



Announcement of PTT Public Company Limited

Registration Number 0107544000108

PR No. 1120017686

Subject: Bid for Hiring to design and implement Plantwide Data Validation and Reconciliation (DVR) for PTT Rayong Gas Separation Plant

As PTT Public Company Limited intends to invite written Bid for **Hiring to design and implement Plantwide Data Validation and Reconciliation (DVR) for PTT Rayong Gas Separation Plant**

Place of delivery at Rayong Gas Separation Plant

555 Sukhumvit Road, T.Mab Ta Phut, A.Muang Rayong 21150

Within 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 |

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 08 August 2022 Registration for the Conference shall be during 16:00 to 16:15 and conference shall commence at 16:15 hours. (Speaker MR. KAMOLNUT HANGPAI Employee ID No. 600053 Tel. 038-676233 (kamolnut.h@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 22 August 2022 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 01 August 2022 to 05 August 2022 during 09:00 - 16:00 hours (NOTE : ** To reduce the spread of COVID-19, The vender who interested this bid please



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provide the "Memorandum of Association" and "Email who intend the bid clarification" via Email : prangchanok.p.@pttplc.com and kunsriwimol_b@pttplc.com within specific date/time as above **) as follows:

- 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 01 August 2022

(MR. KRITSARA KHONGNUAL)

Procurement Section Head

Procurement section



Subject : Hiring to design and implement Plantwide Data Validation and Reconciliation (DVR) for PTT Rayong Gas Separation Plant

By :
MR. KAMOLNUT HANGPAI

Create date : 11 July 2022
Rev.2
SAP PR No.1120017686

Division/Department :
Process Engineering and Optimization
Division

Related standard systems

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Quality	Safety	Health	Environment	Lab	Energy

Terms Of Reference

PTT Public Company Limited (hereinafter called “PTT”) would be interested to hire vendor to design and implement Plantwide Data Validation and Reconciliation (DVR) for PTT Rayong Gas Separation Plant as following

1. Objective

The Gas Separation Plant of PTT Public Company Limited (hereinafter called “PTTGSP”) wishes to design and implement the Plantwide Data Validation and Reconciliation (DVR) system to meet the objectives of the digital transformation strategy. This system aims to implement a platform to support hydrocarbon monitoring of all movement and prevent unidentified loss. This system shall be able to perform data Reconciliation/Mass Balance and emissions reporting on a daily or monthly basis and reporting for all plants in PTTGSP.

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.)



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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 Bidders shall have Registered capital not less than 5 Million Baht.

2.9 The Bidders, including the parent, the daughter and the branch company, shall have experienced in implementing as the main contributor for project and provide support services both international and local; and not through implementation partners.

2.10 The Bidders, including the parent, the daughter, the branch company, and authorized dealer shall have the experienced on design and implement the production accounting system which related solution techniques, applied for oil and gas industries with the minimum project value 350,000 USD, at least 3 projects within the past five (5) years. The evidences, i.e. project value, project name and detailed, deliverables, outcome, purchase order and so on, shall be provided to PTT.

2.11 The Bidders, including the parent, the daughter, the branch company, and authorized dealer shall provide PROJECT execution team who have relevant knowledge and experience to the PROJECT. The list of all the PROJECT team including roles and responsibilities, resume (experience) and expertise must be submitted. The PROJECT team shall have at least experience as follows;

2.11.1 PROJECT manager who shall have the experienced relating to The PROJECT scope including digital transformation project management for at least 5 years.

2.11.2 PROJECT subject matter expert member(s) who shall have the experienced relating to The PROJECT scope implementation and commissioning for at least 5 years.

2.11.3 PROJECT IT & Software senior member(s) who shall have the experienced of install, integrate, troubleshooting etc. which relating to The PROJECT scope for at least 5 years.

2.11.4 PROJECT local member(s) who shall have the ability to speak natively of THAI language and able to reach to Customer site as requested.

Note: PTT may request a change in the PROJECT manager and/or its members at any time and such request shall not be unreasonable withheld or rejected. Any proposed change in the PROJECT team by the successful Bidder requires prior written



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consent from PTT. Notify period between both parties shall be 15 days prior to the effective date.

2.12 The Bidders shall provide all software Licensing detailed including Licensing cost (If any) for 3 years including warranty period (1 year) with five concurrent users for Plantwide Data Validation and Reconciliation (DVR) system.

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 an individual business owner, 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 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 an individual business owner, company or partnership (“Entity”) does not sign the bid documents by himself and appoints a person to sign such documents on behalf of the Entity, such entity shall have to enclose a valid power of attorney which clearly and correctly states such authorization. The bidder may also have another person submit the said bid documents to PTT. However, the bidder has to certify that he will be responsible to PTT for any acts of such person in relation to submitting of the bid documents as if it is done on the bidder’s behalf.

(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



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(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 Pre-qualification documents.

3.2.1.1 Proof of Registered Capital.

3.2.1.2 Proof of experienced on design and implement integration between Production accounting and collecting data from historians, Lab systems & ERP, OPC including in-built screens for operators to enter manual movements and tank levels.

3.2.1.3 CVs of the Project execution team members.

3.2.1.4 Proposed Licensing Details without Cost.

3.2.2 Full detailed Technical Proposal with The Table of Compliance and Guarantee Figures.

3.2.3 Project Scope and Scope of Supply as stated.

3.2.4 Total Manpower and Manpower allocation plan throughout the project.

3.2.5 System Design Architecture and all interfacing work.

3.2.6 Documentation Deliverables and Application Training.

3.2.7 Software and technology description, utilization, and training methodology.



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- 3.2.8 Software Licensing Details.
- 3.2.9 Project Schedule and Project Execution Strategy.
- 3.2.10 Project Team and Curriculum Vitae (CV).
- 3.2.11 After sales local support and services details.
- 3.2.12 Warranty and Guaranteed scope as stated.

(3.3) Envelope of proposal :

- 3.3.1 Quotation
- 3.3.2 Breakdown cost
 - 3.3.2.1 Software license cost
 - 3.3.2.2 Hardware cost
 - 3.3.2.3 Engineering services cost
 - 3.3.2.4 Training cost
 - 3.3.2.5 Other expenses cost

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 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 , 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



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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) Performance Evaluation 75 percent
 - (2) Price Evaluation 25 percent

Topic of Consideration	Weight	Criteria for Consideration
1. Performance Evaluation	75	The evaluation criteria detail is in attachment.
2. Price Evaluation	25	The evaluation criteria detail is in attachment.

- 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



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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.

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



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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.

- 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 vernment 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 fifth times within 360 days (counting continuous everyday), Starting from the date after Notice to proceed letter from PTT.



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8.2 The delivery term is DDP at the PTT Rayong Gas Separation Plant, 555 Sukhumvit Road, Mab Ta Phut, Muang, Rayong 21150 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.

10. Payment

10.1 PTT shall make the payment

fifth times to the contractor on the thirtieth (30th) days after PTT's Acceptance Committee has accepted the service successfully

1st Payment :

PTT shall pay 10% of the Contract price upon Contactor's submission of System Design Architecture.

2nd Payment :

PTT shall pay 20% of the Contract price upon Contactor's submission of Functional Design System (FDS) approval certification.

3rd Payment :

PTT shall pay 30% of the Contract price upon Contactor's submission of Detailed design system (DDS)

4th Payment :

PTT shall pay 20% of the Contract price upon Contactor's submission of Model Acceptance Test (MAT) approval certification. Site Acceptance Test (SAT) approval certification.

5th Payment :

PTT shall pay 20% of the Contract price upon Contactor's submission of Site Acceptance Test (SAT) approval certification and Performance Test Run (PTR) approval certification, Certification of training completion, and Certification of All final document submission.



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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 the 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

If contractor fails to deliver work within the time specified, contractor shall be liable to pay a penalty at the rate of 0.1% (zero point one percent) of undelivered work per day of delay from the due date for delivery up to the date PTT accepts such work, provided, however, that if the undelivered work has to be used in combination with or as an essential component for the work already accepted by PTT, the penalty shall be calculated in full on the cost of the combination. However, the maximum penalty shall not exceed 10% of the Contract price.

12. Liability

- Liability 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 respond to all damages but 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.

- 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.



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13. Governing LawThe 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 12 months 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)

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.
- (4) Vendors must have firms’ policies to will not hire youth labor that age below 15 years old.



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(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

All technical requirements scope shall cover at least but not limit to the following hereinafter called “Plantwide Data Validation and Reconciliation (DVR) system” which includes Inbound logistics, Operations, Outbound logistics and “PTTGSP Products” are consists of Sales Gas, Methane, Ethane, Propane, Butane, LPG, Pentane and NGL.



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By : MR. KAMOLNUT HANGPAI

Create date : 11 July 2022
Rev.2
SAP PR No.1120017686

Division/Department :
Process Engineering and Optimization
Division

Related standard systems

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Quality	Safety	Health	Environment	Lab	Energy

The following lists of area below shall be part of “PTTGSP production accounting”

- a. Inlet feed gas pipelines from Off-shore supply to GSPs.
- b. Inlet vaporized LNG pipeline from PTTLNG supply to GSPs.
- c. GSP processing units 1, 2, 3, ESP, 5, and 6.
- d. GSP Inlet facilities, DPCU and Stabilizers.
- e. GSP Products pipelines including customer demands.
- f. GSP Products storages including customer demands.
- g. Products Inventories and logistics covering area of PTTGSP, BRP, MT, PTT TANK, SRC
- h. Import & Export facilities covering area of PTTGSP, BRP, MT, PTT TANK, SRC.

18.1 Technical requirements

PTTGSP would like to develop the Hydrocarbon Accounting system which the platform aiming to cover both oil and gas movement tracking data reconciliation/mass balance with a state of the art and proven data reconciliation algorithms to determine statistically best estimates of flows across the entire PTTGSP plant.

18.1.1 General Requirements

- a) System shall support modular model building such that the models for the individual units can be built independently and then the units can be connected to represent the entire plant and balanced as single model. As eg: System should allow modular representation of GSP1, GSP2, ESP, GSP4, GSP5, GSP6, Tank farm, fuel gas system and should balance on entire PTTGSP basis.
- b) System shall have comprehensive object-oriented graphical user interface (GUI) with drag-and-drop functionality for building and viewing the plant model to create/extend balance models of interest.
- c) System shall provide capability for users to easily backup data from server to local machine and migrate modified model from local machine to server.



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d) The reconciliation periods: One of the requirements for the reconciliation system is that it could be applied over accounting periods of different durations (one hour, one day, one month) and on different models (site-wide, specific trains, specific units).

Supported Accounting periods are:

- Standard Durations: Hour, Day, Week, Month
- Configurable Durations

Ad Hoc: For analysis purposes, system should support creating ad hoc balance cases for any time desired. System should allow the user to create a balance case for an existing model and define the time one is interested in, and then to initiate data collection from the process historian for that time. System should allow Ad hoc reconciliation results to be saved for later analysis and report

Custom: System should allow users to perform reconciliation for user defined custom period, such as say 5 daily periods and one 2-day period (weekends). This is useful, for example, when Reconciliation engineers are unavailable over the weekend and on Monday morning, the weekend data shall be reconciled in a single two-day accounting period.

e) System shall support automatic and scheduled execution of data gathering, data reconciliation and publishing results.

f) All units of measurements shall be configurable, and the results shall be calculated based on end user requirements.

g) System shall support administrative capability to assign users, different access permissions (read-only and read-write) for the system and for the model and it should provide multi-user environment to allow the use of the model and model objects by multiple users from different groups, e.g. Daily reconciliation activity by production accountant(s) and unit test run activity by process engineers.

h) System shall provide ability to track the changes made to the values, for each recorded event the system should log following information -

- User identification (user account),
- Date and time



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- Terminal identification or device network address
 - Completed details of the event (event type, result)
- i) System shall provide Email Notification capability to send the reports to the configured users by email.
- j) System should have capability to do the summary calculations while run of reconciliation.
- k) System shall have flexibility to be deployed on cloud in the future if required by PTTGSP.

18.1.2 Input data gathering and validation requirements

a) System shall have the capability to collect the process data from a variety of systems, such as Historians, Movement Management Systems, ERP, LIM (Lab Systems) and others such as:

- Transaction (or Event) data handling of tank movement data based on accrued quantities between start and end times.
- Manual data entry screens shall be available for entering any ad-hoc or flow indicator readings in the units

b) System shall automatically create a tank movement line from the tank movement data if it does not exist in model flowsheet and add tank movement events (or activities) to the automatically created tank movement line.

c) System shall enable sites to calculate net mass or volumes based on API/ASTM standards and gross volume of different tank types (fixed and floating roof, bullet, horizontal tanks, spheres and caverns) shall be calculated based on geometric equation or strapping tables.

d) System shall provide ability to process several categories of data, but not limited to:

- Measurements that are to be reconciled, as cumulated raw flow rates and time stamped tank inventory variations.
- Measurements that are not modified by reconciliation, such as all custody transfer meters.
- Finished Products tank inventory data that are not to be reconciled.
- Time stamped data used by the model whose values are not reconciled, such as valve positions (%).
- Tank level variation to compute inventory variation (for liquids), unit operating mode change.
- Manual inputs by authorized user.



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- The system should have ability to capture average value of measurement data for selected time-period (daily or user defined).
- Functionality to split the on-going movements that extend beyond mid-night (or start of reconciliation time) and calculate the accrued quantities for the reconciliation day under consideration and account for the remaining amounts on the next reconciliation day.

18.1.3 Modeling requirements

a) System shall have comprehensive object-oriented graphical user interface (GUI) with drag-and-drop functionality for building and viewing the plant model and provide modular model building capability such that the models for the individual units can be built independently and then the units can be connected to represent the entire plant instead of building entire plant model into one big model or flowsheet view.

b) System should provide ability to configure a process unit, a tank or a group of tanks, a shipment or receipt facility, any external facility or a virtual facility, and Streams or flows or movements (tank to unit, unit to unit, unit to tank, tank to tank movements, tank to ship etc.).

c) System should allow configuration of permanent, temporary and user added flows:

- Permanent' flows, i.e. those flows that are permanently present in the flowsheet and that are initially defined at the time of application configuration.
- Temporary' flows to account for movement information on a temporary basis without the need to model all the tank farm lineup options.
- User' added flows, i.e. the flows that can be created by the user to deal with ad-hoc situations such as movements that occurred during the day under consideration.

d) System shall support to allow simple, complex, customized and user specific model calculations e.g. formula, equation based or function-based calculations – to calculate flows where measurements are not available without the need for additional tags in historian or embedded historian.



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- e) System shall allow Out of service equipment and pipelines should remain in the same status until taken back in line during a new period.
- f) System should provide capability to update the Model both from its modeling GUI and through bulk loading through a batch file mode (e.g. lists of measurement tags).
- g) System shall allow the user to interactively work with the software in order to manually correct the model to match the actual plant operations. System should have a graphical user interface (GUI) to perform operations on the model like -
 - Modify the status of the nodes (on/off),
 - Correct existing flow values or create new ones ('user' flows),
 - Adjust tank inventory variations,
 - Adjust losses of tanks and units,
 - Modify the allocation of tanks to groups,
 - Modify tank service
- h) System should provide users the capability to create in-tool summary or logical models (not external reporting system) using built-in calculation functions to come up with the key values containing the most useful data such as Loss, Product Cost and other KPI's. A few examples are -
 - Yield Summary, summarizing the yield and loss of the plant, including key components (eg: Methane, Ethane, Propane etc.)
 - Energy Summary, summarizing the energy consumption and energy unit cost of the plant
 - Loss and Emissions Summary
- i) System shall provide capability to set logics such as shutdown logics.

18.1.4 Reconciliation Requirements

- a) System shall provide best-in-class statistical data reconciliation using robust, published, algorithms. It solves scenarios rapidly and it identifies missing measurements and movements.
- b) System shall support simultaneous mass, energy and volume reconciliation, where applicable. Regardless of whether it is several sub-models linked to each other, mass, energy and volume balance reconciliation will be performed on the entire



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plant/network simultaneously taking advantage of the available redundancies in measurements.

c) System shall be able to detect gross errors of the below mentioned types by user defined rules or statistical algorithm.

- Plant model errors
- Missing movements
- Faulty measurements or erroneous movement data entered manually

d) System shall be able to eliminate gross errors automatically (i.e. without user intervention) before data reconciliation is performed to prevent gross errors from spreading over all measurements.

e) System shall provide ability to balance individual (e.g. NGL) as well as pool-based balancing (e.g. ethane).

f) System shall provide ability to balance/calculate heat content for sales gas along with mass or volume reconciliation.

g) System shall support capability to build additional constraint equations within the application e.g. component balance or enthalpy balance around a process block with the flexibility to include or exclude them during reconciliation.

h) System should be able to calculate heat content based on gas composition and pure component heating value.

i) System shall support easy to use excel-like calculation builder to perform in-tool calculations e.g. to fill in missing flow measurements, when they can be inferred by reaction equations, other measurements and lab data or calculate high level KPIs

j) System shall provide following details for each flow within the application UI - name, description, raw value, raw standard deviation, 'user' value and standard deviation, reconciled value and standard deviation, correction made by the User, if any.

k) System shall provide ability to color code the flows on model flowsheet based on categories like measured, unmeasured, gross error, out of service etc. And flag imbalances across units/nodes and tanks.

l) System shall provide ability to set the minimum and maximum constraints to prevent the unrealistic reconciled value such as negative reconciled value and the users have the ability to configure range constraints for individual measurements/values and will flag if the values are outside of that range to easily check out the balance problems between process unit and off-site balancing. And system shall have ability to manage hold up volumes of equipment and pipelines when they are significant.

m) Data reconciliation including gross error detection and elimination shall be run under 20 seconds for the overall plant



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balance with minimum 3,000 streams (or flows), if specified PC architecture is complied with.

n) System shall display

- Overall balance report on all the unit nodes included in the overall plant network and on the unit itself as a single and global node.
- Detailed balance report on each node showing the details of all the flows around the node.

o) System shall use color coding to alert the user of errors and prompt suggested value. And it shall allow gross errors to be identified easily using color coding that will change the color of the objects to alert the user of errors as well as calculation status, simultaneous movements, unknown movements, etc. That will support mechanism to easily review the imbalance in receipt and shipment to and from a tank movement.

p) System shall provide the user flexibility to choose and eliminate the gross errors (known instrument issues) or simply accept the results, knowing that the gross errors were not included in the reconciled balance.

q) System shall allow the user to set exclusion thresholds to apply statistical analysis to flows and determine which ones are outliers. Outliers should be excluded from the reconciliation and listed as gross errors.

r) System shall allow the user to set the bias factor for instrument reading and the biased measured value (=bias factor * measured value) is used for reconciliation so that more accurate reconciled value is achieved.

s) System shall provide ability to use the default densities or the last available density or a daily average depending on User preference, for missing lab measurements and it should provide density tracking functionality to calculate the density in tank and this calculated density can be used for calculating mass inventory from volumetric inventory in tank.

t) System should have capability to model each LPG and NGL tanks with its own composition instead of pooled representation. And it should allow tracking until final LPG and NGL products to support in quality give away calculations.

u) System shall provide composition & density tracking functionality to augment the composition and qualities in individual LPG & NGL tanks by tracking simulation.

18.1.5 Reporting Requirements



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- a) System shall automatically calculate the density of tanks (especially liquids NGL, LPG etc.) from process density data and considering transfer time.
- b) System should have capability to summarize Plan vs Actual in tool user interface.
- c) System shall have standard reports and provide ability to generate custom excel reports. And it shall provide Excel Add-Ins to report all data of the system by using the defined functions in Excel. An Excel add-in that can pull data into an excel spreadsheet based on user defined queries enabling user's access to the whole gambit of Microsoft Excel analysis and visualization capabilities.
- d) System shall provide the following standard reports:
 - Bad Measurement Report - displays the worst performing quantity or quality meters for flows and inventories.
 - Component Inventory Report - displays the inventory per product and per component of an equipment on specific dates.
 - Equipment Balance Summary Report - displays the summary of opening inventory, closing inventory, inflows, outflows, and net production by model for a specified range.
 - Equipment Inventory Report - displays the inventory for each equipment for a balance.
 - Inventory Summary Report - displays the inventory summary and stock report.
 - Net Production Report displays the net production based on inventory change, receipt & dispatch per product within the plant.
 - Product Summary Report - Displays a summary of the products in the gas plant scope.
 - Process yield report for each GSP.
 - Loss & Emission Summary report.
 - Energy & Utilities Summary report.

18.2 Hardware and Software Requirements

18.2.1 Provide all software and hardware required for all systems. A PC-BASED system (Rack) shall be used in this project.



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The OS and hardware that The Bidders provide must be support and warranty at least 3 years. The minimum specification of PC shall be a top tier workstation type and the specification shall be declared in the technical solution proposed by The Bidders. Bidders shall propose the minimum computer specification required (with the latest version) to run all related models. Computer specification should be approved by PTTGSP.

Remark:

- CPU top tier new version or higher
- RAM 256 GB DDR4-bus 3200 or higher
- Disk space enough for future with SSD SATA Gen 4th or higher
- Warranty at least 3 years
- The hardware must be get approval from PTT before installation

18.3 Provide after sale-service and quick response in case of the system failure or instability or any defect happening after acceptance test. The response time of the CONTRACTOR shall not exceed three (3) working days and any services that occurred are free-of-charge to PTTGSP during warranty period (Refer to Terms of warranty). The Bidders shall specify details of services and warranty in the proposal documents.

18.4 Provide technology transfer and training for PTTGSP staff to be capable of using, modifying and maintaining the system as a system administrator (Engineering work) and as an advance user. The Bidders shall also provide the additional types of optional training course in the proposal to ensure that PTTGSP personnel can handle and maintain the system.

18.5 Progression report shall be submitted to PTTGSP at least every 2 weeks during the project schedule.

18.6 Perform commissioning, testing and performance tuning including troubleshooting and necessary activity as PTTGSP requested of the total system at PTTGSP site.



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18.7 Provide all documentations and manuals with One (1) hard copies and one (1) electronic formats of the project. The document shall consist of (but not limit to):

List of Training topic

- 1 Software training for the user point of view
- 2 Software training for engineering point of view
- 3 Application training

Items	Required documents and manuals (but not limit to):
1	The system design overview
2	The instruction for administrator
3	The instruction for maintenance
4	The instruction for Data Validation and Reconciliation (DVR)
5	Standard hardware and software manuals and user guide
6	Functional Design Specification report (FDS report)
7	Detailed Design System report (DDS report)
8	Model Acceptance Test (MAT) procedure and report
9	Site Acceptance Test (SAT) procedure and report
10	
11	All 3rd party hardware and software documentation



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Items	Required documents and manuals (but not limit to):
12	Final Detailed Report for G-PLOT project
13	Etc.

18.8 Criteria for Model Acceptance Test (MAT), Site Acceptance Test (SAT), and Performance Test Run (PTR)

18.8.1 The CONTRACTOR shall submit lists of successful criteria parameters for each acceptance step in the proposal to PTTGSP. These values shall be applied as criteria for MAT and SAT in each step of the project. The CONTRACTOR shall also prepare a performance guarantee, performance test plan and procedure for testing the system performance.

18.8.2 Data Validation and Reconciliation solution should be correct when compared to the actual plant data. If the system cannot meet the criteria, the CONTRACTOR shall solve the problem and PTTGSP will continuously count working day.

18.8.3 Performance Test Run (PTR) shall perform to meet the project scope and guarantee without any assistant from the CONTRACTOR for continuously at least 72 hours. The counting for PTR period will be paused in the case that proven PTT's fault and the counting for PTR period will be reset in the case that proven the CONTRACTOR's fault.

19. Technical Correspondence

ATTENTION : Kamolnut Hangpai

TELEPHONE No. : 089-6047695

E-MAIL : kamolnut.h@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



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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.
 - 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.



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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 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.



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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.
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.

Bid Evaluation Criteria

Plantwide Data Validation and Reconciliation (DVR)

Bid Evaluation Criteria

- For the consideration of this bidding submitting, PTT will consider by using the rules on performance and commercial.
- PTT will consider by giving percentage to each topic and the weight. The total weight shall be equivalent to the point as following;
- Performance in proposal paper and presentation shall be equivalent to 75 points
- Commercial evaluation shall be equivalent to 25 points

The evaluation criteria detail is as following;

(1) Performance Evaluation (75 points);

Performance in proposal paper and presentation shall be evaluated Proposed work execution plan by Bidders, including detailed description and activities required for the completion of the scope of work and deliver PTTGSP' needs as following topics

- i. Reference project (10 percent)
- ii Proposed Solution for Data Validation and Reconciliation (DVR) concept (60 percent)
- iii. Proposed Solution for System Integrating and Ease of use (20 percent)
- iv. Proposed Team Structure and CVs (10 percent)

- The Bidders who had the technical score of Reference project lower than 6 percent will not pass the technical evaluation, PTT reserve the right to not consider the commercial part of that Bidders.
- The Bidders who had the technical score of Proposed Solution for Data Validation and Reconciliation concept lower than 40 percent will not pass the technical evaluation, PTT reserve the right to not consider the commercial part of that Bidders.
- The Bidders who had the technical score of Proposed Solution for System Integrating and Ease of use lower than 10 percent will not pass the technical evaluation, PTT reserve the right to not consider the commercial part of that Bidders.
- The Bidders who had the technical score of Proposed Team Structure and CVs lower than 6 percent will not pass the technical evaluation, PTT reserve the right to not consider the commercial part of that Bidders.
- The Bidders who had the total technical score lower than 62 percent will not pass the technical evaluation, PTT reserve the right to not consider the commercial part of that Bidders.

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

The evaluation criteria detail is as following;

(2) Price evaluation (25 points)

Bidders shall be commercially evaluated based on competitive scoring system as the following criteria;

i. Scoring Score (Percentage)

Lowest Quoted Price 100

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

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

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

Remark: 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 performance and commercial evaluations.

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

No.	Topic	Percent
1	Project Reference	10
	The Bidders shall have the experienced on design and implement the production accounting system which related solution techniques, applied for oil and gas industries that fulfills (but not limited to) the Bidders qualification regarding "Article 2" to ensure the succeeding of the proposed solution. Project reference with the minimum project value 350,000 USD, at least 3 projects within the past five (5) years.	6
	The Bidders shall have the experienced on design and implement the production accounting system which related solution techniques, applied for oil and gas industries that have minor additional benefits compared to the Bidders qualification regarding "Article 2" to ensure the succeeding of the proposed solution. Project reference with the minimum project value 350,000 USD, at least 5 projects within the past five (5) years.	8
	The Bidders shall have the experienced on design and implement the production accounting system which related solution techniques, applied for oil and gas industries that have major additional benefits compared to the Bidders qualification regarding "Article 2" to ensure the succeeding of the proposed solution. Project reference with the minimum project value 350,000 USD, at least 8 projects within the past five (5) years. The proposed solution of The Bidders shall have major additional benefits compared to PTTGSP objectives and technical requirements of the Data Validation and Reconciliation (DVR) concept. The proposed solution shall include all necessary technical details included the proof of success projects reference to clarify and guarantee the outcome will be as The Bidder proposed.	10

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

No.	Topic	Percent
2	Data Validation and Reconciliation (DVR) Concept Solution	60
	The proposed solution of The Bidders shall fulfill (but not limited to) PTTGSP objectives and technical requirements of the Data Validation and Reconciliation (DVR) concept. The proposed solution shall include all necessary technical details included the proof of success projects reference to clarify and guarantee the outcome will be as The Bidders proposed.	40
	The proposed solution of The Bidders shall have minor additional benefits compared to PTTGSP objectives and technical requirements of the Data Validation and Reconciliation (DVR) concept. The proposed solution shall include all necessary technical details included the proof of success projects reference to clarify and guarantee the outcome will be as The Bidder proposed.	50
	The proposed solution of The Bidders shall have major additional benefits compared to PTTGSP objectives and technical requirements of the Data Validation and Reconciliation (DVR) concept. The proposed solution shall include all necessary technical details included the proof of success projects reference to clarify and guarantee the outcome will be as The Bidder proposed.	60

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

No.	Topic	Percent
3	System Integrating and Ease of use	20
	The Bidders shall propose the solution and methodology for the Data Validation and Reconciliation (DVR) concept with a guarantee for work perfectly fine and seamless integration between the Bidders proposed solution system and PTTGSP existing system that fulfills PTTGSP TOR (but not limit to). The proposed solution shall have a user-friendly Graphic User Interface (GUI), easy to use, maintain, modify, secure, and update.	10
	The Bidders shall propose the solution and methodology for the Data Validation and Reconciliation (DVR)concept with a guarantee for work perfectly fine and seamless integration between the Bidders proposed solution system and PTTGSP existing system that have minor additional benefits compared to PTTGSP TOR. The proposed solution shall have a user-friendly Graphic User Interface (GUI), easy to use, maintain, modify, secure, and update.	15
	The Bidders shall propose the solution and methodology for the Data Validation and Reconciliation (DVR) concept with a guarantee for work perfectly fine and seamless integration between the Bidders proposed solution system and PTTGSP existing system that have major additional benefits compared to PTTGSP TOR. The proposed solution shall have a user-friendly Graphic User Interface (GUI), easy to use, maintain, modify, secure, and update.	20

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

No.	Topic	Percent
4	Team Structure and CVs	10
	The Bidders shall propose the team structure together with CVs that fulfills (but not limited to) the Bidders qualification regarding "Article 2" to ensure the succeeding of the proposed solution. All team member have the experienced relating to The PROJECT for at least 5 years.	6
	The Bidders shall propose the team structure together with CVs that have minor additional benefits compared to the Bidders qualification regarding "Article 2" to ensure the succeeding of the proposed solution. All team member have the experienced relating to The PROJECT for at least 8 years.	8
	The Bidders shall propose the team structure together with CVs that have major additional benefits compared to the Bidders qualification regarding "Article 2" to ensure the succeeding of the proposed solution. All team member have the experienced relating to The PROJECT for at least 10 years.	10

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

Total Technical Score (Percent)	100
Weighted Total Technical Score = Total Technical Percent*75% (Point)	
Lowest Quoted Price (Percent)	100
Quoted Price (Not Lowest) Percent = $100 - ((\text{Quoted Price (Not Lowest)} - \text{Lowest Quoted Price}) / \text{Lowest Quoted Price}) * 100$	
Weighted Total Price Score = Quoted Price Percent*25% (Point)	
Total Score (Point) = Weighted Total Technical Score + Weighted Total Price Score	

Personal Data Protection

Both parties agree to comply with the Thai Personal Data Protection Act and all applicable personal data protection laws including any subsequent amendments, other relevant rules and regulations of the jurisdiction where such party is mandated, in respect of collection, use and/or disclosure of any personal information. In this regard, each party represents and warrants that it has right and authority to disclose any personal information of any third party to the other party and has obtained all necessary consents from the relevant third party to disclose such personal information. Any collection, use and disclosure of personal information hereunder shall be conducted to the extent it is necessarily required for and in compliance with such law(s).

In the event that any performance hereunder of either party is considered to be a data controller or a data processor under Thai Personal Data Protection Act including any amendments, the parties agree to enter into a Data Processing Agreement, Data Sharing Agreement or any other similar documentation to ensure adequate level of data protection as required by law and such document shall be incorporated hereinto.



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