2
SAP PR No.1120015282

Division/Department : Process Engineering and
Optimization Division

Related standard systems

<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Quality	Safety	Health	Environment	Lab	Energy

Attachment No.	Document Name
03	TECHNICAL PROPOSAL 3.1 PROCESS DESCRIPTION AND DESIGN BASIC 3.2 PRELIMINARY GENERAL DRAWING 3.3 COMPLETE DATA SHEET 3.4 TYPICAL OF INSTALLATION AND ERECTION PROCEDURE
04	PROJECT EXECUTION PROPOSAL
05	PRICE COMMERCIAL PROPOSAL
06	EXAMPLE OF OFFICIAL CONTRACT
07	EXAMPLE OF PERFORMANCE SECURITY
08	EXISTING INFORMATION, DRAWING AND SPECIFIED PROCESS DATASHEET
09	PTT'S ENGINEERING STANDARD
10	PROCESS FLOW DIAGRAM OF COLD BOX E03-04
11	PROCESS CONDITION SUMMARY OF EXISTING COLD BOX

19. Technical Correspondence

ATTENTION : MR. TEERAPAT RATTANASUWAN (Project Management & Process Engineer)

MR. TANYA JAKAWALNORASING (Process Engineer)

MR. PUNJAPHOL KITTISAPPAKUL (Mechanical Engineer)



Subject : NEW PCHE FOR BAHX DEMETHANIZER LOWERUPPER SIDE REBOILER (3203E003E004) REPLACEMENT					
By : MR. TANYA JAKAWALNORASING MR. TEERAPAT RATTANASUWAN		Create date : 22 January 2021 Rev.2 SAP PR No.1120015282		Division/Department : Process Engineering and Optimization Division	
Related standard systems					
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Quality	Safety	Health	Environment	Lab	Energy

TELEPHONE No. : (6638) 676235, (6638) 676434

MOBILE No. : (6686) 3409392, (6687) 9765362

E-MAIL : teerapat.r@pttplc.com, tanya.j@pttplc.com, punjaphol.k@pttplc.com

20. Other Requirements

Responsibility, in any case, the contractor cannot claim they do not know the facts or information as mentioned above of their benefit.

1. Transport of the materials, chemicals, machinery, equipment and various substances, including the transport vehicles need to consider conservation of the environment without causing overflow, leak, littering along the way or releasing of a substance, emissions and toxic elements exceeding the standards established by the law.
2. The delivered products to be imported to use in the Rayong gas separation plant shall not have an element of asbestos or ozone –destroying substance of the atmosphere as refers to the notice of the EPA, the Clean Air Act, and Section 602.
3. Collection, transport, recovery and disposal of waste from Rayong gas separation plant activities must be comply with procedure QSHEP-GSP-19-022 "Waste Control generated by processing, maintenance and office" through the ISO 14001 "Operational Control"
4. The delivered product for using in the Rayong gas separation plant that is involved with the significant use of energy, e.g. the compressors of the air conditioning or other equipment shall be certified as energy saving from the manufacturer. They shall have a certificate or a certification in accordance with the industrial standards or the equivalent. In the case there is no such the certification, the delivered product shall be assessed after the installation.
5. The deliverer/subcontractor shall promote environmental responsibility and collaborate with PTT on the Energy Saving
6. In hiring involved with the system of managing energy, it has to make a report summarizing the evaluation of the use of energy delivered simultaneously to complement the job inspection.
7. So as the procurement of the goods shall comply with the Thai Labor Standards (TLS) 8001, the PTT reserves the right to consider selecting the traders in the group certified by the TLS 8001 or the traders who can show the determination in the operation according to the TLS 8001 with the guidelines in showing the following determination.



Subject : NEW PCHE FOR BAHX DEMETHANIZER LOWERUPPER SIDE REBOILER (3203E003E004) REPLACEMENT		
By : MR. TANYA JAKAWALNORASING MR. TEERAPAT RATTANASUWAN	Create date : 22 January 2021 Rev.2 SAP PR No.1120015282	Division/Department : Process Engineering and Optimization Division

Related standard systems					
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Quality	Safety	Health	Environment	Lab	Energy

7.1 The deliverer/subcontractor shall not support the use of forced labor in all forms.

7.2 The deliverer/subcontractor shall pay the working wages and compensation a minimum as stipulated by the law.

7.3 The deliverer/subcontractor shall not do or promote discrimination when there is hiring, paying the wages and fringe benefits due to the difference on ethnicity, gender, religion, pregnancy, marriage, union membership and no prejudice due to disability or HIV positivity.

7.4 The deliverer/subcontractor shall not do or promote physical or mental punishment or using force, threat, assault their employees, including there are measures to prevent from sexual molestation by showing in words, gesture, physical contact or any other methods, and no punishment of the employees by deducting a salary or reducing their wages.

7.5 The deliverer/subcontractor shall not allow their female employees to do the job that is hazardous to health and body as prescribed by the law.

7.6 The deliverer/subcontractor shall have measures on occupational safety, health and environment so they can work safely and provide fringe benefits as prescribed by the labor law.

7.7 The PTT shall have no policy to promote using child labor at the age below 18 years old.

7.8 The deliverer/subcontractor shall comply with the Labor Protection Act 1998 and its amendment, including other laws involved and must be consistent with the requirement on Thai labor standards.

7.9 The deliverer/subcontractor shall notify the PTT gas separation plant for acknowledgement in the case the business relations with the other deliverers in the activity to be responsible with the PTT gas separation plant.

8. The Rayong gas separation plant has the system of managing to assess the traders after the delivery. In a situation that any trader is assessed with the result is less than established by the Rayong gas separation plant; it shall give a warning letter for acknowledgement, and shall collect as information in the annual evaluation of the traders. However, the traders who fail the annual evaluation shall be removed out of the Rayong gas separation plant Approve Vender List.

9. The contractor shall comply with the notification of the Department of Welfare and Labor Protection on training of safety by preparing the documentary evidence certifying the training course on occupational safety, health and environment totaling six hours. As for those to come to work in the Rayong gas separation plant, they shall submit such the certificate to the



Subject : NEW PCHE FOR BAHX DEMETHANIZER LOWERUPPER SIDE REBOILER (3203E003E004) REPLACEMENT					
By : MR. TANYA JAKAWALNORASING MR. TEERAPAT RATTANASUWAN		Create date : 22 January 2021 Rev.2 SAP PR No.1120015282		Division/Department : Process Engineering and Optimization Division	
Related standard systems					
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Quality	Safety	Health	Environment	Lab	Energy

inspector or the coordinator to record in the access control system from 1 September 2013 onwards. If the contractor fails to comply with it, it is at the discretion of the PTT to consider allowing working in the Rayong gas separation plant or not.

21. General safety rules (with reference to the occupational safety, health and environmental protection (QSHEP-GSP-11-006))

The practical requirement for the employees and the operators in the responsible area of Rayong gas separation plant or inside the PTT area or under the Operational Control of PTT

1. Working shall comply with the manual and standards by not doing anything that is risking a danger.
2. They shall inspect the safety condition in working area before starting to work each time.
3. Report to the superiors or the inspector promptly upon there is an accident, near- miss accident and upon seeing an action or situation that may cause an accident, damage to life, property and the environment.
4. The workplace shall not have an excess or unnecessary thing, and shall arrange them in order.
5. The tools, machinery, equipment and vehicles shall be inspected in accordance with the schedule, and shall be used suitable with the job correctly. When there is defect/damage, it shall report to the superior or job inspector promptly.
6. Usage, adjustment, change or repair of any equipment shall be performed by the authorized person only.
7. In case of working in the plant area, They shall dress properly with long-sleeved shirts, long pants and wear the personal protection equipment (PPE), e.g. a helmet, safety shoes and including equipment personal protection in accordance with the work standardized by the law. When coming to working in Central Control Room (CCR), They shall wear long-sleeved shirts and long pants as well
8. It is prohibited from gambling, drinking alcohol or consuming intoxicated things and no teasing during working in the plant area.
9. It is prohibited from bringing in or consuming illegal narcotics of all types in all the area of the PTT.
10. No property of PTT Company may be taken without permission. The persons who are found to be guilty of theft shall be subject to legal actions.
11. Smoke and fire are strictly prohibited throughout the plant and all building areas.
12. Follow emergency plans, regulations, warning signs and instructions strictly.



Subject : NEW PCHE FOR BAHX DEMETHANIZER LOWERUPPER SIDE REBOILER (3203E003E004) REPLACEMENT

By : MR. TANYA JAKAWALNORASING
MR. TEERAPAT RATTANASUWAN

Create date : 22 January 2021
Rev.2
SAP PR No.1120015282

Division/Department : Process Engineering and
Optimization Division

Related standard systems					
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Quality	Safety	Health	Environment	Lab	Energy

13. Vehicles, engines, electrical tools, cameras, and other equipment that may sparks cause of fire into the plant area. Must be checked and issue a license permission by PTT.

14. Limit of speed is not exceeding 20 km/h for plant area and outside the plant area is not exceed 40 km/h.

15. New employee and contractor are required to attend safety training before working in the plant area and must be reviewed at least once a year or every 6 months.



ATTACHMENT 1: QUALIFICATION DOCUMENTS

**ATTACHEMENT 1.1 OFFICIAL AUTHORIZED REPRESENTATIVE LETTER
FROM MANUFACTURER**

Bidder shall provide the Official Authorized Representative Letter by attached next to this page.

**ATTACHMENT 1.2 PAST EXPERIENCE & WORK REFERENCE****PROJECT REFERENCES**

Bidder/Partner/Subcontractor/ Supplier's Legal name: [Insert Full name]

Client / Owner's Name	<i>[insert name of the Client / Owner]</i>	
Project Title	<i>[insert name of Project]</i>	
Country of Project	<i>[insert country of project construction]</i>	
Scope of Work	<i>[indicate scope of work performed by the Bidder or partner/subcontractor as applicable]</i>	
Award date	<i>[insert year]</i>	
Completion Date	<i>[Scheduled Date: Month/Year/Actual Date: Month/Year]</i>	
Special Features / Product Specification	<i>[indicate detail of product such as Product Sizing ,Weight and Quantity of Stream Passing per Unit or other Features]</i>	
Total Contract Amount	<i>[insert total contract amount in contract currency]</i>	<i>US \$ [insert total contract amount in US \$ equivalent]</i>
Supporting Evidence Attached	<i>[Bidder can provide by attached any evidence documents next to this page]</i>	

Note : Contractor shall complete the above table of each projects

**ATTACHMENT 1.2. Past Experiences & Work Reference****PROJECT REFERENCES**

Bidder/Partner/Subcontractor/ Supplier's Legal name: [Insert Full name]

Client / Owner's Name	<i>[insert name of the Client / Owner]</i>	
Project Title	<i>[insert name of Project]</i>	
Country of Project	<i>[insert country of project construction]</i>	
Scope of Work	<i>[indicate scope of work performed by the Bidder or partner/subcontractor as applicable]</i>	
Award date	<i>[insert year]</i>	
Completion Date	<i>[Scheduled Date: Month/Year/Actual Date: Month/Year]</i>	
Special Features / Product Specification	<i>[indicate detail of product such as Product Sizing ,Weight and Quantity of Stream Passing per Unit or other Features]</i>	
Total Contract Amount	<i>[insert total contract amount in contract currency]</i>	<i>US \$ [insert total contract amount in US \$ equivalent]</i>
Supporting Evidence Attached	<i>[Bidder can provide by attached any evidence documents next to this page]</i>	

Note : Contractor shall complete the above table of each projects

**ชื่องาน: NEW PCHE FOR BAHX DEMETHANIZER LOWERUPPER SIDE REBOILER (3203E003E004)
REPLACEMENT**

Due to limit size of attached file, for more detail please provide the "Memorandum of Association" and "Email who intend the bid clarification"

via Email : prangchanok.p@pttplc.com

within specific date & time as PTT announcement