ELECTRICITY GENERATING AUTHORITY OF THAILAND

Supplemental Notice No. 1

Invitation to Bid No. LPLC-IETS-RIT1-TIEC-TIPE-MJ1-01

Supply of Instrument Transformer

Long-Term Investment Plan to Accommodate Large Power Consumer

Work Plan to Improve the Electricity Supply Model for High Voltage Substation to Enhance the Transmission System Stability and Reliability

Replacement Plan of Instrument Transformer Phase 1

Transmission System Improvement Project in Northeastern, Lower Northern, Central Regions and Bangkok Area to Enhance System Security

Transmission System Improvement Project in Eastern Region to enhance System Security

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The attached Supplemental Notice shall be considered as part of the bidding documents No. LPLC-IETS-RIT1-TIEC-TIPE-MJ1-01.

As acknowledgement of receipt that all additions, deletions and revisions contained in this Supplemental Notice are incorporated into the above bidding documents, Bidder is requested to sign and return this acknowledgement via email address : ***wirinya.cha@egat.co.th*** within three (3) days from the date of the announcement of this Supplemental Notice on http://www4.egat.co.th/fprocurement/biddingeng/.

The original acknowledgement which is manually signed in ink by a person or persons duly authorized shall be included in the proposal to be submitted on the bid opening date.

ELECTRICITY GENERATING AUTHORITY OF THAILAND

August 17, 2026

ACKNOWLEDGEMENT

This undersigned Bidder hereby certifies that the additions, deletions and revisions set forth in this Supplemental Notice to Invitation to Bid No. LPLC-IETS-RIT1-TIEC-TIPE-MJ1-01 are incorporated as part of the above bidding documents and will be fully included in any bids which he may submit.

Signed _____

Title _____

Company _____

Date _____

E L E C T R I C I T Y G E N E R A T I N G A U T H O R I T Y O F T H A I L A N D

SUPPLEMENTAL NOTICE NO. 1

INVITATION TO BID NO. LPLC-IETS-RIT1-TIEC-TIPE-MJ1-01

SUPPLY OF INSTRUMENT TRANSFORMER

LONG-TERM INVESTMENT PLAN
TO ACCOMMODATE LARGE POWER CONSUMER

WORK PLAN TO IMPROVE THE ELECTRICITY SUPPLY MODEL FOR HIGH VOLTAGE SUBSTATION TO ENHANCE THE TRANSMISSION SYSTEM STABILITY AND RELIABILITY

REPLACEMENT PLAN OF INSTRUMENT TRANSFORMER PHASE 1

TRANSMISSION SYSTEM IMPROVEMENT PROJECT IN NORTHEASTERN, LOWER NORTHERN, CENTRAL REGIONS AND BANGKOK AREA TO ENHANCE SYSTEM SECURITY

TRANSMISSION SYSTEM IMPROVEMENT PROJECT IN EASTERN REGION TO ENHANCE SYSTEM SECURITY

The following supplemental information is hereby given for the above described Invitation:

1. Section G : Ratings and Features

   Replace pages G13 thru G17 of Ratings and Features with the revised pages with (Rev.1) attached.

2. Section I : Specifications

   Replace Specification No. 761 with the revised one with (Rev.1) attached.

Bid submitted must be in accordance with this Notice. Receipt of this Notice shall be acknowledged by the Bidder on the proposal included in the Bidding Documents in the space provided on page C3, Article C-7. Supplemental Notices.

ELECTRICITY GENERATING
AUTHORITY OF THAILAND

August 17 , 2026

Ratings and Features	**Designed :** via ECM System	**Validated :** via ECM System	**Revision 1**	**Page 1/1**
RF No. PD8W1T	**Verified :** via ECM System	**Approved :** via ECM System	**Dated : 27/07/2026**	

a. Type	Outdoor, Oil Filled	
b. Rated Frequency	50	Hz
c. Nominal System Voltage	230	kV
d. Highest Voltage for Equipment	245	kV
e. Rated Insulation Level		
- Power Frequency Withstand Voltage, rms	460	kV
- Lightning Impulse Withstand Voltage, peak	1050	kV
f. Creepage Distance of Insulator	≥ 6125*	mm
g. Rated Primary Voltage	230/√3	kV
h. Connection of Primary Winding	Line to Ground	
i. Transformation Ratio	1154/2000 & 1154/2000:1	
j. Rated Secondary Voltage		
- No.1 Secondary Winding	115 / (115/√3)	V
- No.2 Secondary Winding	115 / (115/√3)	V
k. Rated Output		
- No.1 Secondary Winding	0-30	VA
- No.2 Secondary Winding	0-30	VA
- Simultaneous	0-60	VA
l. Rated Accuracy Class		
- No.1 Secondary Winding	3P	
- No.2 Secondary Winding	3P	
m. High Voltage Capacitor (C1)	≥ 3000	pF
n. Carrier Accessories	[x] With [ ] Without	
o. Carrier Drain Coil		
- Impulse Withstand Voltage	10	kV
- Frequency Range	70-450	kHz
- Max. Insertion Loss at Specified Frequency Range	≤ 0.5	dB
- Max. Voltage Drop at 50 Hz	≤ 30	V
p. Rated Voltage Factor	1.5 for 30 s	
q. Transient Response Class	3PT1	
r. Potential Grounding Switch	[x] With [ ] Without	
s. Line Terminal	Vertical Take-off Terminal Pad 4-Hole NEMA Pad	
t. Mounting	Pedestal	
u. Applicable Standard	IEC 61869-1, 5	

Note : * Special Creepage Distance ; Base on 25 mm/$kV_{max.L-L}$

Ratings and Features	**Designed :** via ECM System	**Validated :** via ECM System	**Revision 1**	**Page 1/1**
RF No. PD801T	**Verified :** via ECM System	**Approved :** via ECM System	**Dated : 27/07/2026**	

a. Type	Outdoor, Oil Filled		
b. Rated Frequency	50	Hz	
c. Nominal System Voltage	230	kV	
d. Highest Voltage for Equipment	245	kV	
e. Rated Insulation Level			
- Power Frequency Withstand Voltage, rms	460	kV	
- Lightning Impulse Withstand Voltage, peak	1050	kV	
f. Creepage Distance of Insulator	≥ 6125*	mm	
g. Rated Primary Voltage	230/√3	kV	
h. Connection of Primary Winding	Line to Ground		
i. Transformation Ratio	1154/2000 & 1154/2000:1		
j. Rated Secondary Voltage			
- No.1 Secondary Winding	115 / (115/√3)	V	
- No.2 Secondary Winding	115 / (115/√3)	V	
k. Rated Output			
- No.1 Secondary Winding	0-30	VA	
- No.2 Secondary Winding	0-30	VA	
- Simultaneous	0-60	VA	
l. Rated Accuracy Class			
- No.1 Secondary Winding	3P		
- No.2 Secondary Winding	3P		
m. High Voltage Capacitor (C1)	≥ 3000	pF	
n. Carrier Accessories	[ ] With	[x] Without	
o. Carrier Drain Coil			
- Impulse Withstand Voltage	-	kV	
- Frequency Range	-	kHz	
- Max. Insertion Loss at Specified Frequency Range	-	dB	
- Max. Voltage Drop at 50 Hz	-	V	
p. Rated Voltage Factor	1.5 for 30 s		
q. Transient Response Class	3PT1		
r. Potential Grounding Switch	[x] With	[ ] Without	
s. Line Terminal	Vertical Take-off Terminal Pad 4-Hole NEMA Pad		
t. Mounting	Pedestal		
u. Applicable Standard	IEC 61869-1, 5		

Note : * Special Creepage Distance ; Base on 25 mm/$kV_{max.L-L}$

Ratings and Features	**Designed :** via ECM System	**Validated :** via ECM System	**Revision 1**	**Page 1/1**
RF No. PD8W1U	**Verified :** via ECM System	**Approved :** via ECM System	**Dated : 27/07/2026**	

a. Type	Outdoor, Oil Filled	
b. Rated Frequency	50	Hz
c. Nominal System Voltage	230	kV
d. Highest Voltage for Equipment	245	kV
e. Rated Insulation Level		
- Power Frequency Withstand Voltage, rms	460	kV
- Lightning Impulse Withstand Voltage, peak	1050	kV
f. Creepage Distance of Insulator	≥ 6125*	mm
g. Rated Primary Voltage	230/√3	kV
h. Connection of Primary Winding	Line to Ground	
i. Transformation Ratio	1154/2000 & 1154/2000:1	
j. Rated Secondary Voltage		
- No.1 Secondary Winding	115 / (115/√3)	V
- No.2 Secondary Winding	115 / (115/√3)	V
k. Rated Output		
- No.1 Secondary Winding	0-200	VA
- No.2 Secondary Winding	0-200	VA
- Simultaneous	0-200	VA
l. Rated Accuracy Class		
- No.1 Secondary Winding	3P	
- No.2 Secondary Winding	3P	
m. High Voltage Capacitor (C1)	≥ 3000	pF
n. Carrier Accessories	[x] With [ ] Without	
o. Carrier Drain Coil		
- Impulse Withstand Voltage	10	kV
- Frequency Range	70-450	kHz
- Max. Insertion Loss at Specified Frequency Range	≤ 0.5	dB
- Max. Voltage Drop at 50 Hz	≤ 30	V
p. Rated Voltage Factor	1.5 for 30 s	
q. Transient Response Class	3PT1	
r. Potential Grounding Switch	[x] With [ ] Without	
s. Line Terminal	Vertical Take-off Terminal Pad 4-Hole NEMA Pad	
t. Mounting	Pedestal	
u. Applicable Standard	IEC 61869-1, 5	

Note : * Special Creepage Distance ; Base on 25 mm/$kV_{max.L-L}$

Ratings and Features	**Designed :** via ECM System	**Validated :** via ECM System	**Revision 1**	**Page 1/1**
RF No. PD701T	**Verified :** via ECM System	**Approved :** via ECM System	**Dated : 27/07/2026**	

a. Type	Outdoor, Oil Filled	
b. Rated Frequency	50	Hz
c. Nominal System Voltage	115	kV
d. Highest Voltage for Equipment	123	kV
e. Rated Insulation Level		
- Power Frequency Withstand Voltage, rms	230	kV
- Lightning Impulse Withstand Voltage, peak	550	kV
f. Creepage Distance of Insulator	≥ 3075*	mm
g. Rated Primary Voltage	115/√3	kV
h. Connection of Primary Winding	Line to Ground	
i. Transformation Ratio	577/1000 & 577/1000:1	
j. Rated Secondary Voltage		
- No.1 Secondary Winding	115 / (115/√3)	V
- No.2 Secondary Winding	115 / (115/√3)	V
k. Rated Output		
- No.1 Secondary Winding	0-30	VA
- No.2 Secondary Winding	0-30	VA
- Simultaneous	0-60	VA
l. Rated Accuracy Class		
- No.1 Secondary Winding	3P	
- No.2 Secondary Winding	3P	
m. High Voltage Capacitor (C1)	≥ 6000	pF
n. Carrier Accessories	[ ] With [x] Without	
o. Carrier Drain Coil		
- Impulse Withstand Voltage	-	kV
- Frequency Range	-	kHz
- Max. Insertion Loss at Specified Frequency Range	-	dB
- Max. Voltage Drop at 50 Hz	-	V
p. Rated Voltage Factor	1.5 for 30 s	
q. Transient Response Class	3PT1	
r. Potential Grounding Switch	[x] With [ ] Without	
s. Line Terminal	Vertical Take-off Terminal Pad 4-Hole NEMA Pad	
t. Mounting	Pedestal	
u. Applicable Standard	IEC 61869-1, 5	

Note : * Special Creepage Distance ; Base on 25 mm/$kV_{max.L-L}$

Ratings and Features	**Designed :** via ECM System	**Validated :** via ECM System	**Revision 1**	**Page 1/1**
RF No. PD7W1U	**Verified :** via ECM System	**Approved :** via ECM System	**Dated : 27/07/2026**	

a. Type	Outdoor, Oil Filled	
b. Rated Frequency	50	Hz
c. Nominal System Voltage	115	kV
d. Highest Voltage for Equipment	123	kV
e. Rated Insulation Level		
- Power Frequency Withstand Voltage, rms	230	kV
- Lightning Impulse Withstand Voltage, peak	550	kV
f. Creepage Distance of Insulator	≥ 3075*	mm
g. Rated Primary Voltage	115/√3	kV
h. Connection of Primary Winding	Line to Ground	
i. Transformation Ratio	577/1000 & 577/1000:1	
j. Rated Secondary Voltage		
- No.1 Secondary Winding	115 / (115/√3)	V
- No.2 Secondary Winding	115 / (115/√3)	V
k. Rated Output		
- No.1 Secondary Winding	0-200	VA
- No.2 Secondary Winding	0-200	VA
- Simultaneous	0-200	VA
l. Rated Accuracy Class		
- No.1 Secondary Winding	3P	
- No.2 Secondary Winding	3P	
m. High Voltage Capacitor (C1)	≥ 6000	pF
n. Carrier Accessories	[x] With [ ] Without	
o. Carrier Drain Coil		
- Impulse Withstand Voltage	10	kV
- Frequency Range	70-450	kHz
- Max. Insertion Loss at Specified Frequency Range	≤ 0.5	dB
- Max. Voltage Drop at 50 Hz	≤ 30	V
p. Rated Voltage Factor	1.5 for 30 s	
q. Transient Response Class	3PT1	
r. Potential Grounding Switch	[x] With [ ] Without	
s. Line Terminal	Vertical Take-off Terminal Pad 4-Hole NEMA Pad	
t. Mounting	Pedestal	
u. Applicable Standard	IEC 61869-1, 5	

Note : * Special Creepage Distance ; Base on 25 mm/$kV_{max.L-L}$

Specification No 761

Oil-filled Coupling Capacitor Voltage Transformer

761-1 General. This specification covers the general requirements for design, manufacture, test and supply of coupling capacitor voltage transformer (CCVT).

The specific ratings, characteristics and the special requirements and features of the equipment not covered herein are given in the accompanying Ratings and Features sheet (if any).

761-2 Materials and Workmanship. All materials shall be new and shall be the best available for the purposes used, considering strength, ductility, durability and suitability for the intended services and best engineering practice. Workmanship shall be of the highest grade and in accordance with the best modern standard practice.

761-3 Service Conditions. All materials shall be suitable for installation and use at an altitude of 1000 m or less in a tropical climate with a maximum ambient temperature of 45°C and 100% relative humidity for outdoor equipment (or a maximum ambient temperature of 40°C and 90% relative humidity for indoor equipment) without corrosion, deterioration or degradation of performance characteristics.

761-4 Codes and Standards. All equipment, materials, devices, fabrication and testing shall conform to the codes, specifications and standards listed below and all applicable codes, specifications and standard referred therein.

ANSI	American National Standards Institute
ASME	American Society of Mechanical Engineers
ASTM	American Society for Testing and Materials
AWS	American Welding Society
IEC	International Electrotechnical Commission
IEEE	The Institute of Electrical and Electronics Engineers
NEMA	National Electrical Manufacturers Association

All threaded parts requiring external connection shall have metric screw and pipe threads. All internal parts may have threads in accordance with the established specification in the country of manufacturer.

It is the intent that all equipment, materials, devices, fabrication and testing shall conform to the application codes, specifications and standards even though they are not specifically noted herein. Equivalent codes, specifications and standards established and approved in the country of equipment or material manufacture may be used subject to EGAT's approval. If this election is made, the Bidder shall so state and include in his bid the governing codes, specifications, and standards.

proposed together with an itemized list of specific deviations from the requirements of codes, specifications and standards referred herein.

The latest issue of all codes, specifications and standards shall govern.

The most stringent requirement, in the event of code, specification or standard conflict, shall govern. This specification shall govern in the event of discrepancies between it and applicable codes, specifications and standards.

761-5 Design and Construction

761-5.1 Type and Construction. The type and ratings of equipment shall be in accordance with the accompanying Ratings and Features sheet.

The expansion system for changing of oil volume to variation in oil transformer shall be metallic bellow, other oil expansion systems are not acceptable.

The coupling capacitor voltage transformer with core molded or encapsulated in epoxy resin or located in porcelain housing is not acceptable.

The both ends of porcelain housing shall be cemented to the transformer base and head flanges. The porcelain which is fixed by clamps is not acceptable.

A meaningful ferro-resonance circuit shall be provided for effective suppression of ferroresonance conditions. Ferroresonance suppression device used of electronic circuit is not acceptable.

The coupling capacitor voltage transformer secondary circuit connection to ground, the carrier lead-in terminal and carrier drain coil grounding terminal of coupling capacitor voltage transformer shall be made in such a way as to permit convenient temporary removal for isolation or testing.

761-5.2 Terminal Pad. Each equipment terminal for connecting to the line or other equipment shall be equipped with a suitable terminal pad unless otherwise specified. The terminal pad shall be provided with 14.3 mm (9/16 in) diameter holes with 45 mm (1-3/4 in) spacing between the centers of each hole in accordance with the NEMA Standards CC1, number of holes specified in Ratings and Features sheet.

The terminal pad shall be of high conductivity bronze, copper or aluminum alloy and, unless it is made of aluminum alloy, shall be plated with electro-tin to a thickness of not less than 0.0127 mm (0.0005 in).

761-5.3 Porcelain Housings. Porcelain housings shall have adequate mechanical and electrical strength. The color of porcelain shall be of chocolate brown. Porcelain housings shall be wet process, homogeneous and free from cavities or other flaws. The glazing shall be uniform in color and free from blisters, burns and other defects.

761-5.4 **Ground Terminal Connectors.** Two (2) units of ground terminal connectors shall be of the clamp type suitable for No 4/0 AWG copper stranded conductor. Terminal connector shall be made of high conductivity material and shall be completed with corrosion resistance bolts, nuts and lock washers.

761-5.5 **Secondary Terminal Box.** Degree of protection for secondary terminal box shall be at least IP54.

A hole shall be provided at the bottom of secondary terminal box suitable for 2 in (outside diameter of 62 mm) rigid steel conduit.

Bottom hole shall be knock-out type or furnished with suitable cover to prevent internal devices of secondary terminal boxes during transportation and storage.

761-5.6 **Terminations.** All coupling capacitor voltage transformer secondary terminals which connected to terminals on terminal blocks located in the junction boxes, shall have the size suitable for termination of 4 mm^2 cable and shall be ring tongue crimp type. All coupling capacitor voltage transformers completed with carrier accessories shall be equipped with carrier terminal connectors suitable for 16 mm^2 copper cable and located inside of secondary terminal box for easy access of connection. The cable hole with cable gland suitable for 18 mm outside diameter cable shall be provided at the bottom of secondary terminal box. The insulation level of carrier terminal shall be the same as carrier drain coil as specified in Ratings and Features sheet.

761-5.7 **Supporting Structures.** Supporting structures, if specified in the Price Schedule, shall be hot-dip galvanized after fabrication in accordance with ASTM A123, A153 and A53. All necessary galvanized bolts, nuts and washers to complete the erection shall be furnished including embedded anchor bolts for securing the supporting structures to the concrete foundation.

The galvanizing coating shall meet the values as shown in the following table.

Galvanizing Coating Weight

Description	Thickness	Coating Weight (g/m2)	
		Average Value	Minimum Value
Shaped steel and steel plate	6 mm and over	more than 702	more than 610
	under 6 mm	more than 610	more than 550
Steel pipe	-	more than 550	more than 490
Bolts, nuts	-	more than 381	more than 305
Washers, filters	5 mm and over	more than 381	more than 305
	under 5 mm	more than 305	more than 259

Finished materials shall be dipped into the solution of dichromate after galvanizing for white rust protection.

Marking. all individual pieces shall be marked with the correct designations shown on the approved shop drawings. Marking shall be done by die stamping the marks into the metal before galvanizing and shall be clearly legible after galvanizing. The number and letter shall be a minimum of 12 mm in height and 8 mm wide.

Each supporting structure shall be provided with mounting holes for fixing of junction box and shall be equipped with clamp-type ground terminal connector suitable for No 4/0 AWG copper stranded conductor.

761-6 Test. Test of equipment shall be performed according to the requirements specified in each referred test item. The costs of all tests and reports shall be borne by the Contractor.

761-6.1 **Type Test.** The proposed equipment shall already have the type test record of the same type and similar rating as EGAT called for, in accordance with the tests specified in test items, which is subject to EGAT′s approval (unless otherwise specified in each test item). In case of the type and similar rating of equipment as proposed has never been accepted by EGAT, the type test record shall be required and submitted together with the tender document during the bidding.

761-6.2 **Routine Test.** Each equipment shall be completely assembled at the factory and subject to the tests specified in each test item.

761-6.3 **Test Report.** The report of all tests, curves and standard application data shall be furnished to EGAT immediately after completion of the tests.

761-6.4 **Test Procedure.** The Contractor shall submit the test procedure of routine tests and actual type tests to EGAT for approval. The test procedure shall consist of procedures, applied voltage, current and criteria to justify the result of the tests.

761-6.5 **Test item for Coupling Capacitor Voltage Transformer.** The tests shall be performed in accordance with the latest IEC Std 61869-1, 61869-5 as following requirements.

a. Type Tests

(a) Temperature-rise test. These tests shall be carried out to verify the thermal limiting output in accordance with IEC 61869-5. The test shall include item (a), and either item (b) or (c), depending on the applicable voltage factor.

(b) Chopped impulse test.

(c) Impulse voltage test on primary terminals

(d) Wet test for outdoor type transformers

(e) Electromagnetic Compatibility tests

(f) Test for accuracy

(g) Verification of the degree of protection by enclosures

(h) Enclosure tightness test at ambient temperature

(i) Capacitance and tanδ measurement at power frequency

(j) Short circuit withstand capability test

(k) Ferro-resonance test

(l) Transient response test

(m) Type tests for carrier frequency accessories

b. Routine Tests

(a) Power-frequency voltage withstand tests on primary terminals

(b) Partial discharge measurement

(c) Power-frequency voltage withstand tests between sections

(d) Power-frequency voltage withstand tests on secondary terminals

(e) Test for accuracy

(f) Verification of markings

(g) Enclosure tightness test at ambient temperature.

(h) Ferro-resonance check.

(i) Ferro-resonance test for potential grounding switch.
- The test shall be performed on one unit of CCVT being supplied as per Ratings and Features sheet. The CCVT shall be energized at 110% of maximum rated voltage with essentially zero burden (that burden imposed only by the recording equipment and in no case exceeding 5 VA) on the secondary winding. The potential grounding switch shall be closed and opened a minimum 30 times.

(j) Routine tests for carrier frequency accessories

(k) Creepage distance measurement. One unit of each type and rating shall be subject to this test.

761-7 Drawings and Documents for Coupling Capacitor Voltage Transformer

Drawings and documents shall at least comprise the followings:

A. Drawings for Approval

Item	Description	Approval and Final DWGS	Autocad files	CD-ROM or Other Storage Device
1	Outline drawing	x	x	x
2	Nameplate including ratings, connection diagram and EGAT's Contract No, Item No and EGAT Serial No.	x	x	x
3	Line terminal pad	x	-	x
4	Ground terminal connector	x	-	x
5	Detail of secondary terminal box	x	-	x
6	Steel supporting structure (if any) including bill of material	x	x	x
7	Detail of carrier terminal and accessories	x	-	x
8	Assembly drawing of equipment completed with steel supporting structure	x	x	x

B. Drawing and Documents for Reference

1. Internal cross-section view
2. Characteristics of insulating oil

761-8 Instruction Manual for Coupling capacitor voltage transformer

Instruction manual shall consist of all necessary information and shall comprise of at least the following parts:

Part A Coupling capacitor voltage transformer instruction including installation, operation and maintenance.

a. Coupling capacitor voltage transformer general technical information.

b. Installation instruction including but not limited to

- Transportation
- Inspection
- Installation instruction
- Method of oil filling
- Characteristics of insulating oil
- Oil temperature-oil level curve (if any)

c. Operation and maintenance instruction

- Method of adjustment of transformer ratio and phase angle
- Method of reactor tuning
- Routine inspection
- Maintenance

d. Catalogs

Part B Complete set of all final drawings and/or documents arranged in order of each complete item.