One (1) New Siemens Energy 75 MVA, 69 kV Three-Phase Substation Power Transformer

ONAN / ONAF / ONAF2 Cooling
45 / 60 / 75 MVA Rating

Siemens Energy Serial No. 461316
CAL No. 10240

Manufacturer: Siemens Energy Transformers

Proposal Date: April 2026
CTG Proposal No. 62-30040
CONFIDENTIAL

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1. EXECUTIVE SUMMARY

This proposal presents one (1) new Siemens Energy three-phase substation power transformer, rated 45/60/75 MVA (ONAN/ONAF/ONAF2), with a high-voltage rating of 69 kV. The unit was recently manufactured by Siemens Energy Transformadores S.A.S. at their facility in Colombia, with Factory Acceptance Testing (FAT) successfully completed. The subject transformer was shipped late 2025 to the US and is currently in storage according to Siemens layup procedures.

The transformer was originally manufactured for purposes of a utility-grade substation unit under Siemens Energy Serial Number 461316 (CTG No.10240). It features a three-phase Wye-Grounded/Wye-Grounded/Delta winding configuration with copper windings, a De-Energized Tap Changer (DETC) on the high side, and fan-assisted cooling stages. The unit is designed and built to IEEE C57.12.00 and related ANSI/IEEE standards.

This document provides comprehensive technical specifications, nameplate data, bill of materials, available drawings, factory photographs, commercial terms, and a detailed FAQ section.

2. SCOPE OF SUPPLY

The scope of this proposal covers the supply of the following:

- One (1) Siemens Energy Three-Phase Power Transformer, 45/60/75 MVA, ONAN/ONAF/ONAF2, 69 kV / 34.5 kV / 13.8 kV
- De-Energized Tap Changer (DETC), SEI 800A-72kV, 5-Position, High Side
- Cooling fans for ONAF/ONAF2 stages
- Current transformers (CTs) as specified on nameplate and datasheet
- Bushings (HV, LV, and neutral)
- Oil preservation system and all standard accessories per Siemens Energy design
- Packaging for ocean transport
- Factory Acceptance Test (FAT) report

3. TECHNICAL SPECIFICATIONS

3.1 General Transformer Data

GENERAL INFORMATION	
Manufacturer	Siemens Energy Transformadores S.A.S.
Country of Manufacture	Colombia
Serial Number	461316
CAL Number	10240
Standard	IEEE C57.12.00
Type	Three-Phase, Oil-Immersed, Substation Power Transformer
Application	Utility Substation

Year of Manufacture	2025 w/production completed and shipped
RATINGS	
Power Rating (ONAN/ONAF/ONAF2)	45 / 60 / 75 MVA
Power Rating TV-Buried	10.2 / 13.6 / 17 MVA
Cooling Type	ONAN / ONAF / ONAF2
Frequency	60 Hz
Phases	3
Phase Displacement	YNyn0(d1)
VOLTAGE RATINGS	
H Winding (HV)	69,000 V
X Winding (LV)	34,500 V
Y Winding (Tertiary)	13,800 V
Maximum HV System Temporary Overvoltage	Minimum 1.20 pu for 0.2 sec (per NERC PRC-024-2)
WINDING CONFIGURATION	
H Winding Connection	Wye-Grounded
X Winding Connection	Wye-Grounded
Y Winding (Tertiary) Connection	Delta
Winding Material (All Windings)	Copper
INSULATION LEVELS (BIL)	
H Winding BIL	350 kVp
X Winding BIL	200 kVp
Y Winding (Tertiary) BIL	150 kVp
BIL Windings (HV/LV/HV_N/LV_N/TV)	350/200/200/200/110 kV
BIL Bushings (HV/LV/HV_N/LV_N/TV)	350/350/350/350/150 kV
IMPEDANCE	
Impedance @ Mid Tap, 85°C	7.5% (on 45 MVA ONAN base)
Impedance Tolerance	−3% / +5%
TAP CHANGER	
Type	De-Energized Tap Changer (DETC)
Model	SEI 800A-72kV, 5-Position
Location	High Side (H Winding)
Number of Positions	5
Tapping Range	2 x ±2.5%
Nominal Tap Voltage	70 kV
COOLING	
Fans	Yes — for ONAF / ONAF2 stages
Cooling Stages	ONAN (self-cooled) / ONAF (1st fan stage) / ONAF2 (2nd fan stage)

3.2 High Voltage Tap Data

Tap Position	Voltage (V)	ONAN Current (A)	ONAF2 Current (A)
1	72,450	359	598
2	70,725	367	612
3*	**69,000**	**377**	**628**
4	67,275	386	644
5	65,550	396	661

* Nominal tap position. DETC connection designations: A–B, B–C, C–D (Nominal), D–E, E–F.

3.3 Low Voltage Winding Data

Voltage (V)	ONAN Current (A)	ONAF2 Current (A)
34,500	753	1,255

3.4 Physical Data & Weights

APPROXIMATE MASS (from GA Outline Drawing)	
Total Mass	182,864 lb
Shipping Weight (without oil)	126,764 lb (~127,359 lb per Shipping Drawing)
Untanking Weight	101,413 lb
Core & Coils Assembly	82,673 lb
Tank & Fittings	34,172 lb
Oil Weight	38,081 lb
Oil Volume	5,283 Gal
Oil Type	ASTM D3487 Type II (Mineral Oil)
INSULATING FLUID	
Type	Mineral Oil
Tank Design Pressure	14.7 psi, vacuum filling
PCB Content	Contains no detectable level of PCB (< 2 PPM at manufacture)
ENVIRONMENTAL / SITE DESIGN	
Altitude	1,000 m.a.s.l.
Extreme Ambient Temperature	−40°C to +40°C
Temperature Rise	65°C
Maximum Ambient Temperature	40°C
Seismic Design	IEEE 693 — Medium
Maximum Wind Speed	90 mph
Max. Voltage HV/LV	73 / 36 kV

3.5 Losses (Expected)

LOSS DATA (Expected per Datasheet)	
No-Load Losses (@ 20°C)	~41 kW (to be confirmed at FAT)
Load Losses — ONAN (45 MVA) @ 85°C	~81 kW (to be confirmed at FAT)
Load Losses — ONAF (60 MVA) @ 85°C	~144 kW (to be confirmed at FAT)
Load Losses — Full Load (75 MVA) @ 85°C	~224 kW (to be confirmed at FAT)

Note: Final warranted loss values will be confirmed upon completion of Factory Acceptance Testing (FAT).

3.6 Current Transformer (CT) Data

The transformer is equipped with extensive current transformer provisions as shown on the nameplate. Key CT configurations include:

Location	CT Ratings
HV (H Winding)	Qty 3: 2 x 1200:5 C400, TRF=2.0; 600:5 SR 0.3B-1.8, TRF 2.0
LV (X Winding)	Qty 3: 2 x 2000:5 C400, TRF=2.0; 800:5 SR 0.3B-1.8, TRF 2.0
Neutral (HO, XO)	H0: TBD by vendor; X0: TBD by vendor; MR, C400, TRF 2.0
Tertiary (Y)	3 buried CTs, TBD by OEM; Recommend MR, C800, TRF 2.0

Refer to the nameplate document (Addendum A) for complete CT winding configurations and ratios.

3.7 Bushing & Surge Arrester Information

BUSHING INFORMATION	
HV Bushings	Per Siemens Energy standard design
LV Bushings	350A (or 250A with large creep distance)
Neutral Bushings (HO, XO)	350A (or 250A with large creep distance)
SURGE ARRESTER DATA	
HV Arrester MCOV	48 kV
LV Arrester MCOV	24.4 kV

4. NAMEPLATE DATA

The official Siemens Energy nameplate drawing (Revision 1) is provided as Addendum A to this proposal. The nameplate is constructed from anodized aluminum (0.025" / 0.635mm thickness) with black background and white lettering. A reproduction of the nameplate drawing is shown below:

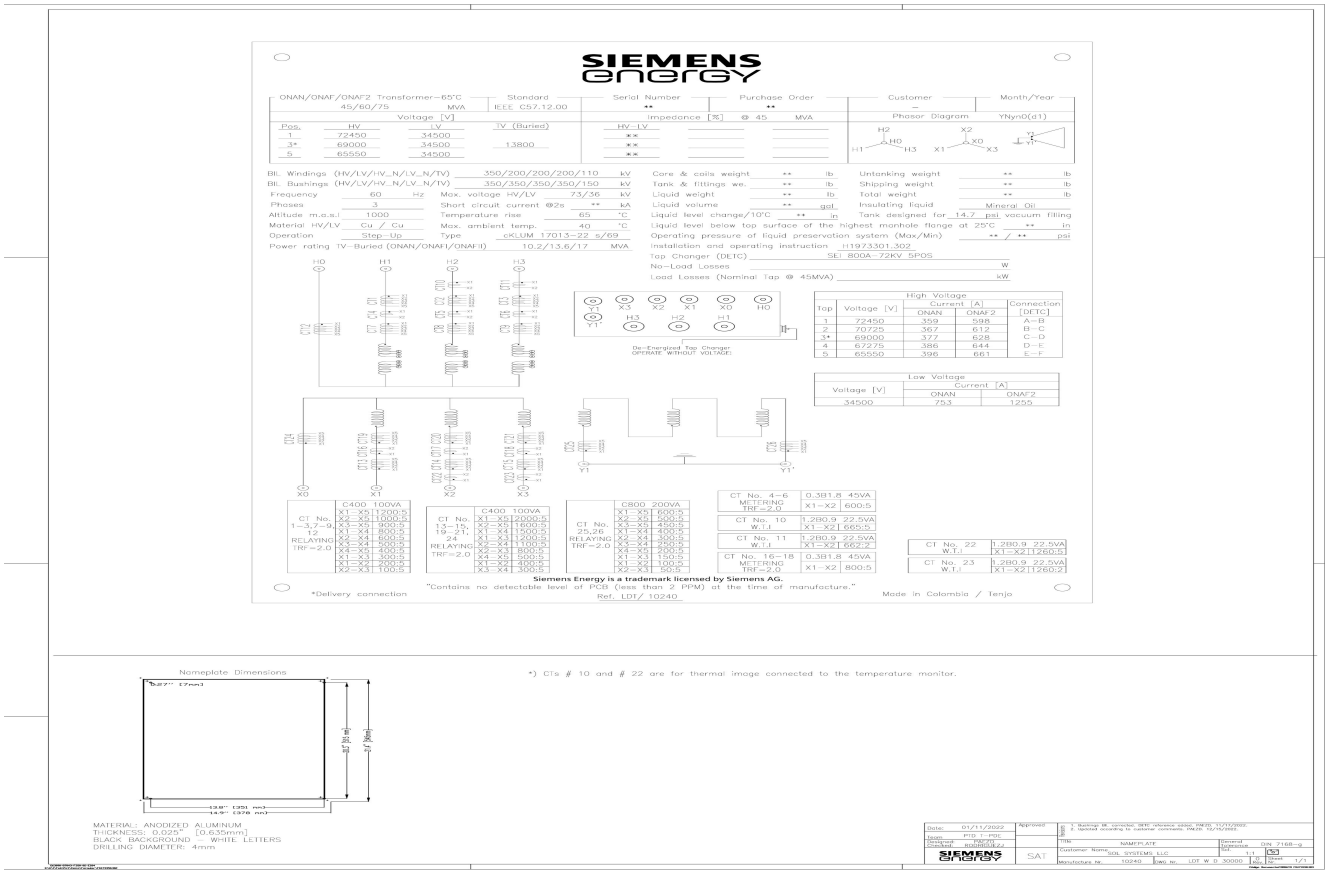

Figure 1: Siemens Energy Nameplate Drawing — Serial No. 461316 (Revision 1)

Note: A photo of the actual installed nameplate on the unit has been requested from Siemens Energy. The official nameplate drawing document is attached as a separate addendum.

5. AVAILABLE DRAWINGS & ADDENDA

The following engineering drawings and documents are provided with this proposal as separate addenda:

- **Addendum A — Nameplate Drawing (Rev 1)**
- **Addendum B — Technical Datasheet**
- **Addendum C — Shipping Drawing (Rev 0) — Shipping Weight Without Oil: 127,359 lb.**
- **Addendum D — General Arrangement / Outline Drawing (Rev 1)**

6. FACTORY PHOTOGRAPHS

The following photographs were taken at the Siemens Energy manufacturing facility on January 29, 2025 and January 31, 2025, documenting the production progress of the transformer.

6.1 Tank & Radiator Assembly

Photo 1: Transformer tank — radiator bank side view, showing radiators, grounding connections, and protective covers (Jan 29, 2025)

Photo 2: Tank side view showing radiator banks, drain valves, and packaged accessories (Jan 29, 2025)

6.2 Tank Upper Section & Bushings Area

Photo 3: Upper tank section showing bushing turrets and HV/LV bushing penetrations (Jan 29, 2025)

6.3 Conservator Tank & Top Details

Photo 4: Top of transformer showing conservator tank (covered), bushing openings with protective covers, and lifting provisions (Jan 31, 2025)

6.4 Core & Coil Assembly

Photo 5: Three-phase winding assemblies — copper disc/helical windings with paper insulation on the manufacturing floor

Photo 6: Individual HV winding coil — continuously transposed conductor (CTC) with paper insulation wrapping

6.5 Core Assembly with Windings

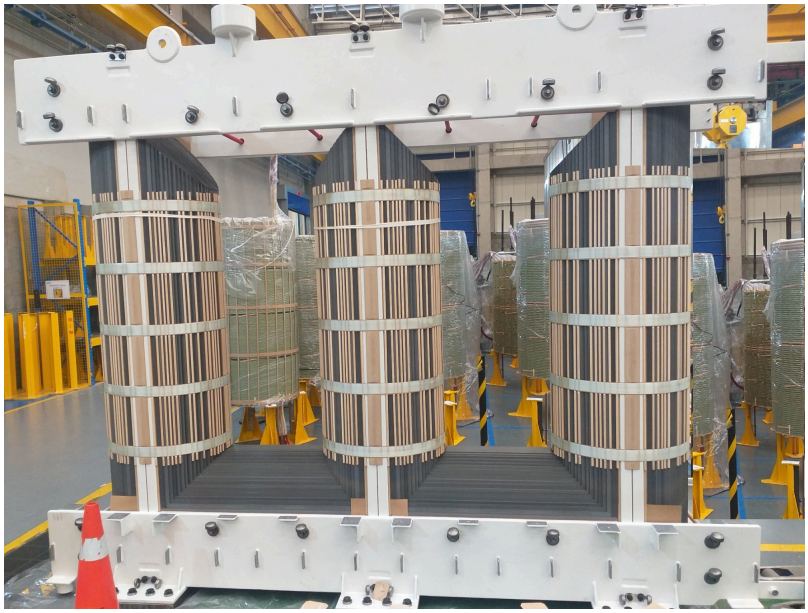

Photo 7: Complete core and coil assembly — three-phase windings mounted on laminated steel core with upper yoke clamping structure, ready for tanking

7. COMMERCIAL TERMS

7.1 Warranty

A twelve (12) month warranty shall be provided from the date of delivery/energization, covering defects in material and workmanship under normal operating conditions.

7.2 Shipping & Logistics

The transformer shipped to Baltimore port. Siemens Energy packaged the unit for ocean transport, including all necessary bracing, desiccant, nitrogen blanket, and impact/tilt recorders as required for safe maritime shipment.

Shipping weight without oil is approximately 127,359 lb. (57,770 kg). The buyer is responsible for coordinating inland freight from Baltimore port to the final installation site. Refer to the Shipping Drawing (Addendum C) for transport dimensions, center of gravity, and jacking/support point locations.

7.3 Availability & Schedule

The transformer is located in USA and available for immediate sale. Factory Acceptance Testing (FAT) was performed successfully and accepted.

7.4 Consumable Supplies & Spare Parts

No consumable supplies or operational spare parts are included in this proposal. These items may be quoted separately upon request.

7.5 Pricing

CALL CTG — Contact CTG sales representative for current pricing, payment terms, and applicable taxes and shipping.

For more information please contact:

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SVP, Sales & Marketing

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8. FREQUENTLY ASKED QUESTIONS (FAQs)

1	**What is the BIL Rating for this equipment?**	H Winding: 350 kVp; X Winding: 200 kVp; Y Winding (Tertiary): 150 kVp
2	**Are there fans on the unit?**	Yes. The transformer has fan-cooled stages (ONAF and ONAF2) in addition to self-cooled (ONAN) operation.
3	**Are there tap changers on the unit?**	Yes. The unit is equipped with a De-Energized Tap Changer (DETC), SEI 800A-72kV, 5-Position, located on the high side. No Load Tap Changer (LTC) is installed.
4	**Is a nameplate photo available?**	The nameplate drawing document (Rev 1) is attached as Addendum A. A photo of the actual installed nameplate on the unit has been requested from Siemens Energy.
5	**How has the unit been maintained and preserved?**	This unit was manufactured by Siemens Energy (SEI) at their facility in Colombia. It shipped to USA and is placed in secure storage.
6	**When was the unit originally manufactured?**	The unit was manufactured in 2024-25. Factory Acceptance Testing (FAT) has been successfully performed.
7	**Can you provide photos of the current condition?**	Yes. Factory photographs from January 29 and 31, 2025 are included in Section 6 of this proposal, showing the tank assembly, core and coil, winding details, and conservator.
8	**What was the original intent for use?**	Utility substation application.
9	**When is the unit available for shipment?**	Available now subject to prior sale
11	**Are consumable supplies or spare parts included?**	No. Consumable supplies and operational spare parts are not included but may be quoted separately upon request.
12	**What warranty is provided?**	A 12-month warranty from date of delivery/energization, covering defects in material and workmanship.

9. NOTES & DISCLAIMERS

- All technical data is based on Siemens Energy engineering documentation and is subject to confirmation upon completion of Factory Acceptance Testing (FAT).
- Dimensions and weights shown are approximate and may vary per final as-built conditions.
- Paint system per ANSI (ISO 12944-2).
- Dimensions on GA drawing are in inches. Shipping drawing dimensions are in millimeters.
- Buyer shall provide a concrete flat surface for mounting. Overhangs and heights could change up to 100mm according to final design.
- It must be ensured that the surfaces of the tank and radiators remain unobstructed for free movement of air.
- This proposal is confidential and intended solely for the named recipient.