



# CANORECO

**CAMARINES NORTE ELECTRIC COOPERATIVE, INC.**

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## NOTICE TO BIDDERS

### SUPPLEMENTAL BULLETIN NO. 2021-02

**PROJECT DESCRIPTION** : **INVITATION TO BID (ITB) for the Conduct of Competitive Selection Process (CSP) by Camarines Norte Electric Cooperative, Inc. (CANORECO) for its Base and Intermediate Load Requirements**

**DATE** : **March 23, 2021**

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This notice is hereby issued also to clarify items in the Bidding Documents as a result of the conducted Pre-bid Conference held last March 16, 2021 (Tuesday) for the subject procurement, to wit:

No.	EXISTING PROVISION	AMENDED
1.	<p>Item 7.1 in the Terms of Reference</p> <p>“7. Termination</p> <p>7.1. Upon COD, any accumulated period of material non-performance, which consists of failure to deliver contracted quantities for at least two (2) months within the immediately preceding six (6) months, which is not due to Force Majeure events, shall be sufficient grounds for possible termination of the PSA by CANORECO.”</p>	<p>7. Termination</p> <p>7.1. Upon COD, any accumulated period of material non-performance, which consists of failure to deliver contracted quantities for at least two (2) months within the immediately preceding six (6) months, which is not due to Force Majeure events, shall be sufficient grounds for possible termination of the PSA by CANORECO, <u>and forfeiture of the Performance Security.</u></p>
2.	<p>Item D. SUBMISSION AND OPENING OF BIDS in the Instruction to Bidders.</p> <p>“18. Deadline for Submission of Bids</p> <p>Bids must be received by CANORECO TPBAC on or before 9:00 am of DOSO. Any bid submitted thereafter shall be declared “Late” and shall not be accepted.”</p>	<p>Bids must be received by CANORECO TPBAC on or before <u>8:59</u> am of DOSO. Any bid submitted thereafter shall be declared “Late” and shall not be accepted.</p>

3.	<p>Item 3.6.3 of Terms of Reference.</p> <p>“3.6.3. <b>FOM</b> and <b>VOM</b> shall be in P/kWh and shall be adjusted according to monthly CPI for All Income Households in the Philippines (All Items, 2012 = 100) as indicated in the website of the Philippine Statistics Authority (www.psa.gov.ph) using the value at the time of PSA signing as base:”</p> $FOM = FOM_{base} \times \frac{CPI_{month}}{CPI_{base}}$ $VOM = VOM_{base} \times \frac{CPI_{month}}{CPI_{base}}$	<p><b>FOM</b> and <b>VOM</b> shall be in P/kWh and shall be adjusted according to monthly CPI for All Income Households in the Philippines (All Items, 2012 = 100) using the value at the time of PSA signing as base. <u>CPI month</u> shall be as indicated in the website of the Philippine Statistics Authority (www.psa.gov.ph) <u>for the calendar month within which the start of the current Billing Period occurs.</u></p> $FOM = FOM_{base} \times \frac{CPI_{month}}{CPI_{base}}$ $VOM = VOM_{base} \times \frac{CPI_{month}}{CPI_{base}}$
4.	<p>Instruction to Bidders Form “A” OMNIBUS SWORN STATEMENT.</p> <p>“SUBSCRIBED AND SWORN to before me this ___ day of _____ 2020 at _____, Philippines. Affiant/s is/are personally known to me and was/were identified by me through competent evidence of identity as defined in the 2004 Rules on Notarial Practice (A.M. No. 02-8-13-SC). Affiant/s exhibited to me his/her [insert type of government identification card used], with his/her photograph and signature appearing thereon, with no. _____ and his/her Community Tax Certificate No. _____ issued on _____ at _____.”</p>	<p>SUBSCRIBED AND SWORN to before me this ___ day of _____ 2021 at _____, Philippines. Affiant/s is/are personally known to me and was/were identified by me through competent evidence of identity as defined in the 2004 Rules on Notarial Practice (A.M. No. 02-8-13-SC). Affiant/s exhibited to me his/her [insert type of government identification card used], with his/her photograph and signature appearing thereon, with ID no. _____ issued on _____ at _____.</p>
5.	<p>Instruction to Bidders Form “D” LIST OF PSAs.</p>	<p>Include all COMPLETED and EXISTING PSAs/ASPAs with DUs and NGCP within the last five (5) years.</p> <p>Completed and existing PSAs with RES may be included depending on confidentiality agreement.</p>
6.	<p>Instruction to Bidders Form “A” OMNIBUS SWORN STATEMENT.</p> <p>“2. I am granted full power and authority to do, execute and perform any and all acts necessary to participate, submit the Bid, and to sign and execute the ensuing Power Supply Agreement (PSA) with CANORECO for the provision of base and intermediate load requirements for Mainland Camarines Norte, accompanied by the duly notarized Special Power of Attorney,</p>	<p>2. I am granted full power and authority to do, execute and perform any and all acts necessary to participate and submit the Bid with CANORECO for the provision of base and intermediate load requirements for Mainland Camarines Norte, accompanied by the duly notarized Special Power of Attorney, Board/Partnership Resolution, or Secretary’s Certificate, whichever is applicable;</p>

	Board/Partnership Resolution, or Secretary's Certificate, whichever is applicable;"	The president of the company shall only be the signatory of the PSA. A board resolution or a secretary's certificate to this effect shall be required.												
7.	<p>Item 6 of Fuel Fees.</p> <p>"6. Monthly Fuel Fee</p> <p>6.1. FC or the fuel cost in P/unit shall be the total cost of fuel inclusive of hauling charges divided by the quantity of fuel delivered to the Power Plant, as evidenced by official receipts of the latest delivery of fuel."</p>	<p>6.1. FC or the fuel cost in P/unit shall be the total cost of fuel inclusive of hauling charges divided by the quantity of fuel delivered to the Power Plant, as evidenced by official receipts of the latest delivery of fuel. However, if the Bidder cannot present the Official Receipt for the latest delivery they can submit the last previous Official Receipt.</p>												
8.	<p>Invitation to Bid (ITB).</p> <p>"Deadline of Submission and Opening of Bids" - 6 April 2021."</p>	<p>"Deadline of Submission and Opening of Bids" - May 04, 2021 (Tuesday).</p> <p>Succeeding activities will be moved accordingly.</p> <table border="1"> <tr> <td>Deadline of Submission and Opening of Bids</td> <td>04 May 2021</td> </tr> <tr> <td>Post-qualification</td> <td>7-17 May 2021</td> </tr> <tr> <td>PSA awarding</td> <td>24 May 2021</td> </tr> <tr> <td>Last day of submission of Performance Security</td> <td>3 June 2021</td> </tr> <tr> <td>PSA signing</td> <td>11 June 2021</td> </tr> <tr> <td>Joint PSA filing</td> <td>25 June 2021</td> </tr> </table>	Deadline of Submission and Opening of Bids	04 May 2021	Post-qualification	7-17 May 2021	PSA awarding	24 May 2021	Last day of submission of Performance Security	3 June 2021	PSA signing	11 June 2021	Joint PSA filing	25 June 2021
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9.	<p>Item 3.5. Guaranteed Service of Terms of Reference (TOR).</p> <p>"3.5.2. Should the Power Plant be unable to supply CANORECO's requirements fully or partially for any reason, the winning Power Supplier shall immediately provide Replacement Power from any other of its generation facilities, or from other GenCos, or from WESM, while observing the same or lower rates."</p>	<p>"3.5.2. Should the Power Plant be unable to supply CANORECO's requirements fully or partially for any reason, the winning Power Supplier shall immediately provide Replacement Power from any other of its generation facilities, or from other GenCos, or from WESM, while observing the same CRF, same base FOM, same base VOM and the applicable CPI month and same FF as the rest of the month or the previous month, as applicable.</p> <p>CANORECO will source from single plant under normal conditions while replacement power can be sourced by the winning Power Supplier from any other of its generation facilities, or from other GenCos, or from WESM.</p>												

10.	<p>Item 15. Bid Security of Instructions to Bidders.</p> <p>“15.1. The Bidder shall submit a Bid Security in the form of cashier’s check or manager’s check issued by a local Universal or Commercial Bank in the amount of One Hundred Million Pesos (PhP100,000,000.00).”</p>	<p>15.1. The Bidder shall submit a Bid Security in the form of Cashier’s check or Manager’s check or Bank Guarantee issued by a Universal or Commercial Bank in the amount of One Hundred Million Pesos (PhP100,000,000.00). For the purposes of this CSP, Bank Guarantee shall indicate that the bank guarantees the faithful performance of the bidder’s obligation to CANORECO in case of default under item 15.5 of Instruction to Bidders.</p>
11.	<p>Item 23. Post Qualification of Instructions to Bidders.</p> <p>“23.3 Failure to submit any of the post-qualification requirements on time, or a finding by the TPBAC against the veracity thereof, shall disqualify the Bidder and shall cause the forfeiture of the Bid Security.”</p>	<p>23.3 Failure to submit any of the post-qualification requirements on time, or a finding by the TPBAC against the veracity thereof, shall disqualify the Bidder and shall cause the forfeiture of the Bid Security.</p> <p>Despite the submission of the required documents, still the lowest calculated bidder (LCB) is disqualified, such disqualification shall not result to forfeiture of the bid security.</p>
12.	<p>27. Performance Security of Instructions to Bidders.</p> <p>“27.2. Performance Security shall be in the form of cashier’s check or manager’s check issued by a Universal or Commercial Bank in the amount of Two Hundred Million Pesos (PhP200,000,000.00).”</p>	<p>27.2. Performance Security shall be in the form of Cashier’s check or Manager’s check or Bank Guarantee issued by a Universal or Commercial Bank in the amount of Two Hundred Million Pesos (PhP200,000,000.00). For the purposes of this CSP, Bank Guarantee shall indicate that the bank guarantees the faithful performance of the bidder’s obligation to CANORECO in case of default under item 27 of Instructions to Bidders.</p>
13.	<p>3.7. Unbundled Tariff Components of Terms of Reference.</p> <p>“3.7.2.4. If the Power Plant is yet to be constructed, the values for NHR, FC, and CV shall be supported by supplier guarantees and detailed estimates.”</p>	<p>3.7.2.4. If the Power Plant is yet to be constructed or <u>Plants under testing and commissioning</u>, the values for NHR, FC, and CV shall be supported by supplier guarantees and detailed estimates.</p>

<p>14.</p>	<p><b>4. Conflict of Interest under Instructions to Bidders.</b></p> <p>“4.1. All Bidders found to have conflicting interests shall be disqualified to participate in this CSP, without prejudice to the imposition of appropriate sanctions and/or the filling of administrative, civil, and criminal cases. A Bidder may be considered to have conflicting interest with another Bidder in any of the events described in paragraphs (a) through (c), and a general conflict of interest in any of the circumstances set out in paragraphs (d) through (g) below:</p> <p>(a) A Bidder has a controlling interest in the company of another Bidder; both or all shall be disqualified</p> <p>(b) A Bidder receives or has received any direct or indirect assistance from any other Bidder in connection with this CSP</p> <p>(c) A Bidder has the same legal representative as the other Bidder/s for purposes of this CSP</p> <p>(d) A Bidder has officer/s and shareholder/s who is/are related directly or indirectly to any officer/s of CANORECO, including the TPBAC, within the fourth civil degree of consanguinity or affinity</p> <p>(e) A Bidder submits more than one bid in this CSP</p> <p>(f) A Bidder participated as a consultant in the preparation of the design or technical specifications of this CSP</p> <p>(g) A Bidder lends, or temporarily seconds/assigns its personnel to firms or organizations which are engaged in consulting services for this CSP, if the personnel would be involved in any capacity on the same project”</p>	<p><b>4. Grounds for Disqualification.</b></p> <p>4.1. All Bidders found to have violated any of the items enumerated below shall be disqualified to participate in this CSP, without prejudice to the imposition of appropriate sanctions and/or the filling of administrative, civil, and criminal cases.</p> <p>(a) A Bidder has a controlling interest in the company of another Bidder; both or all shall be disqualified.</p> <p>In case two (2) or more bidders are affiliates of a generation company that is not a bidder of this CSP, said affiliate-bidder shall be required to submit proof(s) that manifest separate management, books of account, and operations from the other affiliate-bidder. Such affiliate-bidder shall likewise execute an affidavit or certification of non-collusion.</p> <p>(b) A Bidder receives or has received any direct or indirect assistance from any other Bidder in connection with this CSP.</p> <p>(c) A Bidder has the same legal representative as the other Bidder/s for purposes of this CSP.</p> <p>(d) A Bidder has officer/s and shareholder/s who is/are related directly or indirectly to any officer/s of CANORECO, including the TPBAC, within the fourth civil degree of consanguinity or affinity.</p> <p>(e) A Bidder submits more than one bid in this CSP.</p> <p>(f) A Bidder participated as a consultant in the preparation of the design or technical specifications of this CSP.</p> <p>(g) A Bidder lends, or temporarily seconds/assigns its personnel to firms or organizations which are engaged in consulting services for this CSP, if the personnel would be involved in any capacity on the same project.</p>
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15.	<p>10.1.(a) of Instruction to Bidders</p> <p>“(a) Registration Certificate issued by the Securities and Exchange Commission (SEC) together with its articles of incorporation and by-laws;”</p>	<p>(a) Registration Certificate issued by the Securities and Exchange Commission (SEC) together with its articles of incorporation and by-laws;</p> <p>In case of partnership, please submit the SEC certificate and the Articles of Partnership or similar document.</p>
16.	<p>Item 23.3 of Instruction to Bidders.</p> <p>“23.3. Within a non-extendable period of five (5) calendar days from receipt by the Bidder of the notice from CANORECO TPBAC that it submitted the LCB, the Bidder shall submit its income and business tax returns for the immediately preceding taxable year duly filed and paid through the BIR Electronic Filing and Payment System (eFPS) and stamped received by the Securities and Exchange Commission (SEC).”</p>	<p>23.3. Within a non-extendable period of five (5) calendar days from receipt by the Bidder of the notice from CANORECO TPBAC that it submitted the LCB, the Bidder shall submit its income and business tax returns for the immediately preceding taxable year duly filed and paid through the BIR Electronic Filing and Payment System (eFPS) and <u>the corresponding audited financial statement duly stamped received by the BIR and the Securities and Exchange Commission (SEC).</u></p>
17.	<p>Item 1.9 of Power Supply Agreement (PSA).</p> <p>“1.8. “Defaulting Party” means the party causing the event of default.</p> <p>1.9. “Distribution-side Outages” means line and equipment outages within the jurisdiction of <b>CANORECO</b>.</p> <p>1.10. “Fixed O&amp;M Fee” or “FOM” means a charge that allows the recovery of operating expenses.”</p>	<p>1.8. “Defaulting Party” means the party causing the event of default.</p> <p>1.9. “Fixed O&amp;M Fee” or “FOM” means a charge that allows the recovery of operating expenses.</p> <p>(Numbering adjusted accordingly in the PSA).</p>
18.	<p>Item 1.12 of Power Supply Agreement (PSA).</p> <p>“1.11. “Fuel Fee” or “FF” means a charge that allows for recovery of fuel expenses.</p> <p>1.12. “Generation-side Outages” means unavailability of partial or full generating capacity within the jurisdiction of <b>GENCO</b>.</p> <p>1.13. “Minimum Energy Offtake” or “MEOT” means the quantity in kWh that <b>CANORECO</b> agrees to purchase from <b>GENCO</b> for each billing period.”</p>	<p>1.11. “Fuel Fee” or “FF” means a charge that allows for recovery of fuel expenses.</p> <p>1.12. “Minimum Energy Offtake” or “MEOT” means the quantity in kWh that <b>CANORECO</b> agrees to purchase from <b>GENCO</b> for each billing period.</p> <p>(Numbering adjusted accordingly in the PSA).</p>

19.	<p>Section 2 of Power Supply Agreement (PSA).</p> <p>“SECTION 2. TERM</p> <p>2.1. Subject to ERC approval, the target COD is 26 December 2021.</p> <p>2.2. This PSA shall have a duration of fifteen (15) years from COD.”</p>	<p>SECTION 2. TERM</p> <p>2.1. Subject to ERC approval, the target Commencement of Delivery (COD) is 26 December 2021.</p> <p>2.2. This PSA shall have a duration of fifteen (15) years from COD.</p> <p>2.3. Provisional or final authority from ERC is required for COD.</p>
20.	<p>Item 3.6.4.1 of Terms of Reference (TOR).</p> <p>“NHR or the representative net heat rate in BTU/kWh is the ratio of the input heat from the fuel to the output electrical energy as measured from the Plant Gate. NHR shall be derived from a heat rate test conducted within the last three hundred sixty (360) days by a qualified third party tester approved by CANORECO, with CANORECO as witness, and paid for by the winning Power Supplier.”</p>	<p>Net heat rate in BTU/kWh is the ratio of the input heat from the fuel to the output electrical energy as measured from the Plant Gate. NHR shall be the lesser of the weighted average net heat rates of all generating units and the guaranteed net heat rate as provided in the bid. The net heat rates of generating units shall be derived from a heat rate test conducted within the last three hundred sixty (360) days by a qualified third party tester approved by CANORECO, with CANORECO as witness, and paid for by the winning Power Supplier.</p>
21.	<p>Item 3.6.4.2 of Terms of Reference (TOR).</p> <p>“FC or the fuel cost in P/unit shall be the total cost of fuel inclusive of hauling charges divided by the quantity of fuel delivered to the Power Plant, as evidenced by official receipts of the latest delivery of fuel.”</p>	<p>FC or the fuel cost in P/unit shall be the total cost of fuel inclusive of hauling charges divided by the quantity of fuel delivered to the Power Plant, as evidenced by official receipts (or any proof of payment) of the five latest deliveries of fuel:</p> $FC = \frac{\sum_{i=1}^5 PhP_i}{\sum_{i=1}^5 Qty_i}$

22.	<p>Item 3.6.4.3 of Terms of Reference (TOR).</p> <p>“CV shall be the calorific value in BTU/unit for the latest delivery of fuel to the Power Plant as evidenced by a certificate of analysis or equivalent.”</p>	<p>CV shall be the calorific value in BTU/unit for the five latest deliveries of fuel to the Power Plant as evidenced by a Certificates of Analysis or equivalent:</p> $CV = \frac{\sum_{i=1}^5 CV_i \times Qty_i}{\sum_{i=1}^5 Qty_i}$
23.	<p>Item 3.7.2.1 of Terms of Reference (TOR).</p> <p>“The value to be used for NHR in the evaluation shall be that for a condition where all generating units (excluding black start units) are running at 90% generation capacity based on nameplate rating, and all necessary in-house loads are in operation, as evidenced by a net heat rate test conducted not more than one hundred eighty (180) days from submission. Polynomial interpolation may be applied between loading levels as necessary. Results of gross heat rate tests shall not be accepted. NHR shall be conducted by a qualified third party tester approved by CANORECO and paid for by the prospective Power Supplier.”</p>	<p>The value to be used for NHR in the evaluation shall be that which is guaranteed for a condition where all generating units (excluding black start units) are running at 90% generation capacity based on nameplate rating. The guarantee may come from the manufacturer or from the prospective Power Supplier itself. This shall serve as the cap for the purposes of pass-on charges.</p>
24.	<p>Item 3.7.2.2 of Terms of Reference (TOR).</p> <p>“The value to be used for FC in the evaluation shall be the total cost of fuel inclusive of hauling charges divided by the quantity of fuel delivered to the Power Plant, as evidenced by official receipts of the latest delivery of fuel.”</p>	<p>The value to be used for FC in the evaluation shall be the total cost of fuel inclusive of hauling charges divided by the quantity of fuel delivered to the Power Plant, as evidenced by official receipts (or any proof of payment) of the five latest deliveries of fuel:</p> $FC = \frac{\sum_{i=1}^5 PhP_i}{\sum_{i=1}^5 Qty_i}$
25.	<p>Item 3.7.2.3 of Terms of Reference (TOR).</p> <p>“The value to be used for CV in the evaluation shall be the calorific value for the latest delivery of fuel to the Power Plant as evidenced by a Certificate of Analysis or its equivalent.”</p>	<p>The value to be used for CV in the evaluation shall be the weighted-average calorific value for the five latest deliveries of fuel to the Power Plant as evidenced by Certificates of Analysis or equivalent:</p> $CV = \frac{\sum_{i=1}^5 CV_i \times Qty_i}{\sum_{i=1}^5 Qty_i}$



26.	<p>Item 22(b)(i) of Instruction to Bidders.</p> <p>“The value to be used for NHR in the evaluation shall be that for a condition where all generating units (excluding black start units) are running at 90% generation capacity based on nameplate rating, and all necessary in-house loads are in operation, as evidenced by a net heat rate test conducted not more than one hundred eighty (180) days from submission. Polynomial interpolation may be applied between loading levels as necessary. Results of gross heat rate tests shall not be accepted. NHR shall be conducted by a qualified third party tester approved by CANORECO and paid for by the Bidder.”</p>	<p>The value to be used for NHR in the evaluation shall be that which is guaranteed for a condition where all generating units (excluding black start units) are running at 90% generation capacity based on nameplate rating. The guarantee may come from the manufacturer or from the prospective Power Supplier itself. This shall serve as the cap for the purposes of pass-on charges.</p>
27.	<p>Item 22(b)(ii) of Instruction to Bidders.</p> <p>“The value to be used for FC in the evaluation shall be the total cost of fuel inclusive of hauling charges divided by the quantity of fuel delivered to the Power Plant, as evidenced by official receipts of the latest delivery of fuel.”</p>	<p>The value to be used for FC in the evaluation shall be the total cost of fuel inclusive of hauling charges divided by the quantity of fuel delivered to the Power Plant, as evidenced by official receipts (or any proof of payment) of the five latest deliveries of fuel:</p> $FC = \frac{\sum_{i=1}^5 PhP_i}{\sum_{i=1}^5 Qty_i}$
28.	<p>Item 22(b)(iii) of Instruction to Bidders.</p> <p>“The value to be used for CV in the evaluation shall be the calorific value for the latest delivery of fuel to the Power Plant as evidenced by a certificate of analysis or its equivalent.”</p>	<p>The value to be used for CV in the evaluation shall be the weighted-average calorific value for the five latest deliveries of fuel to the Power Plant as evidenced by Certificates of Analysis or equivalent:</p> $CV = \frac{\sum_{i=1}^5 CV_i \times Qty_i}{\sum_{i=1}^5 Qty_i}$

<p>29.</p>	<p align="center"><b>“COMPUTATION OF PASS-ON FUEL FEES (FFCalc) Under the Power Supply Agreement (PSA) Procured through Competitive Selection Process (CSP) by Camarines Norte Electric Cooperative, Inc. (CANORECO) for its Base and Intermediate Load Requirements</b></p> <p>1. Introduction</p> <p>Fuel cost is a pass-on cost. The winning Power Supplier shall not make profits from fuel consumed for generation, and shall only be reimbursed accordingly. Thus, for transparency, FF shall be calculated in accordance with the methodology herein.</p> <p>Heat Rate, typically expressed in BTU/kWh, is the ratio between the input thermal energy from the fuel and the output electrical energy. Lower Heat Rate amounts to higher efficiency. A Generating Unit Heat Rate Curve is a fifth-degree polynomial equation indicating the Heat Rate as a function of load for each generating unit. Said equation is determined by testing under different loading levels.</p> <p>Heat Rate testing takes fuel calorific values into account. Regardless of the fuel’s energy content, the same Heat Rate curve will basically apply for the same unit. Using the polynomial equations, the Heat Rate can be determined for any representative loading level by interpolation. Hence, pass-on costs can be more realistic.</p> <p>2. General Principles</p> <p>2.1. For each generating unit, Heat Rate tests (HRTs) shall be performed at least once every three hundred sixty (360) days preferably after a major overhaul, rehabilitation, or maintenance activity.</p> <p>2.2. HRTs shall be conducted by a qualified third party tester approved by CANORECO, with CANORECO as witness, and paid for by the winning Power Supplier.</p>	<p align="center"><b>COMPUTATION OF PASS-ON FUEL FEES (FFCalc) Under the Power Supply Agreement (PSA) Procured through Competitive Selection Process (CSP) by Camarines Norte Electric Cooperative, Inc. (CANORECO) for its Base and Intermediate Load Requirements</b></p> <p>1. Introduction</p> <p>Fuel cost is a pass-on cost. The winning Power Supplier shall not make profits from fuel consumed for generation, and shall only be reimbursed accordingly. Thus, for transparency, FF shall be calculated in accordance with the methodology herein.</p> <p>Heat Rate, typically expressed in BTU/kWh, is the ratio between the input thermal energy from the fuel and the output electrical energy. Lower Heat Rate amounts to higher efficiency. Heat Rate testing takes fuel calorific values into account. Regardless of the fuel’s energy content, the same Heat Rate curve will basically apply for the same unit.</p> <p>The winning Power Supplier provided its guaranteed Net Heat Rate during CSP. This shall serve as the cap for the purposes of pass-on charges.</p> <p>2. General Principles</p> <p>2.1. For each generating unit, Heat Rate tests (HRTs) shall be performed at least once every three hundred sixty (360) days preferably after a major overhaul, rehabilitation, or maintenance activity.</p> <p>2.2. HRTs shall be conducted by a qualified third party tester approved by CANORECO, with CANORECO as witness, and paid for by the winning Power Supplier.</p> <p>2.3. The winning Power Supplier shall be responsible for securing the necessary permits to conduct HRTs.</p> <p>2.4. Only in-house loads that are normally operational for each loading level shall be permitted to be ran during the conduct of HRTs.</p> <p>2.5. In-house loads that are normally operational shall be ran during the conduct of HRTs.</p>
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2.3. The winning Power Supplier shall be responsible for securing the necessary permits to conduct HRTs.

2.4. Only in-house loads that are normally operational for each loading level shall be permitted to be ran during the conduct of HRTs.

2.5. In-house loads that are normally operational for each loading level shall be ran during the conduct of HRTs.

2.6. The calorific value ( $CV_{Test}$ , in BTU/unit) of the latest delivery of fuel from the pertinent Certificate of Analysis shall be used in the subject HRT.

2.7. The representative Plant Use and Losses (PUAL, dimensionless) with sufficient documentation shall be used in the subject HRT. It shall be calculated for every HRT as the discrepancy of the total output at the metering point from the total output at the generator terminals:

$$PUAL = 1 - \frac{\sum MWh_{MP}}{\sum MWh_{Unit}}$$

2.8. The methodology hereunder may be revised subject to mutual agreement of CANORECO and the winning Power Supplier.

### 3. Heat Rate Tests

For each generating unit, Net Heat Rates shall be determined for at least six (6) loading levels distributed evenly from  $P_{min}$  through  $P_{max}$  for a period T in hours, as follows:

3.1. Run the generating unit at fixed load  $kW_i$ .

3.2. Measure the Fuel Quantity ( $FQ_i$ , in appropriate fuel units) consumed.

3.3. Calculate Input Energy in BTU:

$$IE_i = CV_{Test} \times FQ_i$$

3.4. Calculate Gross Output Energy in kWh:

$$GOE_i = kW_i \times T$$

3.5. Calculate Net Output Power in kW:

2.6. The weighted-average calorific value ( $CV_{Test}$ , in BTU/unit) of the five latest deliveries of fuel from the pertinent Certificates of Analysis shall be used in the subject HRT:

$$CV_{Test} = \frac{\sum_{i=1}^5 CV_i \times Qty_i}{\sum_{i=1}^5 Qty_i}$$

2.7. The representative Plant Use and Losses (PUAL, dimensionless) with sufficient documentation shall be used in the subject HRT. It shall be calculated for every HRT as the discrepancy of the total output at the metering point from the total output at the generator terminals:

$$PUAL = 1 - \frac{\sum MWh_{MP}}{\sum MWh_{Unit}}$$

2.8. The methodology hereunder may be revised subject to mutual agreement of CANORECO and the winning Power Supplier.

### 3. Heat Rate Tests

For each generating unit, Net Heat Rate shall be determined for a period T in hours, as follows:

3.1. Run the generating unit at fixed load  $kW_i$  equal to 90% of  $P_{max}$ .

3.2. Measure the Fuel Quantity ( $FQ_i$ , in appropriate fuel units) consumed.

3.3. Calculate Input Energy in BTU:

$$IE_i = CV_{Test} \times FQ_i$$

3.4. Calculate Gross Output Energy in kWh:

$$GOE_i = kW_i \times T$$

3.5. Calculate Net Heat Rate in BTU/kWh:

$$NHR_i = \frac{IE_i}{GOE_i \times (1 - PUAL)}$$

### 4. Monthly Net Heat Rates

The calculation for monthly net Heat Rate shall be supported by proper documentation in order to be valid and acceptable to CANORECO:

$$kW_{net,i} = kW_i \times (1 - PUAL)$$

3.6. Calculate Net Heat Rate in BTU/kWh:

$$NHR_i = \frac{IE_i}{GOE_i \times (1 - PUAL)}$$

4. Generating Unit Heat Rate Curves

4.1. After the tests, for each generating unit, tabulate the pairs ( $kW_{net,i}$ ,  $NHR_i$ )

4.2. Create the Generating Unit Heat Rate Curve represented by a fifth-degree polynomial equation,

$$y = Ax^5 + Bx^4 + Cx^3 + Dx^2 + Ax + F$$

where x stands for  $kW_{net,i}$  and y stands for  $NHR_i$ .

4.3. The coefficients A through F of the polynomial shall be determined mathematically from the HRT results.

5. Monthly Net Heat Rates

The calculation for monthly net Heat Rate shall be supported by proper documentation in order to be valid and acceptable to CANORECO:

5.1. Obtain the total metered quantity (MQ, in kWh) for the Power Plant from NGCP.

5.2. Apportion MQ among the generating units accordingly as  $MQ_i$ .

5.3. For each generating unit, the overall Heat Rate shall be determined for every billing period, as follows:

5.3.1. Obtain the generating unit's number of generating hours,  $T_i$ .

5.3.2. Calculate the representative load for the billing month:

$$kW_{net,i} = \frac{MQ_i}{T_i}$$

5.3.3. Substitute  $kW_{net,i}$  into x in the Generating Unit Heat Rate Curve to obtain  $NHR_i$ , the

4.1. Obtain the total metered quantity (MQ, in kWh) for the Power Plant from NGCP.

4.2. Apportion MQ among the generating units accordingly as  $MQ_i$ .

4.3. Calculate the weighted-average NHR:

$$NHR_{Ave} = \frac{\sum(NHR_i \times MQ_i)}{MQ}$$

4.4. Calculate **NHR** as the lesser of the weighted average NHR and the guaranteed NHR as provided in the bid:

$$NHR = \min(NHR_{Ave}, NHR_{bid})$$

5. Monthly Fuel Fee

5.1. **FC** or the fuel cost in P/unit shall be the total cost of fuel inclusive of hauling charges divided by the quantity of fuel delivered to the Power Plant, as evidenced by official receipts (or any proof of payment) of the five latest deliveries of fuel:

$$FC = \frac{\sum_{i=1}^5 PhP_i}{\sum_{i=1}^5 Qty_i}$$

5.2. **CV** shall be the calorific value in BTU/unit for the five latest deliveries of fuel to the Power Plant as evidenced by a Certificates of Analysis or equivalent:

$$CV = \frac{\sum_{i=1}^5 CV_i \times Qty_i}{\sum_{i=1}^5 Qty_i}$$

5.3. **FF** in P/kWh for the billing month shall be calculated as follows:

$$FF = \frac{NHR \times FC}{CV}$$

6. Alternative Calculations

6.1. If the sales contract for fuel is in terms of the energy content of fuel, the Input Energy Cost (IEC, in P/BTU) shall be the total cost of energy delivered to the Power Plant inclusive of hauling charges divided by the quantity of said energy, as evidenced by official receipts of the latest delivery of fuel. **FF** in P/kWh for the billing month shall be calculated as follows:

<p>representative Heat Rate for the generating unit for the billing month.</p> <p>5.4. Calculate <b>NHR</b> as the weighted average of all <b>NHR</b>;</p> $NHR = \frac{\sum(NHR_i \times MQ_i)}{MQ}$ <p>6. Monthly Fuel Fee</p> <p>6.1. <b>FC</b> or the fuel cost in P/unit shall be the total cost of fuel inclusive of hauling charges divided by the quantity of fuel delivered to the Power Plant, as evidenced by official receipts of the latest delivery of fuel.</p> <p>6.2. <b>CV</b> shall be the calorific value in BTU/unit for the latest delivery of fuel to the Power Plant as evidenced by a Certificate of Analysis or equivalent.</p> <p>6.3. <b>FF</b> in P/kWh for the billing month shall be calculated as follows:</p> $FF = \frac{NHR \times FC}{CV}$ <p>7. Alternative Calculations</p> <p>7.1. If the sales contract for fuel is in terms of the energy content of fuel, the Input Energy Cost (<b>IEC</b>, in P/BTU) shall be the total cost of energy delivered to the Power Plant inclusive of hauling charges divided by the quantity of said energy, as evidenced by official receipts of the latest delivery of fuel. <b>FF</b> in P/kWh for the billing month shall be calculated as follows:</p> $FF = NHR \times IEC$ <p>7.2. If fuel is not required by the Power Plant or does not come at a cost, <b>FF</b> shall be zero.”</p>	$FF = NHR \times IEC$ <p>6.2. If fuel is not required by the Power Plant or does not come at a cost, <b>FF</b> shall be zero.</p>
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For your information.

  
**GEDDIE C. ORCALES**  
 TPBAC Chairperson

Noted:

  
**ZANDRO B. GESTIADA**  
 General Manager