

COMMERCIAL PROPOSAL FOR:

**MAINTENANCE SUPPORT AND CALIBRATION FOR
AGAR WATER CUT METERS IN SPDC FACILITIES**

PROPOSAL NO: PEVU551/2024



REVISION 01

CLIENT	LOCATION	SERVICE	DATE	PREPARED BY	REVIEWED BY	APPROVED BY
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SHELL PETROLEUM DEVELOPMENT COMPANY OF NIGERIA LIMITED (SPDC)

AGAR WATER CUT METER MAINTENANCE PROPOSAL

Submitted to:

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1.0 Executive Summary

PE Energy Limited (PEEL) is a wholly owned Nigerian company that specializes in Engineering, Procurement, Integration, Installation and Maintenance(**EPIMICE**®). We are pleased to submit a formal commercial proposal for “**Maintenance Support and Calibration for Agar Water Cut Meters in SPDC Facilities**”.

Provision of metering system solutions is one of the core businesses of PE Energy Ltd (PEEL) under its Engineered Solutions business platform. PEEL has the capabilities and capacity to offer solutions for every single point of metering requirement from Wellhead Multiphase and Wet Gas Metering, Production Metering, Water Cut Metering, Flare Metering to Integrated Metering Systems (IMS) for custody transfer or fiscal Metering applications as well as Gas & Liquids sampling systems and Gas Chromatography Solutions in compliance with the Nigerian Upstream Petroleum Regulatory Commission (NUPRC) guidelines, clients design and operations practices and international standards.

In the past six (6) years, PEEL have supplied, installed and commissioned well over 50 units of online and real time water cut meters from her partner (Agar Corporation Inc) in SPDC, Eroton, Aiteo, Newcross, Chevron, Total etc for critical reconciliation of Flow Stations Fiscal Allocation metering, reporting in real time contribution of each flow station in percent (%) volume of water into either common flowlines or crude oil stabilization, processing and export terminals. The field performance of these water cut meters were examined by NUPRC in some flow stations and accepted upon proving that the average deviation reading between the water cut meters outputs and reference Dean & Stark analysis was within $\pm 1\%$ as against industry acceptable limits of $\pm 2\%$.

Similarly, we have installed and commissioned over 16 units of Multiphase Wet Gas Meters with unique and smart metering philosophy from our partner (Solartron ISA) enabling clients to save cost by engineering a small footprint facilities and providing real time 3-phase measurement outputs for flowlines surveillance, well testing, water breakthrough identification and reservoir management as well as for allocation and custody transfer application directly from wellhead to 3rd party Central or Primary treatment facilities.

In our thoroughness and expertise in executing metering projects, clients entrust us with most capital-intensive integrated metering packages. As a reference, we have successfully engineered, fabricate, supplied and commissioned ten (10) integrated metering systems (metering skids) for both liquids and gas applications for the SPDC Southern Swamp Associated Gas Solutions (SSAGS) Project meeting stringent design, application and space constraints requirements. PEEL deployed one of the smartest and small footprint gas chromatography with multiple stream selections capabilities installed in a 3-sided with roof top shelter not requiring a HVAC system thus saving a lot of cost on the project.

We provide unique, compact and highly accurate pipe prover with straight calibrated section as well as intelligent jet mixing and auto-sampling solutions.



Figure 1: Typical Coriolis Meter Based Liquid Metering Skid Supplied by PEEL to Saipem for SPDC SSAGS Project



Fig 2: Fabrication of 10 Gas and Liquid Custody Transfer Metering Systems for SPDC SSAGS Project



Fig 3: Ultrasonic Flow Meter (USM) Based Fiscal Gas Metering Skid Supplied by PE Energy Ltd to Saipem for SPDC SSAGS Project

2.0 Scope Description and Deviation from PE Energy Ltd

S/N	Description	Deviation (By PE Energy Ltd)
	ARTICLE 1 – INTRODUCTION	
1	The CONTRACTOR shall perform the WORK in accordance with the CONTRACT and good workmanship. The WORK to be performed generally consists of all WORK necessary and incidental to the successful and satisfactory completion of MAINTENANCE SUPPORT AND CALIBRATION FOR AGAR WATER CUT METERS IN SPDC FACILITIES	Noted
2	The CONTRACTOR shall provide and mobilize all resources including personnel, their transportation, accommodation, and other materials necessary to perform the SERVICE in accordance with the CONTRACT.	Transportation to and from any site, Feeding & Accommodation, Security at site is not in Contractor's scope.
3	The CONTRACTOR shall perform the WORK in accordance with the CONTRACT, the agreed Work Programme and the Technical Specifications.	Noted
4	The CONTRACTOR warrants that the WORK will be performed in a safe manner, to the required standard, using good engineering working practices by skilled, experienced and suitable personnel and that materials supplied will be new, free from defects and suitable for their intended purpose. All materials to be incorporated into the WORK or to be used for the WORK shall, at THE COMPANY's sole discretion, be subject to prior acceptance and approval by SHELL. The CONTRACTOR shall be responsible for ensuring THE COMPANY's approval of such materials in a timely manner. The CONTRACTOR shall submit samples of such materials to THE COMPANY and THE COMPANY shall within seven (7) working days inform the CONTRACTOR of his acceptance or rejection of the item.	Noted
5	The CONTRACTOR shall ensure that all supervisory personnel employed in the WORK are proficient in speaking, understanding, reading and writing the English Language. All	Noted



	forms of communication shall be in the English Language.	
6	The CONTRACTOR shall be fully responsible for managing and controlling the WORK and all activities associated with it in an efficient manner, to ensure performance and completion of the WORK in accordance with the agreed Work Programme.	Noted
	ARTICLE 2 – SCOPE OF WORK	
7	Visual inspection of Agar meter.	Noted
8	Visual inspection of Agar meter probes.	Noted
9	Maintenance of the probes	Noted
10	Replaced fault parts.	Noted
11	Carry system diagnostic/troubleshooting.	Noted
12	Configuration of Agar meter.	Noted
13	Upgrade of software components	Noted
14	Commission of Agar Water Cut Meter	Noted
15	Preventive and Corrective Maintenance Services	Noted
16	Re-installation of repaired (or replacement) Agar WCM.	Installation could entail hot work and purchase of installation accessories. So, installation should be deleted from the scope since the tender calls for maintenance support and calibration only.
17	Any other service that may be required on Agar WCM	Noted provided it is not associated with installation as stated above
18	Provision of daily activity reports covering scope executed	Noted
19	Personnel to provide Training and Certificate of competency Level D (minimum) to SPDC-nominated personnel for overhaul/maintenance of Agar water cut meters.	TBD
20	Compliance to OEM approved procedures for maintenance and operation of Agar water cut meters	Noted

3.0 Appendix A: Schedule of Prices as per enquiry received

S/No	Activity Description	UoM	Unit Price	
			NGN	USD
1	Agar watercut meter troubleshooting and repairs (4-point) by OEM Specialist Engineer, including software, tools etc.	Day	0.00	2,691.00
2	Agar watercut meter validation/calibration (4-point) by OEM Specialist Engineer, including software, tools etc.	Day	0.00	2,691.00
3	Agar watercut meter system installation, calibration & startup (4-point) by OEM Specialist Engineer, including software, tools etc.	Day	0.00	2,691.00
4	Overtime Rates by OEM Specialist Engineer	Hour	0.00	230.00
5	Stand-by Rates of service engineer OEM specialist Engineer	Day	0.00	1,345.50
6	Mob/Demob Travel days for OEM Specialist Engineer.	Lot	0.00	5,200.00
7	PEEL Engineer Service Rate	Day	0.00	1,800.00
8	Overtime Rates for PEEL Engineer	Hour	0.00	150.00
9	Stand-by Rates for PEEL Engineer	Day	0.00	1,000.00

N/A: Not Applicable TBD:

To be determined. PEEL:

PE Energy Limited

Remarks/Notes:

1) Site Preparation & Prerequisites (Required from Client)

- a. Water Cut Meters are installed with mechanical and electrical connections completed.

- b. Manual Sampling Probes are available and adequately installed to collect representative samples for analysis.
- c. Laboratory facilities at site are available to analyze samples for BS&W (water cut).
- d. Permit to work (PTW) are provided and kept valid for the duration of the service at site.

2) Additional Information

- a. This submission excludes the cost of FTO exposure (where applicable) and not PE Energy's responsibility.
- b. OEM Specialist Engineer rate is per day basis and in USD.
- c. PEEL Engineer rate is per day basis and in USD.
- d. A Total number of 2 full working days is required for Agar WCM calibration/validation/troubleshooting at site, exclusive of Mob/Demob.
- e. Overseas Mob/Demob are travel days and does not include International Airfare, and excludes Hotel, Car Rental, Visa Application, TWP, in-country expenses (local flight, Accommodation, Feeding, Security etc) up to Shell IA/NAFBASE, Port Harcourt as this will be charged as a cost plus 15% administrative fee.
- f. Security, Accommodation and Feeding at site are responsibilities of Shell.
- g. Shell is responsible for, to and fro logistics for both OEM and PE personnel from Shell IA/NAFBASE, PHC to locations where these services will be executed.
- h. This quotation excludes mechanical & electrical installation, fabrication, or hot work activities. If such work is required, separate quotation will be given after a comprehensive evaluation of scope of work.
- i. Three weeks notification required for Mobilization of both expat and Nigerian Field Service Engineer.
- j. Normal working hours is 8 hours (from 8am to 5pm) Monday to Sunday including 1 hour for lunch break. Work beyond 5pm is considered overtime and will be charged as per rates on price schedule above.
- k. Stand-By will also apply as per price schedule above. Stand-By time will also be invoiced if more than 4 hours stand-by time is involved.
- l. All prices are exclusive of all local taxes.

- m. There will be 2 FSEs, 1 FSE from PE Energy and 1 FSE from Agar Corp.
- n. All tools and PPEs required to perform the maintenance will be carried along.
- o. Normal working hours at SPDC sites shall be 7am - 6pm per day and overtime shall apply only after 6pm.

4.0 Appendix B: SPDC Scope

SPDC scope consider the following:

- a. Approved PTW be provided before commencement of any site activity.
- b. The 4-point/2-points calibration may not be possible if there is an event of non-retraction of Agar WCM probe, hence, it is advisable to go on with validation.
- c. SPDC to provide lifting aids either gantries with slings or crane to suspend the water cut meter for calibration (4-point/2-points).
- d. SPDC to perform proper sampling, sample handling and analysis to provide results.
- e. All spares be available at site prior to Agar WCM maintenance.

5.0 Appendix E: Other Information Offered



Certificate of Representation

Oil & Gas Industry of Nigeria

NIGERIA

Attn.: Management and decision makers

Date: 1st of January 2023

Your Reference: Vendor Registration

Our Reference: Announcement of **Agar Corporation Inc.** Representation

Subject: **Agar Corporation Exclusive Representative in Nigeria**

To whom it may concern,

Please be advised that PE Energy Limited, whose principal place of business is located at #54 Emekuku Street D-Line, Port Harcourt, Nigeria, is Agar Corporation's Sole Representative in Nigeria, until December 31, 2023. Should any changes to this representation change you will be notified.

PE Energy Limited
#54 Emekuku Street D-Line Port Harcourt,
Rivers State-NIGERIA.



Mr. Daere AKOBO
Chief Executive Officer

If more information is required, please refer to undersigned.

Sincerely,



Ben Shani
President
Agar Corporation Inc.
5150 Tacoma Drive
Houston, TX 77041



OIL & GAS INDUSTRY OF NIGERIA

Attention: Management & Decision Makers

Date: May 22nd, 2018

Your Reference: Vendor Registration

Our Reference: Notification

Subject: Agar Installations Troubleshooting, Maintenance & Repair Services

To Whom It May Concern:

In our drive to effectively support our clients and control quality of services on Agar Products installations, we periodically train and certify our local representatives all over the world engaging in these services.

Consequently, and particularly in line with the intent of Nigerian Content Development (NCD) policies, Agar has committed to training its Nigerian Rep (PE Energy Ltd) Engineers to perform troubleshooting, maintenance and repair services on deployed Agar products in the Nigerian Oil & Gas Industry when required by operators.

Agar does not authorize anybody except PE Energy Ltd to undertake these assignments and confirms that anyone claiming as such without authorization from Agar is unqualified and will not render quality service to operators as warranted by Agar Corporation.

We are confident this notification will be given priority attention and circulated within the organization.

Kindly contact Agar Corporation should you need clarification.

Sincerely,

Ben Shani

Ben Shani

President

Agar Corporation Inc.

5150 Tacoma Drive

Houston, Texas 77041



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Daisy Maduagwu

Authorized Signature for PEEL