



## REQUEST FOR PROPOSAL

**Package:** Technical Advisor service for supervision, data analysis and assessment report of generators of Ca Mau 1 Power Plant.

**Purchaser:** Petrovietnam Power Technical Services Center

**Issue date:** June 5<sup>th</sup> 2025

**PETROVIETNAM POWER  
TECHNICAL SERVICE CENTER**



**PHÓ GIÁM ĐỐC**

*Lê Ngọc Sơn*

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## ABBREVIATIONS

CCPP	Combined Cycle gas-fired Power Plant
RFP	Request for Proposal
Comma (,)	To divide number in thousands
EUR	Euro
USD	US Dollar
VND	Vietnamese dong
VAT	Value added tax
CIT	Corporate Incomes Tax
PIT	Personal Income Tax

## **CHAPTER I. INSTRUCTIONS TO BIDDERS**

### **Section 1. General information**

Package name: **Technical Advisor service for supervision, data analysis and assessment report of generators of Ca Mau 1 Power Plant.**

Purchaser: PetroVietnam Power Technical Services Center (PV Power TSC), a subsidiary of Petro Vietnam Power Corporation.

Contract duration: 90 days from the effective date of the contract.

Work schedule:

- On-site supervision: 07 days, expected from August 17th 2025 to August 23rd 2025. This on-site schedule can be changed subject to the final decision of National Power System. The specific dates shall be confirmed by the Customer no later than 04 weeks prior to mobilization. On-site location: Ca Mau 1 Power Plant, Khanh An Commune, U Minh District, Ca Mau province, Vietnam.
- Report submission: within 30 days for final report after the completion of the on-site session.

Location of project: Ca Mau 1 Power Plant, Khanh An Commune, U Minh District, Ca Mau province, Vietnam.

### **Section 2. Eligibility of Bidders**

The Bidder has been granted a Certificate of Enterprise registration, an Establishment Decision or equivalent document by a competent authority of the country in which the Bidder is operating.

The Bidder is independent accounting firm.

The Bidder is neither undergoing dissolution process, nor determined as bankrupt or insolvent as prescribed by law.

The Bidder is not banned from bidding as prescribed in Vietnamese law on bidding.

The Bidder is not being suspended or terminated from participating in the national bidding network.

### **Section 3. Cost, currency and language in Proposal**

#### **3.1 Cost**

The Bidder shall bear all costs associated with the preparation and submission of its Proposal. The Purchaser shall not be responsible or liable for any cost related to the Bidder's participation in the bidding process.

#### **3.2 Currency**

Bid currency: USD, EUR, VND.



The Bidder must present the whole work together with a detailed list of the work contents and the corresponding currency value and ensure the principle of one specific work item must be offered in one currency. All kinds of domestic costs must be in VND; foreign expenses related to the procurement package must be in foreign currency.

Payment currency for work items shall correspond to the Bid currency for that work item. Domestic costs are payable in VND only.

For evaluation and comparison of Bids, the Bid currency in USD, EUR shall be converted to VND. The exchange rates of EUR/VND, USD/VND shall be the closing selling rates issued by Vietcombank at the deadline for submission of Proposal.

### **3.3. Language**

The Proposal, as well as all correspondence and documents relating to the proposal, exchanged between the Bidder and the Purchaser, must be written in English.

Supporting materials and documents of the Proposal may be written in another language, along with a translation into English. Where the translation is not provided, the Purchaser may, as it finds necessary, request the Bidder to supplement.

## **Section 4. Structure of Proposal**

The proposal prepared by the Bidder must comprise:

**Form 01:** A Quotation Letter enclosed with documentary evidence of eligibility of signatory of quotation.

**Form 02:** Table of bid price and commercial conditions.

**Form 03:** Previous experience documentation.

**Form 04:** Profile of key personnel.

**Form 05:** Detailed description for all scope of supply.

**Form 06:** Using in case of joint venture.

## **Section 5: Period of validity of the Proposal**

The validity period of the Proposal is at least *90 days from the deadline for submission*. A proposal valid for a shorter period than prescribed shall not be considered further.

## **Section 6: Submission of Proposals**

### **6.1. Deadline for submission of Proposal is:**

<i>Time: 3:00 P.M. Date: June 16th, 2025 (GMT+7).</i>
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## **6.2. Instructions to submit the proposal:**

### ***Step 1: Registration***

Interested Bidders should send an email to [havtt@tsc.pvpower.vn](mailto:havtt@tsc.pvpower.vn) and [thuyltt@tsc.pvpower.vn](mailto:thuyltt@tsc.pvpower.vn) to get an account for online submitting. Email content must include business information and contact person (Full name, title, phone, email).

### ***Step 2: Package***

All proposal documents must be in a single folder which is named as “BIDDER-NAME” and compressed and encrypted in ZIP or ZAR format with a password. The password must be difficult to guess and should be kept secure by the Bidder.

### ***Step 3: Submission***

For online submission: The Proposal of Bidders must be uploaded to the address which is provided in Step 1 before the deadline for submission.

For hardcopy submission: The Bidder shall prepare 01 original hardcopy and 01 hardcopies of the Proposal and submit in person or by post to the address below before the deadline for submission. The envelope clearly shows the name of Bidder and marks Proposal of package “Technical Advisor service for supervision, data analysis and condition assessment of generators of Ca Mau 1 Power Plant”.

+ Recipient: Ms. Vu Thi Thu Ha - PetroVietnam Power Technical Services Center (PV Power TSC).

+ Address: 4th Floor, Vietnam Petroleum Institute Building, No. 167 Trung Kinh Street, Yen Hoa Ward, Cau Giay District, Hanoi, Vietnam.

PV Power TSC shall receive the Proposals of all Bidders submitted before the deadline for submission.

### ***Step 4: Proposal opening***

Proposal opening time & date is public in the RFP. 03 days before the opening time, the Bidders will receive an email with a link, ID and password to join a Zoom meeting for the opening session.

At the opening meeting, the Bidders will provide the password via direct message on the Zoom meeting system for the decryption of the proposal.

In case the Bidders cannot join the opening meeting, no sooner than 12 hours before deadline for submission and no later than the time of proposal opening, Bidders must send password for decryption of The Proposal to The Purchaser via email ([havtt@tsc.pvpower.vn](mailto:havtt@tsc.pvpower.vn) and [thuyltt@tsc.pvpower.vn](mailto:thuyltt@tsc.pvpower.vn)). The Proposal would be excluded if password for decryption is sent late/ not sent.

## **Section 7: Proposal Opening**

### **7.1. Time, Date, Address:**

<i>Time: 3:30 P.M. Date: June 16th, 2025 (GMT+7).</i>
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Address: Via Zoom meeting system hold by PV Power TSC.

### **7.2. Proposal Opening procedures**

The Purchaser opens Proposals, which have been sent before deadline of submission. No proposal shall be rejected at proposal opening except late submission proposals.

The Purchaser shall prepare a Proposal opening record including information about the name of the Bidder, the Bid Prices (mentioned in the grand summary, value of discounts (if any)), validity period of Proposal, the performance period of contract and other details.

The record shall be sent to all Bidders who submitted the Proposal.

## **Section 8: Clarification of Proposals**

After the Proposal opening, the Bidder must clarify the Proposal at the Purchaser's request (if any).

All the Clarification documents sent by the Bidder shall be an integral part of the Proposal. The clarification must not change the nature of the Bidder and not change the basic information of the Proposal which was submitted and not change the Bid Price.

## **Section 9. Evaluation of Proposal and Negotiation of Contract**

9.1. The Bidder having the lowest evaluated bid price shall be ranked first and invited to negotiate the contract.

9.2. Rules for negotiation of contract:

- The negotiation of contract shall be based on the following documents: Request for Proposals; Proposal and clarifications of the Proposal (if any) of the Bidder; Proposal evaluation report of the Purchaser.
- Contract negotiation contents:
  - + Negotiating nonclarification or nonconformities between the RFP and the Proposal, between different contents in the Proposal possibly leading dispute or affecting the duties of contracting parties during the performance of the contract.
  - + Negotiating deviations discovered and proposed in the Proposal by the Bidder (if any).
  - + Negotiating key personnel.
  - + Negotiating issues incurring from the bidder selection (if any) to complete the detailed contents of the package.

- + During the contract negotiations, both parties shall make a draft contract of the package.
- If the negotiation is not successful, the Purchaser shall invite the bidder ranked next to contract negotiation.

9.3. A Bidder shall be proposed for a contract award when all the following conditions are satisfied:

- The Bidder has a valid Proposal.
- The Bidder passed all evaluation criteria in Chapter III.
- The Bidder is successful in contract negotiation.

#### **Section 10. Publishing results of bidder selection**

The results of bidder selection shall be sent to all Bidders submitting Proposal by email/ fax/ post.

Upon the receipt of notification of the Bidder selection result, if any unsuccessful Bidder requests explanation, the Purchaser shall, within 05 working days from the date on which the notification of Bidder selection result is published, give explanation.



## CHAPTER II. SCOPE OF WORK

### Section 1. Project objectives

The project is objective to detect and assess potential damage to the generators of Ca Mau 1 Power Plant. Based on the inspection datas, the Technical Advisor provides recommendations for the operation and maintenance of the generators.

### Section 2. General information of generators

PetroVietnam Power Corporation (PV Power - the Owner) is currently operating Ca Mau 1 and Ca Mau 2 Gas Combined Cycle Power Plant in the Khanh An Commune, U Minh District in Ca Mau, Vietnam, comprised of four (4) Siemens SGT5-4000F Gas Turbines, two (2) Siemens SST5-5000 Steam Turbines, and six (6) SGen5-1000A Generators.

Generator SGen5-1000A is a large, air-cooled generator. It may be in a Totally Enclosed Water-to-Air Cooled (TEWAC) or Open Air Cooled (OAC) configuration. The cooling configuration includes indirectly cooled stator coils and a radially cooled stator core. The rotor is directly cooled using a radial path rotor configuration.

#### 2.1. Detail technical specifications of Generators ST1 & GT2 – Ca Mau 1 Power Plant as follows:

Parameter	Value
Model	SGen5-1000A
Cooling method	Totally Enclosed Water-to-Air Cooled (TEWAC)
Generator S.O. No.	10853
Generator Frame	SGEN5-1000A 118/55
Rated Power (KVA)	299,000
Efficiency	0.85
Frequency (Hz)	50
Number of Phases	3
Rotational Speed (RPM)	3000
Stator Winding Voltage (kV)	20
Rated Stator Current (A)	8631
Rated Excitation Current (A)	1541
Rated Excitation Voltage (V DC)	273
Cooling Air Inlet Temperature (°C)	43
Cooling Water Inlet Temperature (°C)	38
Rotor Weight (kg)	65,953
Rotor Length (mm)	12,522

*(Name plate of generators as attached)*

## **2.2. Operation, maintenance and problem history**

*Details are provided in Attachment 1.*

## **2.3. Bump Test Equipment Specifications**

*Details are provided in Attachment 2.*

## **Section 3. Scope of work**

### **3.1. Bump test supervision**

Based on PV Power TSC process, the Bidder shall:

- Review and consensus and complete on the Bump test procedure.
- Supervise the implementation of Bump Test:
  - + Install and configure Bump Test equipment;
  - + Install and connect sensors;
  - + Perform Global measurement on CE side;
  - + Perform Global measurement on NCE side;
  - + Perform Local measurement on CE side;
  - + Perform Local Phase Lead measurement on CE side;
  - + Perform Local measurement on NCE side;
- Record measurement result data and be responsible for the accuracy of data in accordant with on-site work schedule.

### **3.2. Bump test data analysis**

Bump Test Data Analysis including:

- Analyze Global test data of CE and NCE stator windings.
- Analyze data of 54 conductor bars (single bar) in CE and NCE stator windings.
- Analyze data of 12 phase lead conductor bars in CE stator windings.
- Provide detailed report of Bump test data analysis using ME Scope Software or other equivalent software.

### **3.3. Final report**

Based on Bump Test Data Analysis as item 3.2 above, VDT and X-ray result provided by Purchaser, Bidder shall provide a final report including evaluate generator status and provide recommend an operation & maintenance plan for each generator GT2 & ST1.

### 3.4. Work schedule

The Bidder shall provide services including at least one Technical Advisor for on-site supervision and analysis and reporting service, in compliance with the full scope of work specified in Items 3.1, 3.2, and 3.3 above, and in accordance with the following schedule:

- On-site supervision: 07 days, expected from August 17th 2025 to August 23rd 2025. This on-site schedule can be changed subject to the final decision of National Power System. The specific dates shall be confirmed by the Customer no later than 04 weeks prior to mobilization. On-site location: Ca Mau 1 Power Plant, Khanh An Commune, U Minh District, Ca Mau province, Vietnam.
- Working time on-site shall be calculated by one dayshift, 10 hours/shift/day and 7 days/week, in which:
  - + Working day means ten (10) hours per day (from 7:30 to 18:30 and 01-hour break time for lunch), five (5) days per week from Monday to Friday excluding Saturday, Sunday, Vietnamese National holiday.
  - + Overtime work means Work performed by a Contractor Personnel more than agreed working hours as indicated in working day
- Report submission: within 30 days for final report after the completion of the on-site session.

### 3.5. The division of responsibilities is as follows:

Or.	Item	PV Power TSC	The Bidder
1	Review and complete on the Bump test process		X
2	Visual inspection at both stator end windings to detect abnormalities and evaluate the unit conditions	X	
3	Perform Radiographic testing (RT) of cracks in copper laminations	X	
4	Perform Bump test and collect bump test data under the supervision of Technical Advisor	X	
5	Perform Voltage drop test (VDT) on 54 bars and collect data.	X	
6	Supervise the implementation of Bump Test		X
7	Record and analyse Bump Test data		X
8	Complete report including summary of results (data from visual checks, RT, VDT, Bump test), analysis, evaluation, and recommendations for operation and maintenance.		X



## CHAPTER III. EVALUATION CRITERIA

### Section 1. Evaluation the eligibility of the Proposal

A Proposal is considered eligible when all the conditions below are satisfied:

- The Quotation Letter is signed and seal (if any) by the legal representative of the Bidder. In case of joint venture, the signature and seal (if any) of the legal representative must comply with consortium agreement.
- The duration of the contract mentioned in the Proposal must conform to the technical proposal and satisfy requirements of RFP.
- The Bid Price mentioned in the Proposal must be detailed, specified in both number and words, and in conformity with the total Bid Price mentioned in the Grand Summary. There must be only one Bid Price which does not cause any disadvantage condition to the Purchaser.
- The validity period of the Proposal satisfies requirements of RFP.
- The Bidder shall not have its name included in multiple Proposal(s) as a Contractor (a single entity or a joint venter's party) for the same package.
- The Bidder's status is eligible as prescribed in Chapter I, Section 3.

Any Bidder having eligible Proposal shall be considered further.

### Section 2. Evaluation criteria for qualifications and experience

The evaluation criteria for qualifications and experience shall be applied as Pass/Fail. The Bidder must satisfy all qualification criterias for further technical evaluation.

#### 2.1. Evaluation criteria for experience in performing similar contracts

The Bidder must provide **documents (\*)** to prove that they have previously provided similar services, including performing inspection tests on **generators with a capacity of  $\geq 200,000$  kVA** and data analysis and evaluation of the inspection results.

(\*) Documents refer to:

- A contract that has been fully completed by the Bidder; OR
- Certification from the purchaser/customer confirming the services completed by the Bidder; OR
- Other equivalent documentation.

#### 2.2. Evaluation criteria for key personnel

The Bidder shall provide the Curriculum Vitae (CVs) of the personnel assigned to the project should, at a minimum, meet the following requirements:



- (1). Know how of the English language is required.
- (2). Personnel background is particularly detailed in Curriculum Vitae.
- (3). A successfully completed vocational training (apprenticeship) and have proven job experience according to the position (Certificates of employment, testimonials).
- (4). On-site Supervisor shall have been Diagnostic Engineer (or equivalent) at least 05 years, proficient in operating the Bump test equipment as specified in Attachment 2 (including OROS 36 Bump Test equipment, NVGate measurement software and ME Scope analysis software or other equivalent software).
- (5). On-site Supervisor shall perform at least 03 projects on Bump test OR modal vibration test for generator with a capacity  $\geq 200,000$  kVA.

### **Section 3. Technical evaluation criteria**

The technical proposal evaluation shall be applied as Pass/ Fail. The Bidder satisfying all technical criteria is considered qualified for further financial evaluation.

Technical requirements including:

1. Scope of work: Must meet all requirements in Chapter II, Section 3.
2. Time and progress of implementation: Must meet all requirements in Chapter II, Section 3.

### **Section 4. Financial evaluation criteria**

The lowest bid price shall be determined by the following steps below:

Step 1: Determining Bid Price.

Step 2: Correct errors (comply with Notes (1));

Step 3. Adjust deviation (comply with Notes (2));

Step 4. Determine bid price after error correction and adjustment of deviation and minus discount (if any);

Step 5: Rank bidders. The Proposal with the lowest price after error correction and adjustment of deviation and minus discount (if any) and plus incentives shall be ranked first.

*Notes:*

*(1) Error correction:*

*The arithmetical errors and other errors shall be corrected on the following basis:*

*a) Arithmetical errors include errors due to incorrect addition, subtraction, multiplication*

and division when calculating bid price. If there is a discrepancy between the unit price and the total price, the unit price shall prevail and the total price shall be corrected; if there is an obvious misplacement of the decimal point in the unit price (10 times, 100 times, 1,000 times), the total price shall prevail and the unit price shall be corrected. In case the Bidder insert no value or insert "0" in the columns "unit price" and "total price", the Bidder shall be considered allocating the price of this work item to another work item of the package, the Bidder shall be responsible for performing these work items in conformity with the Request for Proposals' requirements without any payment from the Investor during the contract performance.

*b) Other errors:*

- If a total price is fully filled but the equivalent unit price is leaved blank, the unit price shall be determined by dividing the total price by the quantity; if a unit price is fully filled but the equivalent total price is leaved blank, the total price shall be determined by multiplying the unit price and the quantity; if a unit price and the equivalent total are fully filled but the equivalent quantity is leaved blank, the quantity shall be determined by dividing the total price by the unit price. If the additional quantity determined above is different from the equivalent quantity mentioned in the Request for Proposals, such discrepancy shall be the deviation related to Scope of Supply which shall be adjusted as prescribed in the Step 3;
- Physical unit errors: correct units in conformity with the Request for Proposals' requirements;
- Unit errors: replace "." (stop) with "," (comma) and vice versa in conformity with the Vietnamese unit. If the Employer believes that the stops and commas in the unit price are put in wrong position, the total price shall prevail and the unit price shall be corrected;
- If there is an error in a total corresponding to the addition of subtotals, the subtotals shall prevail and the total shall be corrected;
- If there is a discrepancy between words and figures, the amount in words shall prevail, and the amount in figures shall be corrected. If the amount in words is related to arithmetic error, the amount in figures prescribed in this Section shall prevail.

*(2) Adjustment of deviation:*

*a) If there is a deviation from Scope of Supply, the deficiency shall be added and the redundancy shall be subtracted according to the equivalent unit price in the Proposal;*

*If the Proposal has a deviation as the unit price is left blank, the highest price of other Proposals passing the technical evaluation shall be used as the basis for deviation adjustment; if other Proposals passing the technical evaluation also have no unit price, the unit price in the estimate shall be used as the basis for deviation adjustment; if there is no estimate, the unit price establishing the bid price shall be used as the basis for deviation adjustment;*

*If only one Bidder is considered further after technical evaluation, the adjustment of deviation shall be carried out according to the equivalent unit price in the Proposal of such Bidder; if the Proposal has no unit price, the unit price in the estimate shall be used; if the estimate has no unit price, the unit price forming the bid price shall be used as the basis for adjustment of deviation.*



## CHAPTER IV: FORMS

Forms used in this RFP are listed below:

Form 01: A Quotation Letter enclosed with documentary evidence of eligibility of signatory of quotation.

*The bid price included in the Quotation must consist of all costs to perform whole scope of work as required in this RFP.*

Form 01a & 01b: Bidder information

*The Bidder is required to provide his information*

Form 02: Table of bid price and commercial conditions.

*Discount offered by the Bidder shall be written directly on the Quotation or on a separate Letter of Discount. The Letter of Discount must be submitted separately or together with the Proposal if it is received by the Purchaser before the deadline for submission of proposal.*

*The Bid Price quoted by the Bidder shall include all taxes, duties, fees and charges (if any) imposed on the Bidder inside and outside of Vietnam and determined at 28 days prior the deadline for submission of Proposal as prescribed. In case the Bid Price is not inclusive of any taxes or fees ..., the Proposal of the Bidder shall be rejected.*

*For a foreign Bidder with business organization has no permanent establishment/ head office or branch located in Vietnam, the "Tax" shall be all applicable taxes inside Vietnam (including CIT, VAT) which are calculated by formula set in file "Tax Calculation Sheet for Foreign Contractor" attached. The Bidder can request the Purchaser to provide this file by email.*

*In case a foreign Bidder awards the contract, the Purchaser shall, on behalf of the Bidder, take responsible for declaring and paying the applicable taxes in Vietnam and deduct the corresponding tax amounts from the payments to the Contractor.*

Form 03: Previous experience documentation.

Form 04: Profile of key personnel.

Form 05: Detailed description for all scope of supply.

Form 06: Consortium agreement

*In case the Bidder participates this package as a Consortium, the Bidder shall use this form to specify detailed tasks and estimate equivalent value of tasks performed by every consortium member, joint and separate responsibilities of member, including the Lead member.*

**QUOTATION LETTER <sup>(1)</sup>**

Date: \_\_\_\_\_ *[insert date of signature]*

Project's name: \_\_\_\_\_ *[insert the project's name]*

To: Petrovietnam Power Technical Services Center

In consideration of the Request for Proposals, we, \_\_\_\_\_ *[insert the Bidder's name]*, undertake to perform the contract package \_\_\_\_\_ *[insert package's name]* in accordance with RFP with **total amount** \_\_\_\_\_ *[insert the amount in number, words, and currency]* <sup>(2)</sup> in conjunction with the price schedule.

Contract duration is \_\_\_\_\_ *[insert the length of time the whole of Works must be completed]* <sup>(3)</sup>.

We hereby confirm that we have thoroughly reviewed and verified the accuracy and completeness of all information provided, as well as all statements contained in our Quotation and its accompanying attachments. Following a meticulous examination of the Request for Quotation (RFQ), we affirm our full understanding of the scope and nature of the WORK, and all other factors that may, in any manner, affect the execution of the WORK.

We undertake to bear all costs and expenses incurred by us in the preparation and submission of our Quotation, irrespective of the outcome of the bidding process. Furthermore, we acknowledge and accept responsibility for any additional costs incurred prior to the award of the CONTRACT, regardless of whether such CONTRACT is ultimately awarded to us or to another Bidder.

We hereby declare that:

1. We only participate in this Proposal as main Bidder.
2. We are not undergoing dissolution process, are not thrown into bankruptcy, and do not incur bad debts as prescribed by law.
3. We do not commit violations against regulations on assurance of competitiveness in bidding.
4. We are not involved in corrupt, fraudulent or conclusive practice and other violations against law on bidding.
5. Every information provided herein is truthful to be the best of our knowledge.

This Proposal takes effect within \_\_\_\_\_ days <sup>(4)</sup>, from \_\_\_\_\_ [date] <sup>(5)</sup>.

**Legal representative of Bidder <sup>(6)</sup>**  
*[full name, position, signature and seal]*

Notes:

- (1) Bidder must provide sufficient and accurate information including names of the Purchaser and the Bidder, effective period of the Proposal, which bears the signature and seal of the bidder's legal representative (if any).
  - (2) The Bid Price mentioned in the Quotation letter must be detailed, specified in both number and words, and in conformity with the total Bid Price mentioned in the **Grand Summary of Form no. 02**. There is must be only one Bid Price which does not cause any disadvantage condition to the Purchaser
  - (3) Contract performance time described in the Quotation must be accordant with Technical Proposal and requirements for progress.
  - (4) Insert number of validity days prescribed in Request for Proposals.
  - (5) Insert the bid closing date as prescribed in Request for Proposals.
  - (6) If the bidder's legal representative authorizes his/her subordinate to sign the Quotation, a Letter of Authorization must be enclosed. If the company's charter or another document permits such subordinate to sign the Quotation, such document shall be enclosed (no Letter of Authorization is required in this case).
- Regarding joint venture, the signature and seal (if any) of the legal representative must comply with consortium agreement.

**BIDDER INFORMATION**Date: \_\_\_\_\_ *[insert date of signature]*Project's name: \_\_\_\_\_ *[insert the project's name]*

Bidder's name: _____ <i>[insert Bidder's name]</i>
<i>In case of consortium, name of each party: _____</i>
Place of business registration and operation: _____ <i>[insert province/city where the Bidder registers and operate business]</i>
Year of incorporation: _____ <i>[insert year of incorporation]</i>
Bidder's legal address: _____ <i>[insert the registered address]</i>
Bidder's legal representative information Name: _____ Address: _____ Telephone/Fax: _____ Email Address: _____
Attach copies of one of the following documents: 1. Certificate of Incorporation, Establishment Decision or equivalent documents issued by competent agencies in the country where the Bidder operates. 2. Diagram of organizational structure of the Bidder.

**CONSORTIUM MEMBER INFORMATION <sup>(1)</sup>**Date: \_\_\_\_\_ *[insert date of signature]*Project's name: \_\_\_\_\_ *[insert the project's name]*

Name of Consortium Bidder:
Name of Consortium member:
Country of Registration of Consortium Member:
Year of Establishment of Consortium Member:
Legal Address of Consortium member in Country of Registration:
Legal representative of Consortium member information
Name: _____
Address: _____
Telephone/Fax: _____
Email Address: _____
<p>Attach a copy of one of the following documents:</p> <ol style="list-style-type: none"> <li>1. Certificate of Incorporation, Establishment Decision or equivalent documents issued by competent agencies.</li> <li>2. Diagram of organizational structure.</li> </ol>

Notes:

(1) In case of consortium, each Consortium member shall fill in this form.



**TABLE OF BID PRICE AND COMMERCIAL TERMS**

Currency:.....

Or.	Items	Quantity				Unit price	Total price
		Person	Day	Hour	Per lot		
1	Daily Rate						
2	Overtime rate						
3	Mob & De-mob						
4	International transportation costs						
5	Domestic transportation costs						
6	Accommodation						
7	Report						
8	Other costs ( <i>if any</i> )						
	<b>Total net price</b>						
	<b>Tax</b>						
	<b>Grand Summary</b>						

**Legal representative of Bidder***[full name, position, signature and stamp]***Notes:**

1. The cost items listed in the above table are for reference only. The Bidder may submit a quotation based on a detailed cost breakdown prepared by the Bidder, provided that it complies with the requirements of the RFP.
2. Working day means ten (10) hours per day (from 7:30 to 18:30 and 01-hour break time for lunch), five (5) days per week from Monday to Friday excluding Saturday, Sunday, Vietnamese National holiday.
3. Overtime work means Work performed by a Contractor Personnel more than agreed working hours as indicated in working day.
4. Except Daily rate, Overime rate daily allowance and accommodation cost, other expenses of contractor personnel including mob & de-mob cost, international transportation cost, domestic transportation cost, report and other costs shall be on lump-sum basis.



5. The Bid Price quoted by the Bidder shall include all taxes, duties, fees, and charges (if any) imposed on the Bidder both inside and outside of Vietnam as determined 28 days prior to the deadline for submission of the Proposal. The **Grand Summary** shall be correspondingly complied to the Quotation letter.
6. For domestic Bidder, the “**Tax**” shall be all applicable taxes inside Vietnam.
7. For a foreign Bidder with business organization has no permanent establishment/ head office or branch located in Vietnam, the “**Tax**” shall be all applicable taxes inside Vietnam (including CIT, VAT) which are calculated by formula set in file “*Tax Calculation Sheet for Foreign Contractor*” attached. The Bidder can request the Purchaser to provide this file by email.
8. In case the foreign Bidder awards the contract, the Purchaser shall, on behalf of the Bidder, take responsible for declaring and paying the applicable taxes in Vietnam and deduct the corresponding tax amounts from the payments to the Contractor.

**PREVIOUS EXPERIENCE DOCUMENTATION <sup>(1)</sup>**

The Bidder must provide detailed description as follows:

Name of project	
Location	
Name of project owner	
Contract price (if any)	
Contract duration (from ____ to ____ )	
Brief description of tasks performed under the contract	
Name of person for reference of project (Name, position, email).	

*The Bidder must enclose relevant documents.*

**Legal representative of bidder**  
*[Full name, position, signature and stamp]*

**PROFESSIONAL PROFILE OF KEY PERSONNEL**

The Bidder shall provide the adequate information required below and enclose copies of relevant qualifications.

**1. Proposed Position:**

**2. Name of Firm:**

**3. Name of Staff:**

**4. Date of Birth:**

**Citizenship:**

**5. Education:**

---

**6. Membership of Professional Associations:**

---

**7. Other Training:**

---

**8. Countries of Work Experience:**

---

**9. Languages:**

---

**10. Employment Record:**

<b>Duration</b>	<b>Workplace</b>	<b>Reference information</b>	<b>Position</b>

<b>11. Detailed Tasks Assigned</b>	<b>12. Work Undertaken that Best Illustrates Capability to Handle the Tasks Assigned</b>
	Name of project: Year: Location: Client: Main project features:

	Positions held:
	Name of project:
	Year:
	Location:
	Client:
	Main project features:
	Positions held:

### 13. Certification

*[The Bidder has to enclose herewith copies of relevant qualifications]*

I, the undersigned certify that, to the best of my knowledge and belief, this Curriculum Vitae correctly describes my qualifications, my experience and myself. I understand that any wilful misstatement described herein may lead to my disqualification or dismissal, if engaged.

(Place), (date) ...

*[Signature of Expert]*

\_\_\_\_\_  
*[Signature of authorized representative of the Bidder]*

**TECHNICAL SERVICE PROPOSAL**

(Shall be completed by the Bidder.....)

**Form No. 06**  
**CONSORTIUM AGREEMENT <sup>(1)</sup>**

Date: \_\_\_\_\_ *[insert date of signature]*

Project's name: \_\_\_\_\_ *[insert the project's name]*

In response to Bidding Documents for \_\_\_\_\_ *[insert name of procurement package]* dated \_\_\_\_\_ *[insert date written on the Bidding Documents]*;

Representatives of signatories to the consortium agreement include:

Name of consortium member \_\_\_\_\_ *[insert name of each consortium member]*

Representative: \_\_\_\_\_

Position: \_\_\_\_\_

Address: \_\_\_\_\_

Phone number: \_\_\_\_\_

Fax: \_\_\_\_\_

Email: \_\_\_\_\_

Account: \_\_\_\_\_

Tax Identification Number: \_\_\_\_\_

Power of Attorney No. \_\_\_\_\_ dated \_\_\_\_\_ *(in case of authorization)*.

Parties (hereafter referred to as "members") have reached a consensus on entering into a consortium agreement with the following contents:

**Article 1. General principles**

1. Members voluntarily establish this consortium to participate in the process of bidding for \_\_\_\_\_ *[insert name of procurement package]* of \_\_\_\_\_ *[insert project name]*.

2. Official name of the consortium used in every transaction related to the procurement: \_\_\_\_\_ *[insert the agreed name of the consortium]*.

3. Every member is committed not to unilaterally participate or establish a consortium with another member to participate in this procurement. If awarded the contract, no member is entitled to refuse to fulfil the duties and obligations prescribed in the contract. Any member of the consortium that refuses to perform their duties as agreed must:

- *Compensate damages to other parties in the consortium;*

- *Compensate damages to the Purchaser as prescribed by the contract;*
- *Be subject to other disciplinary actions \_\_\_\_\_ [specify the action].*

## **Article 2. Division of responsibilities**

All members unanimously to undertake joint and separate responsibility to execute \_\_\_\_\_ *[insert name of procurement package]* of \_\_\_\_\_ *[insert project name]* as follows:

### **1. Lead member of the consortium:**

All parties unanimously authorize \_\_\_\_\_ *[insert name of a party]* as the Lead member of the consortium who represents the consortium to perform the following tasks <sup>(3)</sup>:

*[- Sign the Letter of Bid of Technical Proposal or Financial Proposal;*

*- Sign documents with the Purchaser during the short listing processing, including the request for Clarification of Bidding Documents and Bids; sign requests for bid withdrawal, modification or substitutions;*

*- Participate in contract negotiation and conclusion;*

*- Sign complaint letter (if any);*

*- Perform other tasks except for contract conclusion: \_\_\_\_\_ [specify other tasks (if any)].*

### **2. Tasks of consortium members are specified in the table below<sup>(4)</sup>:**

<b>No.</b>	<b>Name</b>	<b>Tasks</b>	<b>Proportion of total bid</b>
1	Name of Lead member	- _____ - _____	- _____% - _____%
2	Name of second member	- _____ - _____	- _____% - _____%
....	....	....	.....
<b>Total</b>		<b>All tasks of the procurement</b>	<b>100%</b>

## **Article 3. Effect of consortium agreement**

1. The consortium agreement takes effect from the date of signing.

2. The consortium agreement expires in the following cases:

- All parties have fulfilled their duties and finalized the contract;

- The agreement is unanimously terminated by all parties;

- The consortium is not awarded the contract;

- The bidding for \_\_\_\_\_ *[insert name of the procurement package]* of

\_\_\_\_\_ *[insert the project name]* is cancelled as notified by the Purchaser.

The consortium agreement is made into \_\_\_\_\_ copies with equal legal value, each party keeps \_\_\_\_\_ copies.

#### **LEGAL REPRESENTATIVE OF LEAD MEMBER**

*[Full name, position, signature and stamp]*

#### **LEGAL REPRESENTATIVE OF CONSORTIUM MEMBER**

*[Full name, position, signature and stamp of each member]*

#### **Notes:**

- (1) Depending on size and nature of the procurement, this consortium agreement may be amended. If the procurement is divided into independent lots, the consortium agreement shall specify names and numbers of lots in which the consortium participates, and clarify joint and separate responsibilities of every consortium member.
- (2) Provide updated legal normative documents in force.
- (3) Scope of authorization includes one or multiple tasks above.
- (4) The Bidder shall specify detailed tasks and estimate equivalent value of tasks performed by every consortium member, joint and separate responsibilities of member, including the Lead member.



## CHAPTER V: DRAFT CONTRACT AGREEMENT

**No.     / PVPTSC-...../2025/DV.CM2 dated . ... 2025**  
*For Technical Advisor service for supervision, data analysis  
and assessment report of generators of Ca Mau 1 Power Plant*

This Contract is entered into on ..... 2025, by and between:

### **PETROVIETNAM POWER TECHNICAL SERVICES CENTER**

Address               : VPI Tower, 167 Trung Kinh Street, Yen Hoa Ward, Cau  
Giay District, Hanoi, Vietnam

Representative   : Mr. Le Ngoc Son

Position           : Vice Director

*(According to Power of Attorney No. ...*

Hereinafter called “Customer” or ‘PV Power TSC” of one part.

**AND**

.....

Address               : ..

Tax Identification Number:

Account Number:

Representative   :

Position           :

Hereinafter called “Contractor” of one part

Customer and Contractor are mutually and individually referred to as “Parties”  
and “Party” respectively.

### **WHEREAS**

Customer wishes to implement the services hereinafter referred to, and

Contractor has capabilities and experience to meet the requirements and is  
willing to perform these services

In consideration of the mutual covenants and agreements hereinafter contained,  
it is hereby agreed as follows:

## **ARTICLE 1. CONTRACT DOCUMENTS**

1.1. The following documents are regarded as Contract Documents and shall form, be read and construed as integral parts of this Contract, namely:

- a) The written Contract Agreement, including appendices, terms and conditions, list of contractor's employees.
- b) Signed Minutes of Meeting between both parties.
- c) Decision on approval for contractor selection result.
- d) The Contractor's proposal and clarifying documents thereof.
- e) Request for bid proposals and supplementing additional documents thereof.

1.2. In the event of any conflict among the Terms and Conditions, the Appendixes and other Contract Documents, the latest agreed and signed written documents shall prevail.

## **ARTICLE 2. DEFINITION AND INTERPRETATION**

In this Contract the following words and expressions shall have the meaning hereby assigned to them, except where the context otherwise required:

<b>PV Power Ca Mau</b>	Means PetroVietnam Ca Mau Power Company, a subsidiary of PV Power, locates in Khanh An Commune, U Minh District, Ca Mau province, Vietnam, who directly operates Ca Mau 1 Power Plant.
<b>Work</b>	Means all the works, activities, services etc. performed by Contractor to carry out what stipulated in Article 3 – Scope of Work and/or other parts of the Contract and/ or deemed necessary to achieve the contract objective.
<b>Contract</b>	Means this agreement between Customer and Contractor to perform the Work.
<b>Contractor Personnel</b>	Means any personnel of Contractor listed in Appendix 2 – Contractor Personnel to engage in performing this Contract.
<b>Customer Personnel</b>	Means any personnel of Customer and/ or its partners, associates, affiliates, subsidiaries who engage in executing this Contract.
<b>Third Party</b>	Means any other party different from the Parties.
<b>Working Day</b>	Means ten (10) hours per day (from 7:30 to 18:30 and 01-hour break time for lunch), five (5) days per week

	from Monday to Friday excluding Saturday, Sunday, Vietnamese National holiday.
<b>Overtime Work</b>	Work performed by a Contractor Personnel more than agreed working hours as indicated in Working Day
<b>Week</b>	Means the full seven (7) consecutive days. If the time amount is less than such a full seven (7) consecutive days, it shall not be regarded as a Week.

### **ARTICLE 3. SCOPE OF WORK**

Contract objectives: The Contractor shall provide services including supervision, data analysis and assessment report of generators of Ca Mau 1 Power Plant which achieve all Scope of Work as follows:

#### **3.1. Bump test supervision**

Based on PV Power TSC procedure, the Contractor shall:

- Review and consensus and complete on the Bump test procedure.
- Supervise the implementation of Bump Test:
  - + Install and configure Bump Test equipment;
  - + Install and connect sensors;
  - + Perform Global measurement on CE side;
  - + Perform Global measurement on NCE side;
  - + Perform Local measurement on CE side;
  - + Perform Local Phase Lead measurement on CE side;
  - + Perform Local measurement on NCE side;
- Record measurement result data and be responsible for the accuracy of data in accordant with on-site work schedule.

#### **3.2. Bump test data analysis**

Bump Test Data Analysis including:

- Analyze Global test data of CE and NCE stator windings.
- Analyze data of 54 conductor bars (single bar) in CE and NCE stator windings.
- Analyze data of 12 phase lead conductor bars in CE stator windings.
- Provide detailed report of Bump test data analysis using ME Scope Software or other equivalent software.

#### **3.3. Final report**

Based on Bump Test Data Analysis as item 3.2 above, VDT and X-ray result provided by Purchaser, Bidder shall provide a final report including evaluate generator status and provide recommend an operation & maintenance plan for each generator GT2 & ST1.

### **3.4. Work schedule**

The Bidder shall provide services including at least one Technical Advisor for on-site supervision and analysis and reporting service, in compliance with the full scope of work specified in Items 3.1, 3.2, and 3.3 above, and in accordance with the following schedule:

- On-site supervision: 07 days, expected from August 17th 2025 to August 23rd 2025. This on-site schedule can be changed subject to the final decision of National Power System. The specific dates shall be confirmed by the Customer no later than 04 weeks prior to mobilization. On-site location: Ca Mau 1 Power Plant, Khanh An Commune, U Minh District, Ca Mau province, Vietnam.
- Working time on-site shall be calculated by one dayshift, 10 hours/shift/day and 7 days/week.
- Report submission: within 30 days for final report after the completion of the on-site session.

## **ARTICLE 4. CONTRACT DURATION**

This Contract shall be effective for 90 days from the date of signing of this Contract until parties complete his obligations under the Contract.

## **ARTICLE 5. OBLIGATIONS OF CONTRACTOR**

### ***EXECUTION OF THE WORK***

5.1. Contractor shall perform the Work, carry out all its obligations as stipulated in Article 3 - Scope of Work and in other parts of this Contract as follows:

- i. Arrange personnel and working schedule to comply with Scope of Work.
- ii. Submit reports to the Customer on schedule. Final reports shall be delivered in USB in addition to the hard copies.

### ***CONTRACTOR PERSONNEL***

5.2. In any circumstances, Contractor shall do its best to keep Contractor Personnel unchanged through the Contract Duration. For cases where change of Contractor Personnel is a must due to resignation, Force Majeure or other cases which are out of Contractor's control, Contractor shall notice such change to Customer in advance. The replacement shall hold the same (or higher) level of experience and qualifications and must be informed to and get the approval from the Customer before the actual

substitution. If Contractor replaces Contractor Personnel without approval of Customer or it is discovered that the change of Contractor Personnel is not due to cases which are out of Contractor's control but are due to fraud, this shall be taken as a Material Breach of the Contract and Customer may terminate the Contract as per Article 10 – Termination and Material Breach of The Contract.

- 5.3. Customer reserves the right to request any of Contractor Personnel to be replaced should Customer find that the individual is incapable of performing the Work or has violated fire prevention, explosion protection, or safety regulations. Within 48 hours from the receipt date of the request letter from Customer, Contractor shall respond with information about the potential replacement with the same level of experience and qualifications for Customer's review and approval. If Contractor does not give a response for such request, Customer may refuse any part of the Work that has been done by the person and incurred costs due to such refusal shall be at Contractor's responsibility.

#### *OTHERS*

- 5.4. Contractor shall be responsible for the Contractor Personnel in the visa applications if and when required by the execution of the Work. Customer shall, where applicable, with its best efforts, assist Contractor with the visa application.
- 5.5. In case of Contractor personnel replacement due to any reason that not comes from Customer or Force Majeure, any additional cost incurring including mob-demob expense shall be in the account of Contractor.
- 5.6. All plants, drawings, specifications, designs, reports, other documents and software prepared by Contractors for Customer under this contract shall become and remain the property of Customer, and not later than upon termination or expiration of this contract, Contractor shall deliver all such documents to Customer together with a detailed inventory thereof.
- 5.7. Contractor shall comply with all provisions, terms and conditions of the Contract.

#### **ARTICLE 6. OBLIGATIONS OF CUSTOMER**

- 6.1. Customer shall settle the payment to Contractor in a timely manner.
- 6.2. Customer shall grant Contractor access manual, reports, measurement campaigns and test records from previous overhauls related to the Work which is available to Customer during the time of Work execution.
- 6.3. Customer shall closely coordinate with Contractor during the Work performance.
- 6.4. Customer shall carry out all mechanicals dis-/reassembly work required to get access for generator inspections and all required work to releases and



- clearance on site, unrestricted access to the generator at the agreed times.
- 6.5. Customer shall provide Media (pressure air, water), power (230 V), office for Contractor site personnel incl. wifi access
  - 6.6. Customer shall, where applicable, assist Contractor Personnel with the visa application for Vietnam for the purpose of performing the Work.
  - 6.7. Customer takes responsibility that all Contractor personnel receive the required instructions and information regarding safety and environmental protection respectively attend the required safety induction before commencement of any work on site.
  - 6.8. Customer shall, on behalf of Contractor, be responsible for settling the CIT, PIT in Vietnam with the Vietnamese Tax Body imposed on the Contractor during the performance of this Contract (if necessary). Then Customer shall deduct it from contract value to be paid to Contractor and provide the Contractor the relating evidences.
  - 6.9. Customer shall comply with all provisions, terms and conditions of the Contract.

#### **ARTICLE 7. REMUNERATION AND TIMESHEET**

During the working period, the Customer will fill the timesheet or another document to determine working time of the Contractor Personnel. The remuneration includes:

7.1. The Daily rate.

7.2. The Overtime rate:

Overtime working hours shall be calculated on an exact 30-minutes basis and be confirmed by the coordinator of PV Power TSC in the timesheet. If the time worked is less than 30 minutes, it shall be rounded down to the closest half-hour.

7.3. Remuneration for other expenses:

Other expenses of consultant including mob & de-mob cost, daily allowance, international transportation cost, domestic transportation cost, accomodation, report and other costs shall be on lump-sum basis.

#### **ARTICLE 8. CONTRACT PRICE**

Type of contract: Combined-price contract between time-based and lump-sum basis, in which:

- Time-based cost: The Daily rate, Overtime rate, daily allowance and accommodation cost.
- Lump-sum cost: Other expenses of contractor personnel including mob & de-mob cost, international transportation cost, domestic transportation cost, , report and other costs.

Total estimated cost of service is: .....

The above Contract price includes (i) all taxes and duties outside of Vietnam which imposed on Contractor by any government authority due to performance or payment for Contractor's provision of services under this Contract and (ii) all taxes and duties in Vietnam.

*Detailed in Appendix 2 - Estimated Cost of Services.*

## **ARTICLE 9. PAYMENT**

9.1. Payment shall be made in USD/EUR/VND by telegraphic transfer to the bank account appointed by Contractor within 30 working days after the receipt all documents specified as follows:

- (i) Written Request for the Payment, signed by Contractor, itemized statements, stating the amount to be paid in details and bank's information of Contractor: 01 original hardcopy.
- (ii) Commercial Invoice issued by Contractor: 01 original hardcopy.
- (iii) Timesheet signed by both Parties: 01 original hardcopy.
- (iv) Bump test data analysis report: 01 original hardcopy.
- (v) Certificate of Work Completion signed by both Parties: 01 original hardcopy.
- (vi) Final report signed by Contractor: 02 original hardcopies and softcopy.
- (vii) Certificate of Contract Completion signed by both Parties: 01 original hardcopy.

9.2. Information for Commercial invoice:

Contractor shall furnish invoice to Customer indicating the following information:

- Customer's name: Petro Vietnam Power Technical Service Center.
- Address: VPI Tower - 14th Flr., 167 Trung Kinh Str., Yen Hoa Ward, Cau Giay Dist., Hanoi, Vietnam
- Tax code: 0102276173 – 009

9.3. Bank fees:

Both Parties shall bear transaction fees occurring from his bank.

## **ARTICLE 10. TERMINATION AND MATERIAL BREACH OF THE CONTRACT**

### ***TERMINATION***

10.1. When the Work is on progress, a Party shall have the right to terminate the Contract with its prior written notice in the event that the other Party Material Breaches the Contract and does not correct properly such



Material Breach as per request within 10 (ten) Working Days from the first written notice (herein referred to as the Right Terminating Party and Breaching Party respectively). Neither Party is allowed to terminate the Contract in the work duration except for the cases stipulated in this Article and in Article 13 - Force Majeure. In the event that a Party unreasonably terminates the Contract when the Work is on progress, the case shall be regarded as the Material Breach, the terminating Party shall be regarded as the Breaching Party and must fulfill all obligations as stated in this Contract.

- 10.2. Except the cases where any obligation of any Party under this contract is still outstanding or it is agreed by the Parties to extend the validity the Contract, this Contract shall expire at the date stipulated in Article 4 – Contract Duration.

#### *MATERIAL BREACH OF THE CONTRACT*

- 10.3. If there is no show of contractor personnel within the agreed time gap between Customer's request and expected show at site and no communication from Contractor for possible further delay from agreed time gap due to reasons beyond reasonable control of the Contractor.
- 10.4. In case of Material Breach, the Contract may be terminated and the Right Terminating Party shall have the right to seek for reasonable amounts of compensation for the costs incurred due to the termination (if any) from the Breaching Party. The Breaching Party shall comply with the compensation request and shall have no right to claim any obligations (including financial obligations) from the Right Terminating Party as per the Contract.
- 10.5. In addition, in this case Customer reserves the right to withhold the fee which is supposed to pay to Contractor until the Material Breach has been resolved.

#### **ARTICLE 11. LIQUIDATED DAMAGES AND LIMITATION OF LIABILITY**

##### **11.1. Liquidated damages**

If Contractor, due to its faults, fails to timely deliver Technical Advisor(s) or report as per the agreed schedule, it shall compensate Customer eight percent (8%) of the Contract Price.

The following cases are not counted as delayed time for the above-mentioned liquidated damages:

- (i) Force Majeure.
- (ii) Cases where the delay is originated from the delay of the Customer.
- (iii) Cases where the reasons for the delay are accepted by the Customer.



The payment for liquidated damages shall be deducted from the Contract Price accordingly.

11.2. The liability of either Party for any breaches arising from or related to the Contract shall in no event exceed the Contract Price.

## **ARTICLE 12. DEFECTS.**

### **12.1. Defects liability.**

The Contractor shall be responsible as follows:

- In case of defects in the Supervisory Services performed by the Supervision Personnel which become apparent during the Defects Liability Period, the Contractor shall re-perform such defective Supervisory Services.
- In case of damage to a part of the Nhon Trach 1's facility resulting directly from the Contractor's Gross Negligence or wilful misconduct during the supervision, the Contractor shall replace or repair such damaged part, at Contractor's option and as set out herein.

The Defects Liability Period shall expire, as applicable:

- (i) In case of Supervisory Services: 18 (eighty) Months from completion of the relevant Supervisory Service(s); or
- (ii) In case of damage to a part of the facility resulting directly from the Contractor's Gross Negligence or wilful misconduct during the supervision: 18 (eighty) Months from installation of the relevant replacement or repaired part into the facility.

In the case of repair or replacement of a part of the facility during the Defects Liability Period, such repaired or replaced part shall be re-warranted for the period set out in item (i) of this Article subject to an overall limit of 18 (eighteen) Months from the date of first installation of the defective part. .

### **12.2. Remedying defects.**

The Customer shall promptly notify the Contractor in writing of the discovery of any defects during the Defects Liability Period, and the Contractor shall carry out an inspection and make good at its own expense, the defects found on such an inspection.

If any defect which the Contractor is liable to remedy pursuant to this Article appears during the relevant defects liability period, and such defect is not remedied within a reasonable time to be agreed upon between the Customer and the Contractor, or if at any time such defect renders the facility or any part thereof inoperable, and, following notice from the Customer, the Contractor fails to commence and diligently pursue remedial work, then the Customer may proceed to do the remedial work itself or have it done by other experienced and qualified third parties.

The reasonable costs incurred by the Customer in undertaking such work may be deducted from the amounts payable under this Contract or otherwise recovered from the Contractor provided that the Contractor's liability pursuant to this sub-article 7.2 shall not exceed the limit of the Contractor's liability determined in accordance with sub-article 8.4 in respect of such defect.

Notwithstanding that the Contractor has no liability for the remedying of damage arising from defects which may occur during the Defects Liability Period, the Contractor agrees that, subject to agreement in advance with the Customer regarding payment of the Cost of rectifying any such damage, the Contractor shall undertake such rectification work contemporaneously with the work of repairing the defect.

### **12.3. Warranty Exclusivity.**

The preceding sub-article 12.1 and 12.2 set forth the exclusive remedies for all claims based on defects in the services provided under this Contract. The foregoing warranty is exclusive and is in lieu of all other remedies, warranties and guarantees whether written, oral, implied or statutory.

## **ARTICLE 13: INDEMNITY**

### **13.1. Indemnity by the Contractor**

The Contractor shall, on demand, indemnify and hold the Customer harmless from any and all claims, liabilities, costs, damages and expenses of whatsoever kind and nature in respect of:

- (i) personal injury or death of any person
- (ii) damage to or destruction of any property or equipment other than the Power Plant; and
- (iii) third party actions, claims or demands, to the extent arising as a result of any wrongful omission, default or negligent act of the Contractor, its subcontractors and their respective employees

arising as a result of the performance or breach of the Contractor's obligations hereunder. For the purposes of this clause, the expression "third party" shall not include any Affiliate Company of the Customer, nor its shareholders, subcontractors or their respective employees.

### **13.2 Indemnity by the Customer**

The Customer shall, on demand, indemnify and hold the Contractor harmless from any and all claims, liabilities, costs, damages and expenses of whatsoever kind and nature in respect of:

- (i) personal injury or death of any person
- (ii) damage to or destruction of any property or equipment and
- (iii) third party actions, claims or demands, to the extent arising as a result of any wrongful omission, default or negligent act of the Customer, its

contractors (other than the Contractor), subcontractors and their respective employees

during or as a result of the performance or breach of the Customer's obligations hereunder. For the purposes of this sub-clause the expression "third party" shall not include any Affiliate Company of the Contractor, nor its shareholders, subcontractors or their respective employees.

13.3. Under no circumstance shall any Party be liable for indirect, incidental, consequential, special or punitive damages or loss (including, without limitation, loss of business, revenue, goodwill or profits) on account of any claim arising from or in connection with or otherwise relating to the Contract ( except for cases where liabilities of one Party to the other Party are due to fraud, gross negligence or willful misconduct)

13.4. Except for Patent infringement, gross negligence or willful misconduct and fraud, injury or death of persons or damage to third party property, where the liabilities of the Contractor shall be governed as per Applicable Laws, the Contract's overall aggregate liabilities including but not limited to all liabilities, penalties, damages, compensation, etc., under the Contract with respect to all claims arising out of or in connection with performance or non-performance of the Contract whether in contract, warranty, tort or otherwise shall not exceed the Limitation of liability. It is expressly understood and agreed that in case of any claim, whatsoever, on account of indemnification, the indemnifying Party shall have exclusive right to defend and settle such claim in any manner it deems appropriate, and the affected Party shall support and cooperate with indemnifying Party for expeditious resolution.

#### **ARTICLE 14. FORCE MAJEURE**

14.1. Force Majeure means any events/circumstances or the combination of such events/circumstances which are beyond the control of Contractor and/or Customer and prevent them from wholly or partially carrying out its obligations under this Contract including without limitation to the Acts of God or the public enemy, perils of navigation, fire, hostilities, war (declared or undeclared), blockade, labor disturbances except due to labor mismanagement, strikes, riots, insurrections, civil commotion, quarantine, restrictions, epidemics, storm, earthquakes, accidents and changes of laws. Change in law includes any change in regulation, procedure, legislation, governing rules, taxation (whether new or an increase in an existing tax, duty or tariff or other charge of any nature) or change in the enforcement practices of any of the foregoing by any national or local governmental authority or quasi-governmental authority.

14.2. Immediately, but not later than five (5) Working Days after it becomes aware of the impact of the Force Majeure event, affected Party shall notify in writing to the other Party of the occurrence date, situation and predicted end date of the Force Majeure and such shall be kept updated on weekly basis until the Force Majeure is over, marked by an official written notification of the affected



Party. If there is no update within a week from receipt of the last written update, it shall be understood that the Force Majeure has been over, and no further claim shall be accepted regarding the end date of that Force Majeure. The party whose performance is delayed must exercise commercially reasonable means to mitigate the effects of the Force Majeure event.10.3. With the Force Majeure duration determined, time-limit for the affected Party to carry out its obligations under the Contract and price schedule shall be adjusted accordingly.

14.3. If the Force Majeure lasts for more than 03 (three) months from receipt of the written notice of occurrence thereof, both Party can terminate the Contract, and Customer shall settle the payment for the part of the Work done by Contractor within thirty (30) business days from receipt of the Contractor invoice.

#### **ARTICLE 15: INSURANCE.**

The Parties shall make sure that they have adequate insurance for themselves covering all risks which may arise during the Contract Term such as social/life insurance for their personnel, third-party insurance, PI (Professional Indemnity) insurance, etc.

In the event that any risk arises, the directly affected Party shall, at its own cost and expense, promptly remedy problems and take the procedures stipulated in the insurance policies to get reimbursed by insurance companies.

#### **ARTICLE 16: CONFIDENTIALITY.**

All information relating to this Contract and the Work which is requested by Customer and provided by Contractor shall be considered as Confidential Information.

Contractor will not any time whether during or after the term of this Contract reveal or divulge any confidential information without prior written consent of Customer.

Contractor acknowledges that the Confidential Information received from or on behalf of Customer is secret and highly confidential, the exclusive property of, and of significant commercial value to Customer.

Contractor agrees that monetary damages are an insufficient remedy for any actual or anticipatory breach of this Article, and that in addition to all other rights and remedies available at law or in equity Contractor shall be entitled to specific performance and injunctive or other equitable relief as a remedy for such breach.

#### **ARTICLE 17. LAW AND DISPUTE SOLUTION**

This Contract shall be governed by the Laws of Vietnam.

In case of any dispute which may arise in connection with this Contract and which cannot be settled by mutual agreement between the Contractor and the Customer, such dispute shall be resolved by arbitration *at the* Vietnam

International Arbitration Center (VIAC) *in accordance with its Rules of Arbitration* and based upon the following provisions: (a) The tribunal for any arbitration shall consist of three arbitrators, with each party appointing one arbitrator, and the two arbitrators thus appointed shall choose the third arbitrator who will act as the presiding arbitrator of the tribunal; (b) The language to be used in the arbitral proceedings shall be English.

#### **ARTICLE 18. MISCELLANEOUS**

This Contract represents the entire agreement between the Parties, and supersedes all previous agreements between the Parties, whether oral or written. Any changes to this Contract agreement (if necessary) shall be made in written form and signed by both Parties.

This Contract shall comprise ... Articles, .... Appendices and .... Forms:

APPENDIX 1 – Estimated Cost of Service

APPENDIX 2 – Contractor Personnel

FORM 1 – Timesheet

This Contract agreement is made into five (5) originals which equal in force and effect. The Customer retains three (3) and the Contractor retains two (2) of them for execution.

**FOR PV POWER TSC**

*[Full name, position, signature, and seal]*

**FOR CONTRACTOR**

*[Full name, position, signature, and seal]*

## FORM 1 - TIMESHEET

**Project: Technical Advisor service for supervision, data analysis  
and assessment report of generators of Ca Mau 1 Power Plant**

<b>Full name of Expert</b>			<b>Expert's signature</b>
<b>Job Title</b>			
<b>Passport No.</b>			

I hereby certificate that the time recorded represents actual hours of employment for the period indicated

From... To...	Date	IN	OUT	Travelling time	Working hours	Overtime working hours	Total hours	Note
Monday								
Tuesday								
Wednesday								
Thursday								
Friday								
Saturday								
Sunday								

<b>Customer's signature</b>	<b>Date:</b>	
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## **ATTACHMENT 1: GENERATOR MAINTAINANCE HISTORY**

### **1. Operation and maintenance history:**

The gas turbine - generator unit 12&10 (Generator GT2 & ST1) has been in commercial operation since April 2007 to the major overhaul outage in June 2022 and has achieved 101,670 EOH.

- First minor inspection generator at 24,921 EOH in 2011.
  - First Intermedia inspection generator at 51,511 EOH in 2014.
  - Second minor inspection generator at 75,603 EOH in 2017.
- Major inspection generator (pull-out rotor) at 101,670 EOH in 2022

### **2. Problem history**

Most of the Ca Mau 1 generators (including GT12 and ST10 generators) issues have been found during scheduled maintenance outages, especially during the major overhauls of the Ca Mau 1 CCPP-in 2022 and 2023. The inspections and evaluations revealed significant abnormalities as follows:

- Friction dust was found at both stator ends windings of the generator. The support structures found in loosed condition such as loose spacer, loose parallel ring, loose resin swell mat resulting vibrations. Dust have been clean and applied resin treatment and also reinforcement for loose parts.

- Degradation of OCP and ECP insulation layers at various positions on both stator end windings. the insulation at the top bars positions has been restored. The bottom bars were not addressed due to limited access space.

- Cracked/broken copper strands were found at the end windings of GT12 generator and repaired by soldering/welding during the 100k EOH MO in 2022.

- Additional tangential blocking was installed at end stator bars during the 100k EOH MO in 2022.

By August 2023, during a scheduled maintenance gas supply outage, the generators were re-inspected and found friction dust at both CE and NCE ends of the stator, again . resin treatment and reinforcement for loose parts were applied.

In November and December 2023, inspection including voltage drop test (VDT), bump test (BT) and Xray examination was carried out for GT12 and ST10 generators , also x- The results as follows:

- Visual inspection: Friction dust found on both GT12 and ST10 generators.



- Voltage Drop Test (VDT):
- + ST10 generator: normal condition.
- + GT12 generator: test with indications, insulation of suspected bars were open for visual confirmation. Cracked/broken copper strands were found at CE bar ends #07, #08, #44. The cracked/broken copper strands on CE bar ends #07, #08, #44 were previously bridge-welded in Dec 2023.
- + Resin treatment was performed on both generators before returning them to service.

By June 2024 – GT12 Generator inspection and repair/reinforcement of stator end windings resulting are as follows:

- Visual inspection: significant friction dust observed at CE, less at NCE.
- Bump Test:
- + Global Measurement: CE side: Mid-basket 4-node ~100 Hz
- + Local Measurement: All bar ends and phase leads are normal (> 200 Hz).
- VDT: Normal result. Note: CE bars #07, #08, #44 were previously bridge-welded in Dec 2023.
- Reinforcement and improvement of the basket and support frame for the stator end winding of the generator units.
- Post-repair Bump Test – Global Measurement:
- + Global Measurement: normal
- + Local Measurement: All bar ends and phase leads are normal (>245 Hz).
- Potential Risk:
- + After as repaired above the risk of continued operation of GN12 is deemed to be Low for next appr. 1 year operation for potential risk of impaired or open electrical connection and flashover during operation, severe generator damage which will require a stator replacement and arotor rewind. The estimated probability is lowered to <1 % for the specified period, severity and preventability stay at 10.
- + Risk mitigation measures and further recommendations:

- o Perform Periodical testing: Bump testing and visual inspection after appr. 1 year operation for verification and to repeated yearly.

- o Install New Stator: Even though the repairs incl. the fact finding have been very extensive and long lasting (repair lasted longer then Major Inspection), the implemented repairs cannot restore the new condition, worn out and aged components remain in operation. It is very uncertain that the proven repair methods are successful at GN12 again in case of future failures and therefore we strongly

recommmend to replace the complete stator soonest with new equipment to insure the availability of the GT12.

By August 2024 – ST10 Generator inspection and repair/reinforcement of stator end windings, results are as follows:

- Visual inspection: friction dust and epoxy cracking at CE and NCE observed.
- Bump Test:
  - +Global Measurement: CE side: Mid-basket 4-node mode: ~100 HZ; NCE side: Mid-basket 4-node mode: ~100 Hz;
  - + Local Measurement: all Individual Bar CE side: > 144 Hz, all Individual Bar NCE side: > 210 Hz → All bar ends and phase leads are normal.
- VDT: Normal result.
- Reinforcement and improvement of the basket and support frame for the stator end winding of the generator units.
- Post-repair Bump Test – Global Measurement:
  - + Global Measurement: CE side: Mid-basket 4-node 110 Hz; NCE side: Mid-basket 4-node: 112 Hz.
  - + Local Measurement: All bar ends and phase leads are normal (>210 Hz).
- Potential Risk:
  - + After as repaired above the risk of continued operation of ST10GN is deemed to be Low for next appr. 1 year operation for potential risk of impaired or open electrical connection and flashover during operation, severe generator damage which will require a stator replacement and a rotor rewind. The estimated probability is lowered to <1 % for the specified period, severity and preventability stay at 10.
  - + Risk mitigation measures and further recommendations:
    - Perfo rm Periodical testing: Bump testing and visual inspection after appr. 1 year operation for verification and be prepared for a Wicking Resin Treatment. Bump testing to be repeated yearly.
    - Install New Stator: Even though the repairs incl. the fact finding have been very extensive and long lasting, the implemented repairs cannot restore the new condition, worn out and aged components remain in operation. It is very uncertain that the proven repair methods are successful at ST10GN again in case of future failures and therefore we strongly recommmend to replace the complete stator in due time with new equipment to insure the availability of the ST10GN.

# SIEMENS

## Instruction Book 1810-C1054

### SGen5-1000A AIR-COOLED GAS TURBINE GENERATOR (GTG) Totally Enclosed Water-to-Air Cooled (TEWAC) Configuration

Supplied To:

Lilama

Ca Mau Units 11 and 12

Vietnam

Generator: Shop Order Nos. 10853 and 10820

#### Nameplate Rating Data 10853

reference drawing:

A.C. Generator, Air Cooled						
KVA 299000 KVA	HERTZ 50 Hz	FIELD AMPERES 1541 A	ROT. VIEWED FROM EE CCW	Temperature Rise above Cold Gas Will not exceed	Applicable Standard IEC 34	
POWER FACTOR 0.85	RPM 3000	FIELD VOLTAGE 273	ALTITUDE 3 m	STATOR 73 K	ROTOR 77 K	YEAR BUILT
STATOR VOLTAGE 20000 V	PHASES 3	COLD GAS TEMP 43°C	INSTRUCTION BOOK 1810-C1054			
STATOR AMPERES 8631	INLET WATER TEMP 38°C	SERIAL NUMBER 10853				
Made In:			USA			

#### Nameplate Rating Data 10820

reference drawing:

A.C. Generator, Air Cooled						
KVA 299000 KVA	HERTZ 50 Hz	FIELD AMPERES 1541 A	ROT. VIEWED FROM EE CCW	Temperature Rise above Cold Gas Will not exceed	Applicable Standard IEC 34	
POWER FACTOR 0.85	RPM 3000	FIELD VOLTAGE 273	ALTITUDE 3 m	STATOR 73 K	ROTOR 77 K	YEAR BUILT
STATOR VOLTAGE 20000 V	PHASES 3	COLD GAS TEMP 43°C	INSTRUCTION BOOK 1810-C1054			
STATOR AMPERES 8631	INLET WATER TEMP 38°C	SERIAL NUMBER 10820				
Made In:			USA			

Siemens Power Generation, Inc.  
The Quadrangle  
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Orlando, FL 32826-2399

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Revised April 2008

## ATTACHMENT 2: BUMP TEST EQUIPMENT SPECIFICATIONS

PV Power TSC will use the following equipment to perform the bump test on the generators.

No.	Item Description	Model	Manufacturer	Unit	Qty
1	OROS Bump Test Equipment (+ Cable (UNF 10-32 / BNC Length 10m): 12 PC +Cross cable (Length 10m): 1 PC + Special wax to connect the sensors: 4 PC + MMF sensors (100mV/g ISO 7626-1, Type KS94C100): 12 PC +BNC connecting cable (BNC (M), length 10m): 1 PC +Triaxial Sensor (Sensitivity 1000 mV/g, ISO 7626-1, PCB-356B18): 1 PC +Triple socket connector (1/4-28 UNF 4 pin cable end into splitter 3 BNC coaxial wires mini 4pin cable connector Length 10m): 1 PC.)	OR36 V3	OROS	Set	1
2	Impulse Hammer Kit (+Impulse hammer (PCB 086D20: 1 PC + Impact tips (084A60 Tip – Super soft plastic (Gray), 084A61 Tip – Soft plastic (Brown), 084A62 Tip – Medium Plastic (Red), 084A63 Tip – Hard plastic (Black)): 1 set)	086D20	PCB Piezotronics	Pcs	1
3	Laptop and NV Gate & ME Scope Software	Precision 3581	Dell	Set	1