

Notice to Bidder

To comply with the ENGINEER ACT, B.E. 2542 FOR THE CONSTRUCTION WORK RELATED TO DESIGN OR CONSTRUCTION SUPERVISION WORK

The Contractors should be aware of the following:

1. The Contractor who is a juristic person is required to obtain a License to Practice the Controlled Engineering Profession issued by the Council of Engineers Thailand.
2. Where the Contractor is a joint venture or consortium, the Contractor shall comply with the following requirements: -
 - 1) In case of a joint venture, the joint venture is required to obtain a License to Practice the Controlled Engineering Profession issued by the Council of Engineers Thailand.
 - 2) In case of a consortium, only the member of the consortium who will be responsible for the Design or Construction Supervision Work is required to obtain a License to Practice the Controlled Engineering Profession issued by the Council of Engineers Thailand.

NOTE : If you have any questions, please contact COUNCIL OF ENGINEERS THAILAND.

Address : 1616/1 Ladprao, Wangthonglang, Bangkok, Thailand 10310

Telephone : 1303

Email : coe@saraban.mail.go.th

ประชาสัมพันธ์ผู้ประกอบการเพื่อทราบ

เพื่อให้การดำเนินงานสำหรับงานจ้างก่อสร้างที่มีลักษณะงานด้านการออกแบบหรือควบคุมงานก่อสร้าง สอดคล้องกับพระราชบัญญัติวิศวกร พ.ศ. 2542 จึงขอแจ้งแนวทางในการดำเนินงาน ดังนี้

1. ผู้รับจ้างที่เป็นนิติบุคคล ต้องเป็นผู้ที่ได้รับใบอนุญาตประกอบวิชาชีพวิศวกรรมควบคุมสำหรับนิติบุคคลจากสภาวิศวกร
2. ผู้รับจ้างที่ดำเนินการในรูปแบบของ “กิจการร่วมค้า”
 - (1) กรณีที่กิจการร่วมค้าได้จดทะเบียนเป็นนิติบุคคลใหม่ กิจการร่วมค่านั้นต้องเป็นผู้ที่ได้รับใบอนุญาตประกอบวิชาชีพวิศวกรรมควบคุมสำหรับนิติบุคคลจากสภาวิศวกร
 - (2) กรณีที่กิจการร่วมค้าไม่ได้จดทะเบียนเป็นนิติบุคคลใหม่ เฉพาะนิติบุคคลที่มีหน้าที่เป็นผู้รับผิดชอบงานวิศวกรรมออกแบบหรือควบคุม ต้องเป็นผู้ที่ได้รับใบอนุญาตประกอบวิชาชีพวิศวกรรมควบคุมสำหรับนิติบุคคลจากสภาวิศวกร

หมายเหตุ หากมีข้อสงสัย โปรดติดต่อ สภาวิศวกร

ที่อยู่ : 1616/1 ถนนลาดพร้าว แขวงวังทองหลาง เขตวังทองหลาง กรุงเทพมหานคร 10310

เบอร์ติดต่อ : 1303

อีเมล : coe@saraban.mail.go.th

EGAT's Privacy Notice on Procurement, Inventory Management and Contract Administration

Electricity Generating Authority of Thailand (EGAT) has performed the protection of the Personal Data regarding procurement, inventory management and contract administration to be in accordance with **the Personal Data Protection Act B.E. 2562** (the "2019 PDPA"), which comes into effect on June 1, 2022.

Details about EGAT's Privacy Notice on Procurement, Inventory Management and Contract Administration are available for you at https://www.egat.co.th/privacy-notice-procurement_en.html or the below QR Code.



The Redaction of Sensitive Personal Data

EGAT has announced the Privacy Notice on Procurement, Inventory Management and Contract Administration for the collection, use or disclosure of Personal Data, excluding the Sensitive Personal Data.

Should the documents you wish to submit to EGAT contain the Sensitive Personal Data as defined in Section 26 of the 2019 PDPA, pertaining to racial, ethnic origin, political opinions, cult, religious or philosophical beliefs, sexual behavior, criminal records, health data, disability, trade union information, genetic data, biometric data, or of any data which may affect you in the same manner, you shall redact or conceal such data before submitting to EGAT.

ประกาศความเป็นส่วนตัว (Privacy Notice) สำหรับการจัดซื้อจัดจ้าง การบริหารพัสดุ และการบริหารสัญญาของ กฟผ.

การไฟฟ้าฝ่ายผลิตแห่งประเทศไทย (กฟผ.) ได้ดำเนินการคุ้มครองข้อมูลส่วนบุคคลสำหรับการจัดซื้อจัดจ้าง การบริหารพัสดุ และการบริหารสัญญา เพื่อให้เป็นไปตามพระราชบัญญัติคุ้มครองข้อมูลส่วนบุคคลของประเทศไทย พ.ศ. 2562 (PDPA) ซึ่งมีผลบังคับใช้อย่างครบถ้วน ตั้งแต่วันที่ 1 มิถุนายน 2565 ทั้งนี้ ท่านสามารถศึกษารายละเอียดประกาศความเป็นส่วนตัว (Privacy Notice) สำหรับการจัดซื้อจัดจ้าง การบริหารพัสดุ และการบริหารสัญญา ได้ที่ <https://www.egat.co.th/privacy-notice-procurement.html> หรือที่ QR Code ด้านล่าง



การขิดฆ่าข้อมูลส่วนบุคคลอ่อนไหว

กฟผ. มีประกาศความเป็นส่วนตัว (Privacy Notice) สำหรับการจัดซื้อจัดจ้าง การบริหารพัสดุ และการบริหารสัญญา เพื่อใช้ในการเก็บรวบรวม ใช้ หรือเปิดเผย ข้อมูลส่วนบุคคล แต่ไม่เก็บข้อมูลส่วนบุคคลอ่อนไหว หากเอกสารของท่านที่ต้องส่งมอบให้ กฟผ. มีข้อมูลส่วนบุคคลอ่อนไหวตามที่ถูกบัญญัติไว้ในมาตรา 26 ของ PDPA ดังนี้ เชื้อชาติ เผ่าพันธุ์ ความคิดเห็นทางการเมือง ความเชื่อในลัทธิ ศาสนาหรือปรัชญา พฤติกรรมทางเพศ ประวัติอาชญากรรม ข้อมูลสุขภาพ ความพิการ ข้อมูลสหภาพแรงงาน ข้อมูลพันธุกรรม ข้อมูลชีวภาพ หรือข้อมูลอื่นใด ซึ่งกระทบต่อเจ้าของข้อมูลส่วนบุคคลในทำนองเดียวกันรวมอยู่ด้วย ขอให้ท่านขิดฆ่า หรือปกปิดข้อมูลดังกล่าว ก่อนส่งมอบให้แก่ กฟผ.

Notice to Bidder

Subject : Online Payment for Purchase of Bidding Documents

Please be informed of the online payment for purchase of bidding documents as follows:

- 1) Fill-out the Registration Form and upload the proof of payment via the link provided in <https://www4.egat.co.th/fprocurement/biddingeng>

Payment shall be made by bank transfer or telegraphic transfer to EGAT's account no. 109-6-01958-2 (swift code : KRTHTHBK), Krung Thai Bank Public Company Limited, Bangkruai Branch, Nonthaburi.

All bank charges and fees incurred by the payment of bidding documents shall be under the buyer's responsibility.

- 2) The registration will be deemed complete only upon successful processing of the payment and confirmation of funds received.
- 3) After the payment has been verified for approximately 3 working days, the in-charge officer will send the link for downloading the bidding documents together with the receipt to the purchaser's email address in the Registration Form.



Invitation to Bid No. HSIS-S-01

(Revision 1)

Supply and Construction of 115 kV Yala 1 Substation (GIS),
Improvement of 115 kV Yala 2 and 115 kV Narathiwat Substations

High Voltage Substation Improvement in the Southern Area for Terrorism and Flood Protection
Two-Envelope

The Electricity Generating Authority of Thailand (EGAT) is calling for the subject Invitation to Bid to be financed by EGAT's fund. The escalation factor (K) for price adjustment is applied to this Bid.

Place of Construction : Yala 1 Substation (GIS), Yala 2 Substation and Narathiwat Substation

Medium Cost (including Value Added Tax and other expenses) : THB 853,000,000.-

Eligibility of Bidders

1. The Bidder shall be a juristic person who provides such services and shall not be named in the List of Work Abandoners published by the Permanent Secretary, Ministry of Finance, and/or in the Debarment List and/or in the List of Work Abandoners declared by EGAT.
2. The Bidder shall not be a Jointly Interested Bidder with other Bidders as from the date of EGAT's issuance of the Invitation, or shall not be a person who undertakes any action as an "Obstruction of Fair Price Competition" for this Invitation.
3. The Bidder shall not either be EGAT's consultant or involve in EGAT's consultancy company under this Invitation to Bid, or shall not have EGAT's personnel involved in his business as shareholder having voting right that can control his business, director, manager, officer, employee, agent, or consultant except those who are officially ordered by EGAT to act or participate therein.
4. The Bidder shall not be the person who is privileged or protected not to be taken any legal proceedings under Thai Court; Provided that such Bidder's government declares that such special privilege is waived.
5. The Bidder who is a joint venture or consortium shall carry out all the work under such formation from the time of bidding until the fulfillment of the Contract.

Availability of Bidding Documents

Bidding Documents are available for online purchase during 8:00 hrs. to 15:00 hrs., Bangkok Standard Time, as from October 29, 2025 to November 28, 2025 at USD 270.- or THB 8,000.- per copy, non-refundable.

Please find more details for online purchasing process at <https://www4.egat.co.th/procurement/biddingeng> or contact for further information at telephone no. 66 2436 3342 or procurement.tse@egat.co.th.

Delivery of Bids

Technical and price proposal submission date and Technical proposal opening date is postponed from January 13, 2026 to January 29, 2026. Technical and price proposal shall be submitted at Bidding Room, 1st Floor, Tor 137 Building at EGAT's Head Office, Nonthaburi during 09:00 hrs. to 10:00 hrs., Bangkok Standard Time, and Technical proposal will be opened publicly at 10:00 hrs.

ELECTRICITY GENERATING AUTHORITY OF THAILAND

December 25, 2025

Kannika Dhachalapat

(Mrs. Kannika Dhachalapat)

Assistant Director, Central Procurement and Inventory Management Division - 1



ประกาศการไฟฟ้าฝ่ายผลิตแห่งประเทศไทย
เรื่อง ประกวดราคาจ้าง เลขที่ HSIS-S-01
ประกวดราคาแบบ 2 ซอง

(ฉบับแก้ไข ครั้งที่ 1)

การไฟฟ้าฝ่ายผลิตแห่งประเทศไทย (กฟผ.) มีความประสงค์จะจัดซื้อและจ้างก่อสร้างสถานีไฟฟ้าแรงสูง 115 kV ยะลา 1 (GIS) จัดซื้อและจ้างก่อสร้างปรับปรุงสถานีไฟฟ้าแรงสูง 115 kV ยะลา 2 และสถานีไฟฟ้าแรงสูง 115 kV นราธิวาส สำหรับแผนงานปรับปรุงสถานีไฟฟ้าแรงสูงในพื้นที่ภาคใต้ เพื่อป้องกันการเกิดวินาศกรรมและอุทกภัย โดยทำสัญญาแบบปรับราคาได้ (ค่า k) โดยใช้งบประมาณ กฟผ.

สถานที่ก่อสร้าง : สถานีไฟฟ้าแรงสูงยะลา 1 (GIS) สถานีไฟฟ้าแรงสูงยะลา 2 และสถานีไฟฟ้าแรงสูงนราธิวาส

ราคากลาง (รวมภาษีมูลค่าเพิ่มและค่าใช้จ่ายอื่นๆ) : 853,000,000.- บาท

คุณสมบัติของผู้เสนอราคา

1. ต้องเป็นนิติบุคคลผู้มีอาชีพรับจ้างตามประกวดราคาจ้างดังกล่าว และต้องไม่เป็นผู้ที่งานซึ่งปลัดกระทรวงการคลังได้แจ้งเวียนชื่อไว้ หรือต้องไม่เป็นผู้ที่ กฟผ. ห้ามติดต่อหรือห้ามเข้าเสนอราคา หรือต้องไม่เป็นผู้ที่ได้รับผลของการสั่งให้นิติบุคคลหรือบุคคลอื่นเป็นผู้ที่จ้างตามคำสั่ง กฟผ.
2. ต้องไม่เป็นผู้มีผลประโยชน์ร่วมกันกับผู้เสนอราคารายอื่น ณ วันประกาศประกวดราคาครั้งนี้เป็นต้นไป หรือต้องไม่เป็นผู้กระทำการอันเป็นการขัดขวางการแข่งขันราคาอย่างเป็นธรรมในการดำเนินการประกวดราคาครั้งนี้
3. ต้องไม่เป็นที่ปรึกษาของ กฟผ. หรือมีส่วนร่วมในบริษัทที่ปรึกษาของ กฟผ. ในงานนี้ หรือต้องไม่มีผู้ปฏิบัติงาน กฟผ. เข้าไปมีส่วนร่วมในกิจการของผู้เสนอราคา ไม่ว่าจะในฐานะผู้ถือหุ้นที่มีสิทธิควบคุมการจัดการ กรรมการ ผู้อำนวยการ ผู้จัดการ พนักงาน ลูกจ้าง ตัวแทน หรือที่ปรึกษา ยกเว้น ในกรณีที่ผู้ปฏิบัติงานได้รับคำสั่งอย่างเป็นทางการจาก กฟผ. ให้ไปปฏิบัติงานหรือเข้าร่วมในกิจการของผู้เสนอราคา
4. ต้องไม่เป็นผู้ได้รับเอกสิทธิ์หรือความคุ้มกัน ซึ่งอาจปฏิเสธไม่ยอมขึ้นศาลไทย เว้นแต่รัฐบาลของผู้เสนอราคาได้มีคำสั่งให้สละสิทธิ์และความคุ้มกันเช่นนั้น
5. ผู้ประสงค์เข้าประกวดราคาในนามของกิจการร่วมค้าหรือกิจการร่วม (Joint Venture or Consortium) จะต้องดำเนินการทุกขั้นตอนของการประกวดราคาในนามของกิจการร่วมค้าหรือกิจการร่วม ตั้งแต่การเสนอราคาจนถึงข้อผูกพันกับ กฟผ.

การขายเอกสารประกวดราคา

ผู้สนใจติดต่อซื้อเอกสารประกวดราคา ในราคาชุดละ 8,000.- บาท ในวันทำการระหว่างเวลา 08:00 น. ถึง 15:00 น. ตั้งแต่วันที่ 29 ตุลาคม 2568 ถึงวันที่ 28 พฤศจิกายน 2568 ทั้งนี้ สามารถดูรายละเอียดการซื้อเอกสารประกวดราคาได้ที่เว็บไซต์ <https://www4.egat.co.th/fprocurement/biddingeng> หรือสอบถามข้อมูลเพิ่มเติมได้ทางโทรศัพท์ หมายเลข 0 2436 3342 หรืออีเมล procurement.tse@egat.co.th

การยื่นซองประกวดราคา

กำหนดยื่นซองข้อเสนอด้านเทคนิคพร้อมซองราคา เลื่อนจากวันที่ 13 มกราคม 2569 เป็นวันที่ 29 มกราคม 2569 เวลา 09:00 น. ถึง 10:00 น. และเปิดซองข้อเสนอด้านเทคนิคเวลา 10:00 น. ณ ห้องประกวดราคา ชั้น 1 อาคาร ท.137 การไฟฟ้าฝ่ายผลิตแห่งประเทศไทย เชียงสะพานพระราม 7 จังหวัดนนทบุรี

ประกาศแก้ไข ณ วันที่ 25 ธันวาคม 2568

กมลทิศา ธัญญา

(นางกรรณิกา ธชาลัญญา)

ผู้ช่วยผู้อำนวยการฝ่ายจัดซื้อจัดจ้างและบริหารพัสดุส่วนกลาง - 1

**ตารางแสดงวงเงินงบประมาณที่ได้รับจัดสรรและราคากลาง(ราคาอ้างอิง)
ในการจัดซื้อจัดจ้างที่มีใช้งานก่อสร้าง**

1. ชื่อโครงการ Bid No. HSIS-S-01

การจัดซื้อและจ้างก่อสร้างสถานีไฟฟ้าแรงสูง 115 kV ยะลา 1 (GIS)

จัดซื้อและจ้างก่อสร้างปรับปรุงสถานีไฟฟ้าแรงสูง 115 kV ยะลา 2

และ สถานีไฟฟ้าแรงสูง 115 kV นราธิวาส

แผนงานปรับปรุงสถานีไฟฟ้าแรงสูงในพื้นที่ภาคใต้ เพื่อป้องกันการเกิดวินาศกรรมและอุทกภัย

/หน่วยงานเจ้าของโครงการ ฝ่ายแผนงานและโครงการระบบส่ง การไฟฟ้าฝ่ายผลิตแห่งประเทศไทย

2. วงเงินงบประมาณที่ได้รับจัดสรร

แผนงานปรับปรุงสถานีไฟฟ้าแรงสูงในพื้นที่ภาคใต้ เพื่อป้องกันการเกิดวินาศกรรมและอุทกภัย

งบประมาณ 4,960 ล้านบาท

3. วันที่กำหนดราคากลาง 27 สิงหาคม 2568 (วันที่ รวร. อนุมัติ)

ราคารวมภาษีมูลค่าเพิ่มและค่าใช้จ่ายอื่นๆ เป็นเงิน 853,000,000.00 บาท ราคา/หน่วย ตามเอกสารแนบ

4. แหล่งที่มาของราคากลาง

หลักเกณฑ์การกำหนดราคากลางการจัดซื้อและจัดจ้างงานก่อสร้างระบบส่งไฟฟ้าของสายงานพัฒนาระบบส่ง

5. รายชื่อเจ้าหน้าที่ผู้กำหนดราคากลาง

5.1 นายณัฐ วงศ์เทพวานิชย์ หมฟ-ร. กวอ-ร.

5.2 นายภูภัทร พานทอง หสก-ร. กวอ-ร.

5.3 นายภาณุวัฒน์ ลิขิตผลผดุง หวอ-ร. กวอ-ร.

5.4 นางสาวจารุวรรณ พิพัฒน์มงคลพร หอด-ร. กวอ-ร.

5.5 นายรุหาญ รุจิธัญธาร กวป-ร.

5.6 นายมณเฑียร จำปาอ่อน กวธ-ร.

5.7 นายสมประสงค์ พัฒนคุณเจริญกิจ กวส-ส. อรส.

หมายเหตุ ค่าใช้จ่ายอื่นๆ ได้แก่ ค่าใช้จ่ายที่ กฟผ. ต้องจ่ายตามวิธีการพิจารณาเปรียบเทียบราคาที่กำหนดไว้

ในเอกสารประกวดราคา เช่น อกรขาเข้า เป็นต้น

MEDIUM COST FOR BID NO. HSIS-S-01

SUMMARY OF BID PRICE

SUPPLY AND CONSTRUCTION OF 115 KV YALA 1 SUBSTATION (GIS), IMPROVEMENT OF 115 KV YALA 2 AND 115 KV NARATHIWAT SUBSTATIONS

HIGH VOLTAGE SUBSTATION IMPROVEMENT IN THE SOUTHERN AREA FOR TERRORISM AND FLOOD PROTECTION

Schedule	Description	Currency	Supply of Equipment		Local Currency (excluding VAT) Baht	Local Transportation (excluding VAT) Baht	Local Transportation, Construction and Installation (excluding VAT) Baht
			Foreign Supply	Local Supply			
			CIF Thai Port	Ex-works Price (excluding VAT) Baht			
			Amount	Amount			
1	115 KV YALA 1 SUBSTATION (GIS)	THB	257,742,608.30	176,854,761.02	148,766,717.99	226,884.40	188,755,659.15
2	115 KV YALA 2 SUBSTATION	THB	2,496,676.60	10,287,624.60			5,116,284.52
3	115 KV NARATHIWAT SUBSTATION			1,336,113.00			614,715.28
BID PRICE		THB	260,239,284.90	Baht 188,478,498.62	Baht 148,766,717.99	Baht 226,884.40	Baht 194,486,658.95
OTHER EXPENSES		THB	5,204,785.70				
VAT			18,581,084.94	Baht 13,193,494.90	Baht 10,413,670.26	Baht 15,881.91	Baht 13,614,066.13
SUMMARY OF BID PRICE		THB	284,025,155.54	Baht 201,671,993.52	Baht 159,180,388.25	Baht 242,766.31	Baht 208,100,725.08
TOTAL MEDIUM COST		THB	853,221,028.70				
TOTAL MEDIUM COST (ROUNDED)		THB	853,000,000.00				


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MEDIUM COST FOR BID NO. HSIS-S-01
SCHEDULE 1 : 115 KV YALA 1 SUBSTATION (GIS)
SUPPLY AND CONSTRUCTION OF 115 KV YALA 1 SUBSTATION (GIS)
HIGH VOLTAGE SUBSTATION IMPROVEMENT IN THE SOUTHERN AREA FOR TERRORISM AND FLOOD PROTECTION

Description	Currency	Supply of Equipment		Local Currency (excluding VAT) Baht	Local Transportation (excluding VAT) Baht	Local Transportation, Construction and Installation (excluding VAT) Baht
		Foreign Supply	Local Supply			
		CIF Thai Port	Ex-works Price (excluding VAT) Baht			
		Amount	Amount			
PART 1AB : SUPPLY AND INSTALLATION OF SUBSTATION EQUIPMENT	THB	255,045,864.80	163,057,616.22			188,755,659.15
PART 1C : CIVIL WORK				148,766,717.99		
PART 1D : SUPPLY OF SPARE PARTS	THB	2,696,743.50	13,797,144.80		226,884.40	
TOTAL PRICE	THB	257,742,608.30	Baht	Baht	Baht	Baht
			176,854,761.02	148,766,717.99	226,884.40	188,755,659.15

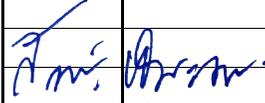


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MEDIUM COST FOR BID NO. HSIS-S-01
PART 1AB : SUPPLY AND INSTALLATION OF SUBSTATION EQUIPMENT
SUPPLY AND CONSTRUCTION OF 115 KV YALA 1 SUBSTATION (GIS)
HIGH VOLTAGE SUBSTATION IMPROVEMENT IN THE SOUTHERN AREA FOR TERRORISM AND FLOOD PROTECTION

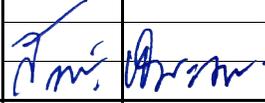
Description	Currency	Supply of Equipment		Local Transportation, Construction and Installation (excluding VAT) Baht Amount
		Foreign Supply	Local Supply	
		CIF Thai Port	Ex-works Price (excluding VAT) Baht	
		Amount	Amount	
Schedule 1AB1 : Power Transformer and Marshalling Control Cubicle	THB		172,000.00	77,400.00
Schedule 1AB2 : Distribution Transformer	THB		2,194,000.00	987,300.00
Schedule 1AB4 : Surge Arrester	THB	2,406,000.00	738,000.00	1,414,800.00
Schedule 1AB7 : SF6 Gas Insulated Switchgear	THB	206,066,720.00		92,730,024.00


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MEDIUM COST FOR BID NO. HSIS-S-01
PART 1AB : SUPPLY AND INSTALLATION OF SUBSTATION EQUIPMENT
SUPPLY AND CONSTRUCTION OF 115 KV YALA 1 SUBSTATION (GIS)
HIGH VOLTAGE SUBSTATION IMPROVEMENT IN THE SOUTHERN AREA FOR TERRORISM AND FLOOD PROTECTION

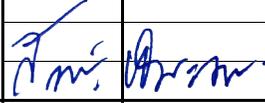
Description	Currency	Supply of Equipment		Local Transportation, Construction and Installation (excluding VAT) Baht Amount
		Foreign Supply	Local Supply	
		CIF Thai Port	Ex-works Price (excluding VAT) Baht	
		Amount	Amount	
Schedule 1AB10 : Disconnecting Switch	THB	2,402,995.10	70,124.00	1,112,903.60
Schedule 1AB11 : Power Fuse, Fuse Link and Hook Stick	THB	1,728,276.00		777,724.20
Schedule 1AB12 : AC&DC Distribution Board and Termination Box			3,421,288.12	1,539,579.65
Schedule 1AB13 : Stationary Battery and Battery Charger	THB	1,516,366.50	1,797,912.60	1,491,425.60


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MEDIUM COST FOR BID NO. HSIS-S-01
PART 1AB : SUPPLY AND INSTALLATION OF SUBSTATION EQUIPMENT
SUPPLY AND CONSTRUCTION OF 115 KV YALA 1 SUBSTATION (GIS)
HIGH VOLTAGE SUBSTATION IMPROVEMENT IN THE SOUTHERN AREA FOR TERRORISM AND FLOOD PROTECTION

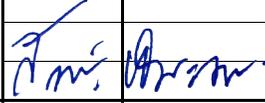
Description	Currency	Supply of Equipment		Local Transportation, Construction and Installation (excluding VAT) Baht Amount
		Foreign Supply	Local Supply	
		CIF Thai Port	Ex-works Price (excluding VAT) Baht	
		Amount	Amount	
Schedule 1AB14 : Substation Steel Structure			2,640,000.00	2,079,000.00
Schedule 1AB15 : Insulator				178,837.31
Schedule 1AB16 : Cable Terminations	THB	26,632,926.70	1,213,690.00	21,929,210.65
Schedule 1AB17 : XLPE Power Cable			23,319,450.00	18,364,066.88


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MEDIUM COST FOR BID NO. HSIS-S-01
PART 1AB : SUPPLY AND INSTALLATION OF SUBSTATION EQUIPMENT
SUPPLY AND CONSTRUCTION OF 115 KV YALA 1 SUBSTATION (GIS)
HIGH VOLTAGE SUBSTATION IMPROVEMENT IN THE SOUTHERN AREA FOR TERRORISM AND FLOOD PROTECTION

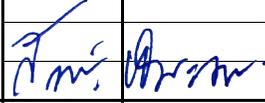
Description	Currency	Supply of Equipment		Local Transportation, Construction and Installation (excluding VAT) Baht Amount
		Foreign Supply	Local Supply	
		CIF Thai Port	Ex-works Price (excluding VAT) Baht	
		Amount	Amount	
Schedule 1AB18 : Low Voltage Cable and Conductor			13,431,141.90	10,577,024.25
Schedule 1AB19 : Switchyard Lighting Fixtures			1,190,151.60	937,244.39
Schedule 1AB20 : Aluminum Tube, Connector and Miscellaneous Hardware			166,886.50	131,423.12
Schedule 1AB21 : Bus Fitting	THB	888,994.70		700,083.33


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MEDIUM COST FOR BID NO. HSIS-S-01
PART 1AB : SUPPLY AND INSTALLATION OF SUBSTATION EQUIPMENT
SUPPLY AND CONSTRUCTION OF 115 KV YALA 1 SUBSTATION (GIS)
HIGH VOLTAGE SUBSTATION IMPROVEMENT IN THE SOUTHERN AREA FOR TERRORISM AND FLOOD PROTECTION

Description	Currency	Supply of Equipment		Local Transportation, Construction and Installation (excluding VAT) Baht Amount
		Foreign Supply	Local Supply	
		CIF Thai Port	Ex-works Price (excluding VAT) Baht	
		Amount	Amount	
Schedule 1AB22 : Grounding Material	THB	528,443.30	415,633.90	743,460.80
Schedule 1AB23 : Substation Miscellaneous	THB	137,824.50	319,150.60	359,867.89
Schedule 1AB24 : Control and Protection System			105,227,616.00	20,090,989.88
Schedule 1AB25 : Fault Recording System			3,326,262.00	569,974.50


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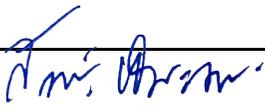
MEDIUM COST FOR BID NO. HSIS-S-01
PART 1AB : SUPPLY AND INSTALLATION OF SUBSTATION EQUIPMENT
SUPPLY AND CONSTRUCTION OF 115 KV YALA 1 SUBSTATION (GIS)
HIGH VOLTAGE SUBSTATION IMPROVEMENT IN THE SOUTHERN AREA FOR TERRORISM AND FLOOD PROTECTION

Description	Currency	Supply of Equipment		Local Transportation, Construction and Installation (excluding VAT) Baht Amount
		Foreign Supply	Local Supply	
		CIF Thai Port	Ex-works Price (excluding VAT) Baht	
		Amount	Amount	
Schedule 1AB39 : Commissioning				960,000.00
Schedule 1AB40 : Installation of Equipment and Steel Structure Supplied by EGAT				3,936,780.00
PART 1AB	THB	255,045,864.80	Baht	Baht
			163,057,616.22	188,755,659.15


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MEDIUM COST FOR BID NO. HSIS-S-01
PART 1C : CIVIL WORK
SUPPLY AND CONSTRUCTION OF 115 KV YALA 1 SUBSTATION (GIS)
HIGH VOLTAGE SUBSTATION IMPROVEMENT IN THE SOUTHERN AREA FOR TERRORISM AND FLOOD PROTECTION

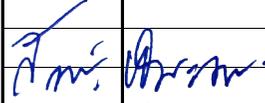
Description	Local Currency (excluding VAT) Baht
	Amount
Schedule 1C1 : Foundation Work	11,564,250.00
Schedule 1C2 : Cable Trench	30,510,461.10
Schedule 1C3 : Building	59,438,841.12
Schedule 1C4 : Earth Work, Road and Crushed Rock Surfacing	4,057,617.00
Schedule 1C5 : Water Supply System	2,882,573.00
Schedule 1C6 : Drainage System	8,269,190.60
Schedule 1C7 : Special Construction Works	6,148,018.57
Schedule 1C8 : Miscellaneous	5,158,383.60
Schedule 1C9 : Fire Protection System	20,737,383.00
PART 1C	Baht 148,766,717.99


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MEDIUM COST FOR BID NO. HSIS-S-01
PART 1D : SUPPLY OF SPARE PARTS
SUPPLY AND CONSTRUCTION OF 115 KV YALA 1 SUBSTATION (GIS)
HIGH VOLTAGE SUBSTATION IMPROVEMENT IN THE SOUTHERN AREA FOR TERRORISM AND FLOOD PROTECTION

Description	Currency	Supply of Equipment		Local Transportation (excluding VAT) Baht
		Foreign Supply	Local Supply	
		CIF Thai Port	Ex-works Price (excluding VAT) Baht	
		Amount	Amount	
Schedule 1D7 : Spare Parts for SF6 Gas Insulated Switchgear	THB	1,541,700.60		77,085.03
Schedule 1D11 : Spare Parts for Power Fuse, Fuse Link and Hook Stick	THB	450,721.70		22,536.09
Schedule 1D12 : Spare Parts for AC&DC Distribution Board and Termination Box			63,577.80	3,178.89
Schedule 1D22 : Spare Parts for Grounding Material	THB	531,784.00		26,589.20


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MEDIUM COST FOR BID NO. HSIS-S-01
PART 1D : SUPPLY OF SPARE PARTS
SUPPLY AND CONSTRUCTION OF 115 KV YALA 1 SUBSTATION (GIS)
HIGH VOLTAGE SUBSTATION IMPROVEMENT IN THE SOUTHERN AREA FOR TERRORISM AND FLOOD PROTECTION

Description	Currency	Supply of Equipment		Local Transportation (excluding VAT) Baht
		Foreign Supply	Local Supply	
		CIF Thai Port	Ex-works Price (excluding VAT) Baht	
		Amount	Amount	
Schedule 1D24 : Spare Parts for Control and Protection System			12,842,231.00	71,727.15
Schedule 1D25 : Spare Parts for Fault Recording System			891,336.00	17,141.18
Schedule 1D37 : Spare Parts for Medium Voltage Switchgear	THB	172,537.20		8,626.86
PART 1D	THB	2,696,743.50	Baht	Baht
			13,797,144.80	226,884.40


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MEDIUM COST FOR BID NO. HSIS-S-01
SCHEDULE 2 : 115 KV YALA 2 SUBSTATION
SUPPLY AND CONSTRUCTION FOR IMPROVEMENT OF 115 KV YALA 2 SUBSTATION
HIGH VOLTAGE SUBSTATION IMPROVEMENT IN THE SOUTHERN AREA FOR TERRORISM AND FLOOD PROTECTION

Description	Currency	Supply of Equipment		Local Currency (excluding VAT) Baht	Local Transportation (excluding VAT) Baht	Local Transportation, Construction and Installation (excluding VAT) Baht
		Foreign Supply	Local Supply			
		CIF Thai Port	Ex-works Price (excluding VAT) Baht			
		Amount	Amount			
PART 2AB : SUPPLY AND INSTALLATION OF SUBSTATION EQUIPMENT	THB	2,496,676.60	10,287,624.60			5,116,284.52
TOTAL PRICE	THB	2,496,676.60	Baht	Baht	Baht	Baht
			10,287,624.60			5,116,284.52

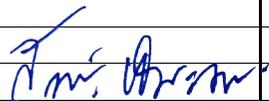


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27 Aug 2025

MEDIUM COST FOR BID NO. HSIS-S-01
PART 2AB : SUPPLY AND INSTALLATION OF SUBSTATION EQUIPMENT
SUPPLY AND CONSTRUCTION FOR IMPROVEMENT OF 115 KV YALA 2 SUBSTATION
HIGH VOLTAGE SUBSTATION IMPROVEMENT IN THE SOUTHERN AREA FOR TERRORISM AND FLOOD PROTECTION

Description	Currency	Supply of Equipment		Local Transportation, Construction and Installation (excluding VAT) Baht Amount
		Foreign Supply	Local Supply	
		CIF Thai Port	Ex-works Price (excluding VAT) Baht	
		Amount	Amount	
Schedule 2AB5 : Current Transformer and Junction Box	THB	2,376,000.00	332,000.00	1,218,600.00
Schedule 2AB18 : Low Voltage Cable and Conductor			2,622,470.40	2,065,195.44
Schedule 2AB21 : Bus Fitting	THB	77,301.40		60,874.85
Schedule 2AB22 : Grounding Material	THB	2,772.00	59,547.40	49,076.53

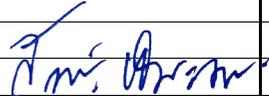


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MEDIUM COST FOR BID NO. HSIS-S-01
PART 2AB : SUPPLY AND INSTALLATION OF SUBSTATION EQUIPMENT
SUPPLY AND CONSTRUCTION FOR IMPROVEMENT OF 115 KV YALA 2 SUBSTATION
HIGH VOLTAGE SUBSTATION IMPROVEMENT IN THE SOUTHERN AREA FOR TERRORISM AND FLOOD PROTECTION

Description	Currency	Supply of Equipment		Local Transportation, Construction and Installation (excluding VAT) Baht Amount
		Foreign Supply	Local Supply	
		CIF Thai Port	Ex-works Price (excluding VAT) Baht	
		Amount	Amount	
Schedule 2AB23 : Substation Miscellaneous	THB	40,603.20	78,708.80	93,958.20
Schedule 2AB24 : Control and Protection System			7,194,898.00	1,124,629.50
Schedule 2AB25 : Fault Recording System				18,450.00
Schedule 2AB38 : Remote Terminal Unit				25,500.00



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MEDIUM COST FOR BID NO. HSIS-S-01
PART 2AB : SUPPLY AND INSTALLATION OF SUBSTATION EQUIPMENT
SUPPLY AND CONSTRUCTION FOR IMPROVEMENT OF 115 KV YALA 2 SUBSTATION
HIGH VOLTAGE SUBSTATION IMPROVEMENT IN THE SOUTHERN AREA FOR TERRORISM AND FLOOD PROTECTION

Description	Currency	Supply of Equipment		Local Transportation, Construction and Installation (excluding VAT) Baht Amount
		Foreign Supply	Local Supply	
		CIF Thai Port	Ex-works Price (excluding VAT) Baht	
		Amount	Amount	
Schedule 2AB39 : Commissioning				185,000.00
Schedule 2AB40 : Installation of Equipment and Steel Structure Supplied by EGAT				275,000.00
PART 2AB	THB	2,496,676.60	Baht	Baht
			10,287,624.60	5,116,284.52



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MEDIUM COST FOR BID NO. HSIS-S-01
SCHEDULE 3 : 115 KV NARATHIWAT SUBSTATION
SUPPLY AND CONSTRUCTION FOR IMPROVEMENT OF 115 KV NARATHIWAT SUBSTATION
HIGH VOLTAGE SUBSTATION IMPROVEMENT IN THE SOUTHERN AREA FOR TERRORISM AND FLOOD PROTECTION

Description	Currency	Supply of Equipment		Local Currency (excluding VAT) Baht	Local Transportation (excluding VAT) Baht	Local Transportation, Construction and Installation (excluding VAT) Baht
		Foreign Supply	Local Supply			
		CIF Thai Port	Ex-works Price (excluding VAT) Baht			
		Amount	Amount			
PART 3AB : SUPPLY AND INSTALLATION OF SUBSTATION EQUIPMENT			1,336,113.00			614,715.28
TOTAL PRICE			Baht 1,336,113.00	Baht	Baht	Baht 614,715.28



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MEDIUM COST FOR BID NO. HSIS-S-01
PART 3AB : SUPPLY AND INSTALLATION OF SUBSTATION EQUIPMENT
SUPPLY AND CONSTRUCTION FOR IMPROVEMENT OF 115 KV NARATHIWAT SUBSTATION
HIGH VOLTAGE SUBSTATION IMPROVEMENT IN THE SOUTHERN AREA FOR TERRORISM AND FLOOD PROTECTION

Description	Currency	Supply of Equipment		Local Transportation, Construction and Installation (excluding VAT) Baht
		Foreign Supply	Local Supply	
		CIF Thai Port	Ex-works Price (excluding VAT) Baht	
		Amount	Amount	
Schedule 3AB18 : Low Voltage Cable and Conductor			206,360.00	162,508.50
Schedule 3AB24 : Control and Protection System			1,129,753.00	255,506.78
Schedule 3AB38 : Remote Terminal Unit				11,700.00
Schedule 3AB39 : Commissioning				185,000.00
PART 3AB		 นายสรวิชัย ทิมะมาน ผู้อำนวยการฝ่ายวิศวกรรมระบบส่ง 27 Aug 2025	Baht 1,336,113.00	Baht 614,715.28

MEDIUM COST FOR BID NO. HSIS-S-01

1AB1 : Power Transformer and Marshalling Control Cubicle

SUPPLY AND CONSTRUCTION OF 115 KV YALA 1 SUBSTATION (GIS)

HIGH VOLTAGE SUBSTATION IMPROVEMENT IN THE SOUTHERN AREA FOR TERRORISM AND FLOOD PROTECTION

Item No.	Description	Qty.	Unit	Currency	Supply of Equipment				Local Transportation, Construction and Installation (excluding VAT) Baht			
					Foreign Supply		Local Supply		Ex-works Price (excluding VAT) Baht			
					CIF Thai Port							
					Unit Price	Amount	Unit Price	Amount	Unit Price	Amount		
1AB1-1	Marshalling Control Cubicle as per EGAT's Dwg No. TP-E-10.5, TP-E-10.6 and TP-E-10.8	2		THB			86,000.00	172,000.00	XXXXX	XXXXX		
1AB1-2	Cost of Local Transportation, Construction and Installation for Item No. 1AB1-1	Lump sum	Lump sum		XXXXX	XXXXX	XXXXX	XXXXX	77,400.00	77,400.00		
Total Price for Schedule 1AB1				THB			Baht 172,000.00		Baht 77,400.00			



นายสรวิษฐ์ ทิมะมาน

MEDIUM COST FOR BID NO. HSIS-S-01

1AB4 : Surge Arrester

SUPPLY AND CONSTRUCTION OF 115 KV YALA 1 SUBSTATION (GIS)

HIGH VOLTAGE SUBSTATION IMPROVEMENT IN THE SOUTHERN AREA FOR TERRORISM AND FLOOD PROTECTION

Item No.	Description	Qty.	Unit	Currency	Supply of Equipment				Local Transportation, Construction and Installation			
					Foreign Supply		Local Supply		Ex-works Price (excluding VAT) Baht		(excluding VAT) Baht	
					CIF Thai Port							
					Unit Price	Amount	Unit Price	Amount	Unit Price	Amount		
1AB4-1	108 kV Surge Arrester as per Ratings and Features RF SA7Y11	18		THB	102,000.00	1,836,000.00			XXXXX	XXXXX		
1AB4-2	30 kV Surge Arrester as per Ratings and Features RF SA3Y11	6		THB	95,000.00	570,000.00			XXXXX	XXXXX		
1AB4-3	Steel Supporting Structure for SA7Y11(for Item No. 1AB4-1), H=4.50 m as per Dwg. No. ST-LA-7-01 and SD-AB-0-01	18		THB			41,000.00	738,000.00	XXXXX	XXXXX		
1AB4-4	Cost of Local Transportation, Construction and Installation for Item No. 1AB4-1 thru 1AB4-3											
		Lump sum	Lump sum		XXXXX	XXXXX	XXXXX	XXXXX	1,414,800.00	1,414,800.00		
Total Price for Schedule 1AB4				THB	2,406,000.00		Baht		Baht			
								738,000.00		1,414,800.00		



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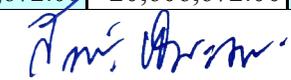
MEDIUM COST FOR BID NO. HSIS-S-01

1AB7 : SF6 Gas Insulated Switchgear

SUPPLY AND CONSTRUCTION OF 115 KV YALA 1 SUBSTATION (GIS)

HIGH VOLTAGE SUBSTATION IMPROVEMENT IN THE SOUTHERN AREA FOR TERRORISM AND FLOOD PROTECTION

Item No.	Description	Qty.	Unit	Currency	Supply of Equipment				Local Transportation, Construction and Installation (excluding VAT) Baht			
					Foreign Supply		Local Supply		Ex-works Price (excluding VAT) Baht			
					CIF Thai Port							
					Unit Price	Amount	Unit Price	Amount	Unit Price	Amount		
1AB7-1	123 kV 3150/2000 A 40 kA Gas Insulated Switchgear as per Ratings and Features RF IS7540(IEC)and DWG. No. YL1-S-1-01/03 and YL1-S-1-02/03 (LINE TO KT1A)	1		THB	20,606,672.00	20,606,672.00			XXXXX	XXXXX		
1AB7-2	123 kV 3150/2000 A 40 kA Gas Insulated Switchgear as per Ratings and Features RF IS7540(IEC)and DWG. No. YL1-S-1-01/03 and YL1-S-1-02/03 (LINE TO KT2A)	1		THB	20,606,672.00	20,606,672.00			XXXXX	XXXXX		
1AB7-3	123 kV 3150/2000 A 40 kA Gas Insulated Switchgear as per Ratings and Features RF IS7540(IEC)and DWG. No. YL1-S-1-01/03 and YL1-S-1-02/03 (LINE No.1 TO YALA 2)	1		THB	20,606,672.00	20,606,672.00			XXXXX	XXXXX		
1AB7-4	123 kV 3150/2000 A 40 kA Gas Insulated Switchgear as per Ratings and Features RF IS7540(IEC)and DWG. No. YL1-S-1-01/03 and YL1-S-1-02/03 (LINE No.2 TO YALA 2)	1		THB	20,606,672.00	20,606,672.00			XXXXX	XXXXX		



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ผู้อำนวยการฝ่ายวิศวกรรมระบบส่ง

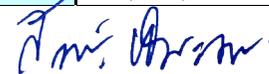
MEDIUM COST FOR BID NO. HSIS-S-01

1AB7 : SF6 Gas Insulated Switchgear

SUPPLY AND CONSTRUCTION OF 115 KV YALA 1 SUBSTATION (GIS)

HIGH VOLTAGE SUBSTATION IMPROVEMENT IN THE SOUTHERN AREA FOR TERRORISM AND FLOOD PROTECTION

Item No.	Description	Qty.	Unit	Currency	Supply of Equipment				Local Transportation, Construction and Installation (excluding VAT) Baht			
					Foreign Supply		Local Supply		Ex-works Price (excluding VAT) Baht			
					CIF Thai Port							
					Unit Price	Amount	Unit Price	Amount	Unit Price	Amount		
1AB7-5	123 kV 3150/2000 A 40 kA Gas Insulated Switchgear as per Ratings and Features RF IS7540(IEC)and DWG. No. YL1-S-1-01/03 and YL1-S-1-02/03 (LINE No.1 TO NARATHIWAT)	1		THB	20,606,672.00	20,606,672.00			XXXXX	XXXXX		
1AB7-6	123 kV 3150/2000 A 40 kA Gas Insulated Switchgear as per Ratings and Features RF IS7540(IEC)and DWG. No. YL1-S-1-01/03 and YL1-S-1-02/03 (LINE No.1 TO PATTANI)	1		THB	20,606,672.00	20,606,672.00			XXXXX	XXXXX		
1AB7-7	123 kV 3150/2000 A 40 kA Gas Insulated Switchgear as per Ratings and Features RF IS7540(IEC)and DWG. No. YL1-S-1-01/03 and YL1-S-1-02/03 (LINE TO 115 kV C-BANK)	1		THB	20,606,672.00	20,606,672.00			XXXXX	XXXXX		
1AB7-8	123 kV 3150/2000 A 40 kA Gas Insulated Switchgear as per Ratings and Features RF IS7540(IEC)and DWG. No. YL1-S-1-01/03 and YL1-S-1-02/03 (LINE No.2 TO PATTANI (FUTURE))	1		THB	20,606,672.00	20,606,672.00			XXXXX	XXXXX		



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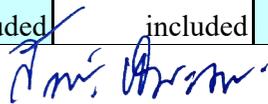
MEDIUM COST FOR BID NO. HSIS-S-01

1AB7 : SF6 Gas Insulated Switchgear

SUPPLY AND CONSTRUCTION OF 115 KV YALA 1 SUBSTATION (GIS)

HIGH VOLTAGE SUBSTATION IMPROVEMENT IN THE SOUTHERN AREA FOR TERRORISM AND FLOOD PROTECTION

Item No.	Description	Qty.	Unit	Currency	Supply of Equipment				Local Transportation, Construction and Installation (excluding VAT) Baht			
					Foreign Supply		Local Supply		Unit Price	Amount	Unit Price	Amount
					CIF Thai Port		Ex-works Price (excluding VAT) Baht					
					Unit Price	Amount	Unit Price	Amount	Unit Price	Amount		
1AB7-9	123 kV 3150/2000 A 40 kA Gas Insulated Switchgear as per Ratings and Features RF IS7540(IEC)and DWG. No. YL1-S-1-01/03 and YL1-S-1-02/03 (LINE No.1 TO PEA)	1		THB	20,606,672.00	20,606,672.00			XXXXX	XXXXX		
1AB7-10	123 kV 3150/2000 A 40 kA Gas Insulated Switchgear as per Ratings and Features RF IS7540(IEC)and DWG. No. YL1-S-1-01/03 and YL1-S-1-02/03 (Coupling bay)	1		THB	20,606,672.00	20,606,672.00			XXXXX	XXXXX		
1AB7-11	123 kV 3150/2000 A 40 kA Gas Insulated Switchgear as per Ratings and Features RF IS7540(IEC)and DWG. No. YL1-S-1-01/03 and YL1-S-1-02/03 (Metal Enclosed Bus) including VT's and fast-acting earthing switches at main bus	1	lot	THB	included	included			XXXXX	XXXXX		
1AB7-12	123 kV 3150/2000 A 40 kA Gas Insulated Switchgear as per Ratings and Features RF IS7540(IEC)(Cable termination interface Plug-in type as per DWG.No.YL1-S-1-01/03 and YL1-S-1-02/03)	1	lot	THB	included	included			XXXXX	XXXXX		



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MEDIUM COST FOR BID NO. HSIS-S-01

1AB7 : SF6 Gas Insulated Switchgear

SUPPLY AND CONSTRUCTION OF 115 KV YALA 1 SUBSTATION (GIS)

HIGH VOLTAGE SUBSTATION IMPROVEMENT IN THE SOUTHERN AREA FOR TERRORISM AND FLOOD PROTECTION

Item No.	Description	Qty.	Unit	Currency	Supply of Equipment				Local Transportation, Construction and Installation (excluding VAT) Baht			
					Foreign Supply		Local Supply					
					CIF Thai Port		Ex-works Price (excluding VAT) Baht		Unit Price	Amount	Unit Price	Amount
					Unit Price	Amount	Unit Price	Amount				
1AB7-13	123 kV 3150/2000 A 40 kA Gas Insulated Switchgear as per Ratings and Features RF IS7540(IEC)(Female cable termination interface (Plug-in type) and Female cable termination interface (Plug-in type) with end-cover cap for future feeder** as per DWG.No.YL1-S-1-01/03 and YL1-S-1-02/03)	1	lot	THB	included	included			XXXXXX	XXXXXX		
1AB7-14	Local control cubicle for IS7540 for item 1AB7-1 thru 1AB7-13*	10		THB	included	included			XXXXXX	XXXXXX		
1AB7-15	Steel Supporting Structure for IS7540*	1	lot	THB	included	included			XXXXXX	XXXXXX		
1AB7-16	Removable service platform and removable ladder for GIS inspection*	1	lot	THB	included	included			XXXXXX	XXXXXX		



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ผู้อำนวยการฝ่ายวิศวกรรมระบบส่ง

MEDIUM COST FOR BID NO. HSIS-S-01

1AB7 : SF6 Gas Insulated Switchgear

SUPPLY AND CONSTRUCTION OF 115 KV YALA 1 SUBSTATION (GIS)

HIGH VOLTAGE SUBSTATION IMPROVEMENT IN THE SOUTHERN AREA FOR TERRORISM AND FLOOD PROTECTION

Item No.	Description	Qty.	Unit	Currency	Supply of Equipment				Local Transportation, Construction and Installation (excluding VAT) Baht			
					Foreign Supply		Local Supply		Ex-works Price (excluding VAT) Baht			
					CIF Thai Port							
					Unit Price	Amount	Unit Price	Amount	Unit Price	Amount		
1AB7-17	Cost of Local Transportation, Construction and Installation for Item No. 1AB7-1 thru 1AB7-16	Lump sum	Lump sum		XXXXX	XXXXX	XXXXX	XXXXX	92,730,024.00	92,730,024.00		
	Note : The SF6 gas in a quantity equivalent to 115% of the total equipment actual requirement shall be provided as follows: - 100% of SF6 gas quantity shall be shipped in returnable steel bottles which shall be returned back to Contractor. - 15% of SF6 gas quantity shall be shipped in non-returnable steel bottles which shall become the property of EGAT.											
Total Price for Schedule 1AB7				THB	206,066,720.00		Baht		Baht 92,730,024.00			

* The design of these equipment/devices shall be verified by Gas Insulated Switchgear manufacturer.

** Item 1AB7-13 (Female cable termination (Plug-in type) shall be confirmed to Specification no. 1001, clause no. 1001-3.10 Cable Terminations)



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- Project 1-1C8 -

ผู้อำนวยการฝ่ายวิศวกรรมระบบส่ง

filename : HSIS-S-01-1 (115 kV Yala 1)

27 Aug 2025

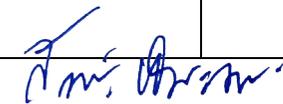
MEDIUM COST FOR BID NO. HSIS-S-01

1AB10 : Disconnecting Switch

SUPPLY AND CONSTRUCTION OF 115 KV YALA 1 SUBSTATION (GIS)

HIGH VOLTAGE SUBSTATION IMPROVEMENT IN THE SOUTHERN AREA FOR TERRORISM AND FLOOD PROTECTION

Item No.	Description	Qty.	Unit	Currency	Supply of Equipment				Local Transportation, Construction and Installation (excluding VAT) Baht			
					Foreign Supply		Local Supply		Unit Price	Amount	Unit Price	Amount
					CIF Thai Port		Ex-works Price (excluding VAT) Baht					
					Unit Price	Amount	Unit Price	Amount				
1AB10-1	123 kV 2000 A air switch (high creepage) motor operated as per Ratings and Features RF DS77AH(IEC) (Phase spacing = 2.25 m)	1		THB	584,036.20	584,036.20			XXXXXX	XXXXXX		
1AB10-2	Steel Supporting Structure for DS77AH(IEC) as per EGAT's Dwg. No. ST-DS-4-01 and SD-AB-0-01, H = 5.30 m	1					70,124.00	70,124.00	XXXXXX	XXXXXX		
1AB10-3	38 kV 1250 A 20 kA air switch vertical break manually gang operated as per Ratings and Features RF DS35D1 (phase spacing = 1.00 m., H = 5.25 m. from base plate to top terminal)	3		THB	234,144.90	702,434.70			XXXXXX	XXXXXX		
1AB10-4	38 kV 1250 A 20 kA air switch vertical break motor operated as per Ratings and Features RF DS35C1(IEC) (phase spacing = 1.00 m., H = 5.25 m. from base plate to top terminal)	2		THB	558,262.10	1,116,524.20			XXXXXX	XXXXXX		
1AB10-5	Cost of Local Transportation, Construction and Installation for Item No. 1AB10-1 thru 1AB10-4		Lump sum	Lump sum					XXXXXX	XXXXXX		
					XXXXXX	XXXXXX	XXXXXX	XXXXXX	1,112,903.60	1,112,903.60		
Total Price for Schedule 1AB10				THB	2,402,995.10		Baht		Baht			
						70,124.00		1,112,903.60				



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MEDIUM COST FOR BID NO. HSIS-S-01
1AB11 : Power Fuse, Fuse Link and Hook Stick
SUPPLY AND CONSTRUCTION OF 115 KV YALA 1 SUBSTATION (GIS)
HIGH VOLTAGE SUBSTATION IMPROVEMENT IN THE SOUTHERN AREA FOR TERRORISM AND FLOOD PROTECTION

Item No.	Description	Qty.	Unit	Currency	Supply of Equipment				Local Transportation, Construction and Installation (excluding VAT) Baht			
					Foreign Supply		Local Supply		Ex-works Price (excluding VAT) Baht			
					CIF Thai Port							
					Unit Price	Amount	Unit Price	Amount	Unit Price	Amount		
1AB11-1	33 kV 200 A 12.5 kA 1-pole dropout fuse as per Ratings and Features RF PF3221 (Not including fuse link or refill unit)	6		THB	215,954.20	1,295,725.20			XXXXX	XXXXX		
1AB11-2	Fuse link or refill unit 7E for 33 kV power fuse (standard speed)	6		THB	72,091.80	432,550.80			XXXXX	XXXXX		
1AB11-3	Cost of Local Transportation, Construction and Installation for Item No. 1AB11-1 thru 1AB11-2											
		Lump sum	Lump sum		XXXXX	XXXXX	XXXXX	XXXXX	777,724.20	777,724.20		
Total Price for Schedule 1AB11				THB	1,728,276.00		Baht		777,724.20			



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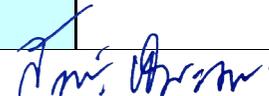
MEDIUM COST FOR BID NO. HSIS-S-01

1AB12 : AC&DC Distribution Board and Termination Box

SUPPLY AND CONSTRUCTION OF 115 KV YALA 1 SUBSTATION (GIS)

HIGH VOLTAGE SUBSTATION IMPROVEMENT IN THE SOUTHERN AREA FOR TERRORISM AND FLOOD PROTECTION

Item No.	Description	Qty.	Unit	Currency	Supply of Equipment				Local Transportation, Construction and Installation (excluding VAT) Baht			
					Foreign Supply		Local Supply		Unit Price	Amount	Unit Price	Amount
					CIF Thai Port		Ex-works Price (excluding VAT) Baht					
					Unit Price	Amount	Unit Price	Amount	Unit Price	Amount		
1AB12-1	400/230 Vac Load Center Unit Substation (LCUS) as per Dwg. No. SE-LCUS-0-01	1						975,964.00	975,964.00	XXXXXX	XXXXXX	
1AB12-2	Lighting Relay Panel (LRP) as per Dwg. No. LT-RP-0-03	1						111,958.00	111,958.00	XXXXXX	XXXXXX	
1AB12-3	Safety switch 600 Vac 500 A, 4 wire, S/N, 3 blades, 3 fuses time lag type, outdoor enclosure (Galvannealed steel or painted stainless steel, IP43, at least 2 mm thickness) completed with 500 A fuses. The terminal lug shall be suitable for ; Incoming cable size : 2(3-1/C x 240 sq.mm.), Power Cable (Copper) 1(1-1/C x 240 sq.mm.), Power Cable (Copper) for neutral Outgoing cable size : 2(3-1/C x 240 sq.mm.), Power Cable (Copper) 1(1-1/C x 240 sq.mm.), Power Cable (Copper) for neutral	2						282,585.01	565,170.02	XXXXXX	XXXXXX	
1AB12-4	Termination Box type TB1 as per Dwg No. LT-TB-0-01	6						2,800.60	16,803.60	XXXXXX	XXXXXX	



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MEDIUM COST FOR BID NO. HSIS-S-01
1AB12 : AC&DC Distribution Board and Termination Box
SUPPLY AND CONSTRUCTION OF 115 KV YALA 1 SUBSTATION (GIS)
HIGH VOLTAGE SUBSTATION IMPROVEMENT IN THE SOUTHERN AREA FOR TERRORISM AND FLOOD PROTECTION

Item No.	Description	Qty.	Unit	Currency	Supply of Equipment				Local Transportation, Construction and Installation (excluding VAT) Baht			
					Foreign Supply		Local Supply		Unit Price	Amount	Unit Price	Amount
					CIF Thai Port		Ex-works Price (excluding VAT) Baht					
					Unit Price	Amount	Unit Price	Amount	Unit Price	Amount		
1AB12-5	Outdoor Receptacle Box type ORB1 as per Dwg. No. SE-ORB-0-01 (for Oil Separator)	1						25,234.00	25,234.00	XXXXX	XXXXX	
1AB12-6	Outdoor Receptacle Box type ORB2 as per Dwg. No. SE-ORB-0-01 (for General purpose)	1						44,576.40	44,576.40	XXXXX	XXXXX	
1AB12-7	Common cubicle for maintenance type 1 as per Dwg. No. SE-CCM-0-01	1						72,726.50	72,726.50	XXXXX	XXXXX	
1AB12-8	400/230 Vac Distribution Board as per Dwg. No. TP-E-4.4 (For Control Room, designed by Contractor)	2						225,717.80	451,435.60	XXXXX	XXXXX	
1AB12-9	400/230 Vac Distribution Board as per Dwg. No. TP-E-4.4 (For 115 kV GIS, designed by Contractor)	2						225,717.80	451,435.60	XXXXX	XXXXX	
1AB12-10	125 Vdc Power Panel as per Dwg. No. TP-E-4.4	1						187,092.40	187,092.40	XXXXX	XXXXX	



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MEDIUM COST FOR BID NO. HSIS-S-01
1AB12 : AC&DC Distribution Board and Termination Box
SUPPLY AND CONSTRUCTION OF 115 KV YALA 1 SUBSTATION (GIS)
HIGH VOLTAGE SUBSTATION IMPROVEMENT IN THE SOUTHERN AREA FOR TERRORISM AND FLOOD PROTECTION

Item No.	Description	Qty.	Unit	Currency	Supply of Equipment				Local Transportation, Construction and Installation (excluding VAT) Baht			
					Foreign Supply		Local Supply		Unit Price	Amount	Unit Price	Amount
					CIF Thai Port		Ex-works Price (excluding VAT) Baht					
					Unit Price	Amount	Unit Price	Amount	Unit Price	Amount		
1AB12-11	125 Vdc Distribution Board as per Dwg. No. TP-E-4.4 (For Control Room, designed by Contractor)	1						172,964.00	172,964.00	XXXXX	XXXXX	
1AB12-12	125 Vdc Distribution Board as per Dwg. No. TP-E-4.4 (For 115 kV GIS, designed by Contractor)	2						172,964.00	345,928.00	XXXXX	XXXXX	
1AB12-13	Cost of Local Transportation, Construction and Installation for Item No. 1AB12-1 thru 1AB12-12											
		Lump sum	Lump sum		XXXXXX	XXXXXX	XXXXXX	XXXXXX		1,539,579.65	1,539,579.65	
Total Price for Schedule 1AB12									Baht	3,421,288.12	Baht	1,539,579.65



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MEDIUM COST FOR BID NO. HSIS-S-01

1AB13 : Stationary Battery and Battery Charger

SUPPLY AND CONSTRUCTION OF 115 KV YALA 1 SUBSTATION (GIS)

HIGH VOLTAGE SUBSTATION IMPROVEMENT IN THE SOUTHERN AREA FOR TERRORISM AND FLOOD PROTECTION

Item No.	Description	Qty.	Unit	Currency	Supply of Equipment				Local Transportation, Construction and Installation (excluding VAT) Baht			
					Foreign Supply		Local Supply		Unit Price	Amount	Unit Price	Amount
					CIF Thai Port		Ex-works Price (excluding VAT) Baht					
					Unit Price	Amount	Unit Price	Amount	Unit Price	Amount		
1AB13-1	Vented stationary battery, 58 cells (tubular type) for 125 Vdc system complete with electrolyte and battery rack as per Specification attached (Design by Contractor, The capacity of Stationary Battery shall not be less than 1300 Ah)											
1AB13-1a	a) Battery	1	set	THB	1,425,096.20	1,425,096.20			XXXXXX	XXXXXX		
1AB13-1b	b) Electrolyte	1	set	THB	30,178.50	30,178.50			XXXXXX	XXXXXX		
1AB13-1c	c) Battery Rack	1	set	THB	61,091.80	61,091.80			XXXXXX	XXXXXX		
1AB13-2	125 Vdc battery charger having sufficient rated DC output current, but not less than 15 % of associated battery 8 hour drainage rate, complete with all accessories as per Specification attached , and shall be suitable for use with substation battery Item No. 1AB13-1	2					898,956.30	1,797,912.60	XXXXXX	XXXXXX		



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MEDIUM COST FOR BID NO. HSIS-S-01
1AB13 : Stationary Battery and Battery Charger
SUPPLY AND CONSTRUCTION OF 115 KV YALA 1 SUBSTATION (GIS)
HIGH VOLTAGE SUBSTATION IMPROVEMENT IN THE SOUTHERN AREA FOR TERRORISM AND FLOOD PROTECTION

Item No.	Description	Qty.	Unit	Currency	Supply of Equipment				Local Transportation, Construction and Installation (excluding VAT) Baht			
					Foreign Supply		Local Supply		Ex-works Price (excluding VAT) Baht			
					CIF Thai Port							
					Unit Price	Amount	Unit Price	Amount	Unit Price	Amount		
1AB13-3	Cost of Local Transportation, Construction and Installation for Item No. 1AB13-1 thru 1AB13-2											
		Lump sum	Lump sum		XXXXX	XXXXX	XXXXX	XXXXX	1,491,425.60	1,491,425.60		
Total Price for Schedule 1AB13				THB	1,516,366.50		Baht	1,797,912.60		1,491,425.60		



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 ผู้อำนวยการฝ่ายวิศวกรรมระบบส่ง

MEDIUM COST FOR BID NO. HSIS-S-01

1AB14 : Substation Steel Structure

SUPPLY AND CONSTRUCTION OF 115 KV YALA 1 SUBSTATION (GIS)

HIGH VOLTAGE SUBSTATION IMPROVEMENT IN THE SOUTHERN AREA FOR TERRORISM AND FLOOD PROTECTION

Item No.	Description	Qty.	Unit	Currency	Supply of Equipment				Local Transportation, Construction and Installation (excluding VAT) Baht			
					Foreign Supply		Local Supply		Unit Price	Amount	Unit Price	Amount
					CIF Thai Port		Ex-works Price (excluding VAT) Baht					
					Unit Price	Amount	Unit Price	Amount	Unit Price	Amount		
1AB14-1	115 kV take-off structure (TS702) as per Dwg. No. ST-TS-7-02	9						173,063.00	1,557,567.00	XXXXX	XXXXX	
1AB14-2	115 kV beam (BB703) as per Dwg. No. ST-BB-7-03	6						60,235.00	361,410.00	XXXXX	XXXXX	
1AB14-3	115 kV bus pole structure (BP705) as per Dwg. No. ST-BP-7-01 (H = 7.30 m)	12						19,329.00	231,948.00	XXXXX	XXXXX	
1AB14-4	Disconnecting switch operating platform (OP002) as per Dwg. No. ST-OP-0-02	7						11,238.00	78,666.00	XXXXX	XXXXX	
1AB14-5	Junction box support structure (JB003) as per Dwg. No. ST-JB-0-03	3						7,642.00	22,926.00	XXXXX	XXXXX	
1AB14-6	22 kV bus support structure (BS202) as per Dwg. No. ST-BS-2-02 (for 33 kV)	5						53,043.00	265,215.00	XXXXX	XXXXX	
1AB14-7	22 kV bus support structure (BS204) as per Dwg. No. ST-BS-2-04 (for 33 kV)	2						61,134.00	122,268.00	XXXXX	XXXXX	
1AB14-8	Cost of Local Transportation, Construction and Installation for Item No. 1AB14-1 thru 1AB14-7	Lump sum	Lump sum			XXXXX	XXXXX	XXXXX	XXXXX	2,079,000.00	2,079,000.00	
Total Price for Schedule 1AB14									Baht	2,640,000.00	Baht	2,079,000.00



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MEDIUM COST FOR BID NO. HSIS-S-01

1AB15 : Insulator

SUPPLY AND CONSTRUCTION OF 115 KV YALA 1 SUBSTATION (GIS)

HIGH VOLTAGE SUBSTATION IMPROVEMENT IN THE SOUTHERN AREA FOR TERRORISM AND FLOOD PROTECTION

Item No.	Description	Qty.	Unit	Currency	Supply of Equipment				Local Transportation, Construction and Installation (excluding VAT) Baht			
					Foreign Supply		Local Supply		Unit Price	Amount	Unit Price	Amount
					CIF Thai Port		Ex-works Price (excluding VAT) Baht					
					Unit Price	Amount	Unit Price	Amount	Unit Price	Amount		
1AB15-1	Suspension insulator ANSI 52-3 as per Specification attached	Lump sum	Lump sum		supplied by EGAT	supplied by EGAT	supplied by EGAT	supplied by EGAT	XXXXXX	XXXXXX		
1AB15-2	115 kV station post insulator ANSI TR. No. 286 as per Specification attached	Lump sum	Lump sum		supplied by EGAT	supplied by EGAT	supplied by EGAT	supplied by EGAT	XXXXXX	XXXXXX		
1AB15-3	33 kV station post insulator ANSI TR. No. 210 as per Specification attached	Lump sum	Lump sum		supplied by EGAT	supplied by EGAT	supplied by EGAT	supplied by EGAT	XXXXXX	XXXXXX		
1AB15-4	Cost of Local Transportation, Construction and Installation for Item No. 1AB15-1 thru 1AB15-3	Lump sum	Lump sum		XXXXXX	XXXXXX	XXXXXX	XXXXXX	178,837.31	178,837.31		
Total Price for Schedule 1AB15							Baht	Baht	178,837.31			



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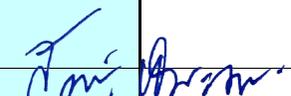
MEDIUM COST FOR BID NO. HSIS-S-01

1AB16 : Cable Terminations

SUPPLY AND CONSTRUCTION OF 115 KV YALA 1 SUBSTATION (GIS)

HIGH VOLTAGE SUBSTATION IMPROVEMENT IN THE SOUTHERN AREA FOR TERRORISM AND FLOOD PROTECTION

Item No.	Description	Qty.	Unit	Currency	Supply of Equipment				Local Transportation, Construction and Installation (excluding VAT) Baht			
					Foreign Supply		Local Supply		Unit Price	Amount	Unit Price	Amount
					CIF Thai Port		Ex-works Price (excluding VAT) Baht					
					Unit Price	Amount	Unit Price	Amount	Unit Price	Amount		
1AB16-1	115 kV plug-in type cable terminations for 1/C no. 800 sq.mm. XLPE power cable as per Ratings and Features RF PTTN7D1X complete with termination accessories	30		THB	438,056.30	13,141,689.00			XXXXX	XXXXX		
1AB16-2	115 kV cable terminations for 1/C no. 800 sq.mm. XLPE power cable as per Ratings and Features RF TN7D1H complete with termination accessories	30		THB	357,084.20	10,712,526.00			XXXXX	XXXXX		
1AB16-3	Steel supporting structure for 115 kV cable terminations for item no.1AB16-2, the distance from the top part of the stand-on-structure cable termination (at live part) to the bottom of steel support structure base plate shall be 4.50 m, phase spacing shall be 2.25 m., 3-phase set, see Dwg. No. YL1-S-3, YL1-S-4 and YL1-S-7 (YL1-TA701) for reference (Designed by Contractor)*	10					121,369.00	1,213,690.00	XXXXX	XXXXX		
1AB16-4	33 kV cable terminations for 1/C no. 500 sq.mm. XLPE power cable as per Ratings and Features RF TN3B1H complete with termination accessories	27		THB	13,377.10	361,181.70			XXXXX	XXXXX		
1AB16-5	Cable Cleats with necessary miscellaneous hardware for item no. 1AB17-1, flat formation 1-phase set (Design by Contractor) as per RF no. TNAC1	Lump sum	Lump sum	THB	1,883,700.00	1,883,700.00			XXXXX	XXXXX		


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MEDIUM COST FOR BID NO. HSIS-S-01

1AB16 : Cable Terminations

SUPPLY AND CONSTRUCTION OF 115 KV YALA 1 SUBSTATION (GIS)

HIGH VOLTAGE SUBSTATION IMPROVEMENT IN THE SOUTHERN AREA FOR TERRORISM AND FLOOD PROTECTION

Item No.	Description	Qty.	Unit	Currency	Supply of Equipment				Local Transportation, Construction and Installation (excluding VAT) Baht			
					Foreign Supply		Local Supply		Ex-works Price (excluding VAT) Baht			
					CIF Thai Port							
					Unit Price	Amount	Unit Price	Amount	Unit Price	Amount		
1AB16-6	Cable Cleats with necessary miscellaneous hardware for item no. 1AB17-2, trefoil formation 3-phase set (Design by Contractor) as per RF no. TNAC1	Lump sum	Lump sum	THB	505,750.00	505,750.00			XXXXX	XXXXX		
1AB16-7	Cable Cleats with necessary miscellaneous hardware for item no. 1AB17-2, flat formation 1-phase set (Design by Contractor) as per RF no. TNAC1	Lump sum	Lump sum	THB	28,080.00	28,080.00			XXXXX	XXXXX		
1AB16-8	Cost of Local Transportation, Construction and Installation for Item No.1AB16-1 thru 1AB16-7	Lump sum	Lump sum		XXXXX	XXXXX	XXXXX	XXXXX	21,929,210.65	21,929,210.65		
	Note : Steel supporting structure (Item No. 1AB16-3) for cable termination for 1/C 800 sq.mm. XLPE power cable shall be designed, considering prevention of any electrical and magnetic issues such as Eddy current.											
Total Price for Schedule 1AB16				THB	26,632,926.70		Baht		1,213,690.00			
									21,929,210.65			

* The design of supporting structures of cable termination shall be verified by cable terminations manufacturer.



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MEDIUM COST FOR BID NO. HSIS-S-01

1AB17 : XLPE Power Cable

SUPPLY AND CONSTRUCTION OF 115 KV YALA 1 SUBSTATION (GIS)

HIGH VOLTAGE SUBSTATION IMPROVEMENT IN THE SOUTHERN AREA FOR TERRORISM AND FLOOD PROTECTION

Item No.	Description	Qty.	Unit	Currency	Supply of Equipment				Local Transportation, Construction and Installation (excluding VAT) Baht			
					Foreign Supply		Local Supply		Unit Price	Amount	Unit Price	Amount
					CIF Thai Port		Ex-works Price (excluding VAT) Baht					
					Unit Price	Amount	Unit Price	Amount	Unit Price	Amount		
1AB17-1	115 kV 1/C no. 800 sq.mm. XLPE power cable as per Specification attached	Lump sum	Lump sum					20,529,300.00	20,529,300.00	XXXXX	XXXXX	
1AB17-2	33 kV 1/C no. 500 sq.mm. XLPE power cable as per Ratings and Features RF PC3B10	Lump sum	Lump sum					2,790,150.00	2,790,150.00	XXXXX	XXXXX	
1AB17-3	Cost of Local Transportation, Construction and Installation for Item No. 1AB17-1 thru 1AB17-2	Lump sum	Lump sum		XXXXX	XXXXX	XXXXX	XXXXX	XXXXX	18,364,066.88	18,364,066.88	
Total Price for Schedule 1AB17								Baht 23,319,450.00		Baht 18,364,066.88		



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ผู้อำนวยการฝ่ายวิศวกรรมระบบส่ง

MEDIUM COST FOR BID NO. HSIS-S-01
1AB18 : Low Voltage Cable and Conductor
SUPPLY AND CONSTRUCTION OF 115 KV YALA 1 SUBSTATION (GIS)
HIGH VOLTAGE SUBSTATION IMPROVEMENT IN THE SOUTHERN AREA FOR TERRORISM AND FLOOD PROTECTION

Item No.	Description	Qty.	Unit	Currency	Supply of Equipment				Local Transportation, Construction and Installation (excluding VAT) Baht			
					Foreign Supply		Local Supply		Unit Price	Amount	Unit Price	Amount
					CIF Thai Port		Ex-works Price (excluding VAT) Baht					
					Unit Price	Amount	Unit Price	Amount	Unit Price	Amount		
1AB18-1	750 V power cable as per Specification attached	Lump sum	Lump sum				5,800,410.00	5,800,410.00	XXXXX	XXXXX		
1AB18-2	600 V control cable with PVC insulation as per Specification attached	Lump sum	Lump sum				1,334,630.00	1,334,630.00	XXXXX	XXXXX		
1AB18-3	750 V lighting cable (THW) as per Specification attached	Lump sum	Lump sum				151,800.00	151,800.00	XXXXX	XXXXX		
1AB18-4	750 V lighting cable (NYY) as per Specification attached	Lump sum	Lump sum				1,038,180.00	1,038,180.00	XXXXX	XXXXX		
1AB18-5	Annealed copper ground wire as per Specification attached	Lump sum	Lump sum				4,949,964.80	4,949,964.80	XXXXX	XXXXX		
1AB18-6	Aluminum conductor as per Specification attached	Lump sum	Lump sum				136,857.60	136,857.60	XXXXX	XXXXX		



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- Project 1-1C21 -

ผู้อำนวยการฝ่ายวิศวกรรมระบบส่ง

filename : HSIS-S-01-1 (115 kV Yala 1)

27 Aug 2025

MEDIUM COST FOR BID NO. HSIS-S-01
1AB18 : Low Voltage Cable and Conductor
SUPPLY AND CONSTRUCTION OF 115 KV YALA 1 SUBSTATION (GIS)
HIGH VOLTAGE SUBSTATION IMPROVEMENT IN THE SOUTHERN AREA FOR TERRORISM AND FLOOD PROTECTION

Item No.	Description	Qty.	Unit	Currency	Supply of Equipment				Local Transportation, Construction and Installation (excluding VAT) Baht			
					Foreign Supply		Local Supply		Unit Price	Amount	Unit Price	Amount
					CIF Thai Port		Ex-works Price (excluding VAT) Baht					
					Unit Price	Amount	Unit Price	Amount	Unit Price	Amount		
1AB18-7	Overhead ground wire as per Specification attached	Lump sum	Lump sum				19,299.50	19,299.50	XXXXX	XXXXX		
1AB18-8	Cost of Local Transportation, Construction and Installation for Item No. 1AB18-1 thru 1AB18-7	Lump sum	Lump sum		XXXXXX	XXXXXX	XXXXXX	XXXXXX	10,577,024.25	10,577,024.25		
Total Price for Schedule 1AB18							Baht 13,431,141.90		Baht 10,577,024.25			



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MEDIUM COST FOR BID NO. HSIS-S-01

1AB19 : Switchyard Lighting Fixtures

SUPPLY AND CONSTRUCTION OF 115 KV YALA 1 SUBSTATION (GIS)

HIGH VOLTAGE SUBSTATION IMPROVEMENT IN THE SOUTHERN AREA FOR TERRORISM AND FLOOD PROTECTION

Item No.	Description	Qty.	Unit	Currency	Supply of Equipment				Local Transportation, Construction and Installation (excluding VAT) Baht			
					Foreign Supply		Local Supply		Unit Price	Amount	Unit Price	Amount
					CIF Thai Port		Ex-works Price (excluding VAT) Baht					
					Unit Price	Amount	Unit Price	Amount	Unit Price	Amount		
1AB19-1	Flood lighting fixture, LED lamp, 10000 lumen, wide-beam, complete with control gear as per Specification attached	12					18,686.80	224,241.60	XXXXX	XXXXX		
1AB19-2	Street lighting fixture, LED lamp, 5000 lumen, wide beam, complete with control gear as per Specification attached	30					10,586.40	317,592.00	XXXXX	XXXXX		
1AB19-3	Tapered galvanized steel lamp post H=5000 mm. complete with 2 A 250 V plug fuse, 20 A 500 V terminal block for accepting 4 sq.mm. of incoming and outgoing cables and anchor bolts as per Dwg. No. ST-LP-0-03 and SD-AB-0-01	30					21,610.60	648,318.00	XXXXX	XXXXX		
1AB19-4	Cost of Local Transportation, Construction and Installation for Item No. 1AB19-1 thru 1AB19-3	Lump sum	Lump sum			XXXXX	XXXXX	XXXXX	XXXXX	937,244.39	937,244.39	
Total Price for Schedule 1AB19									Baht	1,190,151.60	Baht	937,244.39



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MEDIUM COST FOR BID NO. HSIS-S-01

1AB20 : Aluminum Tube, Connector and Miscellaneous Hardware

SUPPLY AND CONSTRUCTION OF 115 KV YALA 1 SUBSTATION (GIS)

HIGH VOLTAGE SUBSTATION IMPROVEMENT IN THE SOUTHERN AREA FOR TERRORISM AND FLOOD PROTECTION

Item No.	Description	Qty.	Unit	Currency	Supply of Equipment				Local Transportation, Construction and Installation (excluding VAT) Baht			
					Foreign Supply		Local Supply		Unit Price	Amount	Unit Price	Amount
					CIF Thai Port		Ex-works Price (excluding VAT) Baht					
					Unit Price	Amount	Unit Price	Amount	Unit Price	Amount		
1AB20-1	Aluminum tube as per Specification attached	Lump sum	Lump sum				54,446.70	54,446.70	XXXXXX	XXXXXX		
1AB20-2	115 kV and below Compression connector as per Specification attached	Lump sum	Lump sum				52,390.80	52,390.80	XXXXXX	XXXXXX		
1AB20-3	115 kV and below Miscellaneous hardware as per Specification attached	Lump sum	Lump sum				60,049.00	60,049.00	XXXXXX	XXXXXX		
1AB20-4	Cost of Local Transportation, Construction and Installation for Item No. 1AB20-1 thru 1AB20-3	Lump sum	Lump sum		XXXXXX	XXXXXX	XXXXXX	XXXXXX	131,423.12	131,423.12		
Total Price for Schedule 1AB20									Baht	166,886.50	Baht	131,423.12



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MEDIUM COST FOR BID NO. HSIS-S-01

1AB21 : Bus Fitting

SUPPLY AND CONSTRUCTION OF 115 KV YALA 1 SUBSTATION (GIS)

HIGH VOLTAGE SUBSTATION IMPROVEMENT IN THE SOUTHERN AREA FOR TERRORISM AND FLOOD PROTECTION

Item No.	Description	Qty.	Unit	Currency	Supply of Equipment				Local Transportation, Construction and Installation (excluding VAT) Baht			
					Foreign Supply		Local Supply		Ex-works Price (excluding VAT) Baht			
					CIF Thai Port							
					Unit Price	Amount	Unit Price	Amount	Unit Price	Amount		
1AB21-1	115 kV and below Bus fitting as per Specification attached	Lump sum	Lump sum	THB	888,994.70	888,994.70			XXXXX	XXXXX		
1AB21-2	Cost of Local Transportation, Construction and Installation for Item No. 1AB21-1	Lump sum	Lump sum		XXXXXX	XXXXXX	XXXXXX	XXXXXX	700,083.33	700,083.33		
				THB	888,994.70		Baht		Baht			
Total Price for Schedule 1AB21									700,083.33			



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MEDIUM COST FOR BID NO. HSIS-S-01

1AB22 : Grounding Material

SUPPLY AND CONSTRUCTION OF 115 KV YALA 1 SUBSTATION (GIS)

HIGH VOLTAGE SUBSTATION IMPROVEMENT IN THE SOUTHERN AREA FOR TERRORISM AND FLOOD PROTECTION

Item No.	Description	Qty.	Unit	Currency	Supply of Equipment				Local Transportation, Construction and Installation (excluding VAT) Baht			
					Foreign Supply		Local Supply		Unit Price	Amount	Unit Price	Amount
					CIF Thai Port		Ex-works Price (excluding VAT) Baht					
					Unit Price	Amount	Unit Price	Amount	Unit Price	Amount		
1AB22-1	Ground rod as per Specification attached	Lump sum	Lump sum	THB	75,124.50	75,124.50			XXXXX	XXXXX		
1AB22-2	Thermite welding material as per Specification attached	Lump sum	Lump sum				415,633.90	415,633.90	XXXXX	XXXXX		
1AB22-3	Grounding hardware as per Specification attached	Lump sum	Lump sum	THB	453,318.80	453,318.80			XXXXX	XXXXX		
1AB22-4	Cost of Local Transportation, Construction and Installation for Item No. 1AB22-1 thru 1AB22-3	Lump sum	Lump sum		XXXXXX	XXXXXX	XXXXXX	XXXXXX	743,460.80	743,460.80		
				THB	528,443.30		Baht		Baht			
Total Price for Schedule 1AB22							415,633.90		743,460.80			



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MEDIUM COST FOR BID NO. HSIS-S-01

1AB23 : Substation Miscellaneous

SUPPLY AND CONSTRUCTION OF 115 KV YALA 1 SUBSTATION (GIS)

HIGH VOLTAGE SUBSTATION IMPROVEMENT IN THE SOUTHERN AREA FOR TERRORISM AND FLOOD PROTECTION

Item No.	Description	Qty.	Unit	Currency	Supply of Equipment				Local Transportation, Construction and Installation (excluding VAT) Baht			
					Foreign Supply		Local Supply		Ex-works Price (excluding VAT) Baht			
					CIF Thai Port							
					Unit Price	Amount	Unit Price	Amount	Unit Price	Amount		
1AB23-1	Rigid steel conduit as per Specification attached	Lump sum	Lump sum				100,150.60	100,150.60	XXXXXX	XXXXXX		
1AB23-2	Fitting for rigid steel conduit as per Specification attached	Lump sum	Lump sum	THB	48,494.60	48,494.60			XXXXXX	XXXXXX		
1AB23-3	HDPE conduit and fitting as per Specification attached	Lump sum	Lump sum				49,000.00	49,000.00	XXXXXX	XXXXXX		
1AB23-4	Heat shrinkable insulation material	Lump sum	Lump sum	THB	89,329.90	89,329.90			XXXXXX	XXXXXX		
1AB23-5	Identification and danger notice plate as per drawing attached	Lump sum	Lump sum				170,000.00	170,000.00	XXXXXX	XXXXXX		
1AB23-6	Cost of Local Transportation, Construction and Installation for Item No. 1AB23-1 thru 1AB23-5	Lump sum	Lump sum		XXXXXX	XXXXXX	XXXXXX	XXXXXX	359,867.89	359,867.89		
				THB	137,824.50		Baht		Baht			
Total Price for Schedule 1AB23							319,150.60		359,867.89			



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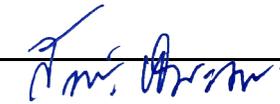
MEDIUM COST FOR BID NO. HSIS-S-01

1AB24 : Control and Protection System

SUPPLY AND CONSTRUCTION OF 115 KV YALA 1 SUBSTATION (GIS)

HIGH VOLTAGE SUBSTATION IMPROVEMENT IN THE SOUTHERN AREA FOR TERRORISM AND FLOOD PROTECTION

Item No.	Description	Drawing No. / Reference No.	Qty.	Unit	Currency	Supply of Equipment				Local Transportation, Construction and Installation (excluding VAT) Baht			
						Foreign Supply		Local Supply		Unit Price	Amount	Unit Price	Amount
						CIF Thai Port		Ex-works Price (excluding VAT) Baht					
						Unit Price	Amount	Unit Price	Amount	Unit Price	Amount		
1AB24-1	DSS : Digital Substation System including System Integrator	See Bill of Materials for 1AB24-1. Specification No.1008 See Scope of Work. Drawing Nos. YL1-E-1 sh.1-3, YL1-S-6, YL1-S-7 and TP-E-20.3	1	SET					105,227,616.00	105,227,616.00	XXXXX	XXXXX	
1AB24-2	DSS : EGAT SCADA X Software	Installed in Computer for HMI Server. See Scope of Work.	1	SET			supplied by EGAT	supplied by EGAT	supplied by EGAT	supplied by EGAT	XXXXX	XXXXX	
1AB24-3	DSS : EGAT Gateway Software	Installed in Computer for Engineering Workstation. See Scope of Work.	1	SET			supplied by EGAT	supplied by EGAT	supplied by EGAT	supplied by EGAT	XXXXX	XXXXX	
1AB24-4	Cost of Local Transportation, Construction and Installation for Item Nos. 1AB24-1 thru 1AB24-3		Lump sum	Lump sum			XXXXX	XXXXX	XXXXX	XXXXX	20,090,989.88	20,090,989.88	
Total Price for Schedule 1AB24										Baht	105,227,616.00	Baht	20,090,989.88



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MEDIUM COST FOR BID NO. HSIS-S-01
1AB25 : Fault Recording System
SUPPLY AND CONSTRUCTION OF 115 KV YALA 1 SUBSTATION (GIS)
HIGH VOLTAGE SUBSTATION IMPROVEMENT IN THE SOUTHERN AREA FOR TERRORISM AND FLOOD PROTECTION

Item No.	Description	Drawing No. / Reference No.	Qty.	Unit	Currency	Supply of Equipment				Local Transportation, Construction and Installation (excluding VAT) Baht					
						Foreign Supply		Local Supply							
						CIF Thai Port		Ex-works Price (excluding VAT) Baht		Unit Price	Amount	Unit Price	Amount	Unit Price	Amount
						Unit Price	Amount	Unit Price	Amount						
1AB25-1	DSS : Fault Recording System	See Bill of Materials for 1AB25-1. Specification Nos. 1003 and 1008 See Scope of Work. Drawing Nos. YL1-E-1 sh.1-3	1	SET					3,326,262.00	3,326,262.00	XXXXXX	XXXXXX			
1AB25-2	Cost of Local Transportation, Construction and Installation for Item No. 1AB25-1		Lump sum	Lump sum			XXXXXX	XXXXXX	XXXXXX	XXXXXX	569,974.50	569,974.50			
Total Price for Schedule 1AB25									Baht 3,326,262.00		Baht 569,974.50				



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MEDIUM COST FOR BID NO. HSIS-S-01

1AB33 : CCTV

SUPPLY AND CONSTRUCTION OF 115 KV YALA 1 SUBSTATION (GIS)

HIGH VOLTAGE SUBSTATION IMPROVEMENT IN THE SOUTHERN AREA FOR TERRORISM AND FLOOD PROTECTION

Item No.	Description	Qty.	Unit	Currency	Supply of Equipment				Local Transportation, Construction and Installation (excluding VAT) Baht			
					Foreign Supply		Local Supply					
					CIF Thai Port		Ex-works Price (excluding VAT) Baht		Unit Price	Amount	Unit Price	Amount
					Unit Price	Amount	Unit Price	Amount				
1AB33-1	CCTV System and accessories including:	1	SET					1,327,339.00	1,327,339.00	XXXXXX	XXXXXX	
	(1) Outdoor PTZ Dome Camera (2 EA) (2) Indoor Fixed Camera (9 EA) (3) Outdoor Fixed Camera (2 EA) (4) PC Workstation (1 EA) (5) Server (1 EA) (6) Software license (6.1) Software management license (1 License) (6.2) Redording license (13 Licenses) (6.3) Video analytic license (13 Licenses) (7) Ethernet I/O Module (1 EA) (8) Monitor (2 EA) (9) HDMI Optical Extender (1 SET) (10) LAN Switch (1 EA) (11) CCTV Rack Cabinet (1 EA) (12) CCTV steel box/ End-point steel box (Lumpsum)											



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ผู้อำนวยการฝ่ายวิศวกรรมระบบส่ง

MEDIUM COST FOR BID NO. HSIS-S-01

1AB33 : CCTV

SUPPLY AND CONSTRUCTION OF 115 KV YALA 1 SUBSTATION (GIS)

HIGH VOLTAGE SUBSTATION IMPROVEMENT IN THE SOUTHERN AREA FOR TERRORISM AND FLOOD PROTECTION

Item No.	Description	Qty.	Unit	Currency	Supply of Equipment				Local Transportation, Construction and Installation (excluding VAT) Baht	
					Foreign Supply		Local Supply			
					CIF Thai Port		Ex-works Price (excluding VAT) Baht			
					Unit Price	Amount	Unit Price	Amount	Unit Price	Amount
(13) Monitoring Desk (1 EA)										
(14) PoE Injector for Fixed camera (11 EA)										
(15) Adapter for PTZ camera (2 EA)										
(16) CCTV Pole 2 meter (Lumpsum)										
(17) CCTV Pole 4 meter (Lumpsum)										
(18) Indoor-type twisted pair cable (Lumpsum)										
(19) Outdoor-type twisted pair cable (Lumpsum)										
(20) 12-core ADSS Optical Fiber Cable (Lumpsum)										
(21) Media Converter (UTP-Fiber Optic) (12 EA)										
(22) Surge protection-220VAC (2 SET)										
(23) Line Filter (2 EA)										
(24) Electrical cable (Lumpsum)										
(25) EMT conduit (Lumpsum)										
(26) IMC, Flexible conduit with PVC coating (Lumpsum)										
(27) E-flex/HDPE (Lumpsum)										
(28) Ground System (Lumpsum)										
(29) Accessories (Lumpsum)										



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- Project 1-1C31 -

ผู้อำนวยการฝ่ายวิศวกรรมระบบส่ง

filename : HSIS-S-01-1 (115 kV Yala 1)

27 Aug 2025

MEDIUM COST FOR BID NO. HSIS-S-01

1AB33 : CCTV

SUPPLY AND CONSTRUCTION OF 115 KV YALA 1 SUBSTATION (GIS)

HIGH VOLTAGE SUBSTATION IMPROVEMENT IN THE SOUTHERN AREA FOR TERRORISM AND FLOOD PROTECTION

Item No.	Description	Qty.	Unit	Currency	Supply of Equipment				Local Transportation, Construction and Installation (excluding VAT) Baht			
					Foreign Supply		Local Supply		Unit Price	Amount	Unit Price	Amount
					CIF Thai Port		Ex-works Price (excluding VAT) Baht					
					Unit Price	Amount	Unit Price	Amount	Unit Price	Amount		
1AB33-2	Cost of Local Transportation, Construction and Installation for Item no. 1AB33-1	1	JOB		XXXXX	XXXXX	XXXXX	XXXXX	318,896.00	318,896.00		
	<p>IMPORTANT :</p> <p>1. The Bidders are required to propose their estimated quantities for such item together with their bid proposal for EGAT's consideration.</p> <p>2. Telecommunication Equipment supplied under Schedule 1AB33 shall conform to Specification No. SD-CCTV-P01, Drawing No. DW-COM-D01-007-ALL and DW-CAB-D01-019</p>											
Total Price for Schedule 1AB33								Baht	1,327,339.00	Baht	318,896.00	



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MEDIUM COST FOR BID NO. HSIS-S-01

1AB34 : 48 VDC Stationary Battery, Battery Charger and DC Power Panel

SUPPLY AND CONSTRUCTION OF 115 KV YALA 1 SUBSTATION (GIS)

HIGH VOLTAGE SUBSTATION IMPROVEMENT IN THE SOUTHERN AREA FOR TERRORISM AND FLOOD PROTECTION

Item No.	Description	Qty.	Unit	Currency	Supply of Equipment				Local Transportation, Construction and Installation (excluding VAT) Baht			
					Foreign Supply		Local Supply		Unit Price	Amount	Unit Price	Amount
					CIF Thai Port		Ex-works Price (excluding VAT) Baht					
					Unit Price	Amount	Unit Price	Amount	Unit Price	Amount		
1AB34-1	Vented Type Lead-Acid Station Battery 48Vdc. with capacity not less than 1000Ah (Tubular plate) at 10 Hour rated, 24 Cells, Nominal Voltage 2Volts/Cell, with Rack 1 set (115 kV GIS BUILDING at YL1)	1	SET					651,600.00	651,600.00	XXXXXX	XXXXXX	
1AB34-2	Conventional Type Charger 48VDC, 300A. (115 kV GIS BUILDING at YL1)	2	SET					400,000.00	800,000.00	XXXXXX	XXXXXX	
1AB34-3	48VDC. Load center Type1: 60 Breaker (115 kV GIS BUILDING at YL1)	1	SET					141,300.00	141,300.00	XXXXXX	XXXXXX	
1AB34-4	Local Transportation, Construction and Installation for item 1AB34-1, 1AB34-2 and 1AB34-3	1	JOB			XXXXXX	XXXXXX	XXXXXX	XXXXXX	108,500.00	108,500.00	
Total Price for Schedule 1AB34										Baht	Baht	
									1,592,900.00		108,500.00	



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MEDIUM COST FOR BID NO. HSIS-S-01

1AB35 : Communication Cable

SUPPLY AND CONSTRUCTION OF 115 KV YALA 1 SUBSTATION (GIS)

HIGH VOLTAGE SUBSTATION IMPROVEMENT IN THE SOUTHERN AREA FOR TERRORISM AND FLOOD PROTECTION

Item No.	Description	Qty.	Unit	Currency	Supply of Equipment				Local Transportation, Construction and Installation (excluding VAT)			
					Foreign Supply		Local Supply		Baht		Baht	
					CIF Thai Port		Ex-works Price (excluding VAT)					
					Unit Price	Amount	Unit Price	Amount	Unit Price	Amount	Unit Price	Amount
1AB35-1	Optical Fiber Cable from fiber frame termination cabinet at Yala 1 new control building to joint box at 115 kV Narathiwat take-off structure											
1AB35-1.1	Supply of optical fiber cable and accessories including: (a) 36-core non-metallic optical fiber cable (approx. 400 meters) (b) Rigid steel conduit from take-off structure to cable trench (lump sum) (c) EFLEX and/or HDPE conduit with hot-dip galvanized steel clamp (lump sum) (d) Rack cabinet and accessories (Yala 1 new control building - 1 set) (e) Fiber frame termination cabinet with cable tray (Yala 1 new control building - 1 set) (f) 36 Pigtails (1.5 meters) (Yala 1 new control building - 1 set) (g) 6-wire cleat for coiling optical fiber cable at take-off structure (4 sets) (h) 2-way joint box and accessories for optical fiber cable at take-off structure (1 set)	1	LOT					156,530.00	156,530.00	XXXXXX	XXXXXX	



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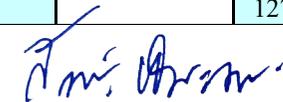
MEDIUM COST FOR BID NO. HSIS-S-01

1AB35 : Communication Cable

SUPPLY AND CONSTRUCTION OF 115 KV YALA 1 SUBSTATION (GIS)

HIGH VOLTAGE SUBSTATION IMPROVEMENT IN THE SOUTHERN AREA FOR TERRORISM AND FLOOD PROTECTION

Item No.	Description	Qty.	Unit	Currency	Supply of Equipment				Local Transportation, Construction and Installation (excluding VAT) Baht			
					Foreign Supply		Local Supply		Unit Price	Amount	Unit Price	Amount
					CIF Thai Port		Ex-works Price (excluding VAT) Baht					
					Unit Price	Amount	Unit Price	Amount	Unit Price	Amount		
1AB35-1.2	Local transportation, Construction and Installation for item 1AB35-1.1 (Including splicing work and field testing for optical fiber)	1	JOB		XXXXXX	XXXXXX	XXXXXX	XXXXXX	248,450.00	248,450.00		
1AB35-2	Optical Fiber Cable from fiber frame termination cabinet at Yala 1 new control building to joint box at 115 kV Yala 2 take-off structure											
1AB35-2.1	Supply of optical fiber cable and accessories including: (a) 36-core non-metallic optical fiber cable (approx. 400 meters) (b) Rigid steel conduit from take-off structure to cable trench (lump sum) (c) EFLEX and/or HDPE conduit with hot-dip galvanized steel clamp (lump sum) (d) Fiber frame termination cabinet with cable tray (Yala 1 new control building - 1 set) (e) 36 Pigtailes (1.5 meters) (Yala 1 new control building - 1 set) (f) 6-wire cleat for coiling optical fiber cable at take-off structure (4 sets) (g) 2-way joint box and accessories for optical fiber cable at take-off structure (1 set)	1	LOT				127,530.00	127,530.00	XXXXXX	XXXXXX		



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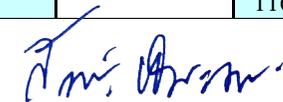
MEDIUM COST FOR BID NO. HSIS-S-01

1AB35 : Communication Cable

SUPPLY AND CONSTRUCTION OF 115 KV YALA 1 SUBSTATION (GIS)

HIGH VOLTAGE SUBSTATION IMPROVEMENT IN THE SOUTHERN AREA FOR TERRORISM AND FLOOD PROTECTION

Item No.	Description	Qty.	Unit	Currency	Supply of Equipment				Local Transportation, Construction and Installation (excluding VAT)			
					Foreign Supply		Local Supply		Baht		Baht	
					CIF Thai Port		Ex-works Price (excluding VAT)		Baht		Baht	
					Unit Price	Amount	Unit Price	Amount	Unit Price	Amount	Unit Price	Amount
1AB35-2.2	Local transportation, Construction and Installation for item 1AB35-2.1 (Including splicing work and field testing for optical fiber)	1	JOB		XXXXXX	XXXXXX	XXXXXX	XXXXXX	239,850.00	239,850.00		
1AB35-3	Optical Fiber Cable from fiber frame termination cabinet at Yala 1 new control building to joint box at 115 kV Pattani take-off structure											
1AB35-3.1	Supply of optical fiber cable and accessories including: (a) 36-core non-metallic optical fiber cable (approx.350 meters) (b) Rigid steel conduit from take-off structure to cable trench (lump sum) (c) EFLEX and/or HDPE conduit with hot-dip galvanized steel clamp (lump sum) (d) Fiber frame termination cabinet with cable tray (Yala 1 new control building - 1 set) (e) 36 Pigtails (1.5 meters) (Yala 1 new control building - 1 set) (f) 6-wire cleat for coiling optical fiber cable at take-off structure (4 sets) (g) 2-way joint box and accessories for optical fiber cable at take-off structure (1 set)	1	LOT				116,030.00	116,030.00	XXXXXX	XXXXXX		



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MEDIUM COST FOR BID NO. HSIS-S-01

1AB35 : Communication Cable

SUPPLY AND CONSTRUCTION OF 115 KV YALA 1 SUBSTATION (GIS)

HIGH VOLTAGE SUBSTATION IMPROVEMENT IN THE SOUTHERN AREA FOR TERRORISM AND FLOOD PROTECTION

Item No.	Description	Qty.	Unit	Currency	Supply of Equipment				Local Transportation, Construction and Installation (excluding VAT) Baht			
					Foreign Supply		Local Supply		Unit Price	Amount	Unit Price	Amount
					CIF Thai Port		Ex-works Price (excluding VAT) Baht					
					Unit Price	Amount	Unit Price	Amount				
1AB35-3.2	Local transportation, Construction and Installation for item 1AB35-3.1 (Including splicing work and field testing for optical fiber)	1	JOB		XXXXXX	XXXXXX	XXXXXX	XXXXXX	226,850.00	226,850.00		
1AB35-4	Temporary Optical Fiber Cable from fiber frame termination cabinet at Yala 1 new control building to fiber frame termination cabinet at Yala 1 existing control building											
1AB35-4.1	Supply of optical fiber cable and accessories including: (a) 36-core non-metallic optical fiber cable (approx. 250 meters) (b) EFLEX and/or HDPE conduit with hot-dip galvanized steel clamp (lump sum) (c) Fiber frame termination cabinet with cable tray (Yala 1 new control building - 1set, Yala 1 existing control building - 1set) (d) 36 pigtails (1.5 meter) (Yala 1 new control building - 1 set, Yala 1 existing control building - 1 set)	1	LOT				93,980.00	93,980.00	XXXXXX	XXXXXX		



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MEDIUM COST FOR BID NO. HSIS-S-01

1AB35 : Communication Cable

SUPPLY AND CONSTRUCTION OF 115 KV YALA 1 SUBSTATION (GIS)

HIGH VOLTAGE SUBSTATION IMPROVEMENT IN THE SOUTHERN AREA FOR TERRORISM AND FLOOD PROTECTION

Item No.	Description	Qty.	Unit	Currency	Supply of Equipment				Local Transportation, Construction and Installation (excluding VAT) Baht			
					Foreign Supply		Local Supply		Unit Price	Amount	Unit Price	Amount
					CIF Thai Port		Ex-works Price (excluding VAT) Baht					
					Unit Price	Amount	Unit Price	Amount	Unit Price	Amount		
1AB35-4.2	Local transportation, Construction and Installation for item 1AB35-4.1 (Including splicing work and field testing for optical fiber)	1	JOB		XXXXX	XXXXX	XXXXX	XXXXX	192,200.00	192,200.00		
	<p>IMPORTANT:</p> <p>1. Telecommunication Equipment supplied under Schedule AB35 shall conform to Telecommunication Equipment Specification: Single Sheath Non-metallic Optical Fiber Cable (SD-FOT-P22).</p> <p>2. The Bidder is required to later break down the unit price for sub-items of this Schedule for consideration.</p>											
Total Price for Schedule 1AB35								Baht	494,070.00	Baht	907,350.00	



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MEDIUM COST FOR BID NO. HSIS-S-01

1AB37 : Medium Voltage Switchgear

SUPPLY AND CONSTRUCTION OF 115 KV YALA 1 SUBSTATION (GIS)

HIGH VOLTAGE SUBSTATION IMPROVEMENT IN THE SOUTHERN AREA FOR TERRORISM AND FLOOD PROTECTION

Item No.	Description	Qty.	Unit	Currency	Supply of Equipment				Local Transportation, Construction and Installation (excluding VAT) Baht			
					Foreign Supply		Local Supply					
					CIF Thai Port		Ex-works Price (excluding VAT) Baht		Unit Price	Amount	Unit Price	Amount
					Unit Price	Amount	Unit Price	Amount				
1AB37-1	36 kV 1250 A 25 kA metal-clad Gas Insulated Switchgear as per Ratings and Features RF MS3527(IEC) , modular design, single row arrangement, indoor, free standing, complete with end covers, cable termination(socket and plug), dummy plugs for future feeder*, control protection and accessories (see Dwg. No. YL1-S-1-03/03) (Switchgear No.1)	1		THB	6,326,931.60	6,326,931.60			XXXXXX	XXXXXX		
1AB37-2	36 kV 1250 A 25 kA metal-clad Gas Insulated Switchgear as per Ratings and Features RF MS3527(IEC) , modular design, single row arrangement, indoor, free standing, complete with end covers, cable termination(socket and plug), dummy plugs for future feeders*, control protection and accessories (see Dwg. No. YL1-S-1-03/03) (Switchgear No.2)	1		THB	6,326,931.60	6,326,931.60			XXXXXX	XXXXXX		



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MEDIUM COST FOR BID NO. HSIS-S-01

1AB37 : Medium Voltage Switchgear

SUPPLY AND CONSTRUCTION OF 115 KV YALA 1 SUBSTATION (GIS)

HIGH VOLTAGE SUBSTATION IMPROVEMENT IN THE SOUTHERN AREA FOR TERRORISM AND FLOOD PROTECTION

Item No.	Description	Qty.	Unit	Currency	Supply of Equipment				Local Transportation, Construction and Installation (excluding VAT) Baht			
					Foreign Supply		Local Supply		Ex-works Price (excluding VAT) Baht			
					CIF Thai Port							
					Unit Price	Amount	Unit Price	Amount	Unit Price	Amount		
1AB37-3	Accessories and special tools necessary for medium voltage switchgear (if any)	1	lot	THB	83,454.80	83,454.80			XXXXXX	XXXXXX		
1AB37-4	Cost of Local Transportation, Construction and Installation for Item No. 1AB37-1 thru 1AB37-3											
		lump sum	lump sum		XXXXXX	XXXXXX	XXXXXX	XXXXXX	5,731,793.10	5,731,793.10		
				THB	12,737,318.00		Baht		Baht			
Total Price for Schedule 1AB37									5,731,793.10			

* shall be able to withstand rated insulation level of the metal-clad Gas Insulated Switchgear



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MEDIUM COST FOR BID NO. HSIS-S-01

1AB40 : Installation of Equipment and Steel Structure Supplied by EGAT

SUPPLY AND CONSTRUCTION OF 115 KV YALA 1 SUBSTATION (GIS)

HIGH VOLTAGE SUBSTATION IMPROVEMENT IN THE SOUTHERN AREA FOR TERRORISM AND FLOOD PROTECTION

Item No.	Description	Qty.	Unit	Currency	Supply of Equipment				Local Transportation, Construction and Installation (excluding VAT) Baht			
					Foreign Supply		Local Supply		Ex-works Price (excluding VAT) Baht			
					CIF Thai Port							
					Unit Price	Amount	Unit Price	Amount	Unit Price	Amount		
1AB40-1	Dismantlement	Lump sum	Lump sum		XXXXXX	XXXXXX	XXXXXX	XXXXXX	3,936,780.00	3,936,780.00		
							Baht		Baht			
Total Price for Schedule 1AB40									3,936,780.00			



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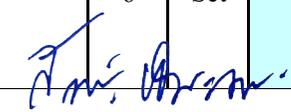
MEDIUM COST FOR BID NO. Hsis-S-01

1C1 : Foundation Work

SUPPLY AND CONSTRUCTION OF 115 KV YALA 1 SUBSTATION (GIS)

HIGH VOLTAGE SUBSTATION IMPROVEMENT IN THE SOUTHERN AREA FOR TERRORISM AND FLOOD PROTECTION

Item No.	Description	Drawing No. / Reference No.	Qty.	Unit	Local Currency (excluding VAT) Baht	
					Unit Price	Amount
1C1-1	115 kV Take off Structure Foundation (TS702) Pile Type	FD-TS-7-07	9	Set	234,205.00	2,107,845.00
1C1-2	115kV Cable riser support structure foundation(TA701)	Designed by Contractor FD-TM-7-05 See Dwg no. YL1-C-3	11	Set	66,605.00	732,655.00
1C1-3	115/230 kV General equipment support structure foundation (BP701,BP801,CC704,CT702,CT802,VT703,VT803,LA401,LA402,LA701,LA801,LA802) Short Pile Type (LA701 only)	FD-GE-0-02	18	Set	35,223.00	634,014.00
1C1-4	115 kV Circuit breaker foundation (CB713) Pile , Bored pile Type	Designed by Contractor FD-CB-7-30 See Dwg no. YL1-C-3	1	Set	26,702.00	26,702.00
1C1-5	115 kV Circuit breaker foundation (CB713) Pile , Bored pile Type(CB)	Designed by Contractor FD-CB-7-30 See Dwg no. YL1-C-3	1	Set	13,236.00	13,236.00
1C1-6	115/230 kV General equipment support structure foundation (BP701,BP801,CC704,CT702,CT802,VT703,VT803,LA401,LA402,LA701,LA801,LA802) Short Pile Type(CT only)	Designed by Contractor FD-GE-0-02 See Dwg no. YL1-C-3	6	Set	21,758.00	130,548.00



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MEDIUM COST FOR BID NO. Hsis-S-01

1C1 : Foundation Work

SUPPLY AND CONSTRUCTION OF 115 KV YALA 1 SUBSTATION (GIS)

HIGH VOLTAGE SUBSTATION IMPROVEMENT IN THE SOUTHERN AREA FOR TERRORISM AND FLOOD PROTECTION

Item No.	Description	Drawing No. / Reference No.	Qty.	Unit	Local Currency (excluding VAT) Baht	
					Unit Price	Amount
1C1-7	115 kV Disconnecting Switch Support foundation (DS704) Pile Type	FD-DS-7-08	1	Set	65,024.00	65,024.00
1C1-8	115 kV Disconnecting Switch Support foundation (DS704) Pile Type	Designed by Contractor FD-DS-7-08 See Dwg no. YL1-C-3 01/03	1	Set	65,024.00	65,024.00
1C1-9	115 kV Disconnecting Switch Support foundation (DS704) Pile Type (DS)	Designed by Contractor FD-DS-7-08 See Dwg no. YL1-C-3 01/03	1	Set	65,024.00	65,024.00
1C1-10	115/230 kV General equipment support structure foundation (BP701,BP801,CC704,CT702,CT802,VT703,VT803,LA401,LA402,LA701,LA801,LA802) Short Pile Type(BP701 only)	FD-GE-0-02	12	Set	14,119.00	169,428.00
1C1-11	22 kV Bus support structure foundation (BS201,BS202,BS203,BS204) Pile Type(BS202 only)	FD-BS-2-02	5	Set	45,569.00	227,845.00
1C1-12	22 kV Bus support structure foundation (BS201,BS202,BS203,BS204) Pile Type(BS204 only)	FD-BS-2-02	2	Set	45,569.00	91,138.00
1C1-13	Disconnecting Switch Operating Platform foundation (OP002)	FD-OP-0-02	8	Set	3,221.00	25,768.00
1C1-14	Transformer Foundation (T-125) Long Pile Type	FD-TX-7-02	2	Set	197,761.00	395,522.00
1C1-15	Outdoor marshalling Cubicle foundation and Sub-Trench (MC002) Pad Type	FD-MC-0-06	2	Set	11,996.00	23,992.00

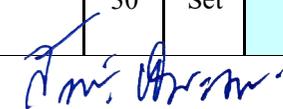
MEDIUM COST FOR BID NO. HSIS-S-01

1C1 : Foundation Work

SUPPLY AND CONSTRUCTION OF 115 KV YALA 1 SUBSTATION (GIS)

HIGH VOLTAGE SUBSTATION IMPROVEMENT IN THE SOUTHERN AREA FOR TERRORISM AND FLOOD PROTECTION

Item No.	Description	Drawing No. / Reference No.	Qty.	Unit	Local Currency (excluding VAT) Baht	
					Unit Price	Amount
1C1-16	RC. Slab for Skid Base 115 kV ,39.6 MVAR (SK719-S,SK719-L)	FD-SK-7-16	1	Set	157,608.00	157,608.00
1C1-17	RC. Slab for Skid Base 115 kV ,39.6 MVAR (SK719-S,SK719-L)	Designed by Contractor FD-SK-7-16 See Dwg no. YL1-C-3 01/03	1	Set	157,608.00	157,608.00
1C1-18	36kV 3.6MVAR Capacitor bank skid base foundation(SC1)	Designed by Contractor FD-SC-3-01 See Dwg no. YL1-C-3 01/03	2	Set	25,984.00	51,968.00
1C1-19	Concrete pole strain bus structure(CP18)	CP-SB-4-01	7	Set	66,600.00	466,200.00
1C1-20	Neutral grounding resister support structure foundation (NGR)	FD-NGR-7-01	2	Set	28,783.00	57,566.00
1C1-21	Lighting Relay Panel foundation (RP002) Pad Type	FD-RP-0-03	1	Set	7,804.00	7,804.00
1C1-22	Junction Box Structure foundation (JB003) Pad Type	FD-JB-0-05	3	Set	8,293.00	24,879.00
1C1-23	Lamp post for fence and access road lighting foudation (LP3) (LED type) Pad Type & Pile Type	FD-LP-0-05	30	Set	31,272.00	938,160.00



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MEDIUM COST FOR BID NO. HSIS-S-01

1C1 : Foundation Work

SUPPLY AND CONSTRUCTION OF 115 KV YALA 1 SUBSTATION (GIS)

HIGH VOLTAGE SUBSTATION IMPROVEMENT IN THE SOUTHERN AREA FOR TERRORISM AND FLOOD PROTECTION

Item No.	Description	Drawing No. / Reference No.	Qty.	Unit	Local Currency (excluding VAT) Baht	
					Unit Price	Amount
1C1-24	Isolating Transformer Foundation (IST) Pile Type	Designed by Contractor FD-TX-0-02 See Dwg no. YL1-C-3 01/03	1	Set	107,831.00	107,831.00
1C1-25	Fire Wall 8.00m Height (FW) Pile Type	FD-FW-0-02	1	Set	719,245.00	719,245.00
1C1-26	Driven Pile (Driven Pile, Dowel bar are included and pile shoe if require)	SD-PL-0-01	Lump sum	Lump sum	3,720,308.00	3,720,308.00
1C1-27	115 kV Take off structure foundation (TOS2) Pad type (Existing to be removed)(TOS2-1) (Existing to be removed)	Unidentified	3	Set	9,603.00	28,809.00
1C1-28	115 kV Take off structure foundation (TOS2) Pad type (Existing to be removed)(Existing to be removed)	TP-328.1	3	Set	9,603.00	28,809.00
1C1-29	Transformer Foundation(TS2-2) (Existing to be removed)	Unidentified	2	Set	10,563.00	21,126.00
1C1-30	115 kV Disconnecting Switch Support foundation (S2-C) Pad Type (S2-2) (Existing to be removed)	TP-321	6	Set	961.00	5,766.00
1C1-31	115 kV Bus pole support structure foundation (BP2-4) Pad Type(BP2-2) (Existing to be removed)	TP330.1	47	Set	404.00	18,988.00

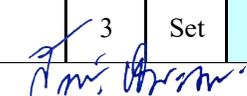
MEDIUM COST FOR BID NO. HSIS-S-01

1C1 : Foundation Work

SUPPLY AND CONSTRUCTION OF 115 KV YALA 1 SUBSTATION (GIS)

HIGH VOLTAGE SUBSTATION IMPROVEMENT IN THE SOUTHERN AREA FOR TERRORISM AND FLOOD PROTECTION

Item No.	Description	Drawing No. / Reference No.	Qty.	Unit	Local Currency (excluding VAT) Baht	
					Unit Price	Amount
1C1-32	115 kV Bus pole support structure foundation (BP2-4) Pad Type(BP2-3) (Existing to be removed)	TP-330.1	1	Set	404.00	404.00
1C1-33	Power fuse structure foundation(Existing to be removed)	Unidentified	4	Set	961.00	3,844.00
1C1-34	Metering structure foundation (MS3) Pad type (Existing to be removed)(MS2) (Existing to be removed)	Unidentified	3	Set	481.00	1,443.00
1C1-35	Disconnecting Switch Operating Platform foundation (OP2) Pad Type(Existing to be removed)	TP-322, TP-360	21	Set	20.00	420.00
1C1-36	Lamp post foundation (Existing to be removed)	Unidentified	3	Set	586.00	1,758.00
1C1-37	Transformer Foundation(T-100) (Existing to be removed)	TP-328.1	2	Set	10,563.00	21,126.00
1C1-38	115kV lighting arrester support structure foundation, LA2-1 (Existing to be removed)(LA2)	Unidentified	2	Set	1,057.00	2,114.00
1C1-39	69/230 kV Overhead groundwire structure foundation(OS3) (Existing to be removed)	Unidentified	2	Set	12,426.00	24,852.00
1C1-40	115 kV Circuit breaker foundation (GCB701) Pad Type(GCB) (Existing to be removed)	TP-344	2	Set	4,514.00	9,028.00
1C1-41	115 kV Circuit breaker foundation (CB701) Pad Type(CB) (Existing to be removed)	TP-345	3	Set	4,514.00	13,542.00



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1C1 : Foundation Work

SUPPLY AND CONSTRUCTION OF 115 KV YALA 1 SUBSTATION (GIS)

HIGH VOLTAGE SUBSTATION IMPROVEMENT IN THE SOUTHERN AREA FOR TERRORISM AND FLOOD PROTECTION

Item No.	Description	Drawing No. / Reference No.	Qty.	Unit	Local Currency (excluding VAT) Baht	
					Unit Price	Amount
1C1-42	115 kV Current Transformer foundation (CT701) Pad Type (CT) (Existing to be removed)	Unidentified	13	Set	1,057.00	13,741.00
1C1-43	115kV PT structure foundation, VT701 (Existing to be removed)(ES) (Existing to be removed)	Unidentified	10	Set	961.00	9,610.00
1C1-44	115kV Switch structure foundation(S2-1,S2-2) (Existing to be removed)	Unidentified	24	Set	1,057.00	25,368.00
1C1-45	115 kV Bus pole support structure foundation (BP2-4) Pad Type(BP2) (Existing to be removed)	Unidentified	1	Set	961.00	961.00
1C1-46	Instrument transformer support structure foundation (ES1)(ES1,ES2) (Existing to be removed)	TP-323	7	Set	1,057.00	7,399.00
1C1-47	115 kV Take off Structure Foundation (TS701) Pad Type(Existing to be removed)	FD-TS-7-01	6	Set	9,603.00	57,618.00
1C1-48	115 kV Bus pole support structure foundation (BP 701) Pad Type(Existing to be removed)	FD-BP-7-01	12	Set	961.00	11,532.00
1C1-49	Disconnecting switch operating platform foundation (OP001) (Existing to be removed)	FD-OP-0-01	11	Set	20.00	220.00
1C1-50	115 kV Circuit breaker foundation (CB701) Pad Type(Existing to be removed)	FD-CB-7-01	5	Set	4,514.00	22,570.00
1C1-51	115 kV Disconnecting Switch Support foundation (DS701) Pad Type (Existing to be removed)	FD-DS-7-01	4	Set	961.00	3,844.00
1C1-52	115 kV Current Transformer foundation (CT701) Pad Type (Existing to be removed)	FD-CT-7-01	3	Set	1,057.00	3,171.00
1C1-53	115 kV CCVT.Support Structure Foundation (VT701) Pad Type(Existing to be removed)	FD-VT-7-01	3	Set	653.00	1,959.00



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MEDIUM COST FOR BID NO. HSIS-S-01

1C1 : Foundation Work

SUPPLY AND CONSTRUCTION OF 115 KV YALA 1 SUBSTATION (GIS)

HIGH VOLTAGE SUBSTATION IMPROVEMENT IN THE SOUTHERN AREA FOR TERRORISM AND FLOOD PROTECTION

Item No.	Description	Drawing No. / Reference No.	Qty.	Unit	Local Currency (excluding VAT) Baht	
					Unit Price	Amount
1C1-54	33 kV 3150 Kvar Shunt Capacitor-Bank foundation (SC301) Pad Type (BP201) (Existing to be removed)	FD-SC-3-01	2	Set	481.00	962.00
1C1-55	22 kV Bus pole structure foundation (BP 201, BP202, BP203) Pad Type(Existing to be removed)	FD-BP-2-01	3	Set	865.00	2,595.00
1C1-56	RC. Support for Skid Base 115 kV , 24 MVAR(SK701) (Existing to be removed)	FD-SK-7-01	2	Set	3,169.00	6,338.00
1C1-57	RC. Support for Skid Base 115 kV , 24 MVAR(SK702) (Existing to be removed)	FD-SK-7-01	1	Set	3,169.00	3,169.00
1C1-58	RC. Support for Skid Base 115 kV , 24 MVAR(SK703) (Existing to be removed)	FD-SK-7-01	1	Set	3,169.00	3,169.00
1C1-59	Wood pole(Existing to be removed)	Unidentified	1	Set	154.00	154.00
1C1-60	22&33 kV Metering Structure foundation (MS401),(MS405) Pad Type(Existing to be removed)	FD-MS-4-01	1	Set	481.00	481.00
1C1-61	22&33 kV Metering Structure foundation (MS403,MS406,MS407) Pad Type(Existing to be removed)	FD-MS-4-05	1	Set	529.00	529.00
1C1-62	Transformer Foundation (T-125) Pad Type(Existing to be removed)	FD-TX-7-01	1	Set	1,498.00	1,498.00
1C1-63	33 kV Circuit breaker foundation (CB301) Pile Type(Existing to be removed)	Unidentified	2	Set	1,201.00	2,402.00
1C1-64	115 kV Disconnecting Switch Support foundation (DS701) Pad Type (GDS701) (Existing to be removed)	FD-DS-7-01	3	Set	961.00	2,883.00
1C1-65	115 kV Current Transformer foundation (CT701) Pad Type (GCT701) (Existing to be removed)	FD-CT-7-01	3	Set	1,057.00	3,171.00

MEDIUM COST FOR BID NO. HSIS-S-01

1C1 : Foundation Work

SUPPLY AND CONSTRUCTION OF 115 KV YALA 1 SUBSTATION (GIS)

HIGH VOLTAGE SUBSTATION IMPROVEMENT IN THE SOUTHERN AREA FOR TERRORISM AND FLOOD PROTECTION

Item No.	Description	Drawing No. / Reference No.	Qty.	Unit	Local Currency (excluding VAT) Baht	
					Unit Price	Amount
1C1-66	115 kV Disconnecting Switch Support foundation (DS704) Pad Type (Existing to be removed)	FD-DS-7-07	3	Set	1,105.00	3,315.00
1C1-67	115 kV Ground Switch Support foundation (GS701) Pad Type(Existing to be removed)	FD-GS-7-01	2	Set	481.00	962.00
1C1-68	115 kV Coupling Capacitor Voltage Transformer Foundation (VT703)Pad Type(Existing to be removed)	FD-VT-7-05	3	Set	1,057.00	3,171.00
1C1-69	115 kV Circuit breaker foundation (CBT701) pad type(Existing to be removed)	FD-CB-7-36	1	Set	1,201.00	1,201.00
1C1-70	115 kV Current Transformer foundation (CT701) Pad Type (CT702) (Existing to be removed)	FD-GE-0-01	3	Set	961.00	2,883.00
1C1-71	Disconnecting Switch Operating Platform foundation (OP002) (Existing to be removed)	FD-OP-0-02	1	Set	20.00	20.00
1C1-72	RC. Slab for Skid Base 115 kV ,39.6 MVAR (SK719-S,SK719-L)(Existing to be removed)	FD-SK-7-16	1	Set	1,921.00	1,921.00
1C1-73	Concrete pole strain bus structure(CP18) (Existing to be removed)	CP-SB-4-01	3	Set	154.00	462.00
Total Price for Schedule 1C1					Baht	11,564,250.00



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MEDIUM COST FOR BID NO. HSIS-S-01

1C2 : Cable Trench

SUPPLY AND CONSTRUCTION OF 115 KV YALA 1 SUBSTATION (GIS)

HIGH VOLTAGE SUBSTATION IMPROVEMENT IN THE SOUTHERN AREA FOR TERRORISM AND FLOOD PROTECTION

Item No.	Description	Drawing No. / Reference No.	Qty.	Unit	Local Currency (excluding VAT) Baht	
					Unit Price	Amount
1C2-1	Standard cable trench, steel cover included (Type"A")	SD-CE-0-02	Lump sum	Lump sum	2,668,815.00	2,668,815.00
1C2-2	Standard cable trench, steel cover included (Type"B")	SD-CE-0-02	Lump sum	Lump sum	592,662.00	592,662.00
1C2-3	Cable trench type "A" including RC cover for XLPE system	Designed by Contractor	Lump sum	Lump sum	10,076,430.00	10,076,430.00
1C2-4	Cable trench type "B" including RC cover for XLPE system	Designed by Contractor	Lump sum	Lump sum	836,800.00	836,800.00
1C2-5	Cable trench type "A" including steel cover for XLPE system	Designed by Contractor	Lump sum	Lump sum	12,132,474.00	12,132,474.00
1C2-6	Cable trench type "B" including steel cover for XLPE system	Designed by Contractor	Lump sum	Lump sum	2,733,910.00	2,733,910.00



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- Project 1-1C51 -

ผู้อำนวยการฝ่ายวิศวกรรมระบบส่ง

filename : HSIS-S-01-1 (115 kV Yala 1)

27 Aug 2025

MEDIUM COST FOR BID NO. HSIS-S-01

1C2 : Cable Trench

SUPPLY AND CONSTRUCTION OF 115 KV YALA 1 SUBSTATION (GIS)

HIGH VOLTAGE SUBSTATION IMPROVEMENT IN THE SOUTHERN AREA FOR TERRORISM AND FLOOD PROTECTION

Item No.	Description	Drawing No. / Reference No.	Qty.	Unit	Local Currency (excluding VAT) Baht	
					Unit Price	Amount
1C2-7	Standard cable trench, steel cover included (Type"A") (Existing to be removed)	SD-CE-0-02	Lump sum	Lump sum	1,342,224.10	1,342,224.10
1C2-8	Standard cable trench, steel cover included (Type"B") (Existing to be removed)	SD-CE-0-02	Lump sum	Lump sum	127,146.00	127,146.00
Total Price for Schedule 1C2					Baht	30,510,461.10



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ผู้อำนวยการฝ่ายวิศวกรรมระบบส่ง

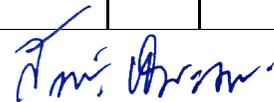
MEDIUM COST FOR BID NO. HSIS-S-01

1C3 : Building

SUPPLY AND CONSTRUCTION OF 115 KV YALA 1 SUBSTATION (GIS)

HIGH VOLTAGE SUBSTATION IMPROVEMENT IN THE SOUTHERN AREA FOR TERRORISM AND FLOOD PROTECTION

Item No.	Description	Drawing No. / Reference No.	Qty.	Unit	Local Currency (excluding VAT) Baht	
					Unit Price	Amount
1C3-1	115kV GIS and Control Building	Designed by contractor See Scope of work YL1-GIS-7-01A	Lump sum	Lump sum	50,762,380.38	50,762,380.38
1C3-1.1	Air conditioning system and Ventilation system					
1C3-1.1.1	Minimum 24,000 BTU split-type air conditioner, including installation fee (Not Higher than the price specified by the Bureau of the Budget www.bb.go.th)		1	set	30,093.46	30,093.46
1C3-1.1.2	Minimum 36,000 BTU split-type air conditioner, including installation fee (Not Higher than the price specified by the Bureau of the Budget www.bb.go.th)		1	set	42,523.36	42,523.36
1C3-1.1.3	Minimum 40,000 BTU split-type air conditioner (Invertor), including installation fee (Not Higher than the price specified by the Bureau of the Budget www.bb.go.th)		1	set	54,672.90	54,672.90



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- Project 1-1C53 - ผู้อำนวยการฝ่ายวิศวกรรมระบบส่ง filename : HSIS-S-01-1 (115 kV Yala 1)

27 Aug 2025

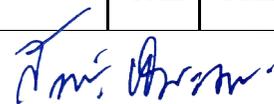
MEDIUM COST FOR BID NO. HSIS-S-01

1C3 : Building

SUPPLY AND CONSTRUCTION OF 115 KV YALA 1 SUBSTATION (GIS)

HIGH VOLTAGE SUBSTATION IMPROVEMENT IN THE SOUTHERN AREA FOR TERRORISM AND FLOOD PROTECTION

Item No.	Description	Drawing No. / Reference No.	Qty.	Unit	Local Currency (excluding VAT) Baht	
					Unit Price	Amount
1C3-1.1.4	Minimum 48,000 BTU split-type air conditioner (Invertor), including installation fee (Not Higher than the price specified by the Bureau of the Budget www.bb.go.th)		10	set	56,915.89	569,158.90
1C3-1.1.5	Minimum 60,000 BTU split-type air conditioner (Invertor), including installation fee (Not Higher than the price specified by the Bureau of the Budget www.bb.go.th)		2	set	67,442.62	134,885.24
1C3-1.1.6	Extra work for air conditioning system		Lump sum	Lump sum	Included in 1C3-1	Included in 1C3-1
1C3-1.1.7	Ventilation system		Lump sum	Lump sum	Included in 1C3-1	Included in 1C3-1
1C3-1.2	Solar rooftop system		Lump sum	Lump sum	2,520,000.00	2,520,000.00



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- Project 1-1C54 - ผู้อำนวยการฝ่ายวิศวกรรมระบบส่ง filename : HSIS-S-01-1 (115 kV Yala 1)

27 Aug 2025

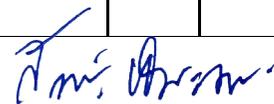
MEDIUM COST FOR BID NO. HSIS-S-01

1C3 : Building

SUPPLY AND CONSTRUCTION OF 115 KV YALA 1 SUBSTATION (GIS)

HIGH VOLTAGE SUBSTATION IMPROVEMENT IN THE SOUTHERN AREA FOR TERRORISM AND FLOOD PROTECTION

Item No.	Description	Drawing No. / Reference No.	Qty.	Unit	Local Currency (excluding VAT) Baht	
					Unit Price	Amount
1C3-2	22/33kV Switchgear Building	SD-SWG-3-01A 01/13-13/13 SD-SWG-3-01C 01/11-11/11 SD-SWG-3-01FP 01/01 SD-SWG-3-01L 01/02-02/02 SD-SWG-3-01M 01/01 SD-SWG-3-01ME 01/01 SD-SWG-3-01SN 01/02-02/02 See Dwg.No.YL1-C-1 See Scope of work	Lump sum	Lump sum	4,870,663.32	4,870,663.32
1C3-2.1	Air conditioning system and Ventilation system					
1C3-2.1.1	Minimum 48,000 BTU split-type air conditioner (Invertor), including installation fee (Not Higher than the price specified by the Bureau of the Budget www.bb.go.th)		4	set	56,915.89	227,663.56



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MEDIUM COST FOR BID NO. HSIS-S-01

1C3 : Building

SUPPLY AND CONSTRUCTION OF 115 KV YALA 1 SUBSTATION (GIS)

HIGH VOLTAGE SUBSTATION IMPROVEMENT IN THE SOUTHERN AREA FOR TERRORISM AND FLOOD PROTECTION

Item No.	Description	Drawing No. / Reference No.	Qty.	Unit	Local Currency (excluding VAT) Baht	
					Unit Price	Amount
1C3-2.1.2	Extra work for air conditioning system		Lump sum	Lump sum	Included in 1C3-2	Included in 1C3-2
1C3-2.1.3	Ventilation system		Lump sum	Lump sum	Included in 1C3-2	Included in 1C3-2
1C3-3	Control Building(Existing to be removed)		1	set	226,800.00	226,800.00
Total Price for Schedule 1C3					Baht 59,438,841.12	



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- Project 1-1C56 - ผู้อำนวยการฝ่ายวิศวกรรมระบบส่ง filename : HSIS-S-01-1 (115 kV Yala 1)

27 Aug 2025

MEDIUM COST FOR BID NO. HSIS-S-01
1C4 : Earth Work, Road and Crushed Rock Surfacing
SUPPLY AND CONSTRUCTION OF 115 KV YALA 1 SUBSTATION (GIS)
HIGH VOLTAGE SUBSTATION IMPROVEMENT IN THE SOUTHERN AREA FOR TERRORISM AND FLOOD PROTECTION

Item No.	Description	Drawing No. / Reference No.	Qty.	Unit	Local Currency (excluding VAT) Baht	
					Unit Price	Amount
1C4-1	RC.Road type " E " section 4 - 4	SD-RD-0-01	Lump sum	Lump sum	3,056,980.00	3,056,980.00
1C4-2	RC.Road type " E " section 4 - 4 (Existing to be removed)	SD-RD-0-01	Lump sum	Lump sum	541,233.00	541,233.00
1C4-3	Crushed rock surfacing 0.10 m thickness	-	Lump sum	Lump sum	127,380.00	127,380.00
1C4-4	Crushed rock surfacing 0.10 m thickness(relocated from existing)	-	Lump sum	Lump sum	332,024.00	332,024.00
Total Price for Schedule 1C4					Baht	4,057,617.00



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- Project 1-1C57 -

ผู้อำนวยการฝ่ายวิศวกรรมระบบส่ง

filename : HSIS-S-01-1 (115 kV Yala 1)

27 Aug 2025

MEDIUM COST FOR BID NO. HSIS-S-01

1C5 : Water Supply System

SUPPLY AND CONSTRUCTION OF 115 KV YALA 1 SUBSTATION (GIS)

HIGH VOLTAGE SUBSTATION IMPROVEMENT IN THE SOUTHERN AREA FOR TERRORISM AND FLOOD PROTECTION

Item No.	Description	Drawing No. / Reference No.	Qty.	Unit	Local Currency (excluding VAT) Baht	
					Unit Price	Amount
1C5-1	Water supply system	Designed by Contractor See Scope of work See Dwg.YL1-C-9	Lump sum	Lump sum	291,820.00	291,820.00
1C5-2	15 cu.m Water tank tower Pile type	WD-WT-0-02	1	set	884,628.00	884,628.00
1C5-3	50 cu.m Underground water tank (Pile type)	WD-UT-0-01	1	set	842,348.00	842,348.00
1C5-4	Deep well with water treatment system	Designed by Contractor	1	set	735,745.00	735,745.00
1C5-5	Water treatment system house	Designed by Contractor	1	set	128,032.00	128,032.00
Total Price for Schedule 1C5					Baht	2,882,573.00



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- Project 1-1C58 -

filename : HSIS-S-01-1 (115 kV Yala 1)

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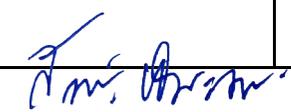
MEDIUM COST FOR BID NO. HSIS-S-01

1C6 : Drainage System

SUPPLY AND CONSTRUCTION OF 115 KV YALA 1 SUBSTATION (GIS)

HIGH VOLTAGE SUBSTATION IMPROVEMENT IN THE SOUTHERN AREA FOR TERRORISM AND FLOOD PROTECTION

Item No.	Description	Drawing No. / Reference No.	Qty.	Unit	Local Currency (excluding VAT) Baht	
					Unit Price	Amount
1C6-1	Drainage System	Designed by Contractor See Scope of work See Dwg. YL1-C-6	Lump sum	Lump sum	4,792,498.00	4,792,498.00
1C6-2	Dia. 0.15m PVC. Pipe (Class 8.5)	-	Lump sum	Lump sum	16,269.00	16,269.00
1C6-3	Oil separator (Including piles)	SD-OS-0-02	1	set	1,791,704.00	1,791,704.00
1C6-4	Oil pit with steel grating	WD-DN-0-01	Lump sum	Lump sum	939,329.60	939,329.60
1C6-5	Dia. 0.50 m Black steel pipe (Seam) TIS 427-2531	WD-DN-0-04	Lump sum	Lump sum	682,266.00	682,266.00
1C6-6	Drainage System(Existing to be removed)	SD-RD-0-01	Lump sum	Lump sum	47,124.00	47,124.00
Total Price for Schedule 1C6					Baht 8,269,190.60	



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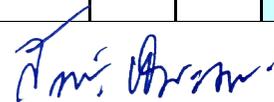
MEDIUM COST FOR BID NO. HSIS-S-01

1C7 : Special Construction Works

SUPPLY AND CONSTRUCTION OF 115 KV YALA 1 SUBSTATION (GIS)

HIGH VOLTAGE SUBSTATION IMPROVEMENT IN THE SOUTHERN AREA FOR TERRORISM AND FLOOD PROTECTION

Item No.	Description	Drawing No. / Reference No.	Qty.	Unit	Local Currency (excluding VAT) Baht	
					Unit Price	Amount
1C7-1	64 sq.m Site office	See Scope of work	1	set	861,333.00	861,333.00
1C7-2	Test and commissioning for fire protection system in switchyard		Lump sum	Lump sum	97,558.00	97,558.00
1C7-3	Test and commissioning for fire pump system		Lump sum	Lump sum	75,841.00	75,841.00
1C7-4	Test and commissioning for inert gas system (Test in Electrical room)		Lump sum	Lump sum	78,731.00	78,731.00
1C7-5	Fire Protection design work		Lump sum	Lump sum	383,657.25	383,657.25
1C7-6	Dynamic Pile load test		Lump sum	Lump sum	199,800.00	199,800.00
1C7-7	Static pile load test		1	set	120,000.00	120,000.00



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- Project 1-1C60 -

ผู้อำนวยการฝ่ายวิศวกรรมระบบส่ง

filename : HSIS-S-01-1 (115 kV Yala 1)

27 Aug 2025

MEDIUM COST FOR BID NO. HSIS-S-01

1C7 : Special Construction Works

SUPPLY AND CONSTRUCTION OF 115 KV YALA 1 SUBSTATION (GIS)

HIGH VOLTAGE SUBSTATION IMPROVEMENT IN THE SOUTHERN AREA FOR TERRORISM AND FLOOD PROTECTION

Item No.	Description	Drawing No. / Reference No.	Qty.	Unit	Local Currency (excluding VAT) Baht	
					Unit Price	Amount
1C7-8	Plate bearing test		1	set	20,000.00	20,000.00
1C7-9	Architectural and Civil engineering design work		Lump sum	Lump sum	4,311,098.32	4,311,098.32
Total Price for Schedule 1C7					Baht	6,148,018.57



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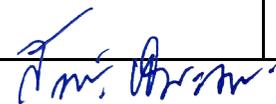
MEDIUM COST FOR BID NO. HSIS-S-01

1C8 : Miscellaneous

SUPPLY AND CONSTRUCTION OF 115 KV YALA 1 SUBSTATION (GIS)

HIGH VOLTAGE SUBSTATION IMPROVEMENT IN THE SOUTHERN AREA FOR TERRORISM AND FLOOD PROTECTION

Item No.	Description	Drawing No. / Reference No.	Qty.	Unit	Local Currency (excluding VAT) Baht	
					Unit Price	Amount
1C8-1	Switch yard entrance gate (Sliding gate)	SD-SG-0-02	2	set	372,391.00	744,782.00
1C8-2	Wire mesh fence and gate (Pile type)	SD-CF-0-01	Lump sum	Lump sum	3,619,008.00	3,619,008.00
1C8-3	Wire mesh fence (existing to be removed)	SD-CF-0-01	Lump sum	Lump sum	366,523.00	366,523.00
1C8-4	Guard rail	SD-GR-0-01	Lump sum	Lump sum	315,321.60	315,321.60
1C8-5	Wire mesh fence 1.50 m high(Pad type)	SD-CF-0-03	Lump sum	Lump sum	104,559.00	104,559.00
1C8-6	Wire mesh fence 1.50 m high(Pad type) (existing to be relocate)	SD-CF-0-03	Lump sum	Lump sum	8,190.00	8,190.00
Total Price for Schedule 1C8					Baht	5,158,383.60



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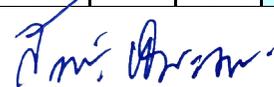
MEDIUM COST FOR BID NO. HSIS-S-01

1C9 : Fire Protection System

SUPPLY AND CONSTRUCTION OF 115 KV YALA 1 SUBSTATION (GIS)

HIGH VOLTAGE SUBSTATION IMPROVEMENT IN THE SOUTHERN AREA FOR TERRORISM AND FLOOD PROTECTION

Item No.	Description	Drawing No. / Reference No.	Qty.	Unit	Local Currency (excluding VAT) Baht	
					Unit Price	Amount
1C9-1	Fire Protection System (Inert gas and detector for 115 kV GIS and Control Building)	Designed by Contractor	Lump sum	Lump sum	5,327,600.00	5,327,600.00
1C9-2	Fire Protection System for 22/33 kV Switchgear Building	Designed by Contractor	Lump sum	Lump sum	1,733,700.00	1,733,700.00
1C9-3	Sound Proof system for fire pump house	Designed by Contractor	1	set	2,486,782.00	2,486,782.00
1C9-4	Fire pump house	SD-FPH-8-01	1	set	1,768,440.00	1,768,440.00
1C9-5	Water storage tank min. capacity 250 cu.m	WD-UT-0-05	1	set	2,361,639.00	2,361,639.00
1C9-6	Wheel fire extinguisher (2*50 lbs) with cabinet	HS-WR-0-04	1	set	328,082.00	328,082.00
1C9-7	Fire pump system	Designed by Contractor	Lump sum	Lump sum	4,757,007.00	4,757,007.00



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- Project 1-1C63 -

ผู้อำนวยการฝ่ายวิศวกรรมระบบส่ง

filename : HSIS-S-01-1 (115 kV Yala 1)

27 Aug 2025

MEDIUM COST FOR BID NO. HSIS-S-01

1C9 : Fire Protection System

SUPPLY AND CONSTRUCTION OF 115 KV YALA 1 SUBSTATION (GIS)

HIGH VOLTAGE SUBSTATION IMPROVEMENT IN THE SOUTHERN AREA FOR TERRORISM AND FLOOD PROTECTION

Item No.	Description	Drawing No. / Reference No.	Qty.	Unit	Local Currency (excluding VAT) Baht	
					Unit Price	Amount
1C9-8	Fire Protection System for switchyard	Designed by Contractor	Lump sum	Lump sum	1,141,638.00	1,141,638.00
1C9-9	Fire Protection environmental monitoring system	Designed by Contractor	Lump sum	Lump sum	832,495.00	832,495.00
Total Price for Schedule 1C9					Baht	20,737,383.00



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- Project 1-1C64 -

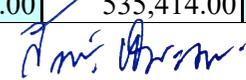
ผู้อำนวยการฝ่ายวิศวกรรมระบบส่ง

filename : HSIS-S-01-1 (115 kV Yala 1)

27 Aug 2025

MEDIUM COST FOR BID NO. HSIS-S-01
1D7 : Spare Parts for SF6 Gas Insulated Switchgear
SUPPLY AND CONSTRUCTION OF 115 KV YALA 1 SUBSTATION (GIS)
HIGH VOLTAGE SUBSTATION IMPROVEMENT IN THE SOUTHERN AREA FOR TERRORISM AND FLOOD PROTECTION

Item No.	Description	Qty.	Unit	Currency	Supply of Equipment				Local Transportation (excluding VAT) Baht			
					Foreign Supply		Local Supply					
					CIF Thai Port		Ex-works Price (excluding VAT) Baht		Unit Price	Amount	Unit Price	Amount
					Unit Price	Amount	Unit Price	Amount				
1D7-1	Note: detail and breakdown price of each equipment for each item shall be submitted together with tender documents during the bidding Gas density meter with two-stage contacts for circuit breaker compartment spare parts for GIS	1	set	THB	35,697.20	35,697.20			XXXXX	XXXXX		
1D7-2	Gas density meter for other compartment spare parts for GIS	1	set	THB	64,447.90	64,447.90			XXXXX	XXXXX		
1D7-3	Rupture disc of overpressure protection device spare parts for GIS (1 EA for each type/each operating pressure)	1	set	THB	27,857.50	27,857.50			XXXXX	XXXXX		
1D7-4	Pump with motor for hydraulic spare parts for GIS (if any)	1	set	THB	60,729.90	60,729.90			XXXXX	XXXXX		
1D7-5	Maintenance closing device for circuit breaker	1	set	THB	52,103.70	52,103.70			XXXXX	XXXXX		
1D7-6	SF6 gas filling cart accessories for GIS	1	set	THB	231,157.30	231,157.30			XXXXX	XXXXX		
1D7-7	Operating Analyzer Fitting Means accessories for GIS	1	set	THB	259,675.90	259,675.90			XXXXX	XXXXX		
1D7-8	Hand pump for hydraulic accessories for GIS (if any)	1	set	THB	535,414.00	535,414.00			XXXXX	XXXXX		



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MEDIUM COST FOR BID NO. HSIS-S-01
1D7 : Spare Parts for SF6 Gas Insulated Switchgear
SUPPLY AND CONSTRUCTION OF 115 KV YALA 1 SUBSTATION (GIS)
HIGH VOLTAGE SUBSTATION IMPROVEMENT IN THE SOUTHERN AREA FOR TERRORISM AND FLOOD PROTECTION

Item No.	Description	Qty.	Unit	Currency	Supply of Equipment				Local Transportation (excluding VAT) Baht			
					Foreign Supply		Local Supply					
					CIF Thai Port		Ex-works Price (excluding VAT) Baht		Unit Price		Amount	
					Unit Price	Amount	Unit Price	Amount				
1D7-9	Loose pressure gauge completed with necessary fitting for circuit breaker compartment accessories for GIS (1 gauge/1 set precision pressure gauge spare parts for GIS, can be combined with Gas density meter for CB compartment)	1	set	THB	274,617.20	274,617.20			XXXXX	XXXXX		
1D7-10	Cost of Local Transportation for Item No. 1D7-1 thru 1D7-9	Lumpsum	Lumpsum		XXXXX	XXXXX	XXXXX	XXXXX	77,085.03	77,085.03		
Total Price for Schedule 1D7				THB	1,541,700.60		Baht		77,085.03			



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MEDIUM COST FOR BID NO. HSIS-S-01

1D11 : Spare Parts for Power Fuse, Fuse Link and Hook Stick

SUPPLY AND CONSTRUCTION OF 115 KV YALA 1 SUBSTATION (GIS)

HIGH VOLTAGE SUBSTATION IMPROVEMENT IN THE SOUTHERN AREA FOR TERRORISM AND FLOOD PROTECTION

Item No.	Description	Qty.	Unit	Currency	Supply of Equipment				Local Transportation (excluding VAT) Baht			
					Foreign Supply		Local Supply					
					CIF Thai Port		Ex-works Price (excluding VAT) Baht		Unit Price		Amount	
					Unit Price	Amount	Unit Price	Amount				
1D11-1	Fuse link or refill unit 7E for 33 kV power fuse (standard speed)	6		THB	72,091.80	432,550.80			XXXXX	XXXXX		
1D11-2	6.10 m. (20 ft.) hook stick combination operating hook stick and fuse remover, (14 ft universal with male pin and 6 ft pole extention with female pin) for use with the above power fuse	1		THB	18,170.90	18,170.90			XXXXX	XXXXX		
1D11-3	Cost of Local Transportation for Item No. 1D11-1 thru 1D11-2								22,536.09	22,536.09		
		Lump sum	Lump sum		XXXXX	XXXXX	XXXXX	XXXXX				
				THB	450,721.70		Baht		Baht			
Total Price for Schedule 1D11									22,536.09			



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MEDIUM COST FOR BID NO. HSIS-S-01

1D12 : Spare Parts for AC&DC Distribution Board and Termination Box

SUPPLY AND CONSTRUCTION OF 115 KV YALA 1 SUBSTATION (GIS)

HIGH VOLTAGE SUBSTATION IMPROVEMENT IN THE SOUTHERN AREA FOR TERRORISM AND FLOOD PROTECTION

Item No.	Description	Qty.	Unit	Currency	Supply of Equipment				Local Transportation (excluding VAT) Baht			
					Foreign Supply		Local Supply					
					CIF Thai Port		Ex-works Price (excluding VAT) Baht		Unit Price		Amount	
					Unit Price	Amount	Unit Price	Amount				
1D12-1	Fuse time lag type 500A	6					10,596.30	63,577.80	XXXXX	XXXXX		
1D12-2	Cost of Local Transportation for Item No. 1D12-1	Lump sum	Lump sum		XXXXXX	XXXXXX	XXXXXX	XXXXXX	3,178.89	3,178.89		
Total Price for Schedule 1D12									Baht	63,577.80	Baht	3,178.89



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MEDIUM COST FOR BID NO. HSIS-S-01
1D22 : Spare Parts for Grounding Material
SUPPLY AND CONSTRUCTION OF 115 KV YALA 1 SUBSTATION (GIS)
HIGH VOLTAGE SUBSTATION IMPROVEMENT IN THE SOUTHERN AREA FOR TERRORISM AND FLOOD PROTECTION

Item No.	Description	Qty.	Unit	Currency	Supply of Equipment				Local Transportation (excluding VAT) Baht			
					Foreign Supply		Local Supply					
					CIF Thai Port		Ex-works Price (excluding VAT) Baht		Unit Price		Amount	
					Unit Price	Amount	Unit Price	Amount				
1D22-1	Portable temporary grounding tools for maintenance as per Specification attached	1		THB	531,784.00	531,784.00			XXXXXX	XXXXXX		
1D22-2	Cost of Local Transportation for Item No. 1D22-1		Lump sum		XXXXXX	XXXXXX	XXXXXX	XXXXXX	26,589.20	26,589.20		
Total Price for Schedule 1D22				THB	531,784.00		Baht		26,589.20			



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MEDIUM COST FOR BID NO. HSIS-S-01
1D24 : Spare Parts for Control and Protection System
SUPPLY AND CONSTRUCTION OF 115 KV YALA 1 SUBSTATION (GIS)
HIGH VOLTAGE SUBSTATION IMPROVEMENT IN THE SOUTHERN AREA FOR TERRORISM AND FLOOD PROTECTION

Item No.	Description	Drawing No. / Reference No.	Qty.	Unit	Currency	Supply of Equipment				Local Transportation			
						Foreign Supply		Local Supply		(excluding VAT) Baht		(excluding VAT) Baht	
						CIF Thai Port		Ex-works Price					
						Unit Price	Amount	Unit Price	Amount	Unit Price	Amount		
1D24-1	DSS : Spare Parts	See Bill of Materials for 1D24-1. Specification No. 1008	1	SET			10,791,227.00	10,791,227.00	XXXXX	XXXXX			
1D24-2	Multi-function Protective IED (87L, 21BU, 67N, 50BF, 79, 25, 51S/51SG)	Supply as spare part (For Primary Protection of Item Nos. 2AB24-1 and 3AB24-1). - IED must be compatible with both Copper Wire (Having Binary Input, Binary Output and Analog Input) and IEC61850 Standard (4 Ports Ethernet for PRP) - Current Input Rating : 5A Specification No. 1002 and 1008	1	EA			867,358.00	867,358.00	XXXXX	XXXXX			



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MEDIUM COST FOR BID NO. HSIS-S-01
1D24 : Spare Parts for Control and Protection System
SUPPLY AND CONSTRUCTION OF 115 KV YALA 1 SUBSTATION (GIS)
HIGH VOLTAGE SUBSTATION IMPROVEMENT IN THE SOUTHERN AREA FOR TERRORISM AND FLOOD PROTECTION

Item No.	Description	Drawing No. / Reference No.	Qty.	Unit	Currency	Supply of Equipment				Local Transportation			
						Foreign Supply		Local Supply		(excluding VAT) Baht		(excluding VAT) Baht	
						CIF Thai Port		Ex-works Price					
						Unit Price	Amount	Unit Price	Amount	Unit Price	Amount		
1D24-3	Multi-function Protective IED (87L, 21BU, 67N, 50BF, 79, 25, 51S/51SG)	Supply as spare part (For Secondary Protection of Item No. 2AB24-1). - IED must be compatible with both Copper Wire (Having Binary Input, Binary Output and Analog Input) and IEC61850 Standard (4 Ports Ethernet for PRP) - Current Input Rating : 5A Specification No. 1002 and 1008	1	EA				867,358.00	867,358.00	XXXXXX	XXXXXX		
1D24-4	AUTO RECLOSING AND SYNCHRONISM CHECK RELAY (79+25)	Supply as spare part. Specification No. 1002	1	EA				162,581.00	162,581.00	XXXXXX	XXXXXX		



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MEDIUM COST FOR BID NO. HSIS-S-01
1D24 : Spare Parts for Control and Protection System
SUPPLY AND CONSTRUCTION OF 115 KV YALA 1 SUBSTATION (GIS)
HIGH VOLTAGE SUBSTATION IMPROVEMENT IN THE SOUTHERN AREA FOR TERRORISM AND FLOOD PROTECTION

Item No.	Description	Drawing No. / Reference No.	Qty.	Unit	Currency	Supply of Equipment				Local Transportation			
						Foreign Supply		Local Supply		(excluding VAT) Baht		(excluding VAT) Baht	
						CIF Thai Port		Ex-works Price					
						Unit Price	Amount	Unit Price	Amount	Unit Price	Amount		
1D24-5	BREAKER FAILURE RELAY (50BF+62BF)	Supply as spare part. Specification No. 1002	1	EA			153,707.00	153,707.00	XXXXX	XXXXX			
1D24-6	Cost of Local Transportation for Item Nos. 1D24-1 thru 1D24-5		Lump sum	Lump sum		XXXXX	XXXXX	XXXXX	XXXXX	71,727.15	71,727.15		
Total Price for Schedule 1D24									Baht	Baht	12,842,231.00	71,727.15	



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MEDIUM COST FOR BID NO. HSIS-S-01
1D25 : Spare Parts for Fault Recording System
SUPPLY AND CONSTRUCTION OF 115 KV YALA 1 SUBSTATION (GIS)
HIGH VOLTAGE SUBSTATION IMPROVEMENT IN THE SOUTHERN AREA FOR TERRORISM AND FLOOD PROTECTION

Item No.	Description	Drawing No. / Reference No.	Qty.	Unit	Currency	Supply of Equipment				Local Transportation		
						Foreign Supply		Local Supply		(excluding VAT) Baht		
						CIF Thai Port		Ex-works Price				
						Unit Price	Amount	Unit Price	Amount	Unit Price	Amount	
1D25-1	DSS : Digital Fault Recorder Equipment	Spare DFR equipment is same ordering number as supplied in schedule 1AB25-1. Specification Nos. 1003 and 1008	1	SET			891,336.00	891,336.00	XXXXXX	XXXXXX		
1D25-2	Cost of Local Transportation for Item No. 1D25-1		Lump sum	Lump sum		XXXXXX	XXXXXX	XXXXXX	XXXXXX	17,141.18	17,141.18	
Total Price for Schedule 1D25									Baht	Baht	891,336.00	17,141.18



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MEDIUM COST FOR BID NO. HSIS-S-01
1D37 : Spare Parts for Medium Voltage Switchgear
SUPPLY AND CONSTRUCTION OF 115 KV YALA 1 SUBSTATION (GIS)
HIGH VOLTAGE SUBSTATION IMPROVEMENT IN THE SOUTHERN AREA FOR TERRORISM AND FLOOD PROTECTION

Item No.	Description	Qty.	Unit	Currency	Supply of Equipment				Local Transportation (excluding VAT) Baht			
					Foreign Supply		Local Supply					
					CIF Thai Port		Ex-works Price (excluding VAT) Baht		Unit Price		Amount	
					Unit Price	Amount	Unit Price	Amount				
1D37-1	Note: detail and breakdown price of each equipment for each item shall be submitted together with tender documents during the bidding Gas density meter spare parts for medium voltage switchgear	1	set	THB	11,556.60	11,556.60			XXXXX	XXXXX		
1D37-2	Pressure relief device spare parts for medium voltage switchgear (1EA for each type/each operating pressure)	1	set	THB	6,365.70	6,365.70			XXXXX	XXXXX		
1D37-3	SF6 gas filling cart accessories for Medium Voltage Switchgear	1	set	THB	154,614.90	154,614.90			XXXXX	XXXXX		
1D37-4	Cost of Local Transportation for Item No. 1D37-1 thru 1D37-3	Lump sum	Lump sum		XXXXX	XXXXX	XXXXX	XXXXX	8,626.86	8,626.86		
Total Price for Schedule 1D37				THB	172,537.20		Baht		8,626.86			


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MEDIUM COST FOR BID NO. HSIS-S-01
2AB5 : Current Transformer and Junction Box
SUPPLY AND CONSTRUCTION FOR IMPROVEMENT OF 115 KV YALA 2 SUBSTATION
HIGH VOLTAGE SUBSTATION IMPROVEMENT IN THE SOUTHERN AREA FOR TERRORISM AND FLOOD PROTECTION

Item No.	Description	Qty.	Unit	Currency	Supply of Equipment				Local Transportation, Construction and Installation (excluding VAT) Baht			
					Foreign Supply		Local Supply		Ex-works Price (excluding VAT) Baht			
					CIF Thai Port							
					Unit Price	Amount	Unit Price	Amount	Unit Price	Amount		
2AB5-1	115 kV CT, 550 kV BIL, 100/-/1200:5//5//5//5 A, 40 kA, oil filled as per Rating and Features RF CT75E6	12		THB	198,000.00	2,376,000.00			XXXXX	XXXXX		
2AB5-2	Steel Supporting Structure for CT75E6 (for Item No. 2AB5-1), H=4.50 m as per Dwg. No. ST-CT-4-01 and SD-AB-0-01	12		THB			17,000.00	204,000.00	XXXXX	XXXXX		
2AB5-3	Junction Box type CT1 (for Item No. 2AB5-1) as per Dwg. No. TP-E-18.2 and TP-E-18.4	4		THB			32,000.00	128,000.00	XXXXX	XXXXX		
2AB5-4	Cost of Local Transportation, Construction and Installation for Item No. 2AB5-1 thru 2AB5-3											
		Lump sum	Lump sum		XXXXX	XXXXX	XXXXX	XXXXX	1,218,600.00	1,218,600.00		
Total Price for Schedule 2AB5				THB	2,376,000.00		Baht		332,000.00			
									1,218,600.00			



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MEDIUM COST FOR BID NO. HSIS-S-01

2AB21 : Bus Fitting

SUPPLY AND CONSTRUCTION FOR IMPROVEMENT OF 115 KV YALA 2 SUBSTATION

HIGH VOLTAGE SUBSTATION IMPROVEMENT IN THE SOUTHERN AREA FOR TERRORISM AND FLOOD PROTECTION

Item No.	Description	Qty.	Unit	Currency	Supply of Equipment				Local Transportation, Construction and Installation (excluding VAT) Baht			
					Foreign Supply		Local Supply		Ex-works Price (excluding VAT) Baht			
					CIF Thai Port							
					Unit Price	Amount	Unit Price	Amount	Unit Price	Amount		
2AB21-1	115 kV and below Bus fitting as per Specification attached	Lump sum	Lump sum	THB	77,301.40	77,301.40			XXXXX	XXXXX		
2AB21-2	Cost of Local Transportation, Construction and Installation for Item No. 2AB21-1	Lump sum	Lump sum		XXXXX	XXXXX	XXXXX	XXXXX	60,874.85	60,874.85		
				THB	77,301.40		Baht		Baht			
Total Price for Schedule 2AB21									60,874.85			



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MEDIUM COST FOR BID NO. HSIS-S-01

2AB22 : Grounding Material

SUPPLY AND CONSTRUCTION FOR IMPROVEMENT OF 115 KV YALA 2 SUBSTATION

HIGH VOLTAGE SUBSTATION IMPROVEMENT IN THE SOUTHERN AREA FOR TERRORISM AND FLOOD PROTECTION

Item No.	Description	Qty.	Unit	Currency	Supply of Equipment				Local Transportation, Construction and Installation (excluding VAT) Baht			
					Foreign Supply		Local Supply		Ex-works Price (excluding VAT) Baht			
					CIF Thai Port							
					Unit Price	Amount	Unit Price	Amount	Unit Price	Amount		
2AB22-1	Thermite welding material as per Specification attached	Lump sum	Lump sum				59,547.40	59,547.40	XXXXX	XXXXX		
2AB22-2	Grounding hardware as per Specification attached	Lump sum	Lump sum	THB	2,772.00	2,772.00			XXXXX	XXXXX		
2AB22-3	Cost of Local Transportation, Construction and Installation for Item No. 2AB22-1 thru 2AB22-2	Lump sum	Lump sum		XXXXXX	XXXXXX	XXXXXX	XXXXXX	49,076.53	49,076.53		
				THB	2,772.00		Baht					
Total Price for Schedule 2AB22							59,547.40		Baht 49,076.53			



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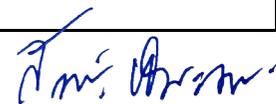
MEDIUM COST FOR BID NO. HSIS-S-01

2AB23 : Substation Miscellaneous

SUPPLY AND CONSTRUCTION FOR IMPROVEMENT OF 115 KV YALA 2 SUBSTATION

HIGH VOLTAGE SUBSTATION IMPROVEMENT IN THE SOUTHERN AREA FOR TERRORISM AND FLOOD PROTECTION

Item No.	Description	Qty.	Unit	Currency	Supply of Equipment				Local Transportation, Construction and Installation (excluding VAT) Baht			
					Foreign Supply		Local Supply		Ex-works Price (excluding VAT) Baht			
					CIF Thai Port							
					Unit Price	Amount	Unit Price	Amount	Unit Price	Amount		
2AB23-1	Rigid steel conduit as per Specification attached	Lump sum	Lump sum				75,028.80	75,028.80	XXXXX	XXXXX		
2AB23-2	Fitting for rigid steel conduit as per Specification attached	Lump sum	Lump sum	THB	40,603.20	40,603.20			XXXXX	XXXXX		
2AB23-3	Identification and danger notice plate as per drawing attached	Lump sum	Lump sum				3,680.00	3,680.00	XXXXX	XXXXX		
2AB23-4	Cost of Local Transportation, Construction and Installation for Item No. 2AB23-1 thru 2AB23-3	Lump sum	Lump sum		XXXXXX	XXXXXX	XXXXXX	XXXXXX	93,958.20	93,958.20		
Total Price for Schedule 2AB23				THB	40,603.20	Baht	78,708.80		Baht 93,958.20			



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MEDIUM COST FOR BID NO. HSIS-S-01

2AB24 : Control and Protection System

SUPPLY AND CONSTRUCTION FOR IMPROVEMENT OF 115 KV YALA 2 SUBSTATION

HIGH VOLTAGE SUBSTATION IMPROVEMENT IN THE SOUTHERN AREA FOR TERRORISM AND FLOOD PROTECTION

Item No.	Description	Drawing No. / Reference No.	Qty.	Unit	Currency	Supply of Equipment				Local Transportation, Construction and Installation (excluding VAT) Baht			
						Foreign Supply		Local Supply		Unit Price	Amount	Unit Price	Amount
						CIF Thai Port		Ex-works Price (excluding VAT) Baht					
						Unit Price	Amount	Unit Price	Amount	Unit Price	Amount		
2AB24-1	115 kV LINE PROTECTION (87L, 87L, 79, 2-BF)	Panel Nos. 47R and 48R - 87L must be compatible with both Copper Wire (Having Binary Input, Binary Output and Analog Input) and IEC61850 Standard (4 Ports Ethernet for PRP) - Current Input Rating : 5A - 87L must be Multifunction IED and Same Model and Connector Type as Supplied in Item No.1AB24-1 (Item Nos.3 and 6 in Bill of Materials for 1AB24) Drawing Nos. YL2-E-1.2, YL2-E-2.1, YL2-E-2.2 SH.1-2, YL2-E-3, TP-E-10.1 Specification Nos. 1002 and 1008 See Scope of Work	2	EA					3,240,581.00	6,481,162.00	XXXXXX	XXXXXX	



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MEDIUM COST FOR BID NO. HSIS-S-01

2AB24 : Control and Protection System

SUPPLY AND CONSTRUCTION FOR IMPROVEMENT OF 115 KV YALA 2 SUBSTATION

HIGH VOLTAGE SUBSTATION IMPROVEMENT IN THE SOUTHERN AREA FOR TERRORISM AND FLOOD PROTECTION

Item No.	Description	Drawing No. / Reference No.	Qty.	Unit	Currency	Supply of Equipment				Local Transportation, Construction and Installation (excluding VAT) Baht			
						Foreign Supply		Local Supply		Unit Price	Amount	Unit Price	Amount
						CIF Thai Port		Ex-works Price (excluding VAT) Baht					
						Unit Price	Amount	Unit Price	Amount	Unit Price	Amount		
2AB24-2	E1 CONVERTER	Installed in Panel No. E1 CONV. -1 (One set of Multimode Optical Fiber Patch Cord Cable and One set of E1 Coaxial Cable shall be supplied in each E1 Converter) Drawing Nos. YL2-E-1.2, YL2-E-2.1, YL2-E-2.2 SH.1-2, YL2-E-3, TP-E-10.20 Specification Nos. 1002 and 1008 See Scope of Work	4	SET				159,028.00	636,112.00	XXXXXX	XXXXXX		
2AB24-3	MCB, 6A,2 POLE FOR DC SUPPLY WITH AUX.	Installed in Panel No. E1 CONV. -1 Drawing Nos. YL2-E-1.2, YL2-E-2.1, YL2-E-2.2 SH.1-2, YL2-E-3, TP-E-10.20 Specification No. 1002 See Scope of Work	8	EA				5,772.00	46,176.00	XXXXXX	XXXXXX		



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MEDIUM COST FOR BID NO. HSIS-S-01

2AB24 : Control and Protection System

SUPPLY AND CONSTRUCTION FOR IMPROVEMENT OF 115 KV YALA 2 SUBSTATION

HIGH VOLTAGE SUBSTATION IMPROVEMENT IN THE SOUTHERN AREA FOR TERRORISM AND FLOOD PROTECTION

Item No.	Description	Drawing No. / Reference No.	Qty.	Unit	Currency	Supply of Equipment				Local Transportation, Construction and Installation (excluding VAT) Baht			
						Foreign Supply		Local Supply		Unit Price	Amount	Unit Price	Amount
						CIF Thai Port		Ex-works Price (excluding VAT) Baht					
						Unit Price	Amount	Unit Price	Amount	Unit Price	Amount		
2AB24-4	BREAKER CONTROL SWITCH (CS)	Installed in Panel No. 2C (CS-773-2, CS-781-2) Drawing Nos. YL2-E-1.2, YL2-E-2.1, YL2-E-2.2 SH.1-2, YL2-E-3 Specification No. 1002 See Scope of Work	2	EA				8,705.00	17,410.00	XXXXX	XXXXX		
2AB24-5	INTERPOSING RELAY (CCX,CTX)	Installed in Panel No. IP CAB.2 (CCX-782-2) Drawing Nos. YL2-E-1.2, YL2-E-2.1, YL2-E-2.2 SH.1-2, YL2-E-3 Specification No. 1002 See Scope of Work	1	EA				2,578.00	2,578.00	XXXXX	XXXXX		
2AB24-6	MCB, 6A, 1 POLE FOR DC SUPPLY	Installed in Panel No. 2C Drawing Nos. YL2-E-1.2, YL2-E-2.1, YL2-E-2.2 SH.1-2, YL2-E-3 Specification No. 1002 See Scope of Work	4	EA				2,865.00	11,460.00	XXXXX	XXXXX		



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MEDIUM COST FOR BID NO. HSIS-S-01

2AB24 : Control and Protection System

SUPPLY AND CONSTRUCTION FOR IMPROVEMENT OF 115 KV YALA 2 SUBSTATION

HIGH VOLTAGE SUBSTATION IMPROVEMENT IN THE SOUTHERN AREA FOR TERRORISM AND FLOOD PROTECTION

Item No.	Description	Drawing No. / Reference No.	Qty.	Unit	Currency	Supply of Equipment				Local Transportation, Construction and Installation (excluding VAT) Baht			
						Foreign Supply		Local Supply		Unit Price	Amount	Unit Price	Amount
						CIF Thai Port		Ex-works Price (excluding VAT) Baht					
						Unit Price	Amount	Unit Price	Amount	Unit Price	Amount		
2AB24-7	Modification of The Existing Control and Protection Panels Associated with New Equipment	Drawing Nos. YL2-E-1.1, YL2-E-1.2, YL2-E-2.1, YL2-E-2.2 SH.1-2, YL2-E-3 Specification No. 1002 See Scope of Work	Lump sum	Lump sum		XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX		
2AB24-8	Cost of Local Transportation, Construction and Installation for Item Nos. 2AB24-1 thru 2AB24-7		Lump sum	Lump sum		XXXXXX	XXXXXX	XXXXXX	XXXXXX	1,124,629.50	1,124,629.50		
Total Price for Schedule 2AB24								Baht	7,194,898.00	Baht	1,124,629.50		



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MEDIUM COST FOR BID NO. HSIS-S-01
2AB25 : Fault Recording System
SUPPLY AND CONSTRUCTION FOR IMPROVEMENT OF 115 KV YALA 2 SUBSTATION
HIGH VOLTAGE SUBSTATION IMPROVEMENT IN THE SOUTHERN AREA FOR TERRORISM AND FLOOD PROTECTION

Item No.	Description	Drawing No. / Reference No.	Qty.	Unit	Currency	Supply of Equipment				Local Transportation, Construction and Installation (excluding VAT) Baht			
						Foreign Supply		Local Supply					
						CIF Thai Port		Ex-works Price (excluding VAT) Baht		Unit Price	Amount	Unit Price	Amount
						Unit Price	Amount	Unit Price	Amount				
2AB25-1	MODIFICATION TO THE EXISTING FAULT RECORDING SYSTEM	Drawing Nos. YL2-E-1.1, YL2-E-1.2, YL2-E-2.1, YL2-E-2.2 SH.1-2, YL2-E-3 See Scope of Work	Lump sum	Lump sum		XXXXX	XXXXX	XXXXX	XXXXX	18,450.00	18,450.00		
Total Price for Schedule 2AB25								Baht		Baht 18,450.00			



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MEDIUM COST FOR BID NO. HSIS-S-01

2AB38 : Remote Terminal Unit

SUPPLY AND CONSTRUCTION FOR IMPROVEMENT OF 115 KV YALA 2 SUBSTATION

HIGH VOLTAGE SUBSTATION IMPROVEMENT IN THE SOUTHERN AREA FOR TERRORISM AND FLOOD PROTECTION

Item No.	Description	Drawing No. / Reference No.	Qty.	Unit	Currency	Supply of Equipment				Local Transportation, Construction and Installation (excluding VAT) Baht			
						Foreign Supply		Local Supply					
						CIF Thai Port		Ex-works Price (excluding VAT) Baht		Unit Price	Amount	Unit Price	Amount
						Unit Price	Amount	Unit Price	Amount				
2AB38-1	MODIFICATION TO THE EXISTING REMOTE TERMINAL UNIT SYSTEM	Drawing Nos. YL2-E-1.1, YL2-E-1.2, YL2-E-2.1, YL2-E-2.2 SH.1-2, YL2-E-3 See Scope of Work	Lump sum	Lump sum		XXXXX	XXXXX	XXXXX	XXXXX	25,500.00	25,500.00		
Total Price for Schedule 2AB38									Baht 25,500.00				



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MEDIUM COST FOR BID NO. HSIS-S-01

2AB39 : Commissioning

SUPPLY AND CONSTRUCTION FOR IMPROVEMENT OF 115 KV YALA 2 SUBSTATION

HIGH VOLTAGE SUBSTATION IMPROVEMENT IN THE SOUTHERN AREA FOR TERRORISM AND FLOOD PROTECTION

Item No.	Description	Qty.	Unit	Currency	Supply of Equipment				Local Transportation, Construction and Installation (excluding VAT) Baht			
					Foreign Supply		Local Supply		Unit Price	Amount	Unit Price	Amount
					CIF Thai Port		Ex-works Price (excluding VAT) Baht					
					Unit Price	Amount	Unit Price	Amount	Unit Price	Amount		
2AB39-1	Commissioning	Lump Sum	Lump Sum		XXXXXX	XXXXXX	XXXXXX	XXXXXX	185,000.00	185,000.00		
Total Price for Schedule 2AB39								Baht	Baht	185,000.00		



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filename : HSIS-S-01-2 (115 kV Yala 2)

27 Aug 2025

MEDIUM COST FOR BID NO. HSIS-S-01

2AB40 : Installation of Equipment and Steel Structure Supplied by EGAT

SUPPLY AND CONSTRUCTION FOR IMPROVEMENT OF 115 KV YALA 2 SUBSTATION

HIGH VOLTAGE SUBSTATION IMPROVEMENT IN THE SOUTHERN AREA FOR TERRORISM AND FLOOD PROTECTION

Item No.	Description	Qty.	Unit	Currency	Supply of Equipment				Local Transportation, Construction and Installation (excluding VAT) Baht			
					Foreign Supply		Local Supply		Unit Price	Amount	Unit Price	Amount
					CIF Thai Port		Ex-works Price (excluding VAT) Baht					
					Unit Price	Amount	Unit Price	Amount	Unit Price	Amount		
2AB40-1	Dismantlement	Lump sum	Lump sum		XXXXX	XXXXX	XXXXX	XXXXX	275,000.00	275,000.00		
							Baht		Baht			
Total Price for Schedule 2AB40									275,000.00			



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MEDIUM COST FOR BID NO. HSIS-S-01
3AB18 : Low Voltage Cable and Conductor
SUPPLY AND CONSTRUCTION FOR IMPROVEMENT OF 115 KV NARATHIWAT SUBSTATION
HIGH VOLTAGE SUBSTATION IMPROVEMENT IN THE SOUTHERN AREA FOR TERRORISM AND FLOOD PROTECTION

Item No.	Description	Qty.	Unit	Currency	Supply of Equipment				Local Transportation, Construction and Installation (excluding VAT) Baht			
					Foreign Supply		Local Supply		Ex-works Price (excluding VAT) Baht			
					CIF Thai Port							
					Unit Price	Amount	Unit Price	Amount	Unit Price	Amount		
3AB18-1	600 V control cable with PVC insulation as per Specification attached	Lump sum	Lump sum				206,360.00	206,360.00	XXXXX	XXXXX		
3AB18-2	Cost of Local Transportation, Construction and Installation for Item No. 3AB18-1	Lump sum	Lump sum		XXXXX	XXXXX	XXXXX	XXXXX	162,508.50	162,508.50		
Total Price for Schedule 3AB18								Baht 206,360.00	Baht 162,508.50			



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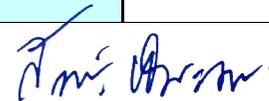
MEDIUM COST FOR BID NO. HSIS-S-01

3AB24 : Control and Protection System

SUPPLY AND CONSTRUCTION FOR IMPROVEMENT OF 115 KV NARATHIWAT SUBSTATION

HIGH VOLTAGE SUBSTATION IMPROVEMENT IN THE SOUTHERN AREA FOR TERRORISM AND FLOOD PROTECTION

Item No.	Description	Drawing No. / Reference No.	Qty.	Unit	Currency	Supply of Equipment				Local Transportation, Construction and Installation (excluding VAT) Baht					
						Foreign Supply		Local Supply							
						CIF Thai Port		Ex-works Price (excluding VAT) Baht		Unit Price	Amount	Unit Price	Amount	Unit Price	Amount
						Unit Price	Amount	Unit Price	Amount						
3AB24-1	Multi-function Protective IED (87L, 21BU, 67N, 50BF, 79, 25, 51S/51SG)	Installed in Panel No. 4R - IED must be compatible with both Copper Wire (Having Binary Input, Binary Output and Analog Input) and IEC61850 Standard (4 Ports Ethernet for PRP) - Current Input Rating : 5A - Same Model and Connector Type as Supplied in Item No.1AB24-1 (Item No.3 in Bill of Materials for 1AB24) Drawing Nos. NW-E-1, NW-E-2, NW-E-3 Specification Nos. 1002 and 1008 See Scope of Work	1	EA					867,358.00	867,358.00	XXXXX	XXXXX			



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MEDIUM COST FOR BID NO. Hsis-S-01

3AB24 : Control and Protection System

SUPPLY AND CONSTRUCTION FOR IMPROVEMENT OF 115 KV NARATHIWAT SUBSTATION

HIGH VOLTAGE SUBSTATION IMPROVEMENT IN THE SOUTHERN AREA FOR TERRORISM AND FLOOD PROTECTION

Item No.	Description	Drawing No. / Reference No.	Qty.	Unit	Currency	Supply of Equipment				Local Transportation, Construction and Installation (excluding VAT) Baht					
						Foreign Supply		Local Supply							
						CIF Thai Port		Ex-works Price (excluding VAT) Baht		Unit Price	Amount	Unit Price	Amount	Unit Price	Amount
						Unit Price	Amount	Unit Price	Amount						
3AB24-2	E1 CONVERTER	Installed in Tele-Protection Rack Panel. 1 set of Multimode Patch Cord Cable and 1 set of Coaxial Cable (RG179) shall be supplied in each E1 Converter. Drawing Nos. NW-E-1, NW-E-2, NW-E-3, TP-E-10.20 Specification Nos. 1002 and 1008 See Scope of Work	1	SET				159,028.00	159,028.00	XXXXXX	XXXXXX				
3AB24-3	MCB, 6A,2 POLE FOR DC SUPPLY WITH AUX.	Installed in Tele-Protection Rack Panel. Drawing Nos. NW-E-1, NW-E-2, NW-E-3, TP-E-10.20 Specification Nos. 1002 and 1008 See Scope of Work	2	EA			5,772.00	11,544.00	XXXXXX	XXXXXX					



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MEDIUM COST FOR BID NO. HSIS-S-01

3AB24 : Control and Protection System

SUPPLY AND CONSTRUCTION FOR IMPROVEMENT OF 115 KV NARATHIWAT SUBSTATION

HIGH VOLTAGE SUBSTATION IMPROVEMENT IN THE SOUTHERN AREA FOR TERRORISM AND FLOOD PROTECTION

Item No.	Description	Drawing No. / Reference No.	Qty.	Unit	Currency	Supply of Equipment				Local Transportation, Construction and Installation (excluding VAT) Baht					
						Foreign Supply		Local Supply							
						CIF Thai Port		Ex-works Price (excluding VAT) Baht		Unit Price	Amount	Unit Price	Amount	Unit Price	Amount
						Unit Price	Amount	Unit Price	Amount						
3AB24-4	CUT OFF SWITCH, 10 CONTACTS (DTTCO, 87CO, 86ACO, 50/51SCO)	Installed in Panel No. 4R Drawing Nos. NW-E-1, NW-E-2, NW-E-3 Specification No. 1002 See Scope of Work	1	EA				3,059.00	3,059.00	XXXXX	XXXXX				
3AB24-5	INDICATING LAMP (R,G,IL,LG)	Installed in Panel No. 4R Drawing Nos. NW-E-1, NW-E-2, NW-E-3 Specification No. 1002 See Scope of Work	1	EA			491.00	491.00	XXXXX	XXXXX					
3AB24-6	CUT OFF SWITCH, 20 CONTACTS (PTTCO, 85CO, 43CCS)	Installed in Panel No. 4R Drawing Nos. NW-E-1, NW-E-2, NW-E-3 Specification No. 1002 See Scope of Work	1	EA			4,357.00	4,357.00	XXXXX	XXXXX					
3AB24-7	DC UNDERVOLTAGE RELAY (27XB,27XR)	Installed in Panel Nos. 4F/4R Drawing Nos. NW-E-1, NW-E-2, NW-E-3 Specification No. 1002 See Scope of Work	3	EA			14,452.00	43,356.00	XXXXX	XXXXX					

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MEDIUM COST FOR BID NO. HSIS-S-01
3AB24 : Control and Protection System
SUPPLY AND CONSTRUCTION FOR IMPROVEMENT OF 115 KV NARATHIWAT SUBSTATION
HIGH VOLTAGE SUBSTATION IMPROVEMENT IN THE SOUTHERN AREA FOR TERRORISM AND FLOOD PROTECTION

Item No.	Description	Drawing No. / Reference No.	Qty.	Unit	Currency	Supply of Equipment				Local Transportation, Construction and Installation (excluding VAT) Baht					
						Foreign Supply		Local Supply							
						CIF Thai Port		Ex-works Price (excluding VAT) Baht		Unit Price	Amount	Unit Price	Amount	Unit Price	Amount
						Unit Price	Amount	Unit Price	Amount						
3AB24-8	BREAKER CONTROL SWITCH (CS)	Installed in Panel No. 4F Drawing Nos. NW-E-1, NW-E-2, NW-E-3 Specification No. 1002 See Scope of Work	1	EA				8,705.00	8,705.00	XXXXX	XXXXX				
3AB24-9	LATCHING RELAY (8 contacts,79COCX)	Installed in Panel No. 4F (Function 43X) Drawing Nos. NW-E-1, NW-E-2, NW-E-3 Specification No. 1002 See Scope of Work	1	EA				25,041.00	25,041.00	XXXXX	XXXXX				
3AB24-10	MCB, 6A, 2 POLE FOR DC SUPPLY	Installed in Panel No.4F Drawing Nos. NW-E-1, NW-E-2, NW-E-3 Specification No. 1002 See Scope of Work	1	EA				3,949.00	3,949.00	XXXXX	XXXXX				
3AB24-11	MCB, 6A, 1 POLE FOR DC SUPPLY	Installed in Panel No.4F Drawing Nos. NW-E-1, NW-E-2, NW-E-3 Specification No. 1002 See Scope of Work	1	EA				2,865.00	2,865.00	XXXXX	XXXXX				


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MEDIUM COST FOR BID NO. HSIS-S-01

3AB24 : Control and Protection System

SUPPLY AND CONSTRUCTION FOR IMPROVEMENT OF 115 KV NARATHIWAT SUBSTATION

HIGH VOLTAGE SUBSTATION IMPROVEMENT IN THE SOUTHERN AREA FOR TERRORISM AND FLOOD PROTECTION

Item No.	Description	Drawing No. / Reference No.	Qty.	Unit	Currency	Supply of Equipment				Local Transportation, Construction and Installation (excluding VAT) Baht					
						Foreign Supply		Local Supply							
						CIF Thai Port		Ex-works Price (excluding VAT) Baht		Unit Price	Amount	Unit Price	Amount	Unit Price	Amount
						Unit Price	Amount	Unit Price	Amount						
3AB24-12	Modification of The Existing Control and Protection Panels Associated with New Equipment	Drawing Nos. NW-E-1, NW-E-2, NW-E-3 Specification No. 1002 See Scope of Work	Lump sum	Lump sum		XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX				
3AB24-13	Cost of Local Transportation, Construction and Installation for Item Nos. 3AB24-1 thru 3AB24-12		Lump sum	Lump sum		XXXXXX	XXXXXX	XXXXXX	XXXXXX	255,506.78	255,506.78				
Total Price for Schedule 3AB24									Baht	1,129,753.00	Baht 255,506.78				



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MEDIUM COST FOR BID NO. HSIS-S-01

3AB38 : Remote Terminal Unit

SUPPLY AND CONSTRUCTION FOR IMPROVEMENT OF 115 KV NARATHIWAT SUBSTATION

HIGH VOLTAGE SUBSTATION IMPROVEMENT IN THE SOUTHERN AREA FOR TERRORISM AND FLOOD PROTECTION

Item No.	Description	Drawing No. / Reference No.	Qty.	Unit	Currency	Supply of Equipment				Local Transportation, Construction and Installation (excluding VAT) Baht			
						Foreign Supply		Local Supply					
						CIF Thai Port		Ex-works Price (excluding VAT) Baht		Unit Price	Amount	Unit Price	Amount
						Unit Price	Amount	Unit Price	Amount				
3AB38-1	MODIFICATION TO THE EXISTING RTU SYSTEM	Drawing Nos. NW-E-1, NW-E-2, NW-E-3 See Scope of Work	Lump sum	Lump sum									
					XXXXX	XXXXX	XXXXX	XXXXX		11,700.00	11,700.00		
Total Price for Schedule 3AB38									Baht	Baht	11,700.00		



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MEDIUM COST FOR BID NO. HSIS-S-01

3AB39 : Commissioning

SUPPLY AND CONSTRUCTION FOR IMPROVEMENT OF 115 KV NARATHIWAT SUBSTATION

HIGH VOLTAGE SUBSTATION IMPROVEMENT IN THE SOUTHERN AREA FOR TERRORISM AND FLOOD PROTECTION

Item No.	Description	Qty.	Unit	Currency	Supply of Equipment				Local Transportation, Construction and Installation (excluding VAT) Baht			
					Foreign Supply		Local Supply		Ex-works Price (excluding VAT) Baht			
					CIF Thai Port							
					Unit Price	Amount	Unit Price	Amount	Unit Price	Amount		
3AB39-1	Commissioning	Lump Sum	Lump Sum		XXXXX	XXXXX	XXXXX	XXXXX	185,000.00	185,000.00		
Total Price for Schedule 3AB39							Baht		Baht 185,000.00			



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Important Information
for
Invitation to Bid No. HSIS-S-01

The purpose of this section is to inform the Bidders to **carefully study** the details of the revised terms and conditions in the bidding documents. The following provisions have been **recently revised** as stated hereunder:

Article A-6. Preparation and Delivery of Bids and Article B-1. Preparation of Bids

Details on how to prepare the proposal have been revised. Bids shall be prepared in accordance with the Instructions to Bidders contained in the Bidding Documents in one (1) original hard copy and one (1) electronic copy contained in USB flash drive.

Article A-6. Preparation and Delivery of Bids

Details of technical proposal opening time and place shall be specified in the Tentative Schedule.

Article A-7. Availability of Bidding Documents

Availability of Bidding Documents has been changed from CD-ROM to electronic files for download via link provided by EGAT.

Channel of Documents Submission

For channel of document submission in the hereunder Articles, facsimile and telex has been replaced with letters submitted electronically or electronic mails (E-mails).

- B-1. Preparation of Bids
- B-4. Validity of Bids
- D-9. Notices
- E-20. Documents Required for Each Shipment
- F-11. Payment

Section B : Overview of the Procurement Process

The procurement process diagram has been updated.

Article B-2. Bid Prices

For Source of Supply and Service 1. Prices for Equipment, Prices for Equipment manufactured outside Thailand (imported Equipment), shall be firm CIF Thai Port basis and quoted in Thai baht, US dollar, euro, Japanese yen, renminbi (Chinese yuan), or in the Bidder's or Manufacturer's home currency only if his currency trading is prevailed at the time of bidding in any international market other than in Bidder's or Manufacturer's home country.

Article E-19. Shipment

The Maritime Promotion Bureau has been updated to the Maritime Promotion Division and its contact information has also been updated.

Article F-11. Payment

After each payment is made, the Contractor or beneficiary shall issue and submit the receipt to EGAT as detailed in the paragraph added at the end of this article.

DATA SHEET

for

Invitation to Bid No. HSIS-S-01

(Two-envelope)

This Section consists of provisions that are specific to each procurement and supplement the information or requirements included in Bidding Documents.

Article A-3. Eligibility of Bidders: General Requirements

The following requirement shall be added to item I:

- “j. Bidders shall provide written anti-corruption policies and guidelines with respect to procurement and supplies according to the Notification of the Anti-Corruption Co-Operation Committee Concerning Minimum Standards of the Anti-Corruption Policies and Guidelines in Relation to Procurement and Supplies Required to be Implemented by the Business Operator, Section 19 of the Government Procurement and Supplies Management Act B.E. 2560 (A.D. 2017).”*

Article B-3. Bid Security

The amount of bid security shall be USD 1,375,810.- or THB 45,000,000.-.

Article B-4. Validity of Bids

The validity of the bid shall be for three hundred (300) Days from the date specified for opening of technical proposals.

Article B-8. Information to be Submitted with Bid

The following document shall be added to Article B-8. Information to be Submitted with Bid:

- s. Bidder’s anti-corruption policies and guidelines in relation to procurement and supplies together with the completely filled out Anti-Corruption Compliance Checklist as provided.*

Maintenance Guarantee Period

- For all Work except 500 kV System

The Contractor shall guarantee the proper functioning of the Work for a period of one (1) Year except the following Equipment the guarantee period of which shall be as follows :

<u>Equipment</u>	<u>Period of Guarantee (Year)</u>
- Fault Recording System	2
- Control and Protection System	2

- For 500 kV System

The Contractor shall guarantee the proper functioning of the Work for a period of five (5) Years.

Defective Equipment to be replaced with the whole new set

Not Applicable

Anti-Corruption Compliance Checklist

(Rev.1)

Bidders shall provide written minimum standards of the policy and directions for anti-corruption in relation to procurement (“Minimum Standards”) together with supporting evidence pursuant to the Notification of the Anti-Corruption Co-operation Committee Concerning Minimum Standards of the Policy and Directions for Anti-Corruption in Relation to Procurement Required to be put in place by the Business Operator, in accordance with Section 19 of the Public Procurement and Supplies Administration Act, B.E. 2560 (A.D. 2017). This checklist shall be submitted with Bids.

Project: (Please specify the project for which you are bidding)

State Agency: Electricity Generating Authority of Thailand

Bidder Name: (Please specify the bidder’s name)

Please mark one of the following boxes that applies to the bidders* and complete all details in the space provided:

1. Have one of the following certificates:

- Certificate under ISO 37001 Anti-Bribery Management Systems, or
- Certificate from the Thai Private Sector Collective Action against Corruption, or
- Certificate as prescribed by the Anti-Corruption Co-operation Committee: (Please specify the certificate name)

Validity period:(Please specify the validity period of the chosen certificate).....

Please attach an evidence of the chosen certificate.

2. Do not have a certificate as specified in item 1, but have the Minimum Standards with one of the following validity:

- Perpetual Validity, or
- Validity period:(Please specify the validity period of the Minimum Standards).....

Details of the Minimum Standards and supporting evidence are as follows: (Please mark in the “Yes” or “No” column):

Item	Yes	No	Reference Evidence (Please specify Article)
1. Bidders have any clearly defined written anti-corruption policies that is regularly updated.			
2. Bidders have any clearly defined written guidelines, methods, or measures for preventing corruption in procurement that is regularly updated, including but not limited to:			
2.1 Code of Conduct			
2.2 Internal unit or personnel explicitly responsible for the prevention of corruption			
2.3 Penalties or regulations against corruption			
2.4 Channels or systems to report any suspicious or queries related to corruption			
2.5 Anti-corruption training plan			
3. Bidders have communicated and publicized the anti-corruption policies and guidelines relation to procurement as stated in items 1 and 2.			
4. Bidders have provided training on anti-corruption to directors, executives, or employees.			
5. The anti-corruption policies and guidelines are reviewed at least every three (3) years.			

We hereby certify that the information provided above and the supporting evidence are true and correct.

Signed

(.....)

Name of Bidder

Stamp company seal (if any)

Date.....

* Notes:

1. The certificate or Minimum Standards shall remain valid and effective from the technical proposal opening date until the date of receipt of the final payment under the contract.
2. If the bidders do not have a certificate, the bidders shall fulfill all items stipulated in the above table to meet the Eligibility of Bidders’ criteria for participation in this procurement.
3. In case of Consortium of two (2) or more firms, partnership or companies, this checklist of each member shall be submitted separately.
4. In the case of an unincorporated Joint Venture, each participant shall submit this checklist separately.
5. This checklist is a translation from Thai based on the Notification of the Anti-Corruption Co-operation Committee Concerning Minimum Standards of the Policy and Directions for Anti-Corruption in Relation to Procurement Required to be put in place by the Business Operator, in accordance with Section 19 of the Public Procurement and Supplies Administration Act, B.E. 2560 (A.D. 2017), dated September 25, 2024. In the event of any discrepancy, the Thai version in the notification shall prevail.

SECTION A
INVITATION TO BID

ELECTRICITY GENERATING AUTHORITY OF THAILAND

Nonthaburi
Thailand

INVITATION TO BID NO. HSIS-S-01

SUPPLY AND CONSTRUCTION OF 115 kV YALA 1 SUBSTATION (GIS), IMPROVEMENT OF 115 kV YALA 2 AND 115 kV NARATHIWAT SUBSTATIONS

HIGH VOLTAGE SUBSTATION IMPROVEMENT IN THE SOUTHERN AREA FOR TERRORISM AND FLOOD PROTECTION

(TWO-ENVELOPE)

A-1. Invitation

The Electricity Generating Authority of Thailand (EGAT) hereby invites sealed bids for supply and construction of 115 kV Yala 1 Substation (GIS), Improvement of 115 kV Yala 2 and 115 kV Narathiwat Substations under High Voltage Substation Improvement in The Southern Area for Terrorism and Flood Protection as described herein in accordance with terms, conditions and Specifications described in these Bidding Documents.

A-2. Work Description

The supply and construction of 115 kV Yala 1 Substation (GIS), Improvement of 115 kV Yala 2 and 115 kV Narathiwat Substations will be on a supply and construction basis, the Contractor shall be responsible for complete supply, installation, construction and also engineering design work to the standard specified and best modern practice. The substations to be constructed and the scope of work under this Invitation are described in Section H. Scope of Work.

A-3. Eligibility of Bidders: General Requirements

I. All Bidders shall meet the following requirements; failure to so comply shall constitute sufficient ground for rejection.

- a. The Bidder shall be a partnership, firm or company, either alone or in joint venture or in consortium.
- b. The Bidder shall be well-established and maintain a permanent place of business.

- c. The Bidder shall not be, or supply the Equipment, from the country under the state of Civil War.
- d. The Bidder shall be a juristic person who manufactures or provides such material or services, as the case may be, and not be named in the List of Work Abandoners published by the Permanent Secretary, Ministry of Finance and/or in the Debarment List and/or in the List of Work Abandoners declared by EGAT.
- e. The Bidder shall not be a Jointly Interested Bidder with other Bidders as from the date of EGAT's issuance of the Invitation to Bid, or shall not be a person who undertakes any action as an "Obstruction of Fair Price Competition" as defined in Additional Regulation for this Invitation.
- f. The Bidder shall not either be EGAT's consultant or involving in EGAT's consultancy company under this Invitation, or have EGAT's personnel involved in his business as shareholder having voting right that can control his business, director, manager, officer, employee, agent or consultant except for the ones who are officially ordered by EGAT to act or participate therein.
- g. The Bidder shall not be the person who is privileged or protected not to be taken any legal proceeding under Thai Court; provided that such Bidder's government declares that such special privilege is waived.
- h. In case of a joint venture or consortium, the Bidder shall carry out all the work under such formation from the time of bidding until the fulfillment of the Contract.
- i. The Bidder must have purchased the bidding documents from EGAT. For a joint venture or a consortium, only one (1) member of the joint venture or consortium is required to purchase the bidding documents.

In case the Bidder's name is not exactly the same as the purchaser's name, the purchaser shall notify EGAT of the name of the Bidder in writing prior to the *technical proposal* opening time.

- II. All Bidders should preferably meet the following requirements; failure to so comply may constitute sufficient ground for rejection.
 - a. The Bidder shall have adequate fund to meet financial obligations incidental to this Contract.
 - b. The Bidder shall supply documentary evidence established in accordance with Article B-8. Information to be Submitted with Bid to demonstrate adequately that he is eligible to bid and is qualified to perform the Contract if his bid is

accepted. Bidder should also demonstrate his capacity to perform the Work either with or without the use of subcontractor.

A-4. Eligibility of Bidders: Technical Requirements

I. All Bidders shall meet the following requirements; failure to so comply shall constitute sufficient ground for rejection.

- a. Being well-established and maintaining a permanent place of business.

If the Bidder is a new company formed by acquisition of or merger with other companies or business units before submitting the Bid, the experience records of any of such previous companies or business units that meet the requirements set forth herein are acceptable as the experience records of the Bidder.

If Bidder is a new company formed by acquisition of or merger with other companies or business units, the pending claim of any of such previous companies or business units shall be considered pending claim of the Bidder.

Reference records of either the parent or affiliated companies shall not be considered as the record of such Bidder.

- b. The Bidder shall have one of the following qualifications regarding experiences executing contract of supply and construction substation.

1) Having experience with EGAT in executing at least one (1) contract as contractor (not as subcontractor) for supply and construction of a complete 115 kV or above conventional or GIS substation, with its overall performance satisfactory to EGAT.

2) Having experience in executing at least two (2) contracts as contractor (not as subcontractor) for supply and construction of a complete 115 kV or above conventional or GIS substation with other Electricity Authorities of Thailand or in an overseas country (not his own country).

Experience record of the Bidder or either member of the joint venture /consortium, including experience record derived from being a member of other joint venture or consortium in previous project(s) is acceptable. It is not allowed to combine the experience records of each member of the joint venture/consortium in order to meet the experience requirements.

- c. Further to b.1) and b.2) mentioned above, having a record of experience within the last ten (10) years on the technical knowledge and practical experience on design, construction, installation and commissioning of Equipment of a 115 kV or above complete conventional or GIS substation. Bidder shall also demonstrate his capacity to perform Work.

Experience record of the Bidder or either member of the joint venture/consortium, including experience record derived from being a

member of other joint venture or consortium in previous project(s) is acceptable, provided that there is a letter from the project owner certifying that the Works as described in c. above were performed by the Bidder or either member of the joint venture/consortium of this project. It is not allowed to combine the experience records of each member of the joint venture/consortium in order to meet the experience requirements.

With respect to item b. and c. above, reference records of either the parent or affiliated companies of the Bidder or of either member of joint venture or consortium shall not be acceptable. If the Bidder has previously formed as the joint venture/consortium with other company and the experience record(s) of the joint venture/consortium meet(s) the requirement set forth herein, such experience record(s) of the joint venture/consortium is(are) also acceptable as the experience record(s) of the Bidder.

- d. The Bidder shall propose Equipment manufactured by the qualified manufacturers who shall fulfill the following requirements:
 1. Regularly manufacturing of Equipment of the type and similar ratings proposed.
 2. Being well-established and maintaining a permanent place of business.
 3. The manufacturer shall have the experience records that meet the requirements set forth herein.

Reference records of either parent or affiliated companies shall not be considered as the records of such manufacturer.

4. If the Manufacturer is a new company formed by acquisition of or merger with other companies or business units, and any of such previous companies or business units has the experience records that meet the requirements set forth herein, such experience records are acceptable as the experience records of the new company, provided that each item of the equipment to be supplied under this bid shall be manufactured from the same source of supply as indicated in each of such relevant supply records as described in Item I.d.5 to I.d.7 below. Otherwise, it shall not be acceptable and shall be sufficient grounds for rejection.

For the avoidance of doubt, it is not allowed to combine the experience records of the previous companies or business units in order to meet the experience requirements.

5. For 115 kV Ratings of Gas-Insulated Switchgear (GIS). These Equipment shall be manufactured by the qualified manufacturers who shall fulfill the following requirements:

5.1 Having one of the following qualifications:

- 5.1.1 Proposing the Equipment of the type and ratings which has already been accepted by EGAT.

OR

- 5.1.2 Having a supply record of Equipment of the type proposed (type of enclosure, interrupter or circuit breaker, rated filling gas pressure) at the nominal system voltage of 110 kV or above, busbar current of 2000 A or above, 40 kA or above, with successful operation/use of at least three (3) consecutive years in an overseas country (not his own country) and at least three (3) substations of which total GIS bays shall not be less than twelve (12).

However, the Equipment of the type and short circuit current ratings proposed shall have a supply record of successful operation/use of at least three (3) consecutive years in an overseas country (not his own country) and at least one (1) substation of which total GIS bays shall not be less than four (4).

In case that the supply record of Equipment of the type and ratings proposed fulfills the requirement, the manufacturer may propose a newly developed or modified type of such Equipment with successful operation/use of at least three (3) substations of which total GIS bays shall not be less than twelve (12) and having minimum one (1) year in an overseas country (not his own country). The detailed information of the development or modification shall be submitted with his proposal. EGAT, however, reserves the right and will make its own judgment whether or not to consider or accept the proposed developed or modified type.

- 5.2 Having a past design test record of the Equipment as proposed, if specified in EGAT's specification. Such past design test record shall conform to the test specified in EGAT's specification.

6. For Control and Protection Panel, having the following qualifications:

6.1 Being local manufacturer.

6.2 Having one of the following qualifications:

- 6.2.1 Having a letter of acceptance for manufacturing of Control and Protection Boards and/or fabrication of the specific Equipment issued by EGAT within the scope specified therein.

OR

- 6.2.2 Being listed in EGAT ACCEPTED MANUFACTURER LIST FOR CONTROL AND PROTECTION PANEL (LOCAL MANUFACTURER) attached at the end of Section A. Invitation to Bid.

The design of Equipment layout shall be performed by the manufacturer of control and protection panel under the Substation Control and Protection System Integrator's supervision. However, the design and engineering of the complete substation protection and automation system shall be performed by the Substation Control and Protection System Integrator.

7. For Substation Control and Protection System Integrator

Having one of the following qualifications:

7.1 Having successful experience in EGAT's digital substation.

OR

7.2 Having at least two (2) records of practical experience on design and implementation of an IEC 61850 based control and protection system of a complete conventional or GIS with 110 kV or above digital substation (both station bus and process bus) with at least two (2) consecutive years of successful operation in overseas utilities (not his own country).

II. All Bidders should preferably meet the following technical requirements; failure to so comply may constitute sufficient ground for rejection.

- a. The Bidder shall have sufficient capacity to carry out the work.
- b. The Bidder shall have no just or proper claims pending against him with respect to breach in the performance of Contract on other similar works awarded by EGAT. In case the Bidder is a joint venture/consortium, either member of the joint venture/consortium shall have no just or proper claims pending against him with respect to breach in the performance of Contract on other similar works awarded by EGAT.
- c. The Bidder himself or his subcontractors, at the time of submitting this proposal, shall not carry excessive work nor be in a default position with respect to work with EGAT. Unsatisfactory past performance on Contract awarded by EGAT may be a sufficient reason of being disqualified.
- d. The Bidder shall propose Equipment from manufacturers who fulfill the requirements below. If there is any deficiency, EGAT reserves the right to require the Bidder to propose new manufacturer or new type/model of Equipment without any additional cost to EGAT.
 1. Regularly manufacturing of Equipment of the type and similar ratings proposed.
 2. Being well-established and maintaining a permanent place of business
 3. The manufacturer shall have the experience records that meet the requirements set forth herein.

Reference records of either parent or affiliated companies shall not be considered as the records of such manufacturer.

4. If the Manufacturer is a new company formed by acquisition of or merger with other companies or business units, and any of such previous companies or business units has the experience records that meet the requirements set forth herein, such experience records are acceptable as the experience records of the new company, provided that each item of the equipment to be supplied under this bid shall be manufactured from the same source of supply as indicated in each of such relevant supply records as described in Item II.d.5 thru II.d.18 below.

For the avoidance of doubt, it is not allowed to combine the experience records of the previous companies or business units in order to meet the experience requirements.

5. For 115 kV Ratings of Power Circuit Breaker, Disconnecting Switch and Compact Switchgear shall be manufactured by the qualified manufacturers who shall fulfill the following requirements:

5.1 Having one of the following qualifications:

5.1.1 Proposing the Equipment of the type and ratings which has already been accepted by EGAT.

OR

5.1.2 Having a supply record of Equipment of the type proposed at nominal system voltage of 110 kV or above, 2000 A or above, 40 kA or above, with successful operation/use of at least three (3) consecutive years in an overseas country (not his own country) and at least three (3) three phase sets.

However, the Equipment of the type and short circuit current ratings proposed shall have a supply record of successful operation/use of at least three (3) consecutive years in an overseas country (not his own country) and at least one (1) three phase set.

In case that the supply record of Equipment of the type and ratings proposed fulfilled the requirement, the manufacturer may propose a newly developed or modified type of such Equipment with successful operation/use for at least one (1) year in an overseas country (not his own country) and at least three (3) three phase sets. The detailed information of the development or modification shall be submitted with his proposal. EGAT, however, reserves the right and will make its own judgment whether or not to consider or accept the proposed developed or modified type.

- 5.2 Having a past design test record of the Equipment as proposed, if specified in EGAT's specification. Such past design test record shall conform to the test specified in EGAT's specification.
6. For 115 kV Ratings of following Equipment: Instrument Transformer and Surge Arrester. These Equipment shall be manufactured by the qualified manufacturers who shall fulfill the following requirements:

- 6.1 Having one of the following qualifications:

- 6.1.1 Proposing the Equipment of the type and ratings which has already been accepted by EGAT.

OR

- 6.1.2 Having a supply record of Equipment of the type and ratings proposed with successful operation/use of at least three (3) three phase sets and having minimum three (3) consecutive years in an overseas country (not his own country).

In case that the supply record of Equipment of the type and ratings proposed fulfills the requirement, the manufacturer may propose a newly developed or modified type of such Equipment with successful operation/use of at least three (3) three phase sets and having minimum one (1) year in an overseas country (not his own country). The detailed information of the development or modification shall be submitted with his proposal. EGAT, however, reserves the right and will make its own judgment whether or not to consider or accept the proposed developed or modified type.

Supply records of the higher rating Equipment shall not be considered if the Bidder does not propose such higher rating Equipment in his bid.

- 6.2 Having a past design test record of the Equipment as proposed, if specified in EGAT's specification. Such past design test record shall conform to the test specified in EGAT's specification.
7. For 33, 22 and 11 kV ratings of following Equipment : Metal-Clad SF₆ Gas Insulated Switchgear, Power Circuit Breaker, Instrument Transformer, Disconnecting Switch and Surge Arrester

Having one of the following qualifications:

- 7.1 Proposing the Equipment of the type and ratings which has already been accepted by EGAT.

OR

- 7.2 Having a supply record of Equipment of the type and ratings proposed with successful operation/use of at least three (3)

consecutive years in an overseas country (not his own country) and at least three (3) three phase sets. The ratings and features of Equipment shall be the same or similar rating as EGAT specifies.

In case that the supply record of Equipment of the type and ratings proposed fulfilled the requirement, the manufacturer may propose a newly developed or modified type of such Equipment with successful operation/use of at least one (1) year in an overseas country (not his own country) and at least three (3) three phase sets. The detailed information of the development or modification shall be submitted with his proposal. EGAT, however, reserves the right and will make its own judgment whether or not to consider or accept the proposed developed or modified type.

Supply records of the higher rating Equipment shall not be considered if the Bidder does not propose such higher rating Equipment in his bid.

8. For Distribution Transformer, Power Fuse, AC&DC Distribution Board and Lighting Relay Panel (LRP), Load Center Unit Substation (LCUS), Junction Box, Battery Charger, Substation Steel Structure, 33 kV and below Cable Terminations, XLPE Power Cable, Power Cable, Control Cable and Switchboard Wire, Lighting Cable, Copper Ground Wire, Overhead Ground Wire, Aluminum Conductor, Optical Fiber Cable, Switchyard Lighting Fixtures, Aluminum Tube, Compression Connector and Miscellaneous Hardware, Bus Fittings, Ground Rod, Thermite Welding Material, Grounding Hardware, Conduit and Conduit Fittings

- 8.1 Being local manufacturer for the following Equipment:

Distribution Transformer, AC&DC Distribution Board and Lighting Relay Panel (LRP), Load Center Unit Substation (LCUS), Junction Box, Battery Charger, Substation Steel Structure, 115 kV and below XLPE Power Cable, Power Cable, Control Cable and Switchboard Wire, Lighting Cable, Copper Ground Wire, Overhead Ground Wire, Aluminum Conductor, Single mode optical fiber cable, Switchyard Lighting Fixtures, Aluminum Tube, Compression Connector and Miscellaneous Hardware, Thermite Welding Material and Conduit.

- 8.2 Having been granted a license for producing standard product by Thai Industrial Standard Institute (TISI), Ministry of Industry for the following Equipment:

60 kV through 115 kV XLPE Power Cable, Lighting cable and Aluminum conductor.

- 8.3 Having one of the following qualifications:

- 8.3.1 Having supply record of Equipment of the type and similar ratings proposed with successful operation/use for at least one (1) year.

OR

8.3.2 Having a letter of acceptance for manufacturing and/or fabrication of the specific Equipment issued by EGAT within the scope specified therein (For the local manufacturer).

9. For Insulator

Having one of the following qualifications:

9.1 Having supply record with successful operation/use for at least three (3) consecutive years in an overseas country (not his own country) and for following equipment:

9.1.1 Suspension Insulator, at least 10,000 units having the similar ANSI class as proposed.

9.1.2 Station Post Insulator, having the similar ANSI technical reference number as proposed.

OR

9.2 Having a letter of acceptance for manufacturing and/or fabrication of the specific Equipment issued by EGAT within the scope specified therein (For the local manufacturer).

10. For Stationary Battery

Having one of the following qualifications:

10.1 Having supply record of Equipment of the type and similar ratings proposed with successful operation/use in substations/switchyards of at least three (3) consecutive years and at least three (3) sets.

In case that the supply record of Equipment of the type and similar ratings proposed fulfilled the requirements, the manufacturer may propose a newly developed or modified type of such Equipment with successful operation/use of at least one (1) year. The detailed information of the development or modification shall be submitted with his proposal. EGAT, however, reserves the right and will make its own judgement whether or not to consider or accept the proposed developed or modified type.

OR

10.2 Having a letter of acceptance for manufacturing and/or fabrication of the specific Equipment issued by EGAT within the scope specified therein (For the local manufacturer).

11. For above 33kV through 115 kV Outdoor Type Cable Termination and Cable Termination for GIS.

Having one of the following qualifications:

11.1 Proposing the Equipment of the type and ratings which have ever been accepted by EGAT.

OR

11.2 Having a supply record of Equipment of the type and ratings proposed with successful operation/use for at least three (3) consecutive years in an overseas country (not his own country) and at least five (5) three phase sets. The ratings and features of Equipment shall be the same or similar rating as EGAT specifies.

In case that the supply record of Equipment of the type and ratings proposed fulfilled the requirement, the manufacturer may propose a newly developed or modified type of such Equipment with successful operation/use for at least one (1) year in overseas country (not his own country) and at least five (5) three phase sets. The detailed information of the development or modification shall be submitted with his proposal. EGAT, however, reserves the right and will make its own judgment whether or not to consider or accept the proposed developed or modified type.

Supply records of the higher rating Equipment shall not be accepted if the Bidder does not propose such higher rating Equipment in his bid.

12. Proposing the protective relays from the manufacturers as listed in EGAT ACCEPTED MANUFACTURER LIST FOR PROTECTIVE RELAY attached at the end of Section A. Invitation to Bid and shall be in compliance with the details specified in EGAT's Specifications. Type/Model of the protective relays proposed shall be as specified in EGAT ACCEPTED MULTIFUNCTION RELAY LIST attached at the end of Section A. Invitation to Bid.

13. For Fault Recording System.

13.1 Having one of the following qualifications:

13.1.1 The cabinet and all Equipment are completely wired by the FRS manufacturer before shipping to Thailand.

OR

13.1.2 The cabinet and the Equipment are wired in Thailand by the local cabinet manufacturer who has one of the following qualifications:

13.1.2.1 Having a letter of acceptance for manufacturing of Control and Protection Boards and/or fabrication of the specific Equipment issued by EGAT within the scope specified therein.

OR

13.1.2.2 Being listed in EGAT ACCEPTED MANUFACTURER LIST FOR CONTROL AND PROTECTION PANEL (LOCAL MANUFACTURER) attached at the end of Section A. Invitation to Bid.

The design and engineering shall be performed by the FRS manufacturer. The assembly, factory test and commissioning shall be in accordance with the FRS manufacturer's standard and shall be performed under the FRS manufacturer's supervisor.

13.2 Proposing the Fault Recording System (FRS) from the manufacturers as listed in EGAT ACCEPTED MANUFACTURER LIST FOR FAULT RECORDING SYSTEM attached at the end of Section A. Invitation to Bid and shall be in compliance with the details specified in EGAT's Specifications. Type/model of FRS proposed shall be as specified in EGAT ACCEPTED FAULT RECORDING SYSTEM LIST attached at the end of Section A. Invitation to Bid

14. For supervisory software of IEC 61850 based substation control and protection system:

Having at least one (1) supply record of implementing supervisory software in IEC 61850 based substation control and protection system which comprises at least two (2) manufacturers of protective Intelligent Electronic Device (IED) with successful operation and use of at least one (1) year.

15. For Merging Unit (MU)

Having one of the following qualifications:

15.1 Proposing the MU of the type and rating which has already been successfully operated in EGAT's digital substation.

OR

15.2 Proposing the MU from the manufacturers as listed in EGAT ACCEPTED MANUFACTURER LIST FOR PROTECTIVE RELAY (regardless of country) attached at the end of Section A. Invitation to Bid and shall be in compliance with the details specified in EGAT's Specifications.

AND

Having supply records of at least three (3) digital substations (both station bus and process bus) of the type proposed with at least three (3) consecutive years of successful operation at nominal system voltage of 110 kV or above in overseas utilities (not his own country).

16. For Bay Control Unit (BCU)

Having one of the following qualifications:

16.1 Proposing the BCU of the type and rating which has already been successfully operated in EGAT's digital substation.

OR

16.2 Proposing the BCU from the manufacturers as listed in EGAT ACCEPTED MANUFACTURER LIST FOR PROTECTIVE RELAY (regardless of country) attached at the end of Section A. Invitation to Bid and shall be in compliance with the details specified in EGAT's Specifications.

AND

Having supply records of at least three (3) digital substations (both station bus and process bus) of the type proposed with at least three (3) consecutive years of successful operation at nominal system voltage of 110 kV or above in overseas utilities (not his own country).

17. Being local manufacturer for steel supporting structure of Instrument Transformer, Surge Arrester and Disconnecting Switch.

18. For Closed-circuit television (CCTV) system and equipment

18.1 Proposed camera and Network Video Recorder (NVR) manufacturer shall have a representative or a branch office of manufacturer in Thailand for at least ten (10) years.

18.2 Proposed brand of IP cameras shall have a supply record of IP cameras for at least five hundred (500) IP cameras per contract with successful operation/use for at least three (3) years in Thailand.

18.3 The bidder or subcontractor shall have one of the following qualifications:

18.3.1 Having experiences in installation and cabling of outdoor-type IP cameras for at least fifty (50) cameras per contract with successful operation/use for at least three (3) years in Thailand.

OR

18.3.2 Having experiences in optical fiber cabling in substation switchyards for at least five (5) substations per contract with successful operation/use for at least three (3) years in Thailand.

18.4 Being local manufacturer for the following Equipment: CCTV Rack cabinet, Monitoring desk, CCTV pole, 12-core ADSS optical fiber cable.

- e. Proposing the manufacturer who has no just or proper claims pending against Equipment of the same type/model to be proposed under this bid.

In case the manufacturer is a new company formed by acquisition or merger with other companies or business units, the pending claim of any of such previous companies or business units shall be considered pending claim of the manufacturer.

- f. Proposing reputable subcontractors, for the portion of the work to be subcontracted, having adequate technical knowledge, ability and capacity to perform such work and having at least three years experience in the performance of similar work and of equal magnitude to the work to be subcontracted. If any proposed subcontractor(s) is (are) not qualified in the opinion of EGAT, the Bidder is required to select other subcontractor(s) at his own cost to the satisfaction of EGAT.

Definitions:

Complete substation: New substation or Extension of the existing substation which comprise of at least one transformer circuit and one line circuit.

All above scope may not be necessary to include the building construction and the civil works by themselves. However, the design, supervision, and execution of the buildings and the civil works shall be required.

Year(s) of operation/use: The period of operation Completion date or Commissioning date or Taking over date or Operation date or Put in service date stated in End User Certificate or the sufficient documentary evidence before bid opening.

A-5. Joint Venture or Consortium

In the event that the successful Bidder is a joint venture or a consortium formed of two or more companies, EGAT requires that the parties to the joint venture or the consortium accept joint and several liability for all obligations under the Contract.

A-6. Preparation and Delivery of Bids

Bids shall be prepared in accordance with the Instructions to Bidders contained in the Bidding Documents in one (1) original ***hard copy and one (1) electronic copy contained in USB flash drive***, in English, on the bid forms included for this purpose and shall be accompanied with a bid security as required under Article B-3. ***Bid Security in a separate envelope.***

For preparation of original hard copy, each page of the original hard copy shall be marked with the volume number and the page number in the lower right-hand corner, for example, Volume 1 of 10 and Page 1 of 100.

For preparation of electronic copy, each volume of the signed original hard copy shall be scanned into one (1) PDF file and each PDF file shall be named according to the volume number.

The original hard copy and the electronic copy of the proposal shall be placed in two (2) separate sealed envelopes:

Envelope I which shall consist of the original hard copy of technical proposal, and a USB flash drive containing the electronic files of the original technical proposal in PDF and Excel format, as required by EGAT, and

Envelope II which shall consist of the original hard copy of price proposal, and a USB flash drive containing the electronic files of the price proposal in PDF and Excel format, as required by EGAT.

In the event of any discrepancy between the original hard copy and the electronic copy, the original hard copy shall govern.

Envelope I

Technical proposal will be placed in separate sealed envelope marked in capital letters in the lower left-hand corner as follows:

INVITATION TO BID NO. HSIS-S-01

SUPPLY AND CONSTRUCTION OF 115 kV YALA 1 SUBSTATION (GIS),
IMPROVEMENT OF 115 kV YALA 2 AND 115 kV NARATHIWAT
SUBSTATIONS

HIGH VOLTAGE SUBSTATION IMPROVEMENT IN THE SOUTHERN AREA
FOR TERRORISM AND FLOOD PROTECTION

TECHNICAL PROPOSAL

The Envelope for the technical proposal shall contain the following :

- a. the completed Proposal Data Forms of the proposed proposal(s)
- b. reference documents pertaining to Bidder's qualification and experience under Article A-3. Eligibility of Bidders: General Requirements, A-4. Eligibility of Bidders: Technical Requirements, and Article B-8. Information to be submitted with Bid

- c. delivery date guaranteed by Bidders
- d. any minor deviations on Technical Specifications
- e. any other technical information and drawings the Bidder deems to be adequate to explain his bid
- f. Confirmation Form of not being a Jointly Interested Bidder with other Bidders and not being a person who undertakes any actions as an Obstruction of Fair Price Competition, and Registration/Non-registration with the Revenue Department as a VAT registrant

If the Bidder has registered as a VAT registrant, he shall submit EGAT an evidence of VAT registration. On the contrary, if the Bidder is not registered as a VAT registrant, he shall inform EGAT whether he will register as a VAT registrant or not.

In case the Bidder is a consortium, each member of the consortium shall fill in the Confirmation Form provided for consortium Bidders.

- g. Filled-in Documentary List and documents required according to Additional Regulation
- h. *USB flash drive containing electronic files of the original technical proposal in the following formats :-***
 - PDF files of all pages of each volume of the technical proposal, and***
 - Excel files of filled-in Proposal Data.***

Strictly no prices or reference to price shall be made in the documentation contained in this Envelope. Violation of this requirement will be reason for rejection of the bid.

Envelope II

Price proposal will be placed in separate sealed envelope marked in capital letters in the lower left-hand corner as follows:

INVITATION TO BID NO. HSIS-S-01

SUPPLY AND CONSTRUCTION OF 115 kV YALA 1 SUBSTATION (GIS),
IMPROVEMENT OF 115 kV YALA 2 AND 115 kV NARATHIWAT
SUBSTATIONS

HIGH VOLTAGE SUBSTATION IMPROVEMENT IN THE SOUTHERN AREA
FOR TERRORISM AND FLOOD PROTECTION

PRICE PROPOSAL

The Envelope **II** for the price proposal shall contain the following :

- a. price schedules according to Section C
- b. ***Discount Form***
- c. ***USB flash drive containing electronic files of the price proposal in the following formats :-***
 - ***PDF files of all pages of each volume of the price proposal, and***
 - ***Excel files of filled-in Price Schedule***

The technical proposal and the price proposal shall be addressed and delivered to :

International Procurement Department - Transmission Segment
Procurement and Inventory Management Division
Electricity Generating Authority of Thailand
Bangkruai, Nonthaburi 11130
Thailand

on or before 10:00 a.m., Bangkok Standard Time, see Tentative Schedule

If the envelope(s) is not sealed, marked and addressed as required above, EGAT will assume no responsibility for the bid misplacement or premature opening.

Technical proposals will be opened publicly at ***place and*** time specified ***in Tentative Schedule.***

Bids received after the time stipulated herein shall be rejected and returned unopened.

The technical proposals will be reviewed to determine their responsiveness to the Specifications and requirements.

The price proposals of the responsive technical proposals will be opened publicly at the place and time which will be specified at a later date, which will not be later than 150 Days after the technical proposal opening.

A-7. Availability of Bidding Documents

The Bidding Documents are available for examination *and online purchase at <http://www4.egat.co.th/fprocurement/biddingeng/>* and can be obtained *by downloading via link provided by EGAT* upon payment to EGAT, non-refundable, in the amount of USD ...270.... or Baht ...8,000..... . These prices include the value added tax.

Note : At the time of bidding, EGAT's Specifications and all Drawings need not be submitted, although they are considered as part of the Bidding Documents.

EGAT ACCEPTED FAULT RECORDING SYSTEM LIST

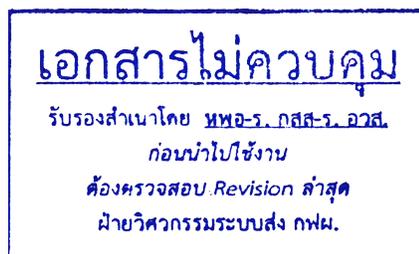
Accepted Type	Manufacturer
IDM+	Qualitrol
M871	GE
7KE85 (*)	Siemens
TESLA 4000 (*)	ERL Phase
TR 2100	Rochester (RIS)
TR 3000 (**)	

Remarks

- (*) Applicable to IEC 61850 for both station bus and process bus with the certification issued by the third party laboratory and specifying that the said FRS conforms to "IEC 61850 edition 2 parts 6, 7-1, 7-2, 7-3, 7-4, and 8-1".
- (**) Applicable to IEC 61850 only for station bus with the certification issued by the third party laboratory and specifying that the said FRS conforms to "IEC 61850 edition 2 parts 6, 7-1, 7-2, 7-3, 7-4, and 8-1".

Notes

- The procedures for being listed in EGAT ACCEPTED FAULT RECORDING SYSTEM LIST are specified in the EGAT's Pre-Qualification (PQ) process, of which the details can be provided by Transmission System Engineering Division on request.
- If any types of FRS in the list are planned to discontinue the manufacturing, the manufacturer or the representative is responsible for informing EGAT at least 1 year before the unavailable date.

1 กรกฎาคม 2568

EGAT ACCEPTED MANUFACTURER LIST FOR PROTECTIVE RELAY

Description	Manufacturer / Country
Protective Relay	ABB / Sweden, Switzerland, USA
	GE / USA, Canada, Spain, UK
	SEL / USA
	Siemens / Germany, UK
	Toshiba / Japan, Vietnam
	Schneider Electric / France, UK
	ZIV / Spain
	INGETEAM / Spain
	NR Electric / China
	Mitsubishi / Japan
	Protecta / Hungary
	Arcteq / Finland
	Sifang / China



เอกสารไม่ควบคุม
 รับรองสำเนาโดย **หนอ-ร.กสส-ร.อวส.**
 ก่อนนำไปใช้งาน
 ต้องตรวจสอบ **Revision** ล่าสุด
 ฝ่ายวิศวกรรมระบบส่ง กฟผ.

EGAT ACCEPTED MANUFACTURER LIST FOR FAULT RECORDING SYSTEM

Description	Manufacturer / Country
Fault Recording System	Qualitrol / UK
	Siemens / Germany
	Rochester / USA
	GE / USA
	ERL Phase / Canada

Bid No. H.S.I.S.-S-01

เอกสารไม่ควบคุม
รับรองสำเนาโดย ทพอ.ร. กสส.ร. อวส.
ก่อนนำไปใช้งาน
ต้องตรวจสอบ Revision ล่าสุด
ฝ่ายวิศวกรรมระบบส่ง กฟผ.

1 กรกฎาคม 2568

EGAT ACCEPTED MANUFACTURER LIST FOR
CONTROL AND PROTECTION PANEL (LOCAL MANUFACTURER)

Description	Manufacturer	Designed by
500 kV Control and Protection Panel	Hitachi Energy (Thailand) Limited	Hitachi Energy (Thailand) Limited
	Precise System and Project Co., Ltd.	Precise System and Project Co., Ltd.
	U-tah Industry Limited Partnership	U-tah Industry Limited Partnership
	SCI Electric Public Company Limited	Siemens Limited
230 kV and below Control and Protection Panel	Hitachi Energy (Thailand) Limited	Hitachi Energy (Thailand) Limited
	C&T Metal Products Co., Ltd.	Easun Reyrolle Limited, India
	Precise System and Project Co., Ltd.	Precise System and Project Co., Ltd.
	U-tah Industry Limited Partnership	U-tah Industry Limited Partnership
	SCI Electric Public Company Limited	SCI Electric Public Company Limited
	Timpano Electrical Co., Ltd.	Timpano Electrical Co., Ltd.
	Mantra Switchgear Co., Ltd.	Siemens Limited

Notes

- The procedures for being listed in EGAT ACCEPTED MANUFACTURER LIST FOR CONTROL AND PROTECTION PANEL (LOCAL MANUFACTURER) can be provided by Transmission System Planning and Project Division on request.
- The control and protection panel shall be manufactured and designed by the manufacturer/company written in the same row.



1 กรกฎาคม 2568

SECTION H
SCOPE OF WORK

SCOPE OF WORK

H-1. General

<u>No.</u>	<u>Substation</u>	<u>Page</u>
1.	115 kV YALA 1 SUBSTAION	
	- GENERAL	H1-1
	- ELECTRICAL PART	H1A-1
	- CONTROL AND PROTECTION PART	H1B-1
	- COMMUNICATION PART	H1C-1
	- CIVIL AND ARCHITECTURAL PART	H1D-1
2.	115 kV YALA 2 SUBSTATION	
	- GENERAL	H2-1
	- ELECTRICAL PART	H2A-1
	- CONTROL AND PROTECTION PART	H2B-1
	- COMMUNICATION PART (NONE)	-
	- CIVIL AND ARCHITECTURAL PART (NONE)	-
3.	115 kV NARATHIWAT SUBSTATION	
	- GENERAL (NONE)	-
	- ELECTRICAL PART (NONE)	-
	- CONTROL AND PROTECTION PART	H3B-1
	- COMMUNICATION PART (NONE)	-
	- CIVIL AND ARCHITECTURAL PART (NONE)	-

1. 115 KV YALA 1 SUBSTATION

GENERAL

The renovation of Yala 1 Substation project to construct new 115 kV Gas Insulated Switchgear (GIS) substation is initiated in order to replace the existing 115 kV conventional substation with Main-and-transfer bus arrangement. The 115 kV conventional substation, which have been utilized for many years shall no longer be in operation after the completion of new GIS substation. Yala 1 Substation is located at Sateng Nok sub-district, Mueang District, Yala province.

The renovation of Yala 1 Substation shall be digital 115 kV GIS substation with double bus single breaker which consists of ten (10) diameters as follows:

- One (1) diameter for 25 MVA, 115-33 kV power transformer “KT1A”
(Plug-in 115 kV XLPE cable 1-1/Cx800 sq.mm. per phase)
- One (1) diameter for 50 MVA, 115-33 kV power transformer “KT2A”
(Plug-in 115 kV XLPE cable 1-1/Cx800 sq.mm. per phase)
- One (1) diameter for 115 kV Capacitor bank No.1 (24 MVA) and No.2 (24 MVA)
(Plug-in 115 kV XLPE cable 1-1/Cx800 sq.mm. per phase)
- One (1) diameter for 115 kV line to PEA
(Plug-in 115 kV XLPE cable 1-1/Cx800 sq.mm. per phase)
- One (1) diameter for 115 kV line to Pattani substation
(Plug-in 115 kV XLPE cable 1-1/Cx800 sq.mm. per phase)
- Two (2) diameters for 115 kV lines No.1 and No.2 to Yala 2 substation
(Plug-in 115 kV XLPE cable 2-1/Cx800 sq.mm. per phase)
- One (1) diameter for 115 kV line to Narathiwat substation
(Plug-in 115 kV XLPE cable 1-1/Cx800 sq.mm. per phase)
- One (1) diameter for Spare Live
(Plug-in 115 kV XLPE cable 1-1/Cx800 sq.mm. per phase)
- One (1) coupling diameter

The contractor shall supply equipment, perform construction and installation work necessary for completion of operation substation in accordance with the contract documents. The design work shall include, but not limited to, technical calculation, preparation of drawings, bill of materials for installation and construction work. For accomplishment of complete operational substation, Scope of contractor's work shall include connection to all public utilities i.e. electrical power, water and drainage. Testing and commissioning of all equipment required to make the substation function properly.

Besides, all detailed engineering design work, calculations, drawing preparation, submission of backup data, test reports instruction books (and), etc. shall be included.

- 1) As stated elsewhere in these bidding documents, the drawings included in the bidding documents except drawing mark "For Construction" are for bidding purposes only and shall not be used for execution of the work.
- 2) The submitted drawings which are incomplete/unacceptable, or are the bidding document copies with minor modifications shall be returned unmarked to the contractor.
- 3) The drawings shall be furnished which provide all details required for thoroughly described equipment as well as installation methods and requirements. However, EGAT retains the right to request additional details if those furnished are perceived inadequate.
- 4) Calculations, backup data and documentation are required for all parts of the design. The furnished data shall verify completely that design is adequate for application purpose.

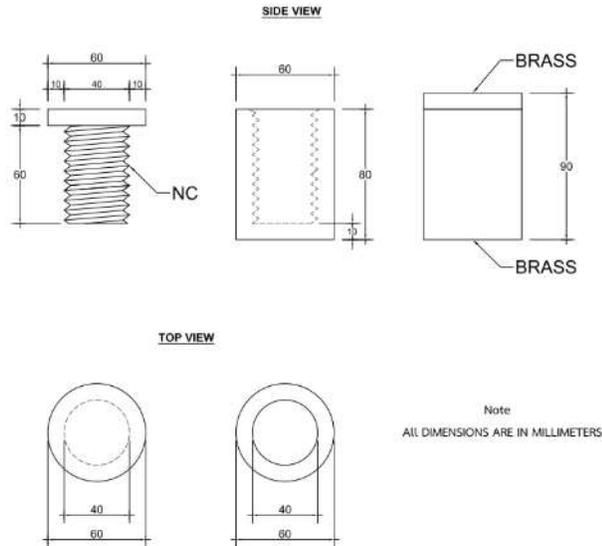
ELECTRICAL PART

Work included in this Contract

The Work included in this Contract to be performed by the Contractor shall be as specified in the Contract Documents and as follows:

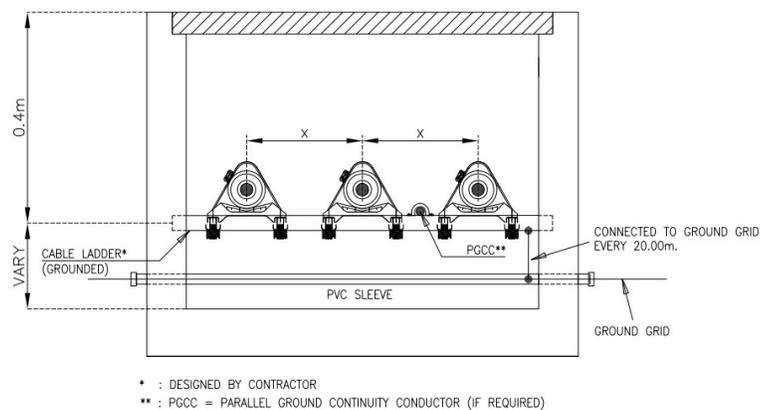
1. 115/33 kV substation

- 1.1 Design, supply and installation of equipment required for a complete new 115 kV GIS digital substation.
- 1.2 Design, supply and installation of equipment required for a complete 33 kV power supply system, 33 kV power supply system and 33 kV switchgear system and all related equipment for the complete operation.
- 1.3 Design, supply and installation of miscellaneous hardware required for the following:
 - 1.3.1 The connection of 115 kV GIS cable interfaces to the 25 MVA and 50 MVA 115-33-11 kV power transformers (KT1A, KT2A).
 - 1.3.2 The connection of 115 kV GIS cable interfaces to 115 kV overhead lines and 115 kV PEA line.
 - 1.3.3 The connection of 115 kV GIS cable interfaces to 115 kV capacitor bank.
 - 1.3.4 The connection of 115-33-11 kV power transformers (KT1A, KT2A) to 33 kV switchgears and station service system.
 - 1.3.5 The connection of 33 kV switchgears to 33 kV PEA lines and 33 kV capacitor bank.
 - 1.3.6 The grounding equipment and miscellaneous hardware for the 115-33-11 kV power transformers (KT1A, KT2A), 115 kV Capacitor bank and 33 kV Capacitor banks.
- 1.4 To meet EGAT's service continuity requirements, the GIS gas compartment shall fulfill the requirements as specified in the specification.
- 1.5 Supply and installation of the marking pins for the referenced positions from the main bus shall be provided in the GIS buildings. The positions of the marking pins shall be shown on the drawings for future GIS extension and the quantity shall not be less than 4 sets. The making pins shall be made of brass or stainless steel that have the formation as follows:



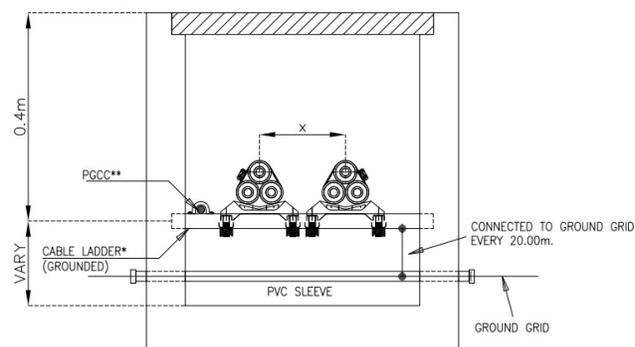
- 1.6 The detachable walk way (cat walk) for visual inspection shall be properly installed on each GIS module and removable service platform, removable ladder shall be provided for GIS inspection.
- 1.7 The feeder nameplates as well as phasing, device and switching numbers shown on the GIS module shall be painted or mounted (detachable type) on the enclosure of GIS. The nameplates color shall conform to Dwg. No.SE-ID-7-01 and their sizes and locations shall be appropriate for GIS module.
- 1.8 The contractor shall supply identification plates for the both indoor and outdoor substation. The material, size and color shall be as shown on attached drawings except size of GIS identification plates shall be proposed by the contractor and approved by EGAT.
- 1.9 The sag and tension of phase wires and overhead ground wires shall be calculated and designed according to internationally-accepted standards by the contractor and the said calculation shall be submitted to EGAT for approval.
- 1.10 Design, supply and installation of 115 kV XLPE cable system which comprises at least the following:
 - 1.10.1 The design and calculation of the 115 kV cable system shall conform to IEC and/or IEEE standards.
 - 1.10.2 The 115 kV XLPE cable shall be single-core with copper conductor.

- 1.10.3 Design, supply and installation of the 115 kV XLPE cables in an 115 kV system complete from one end at the 115 kV GIS to the other end, including cable trench, cable supporting structures, cable spacers, cable cleats, cable termination, cable termination supporting structures, miscellaneous hardware, link box, Sheath Voltage Limiter (SVL) (if applicable) and all related equipment, structures and hardware.
- 1.10.4 The 115 kV XLPE cable shall be installed in flat formation. The cable supporting structure shall be made of stainless steel, aluminum alloy or galvanized steel. The contractor shall design, supply and install the cable supporting structures that are suitable for cable cleat and cable system installation, and their grounding.



- 1.10.5 The minimum bending radius of the 115 kV XLPE cable shall be checked by contractor for cable installation and cable trench design.
- 1.10.6 The contractor shall design and select the type of sheath bonding so that the 115 kV 1/C-800 sq.mm XLPE cable shall be able to carry the continuous current no less than 825A given that the ambient temperature is no less than 45C°. The effect of solar radiation shall be taken into account if deemed technically necessary. The other parameters used in the design shall be practical, reasonable, operational and conform to IEC or IEEE standard. The design report shall be submitted to EGAT for approval. The calculated continuous current rating shall be shown in the single-line diagram.
- 1.10.7 The contractor shall calculate the sheath induced voltage in accordance with IEEE standard. The sheath standing voltage at every point on the metallic sheath of 115 kV XLPE cable system shall be less than 60 V under the rated continuous current. The cable jacket shall be properly designed to be protected from overvoltage. Determine the specification for a surge voltage limiter (SVL) and PGCC cable if deemed technically necessary. The design report shall be submitted to EGAT for approval.

- 1.10.8 Calculate the mechanical force due to short-circuit current as per IEC standard. Determine the specification for cable cleats. The design report shall be submitted to EGAT for approval.
- 1.10.9 The abnormal condition which occurs from the design and installation of 115 kV XLPE cables for example ferroresonance etc. shall be responsible by the Contractor.
- 1.10.10 Based on the design of 115 kV XLPE cable system aforementioned, the contractor shall provide detailed drawings for the installation of this cable system including all related components.
- 1.11 Design, supply and installation of 33 kV XLPE cable system which comprises at least the following:
- 1.11.1 The design and calculation of the 33 kV cable system shall conform to IEC and/or IEEE standards.
- 1.11.2 The 33 kV XLPE cable shall be single-core with copper conductor.
- 1.11.3 Design, supply and installation of the 33 kV XLPE cables in a 33 kV system complete from one end at the 33 kV bus to the 33 kV switchgear and 33 kV switchgear to the disconnecting switch, including cable trench, cable supporting structures, cable spacers, cable cleats, cable termination supporting structures, cable terminations, miscellaneous hardware, link box, Sheath Voltage Limiter (SVL) (if applicable) and all related equipment, structures and hardware.
- 1.11.4 The minimum bending radius of the 33 kV XLPE cable shall be checked by contractor for cable installation and cable trench design.
- 1.11.5 The 33 kV XLPE cable shall be installed in trefoil formation. The cable supporting structure shall be made of stainless steel, aluminum alloy or galvanized steel. The contractor shall design, supply and install the cable supporting structures that are suitable for cable cleat and cable system installation, and their grounding.



* : DESIGNED BY CONTRACTOR
 ** : PGCC = PARALLEL GROUND CONTINUITY CONDUCTOR (IF REQUIRED)

- 1.11.6 The contractor shall design and select the type of sheath bonding so that the 33 kV 1/C-500 sq.mm XLPE cable shall be able to carry the continuous current no less than 500 A given that the ambient temperature is no less than 45C°. The effect of solar radiation shall be taken into account if deemed technically necessary. The other parameters used in the design shall be practical, reasonable, operational and conform to IEC standard. The design report shall be submitted to EGAT for approval. The calculated continuous current rating shall be shown in the single-line diagram.
- 1.11.7 The contractor shall calculate the sheath induced voltage in accordance with IEEE standard. The sheath standing voltage at every point on the metallic sheath of 33 kV XLPE cable system shall be less than 60 V under the rated continuous current. The cable jacket shall be properly designed to be protected from overvoltage. Determine the specification for a surge voltage limiter (SVL) and PGCC cable if deemed technically necessary. The design report shall be submitted to EGAT for approval.
- 1.11.8 Calculate the mechanical force due to short-circuit current as per IEC standard. Determine the specification for cable cleats. The design report shall be submitted to EGAT for approval.
- 1.11.9 The abnormal condition which occurs from the design and installation of the 33 kV XLPE cable system for example the ferroresonance etc, shall be responsible for the contractor.
- 1.11.10 Based on the design of 33 kV XLPE cable system aforementioned, the contractor shall provide detailed drawings for the installation of this cable system including all related components.

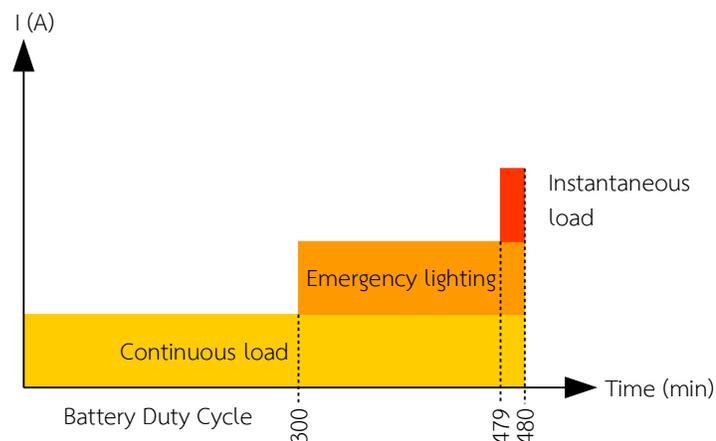
2. Station service system

- 2.1 Design, supply and installation of station service system complete with integral accessories to provide a complete system operation. The station service system mainly consists of as follows:
 - 300 kVA, 33,000-400/230 V distribution transformer (KW1A)
 - 300 kVA, 33,000-400/230 V distribution transformer (KW2A)
 - Load Center Unit Substation (LCUS)
 - 33 kV drop-out fuses
 - 600 V, 500 A safety switches
 - 33 kV equipment, and AC&DC distribution boards, stationary batteries, battery chargers, power cables and all related equipment for the complete operation.
- 2.2 Design, supply and installation of equipment required for a complete 400/230 V power supply system.

2.3 Design, supply and installation of the stationary battery, in which the battery is capable of delivering power to the control and protection for tripping all circuit breakers, essential load for merging unit and emergency essential load for at least 8 hours if normal station service fails. The capacity of the battery shall be designed by the contractor which the considered factor the influence the capacity of battery shall be as follows:

- The temperature correction factor is 1.0
- The design margin factor is 1.15
- The aging factor is 1.25

In case of bus faults occurring on the last hour of battery power, the battery shall generate sufficient power for tripping all circuit breakers as shown in figure below. The stationary battery shall be designed and calculated in accordance with IEEE or other acceptable international standards. In addition, the size of the stationary battery shall be designed to support the operation of the new 115 kV GIS and future diameter as shown on the attached bidding document drawings. The calculation shall be submitted to EGAT for approval.



2.4 Emergency lighting system shall be installed at the 115 kV GIS with control building and 33 kV switchgear in case of normal station service fails. The said emergency lighting system is activated and capable of generating illumination level of at least 150 LUX for at least 3 hours.

3. Grounding system

3.1 Design, supply and installation the grounding system of the following:

- 115 kV GIS substation and the 115 kV system
- 33 kV switchgear system and the 33 kV system
- 115 kV GIS with control building
- 33 kV switchgear building

The grounding conductor of the substation grounding system shall be 4/0 AWG bare copper wire type.

- 3.2 The contractor shall design, supply and install the conductor size 2x4/0 AWG bare copper wire type connect from ground grid to steel structure and equipment.
- 3.3 The ground grid conductor spacing under the building area shall be the same as the switchyard.
- 3.4 Design, supply and installation of the grounding system for isolating transformer. The grounding system of the isolating transformer shall be separated from the substation. The detail design and calculation shall be submitted to EGAT for approval.
- 3.5 Design, supply and installation of the grounding equipment and miscellaneous hardware for 115 kV GIS substation, 33 kV system and the 33 kV switchgear system including the 33 kV power supply system and 115/33 kV XLPE cable system.
- 3.6 The contractor shall conduct the soil resistivity measurement. The result shall be submitted to EGAT for approval.
- 3.7 The contractor shall evaluate the price of new ground grid for the overall area of substation after filling soil based on the specified design for price reference as below:
 - 3.7.1 The maximum ground grid conductor spacing (D_0) shall be 5 meters.
 - 3.7.2 The number of ground rod shall be 150 pieces.
- 3.8 The contractor shall design a grounding grid based on the measured soil resistivity by hand calculation using the equations in IEEE-80 standard and submitted to EGAT for approval. The parameters for grounding system calculation shall be used as follows;
 - Fault current division factor (S_f) value = 1
 - Fault current (rms) = 31.5 kA
 - Time duration of fault = 1 secondThese parameters shall be used for determine the size of grounding conductor for the substation grounding system. If the ground conductor spacing calculated by hand (D_1) is less than the grounding conductor spacing for reference (D_0), the contractor shall design a grounding grid by using the software. The certification of software shall be acceptable for commercial use.
- 3.9 The grounding system for the extended area shall be connected to the existing ground grid.
- 3.10 Modification of the existing grounding system (if necessary).

4. Lightning protection system

- 4.1 Design, supply and installation of the substation lightning protection system complete with all related equipment. The contractor shall design the lightning protection system for the protection of all substation equipment which is under the protective zone. To meet EGAT's design criteria for the lightning protection system and to enhance the stability of lightning protection system, the Basic Insulation Level voltage (BIL) of:
 - a) 550 kV for 115 kV substation.
shall be used in calculation instead of Critical Flashover voltage (CFO).
For 33 kV substation, the stroke current of 2 kA shall be used for the calculation.
- 4.2 For the design of lightning protection system for the 115 kV GIS with control building and 33 kV switchgear building the lightning protection level (LPL) shall be used level 1 for calculation and the overhead ground wire is not permitted. Air terminal rods installed at the roof shall be used instead.
- 4.3 Lightning protection system shall be designed to meet IEC, NEMA and E.I.T. standards or internationally-accepted standards.

5. Facility system

- 5.1 Outdoor facility system
 - 5.1.1 Design, supply and installation of a substation lighting system complete with all integral accessories to provide a complete system operation. The lighting system shall mainly consist of equipment lighting, fence lighting, access road lighting, sign board lighting, lighting relay panels (LRP), raceways and wiring cables for lighting circuits.
 - 5.1.2 The lamps for outdoor facility lighting system shall be LED type with all integral accessories, e.g. lamp holders, fixtures, reflectors, and etc. The contractor shall provide drawings that show details for installation.
 - 5.1.3 Design, supply and installation of circuits for remote control, remote switch and door phone system of the main entrance gate. The control of the entrance gate shall be operated in both manual and remote-control modes which shall be controlled from both the control room and the guardhouse.
 - 5.1.4 Design, supply and installation of circuits for remote control and remote switch of the switchyard gate. The control of the switchyard gate shall be operated in both manual and remote-control modes which shall be controlled from the control room.

5.2 Indoor facility system

- 5.2.1 Design, supply and installation of the facility system which mainly consists of power supply, lighting system, lightning protection system, grounding system, power supply, fire alarm and protection system, air conditioning system, ventilation system and telephone & LAN system in 115 kV GIS with control building and 33 kV switchgear building. All cable wiring systems shall conform NEC and IEC standards or accepted international standards.
- 5.2.2 The lamps for indoor facility lighting system shall be LED type with all integral accessories, e.g. lamp holders, fixtures, reflectors, and etc. The contractor shall provide drawings that show details for installation and specify the LED lamp and LED luminaire circuit identified that the LED lamp circuit shall be supplied by 2 - 3 manufacturers.
- 5.2.3 All steel accessories e.g. lip-channel, conduit, conduit fittings, conduit accessories, box and cover shall be hot dip galvanized.
- 5.3 The size of low voltage cable shall be sufficient to keep the voltage drop at the load point less than 5% at rated current.
- 5.4 The voltage drop shall conform to EGAT's requirement and the calculation shall be submitted for approval.
- 5.5 The inverter for essential load of merging unit and emergency essential load shall meet the requirement as the table below. The contractor shall responsible for inverter sizing calculation and the calculation shall be submitted to EGAT for approval.

No.	Description	Requirement data	Unit	No.	Description	Requirement data	Unit
1	Environmental Condition			6	Control button		
	1.1 Minimum ambient temperature	0	Celsius		6.1 Inverter START and STOP	YES	
	1.2 Maximum ambient temperature	40	Celsius		6.2 Acknowledge alarm silent	YES	
	1.3 Relative Humidity	0-95	%		6.3 Lamp test	YES	
	1.4 Tropicalization	YES	-				
	1.5 Altitude	<1000	meters	7	Measurement scale 90 degree		
					7.1 AC output voltage cls 1.5	YES	
2	Cabinet			8	Protection		
	2.1 Protection Level	IP 20			8.1 Overload shutdown	YES	
	2.2 Mounting	Removable			8.2 Low DC voltage shutdown (<105 V)	YES	
	2.3 Epoxy painting color	RAL7032			8.3 AC output fuse to prevent short circuit	YES	
	2.4 Convection ventilation	Forced air			8.4 Overload temperature shut down	YES	
	2.5 Steel sheet thickness	1.5	mm.		8.5 Thermistor fan controlled	YES	
					(Inverter will shut down when temperature		
3	Main supply Voltage				8.6 DC circuit breaker	YES	
	3.1 Nominal Voltage	125	V.		8.7 AC circuit breaker	YES	
	3.2 Voltage variation	100-150	V.		8.8 DC input fuse to prevent short circuit current	YES	
	3.3 Permissible ripple voltage on DC	< 5	% Vp-p				
	3.4 Self-precharge	YES		9	Monitor		
4	Output AC Voltage				9.1 Input DC voltmeter	YES	
	4.1 Nominal voltage	220	V.		9.2 Output AC voltmeter	YES	
	4.2 Supply system	1 ph+N					
	4.3 Static voltage regulation at 0-100% load variation and power factor 1.0	+/- 2	%	10	Alarm and LED lamp status indicator		
	4.4 Dynamic voltage regulation	+/- 5	%		10.1 Inverter ON/OFF	YES	
	-At AC input fluctuation +/- 10 %				10.2 DC input status	YES	
	4.5 harmonic distortion	< 5	% THD		10.3 Load on inverter	YES	
	4.6 Output frequency	50	Hz		10.4 LED lamp alarm indicators (Alarm noise)	YES	
	4.7 Frequency variable	+/- 0.5	%		10.5 AC output status	YES	
	4.8 Synchronized frequency	+/- 1	% Hz		(LED shall blink when Under/Over voltage +/- 10		
5	Output capacity			11	Cable entry		
	5.1 Output continuous capacity	xx	kVA		11.1 DC incoming	YES	
	Note xx : Design by Contractor				11.2 AC Outgoing	YES	
	5.2 Overload capacity 100 % continuous	YES			11.3 Terminal	INSIDE	
	5.3 Overload capacity 125 %	10	min				
	5.4 Overload capacity 150 %	1	min				
	5.5 Efficiency at rated load and 1.0 power factor	> 85	%				

5.6 The contractor shall refer to DWG.No. TYP2A-CD-0-01L, TYP2A-CD-0-01M, TYP2A-GIS-7-01L and TYP2A-GIS-7-01M for guideline to design facility system of the 115 kV GIS with control building.

5.7 The contractor shall refer to DWG.No.SD-SWG-3-01L and SD-SWG-3-01M for guideline to design facility system of the 33 kV switchgear building.

6. Telecommunication system

- 6.1 The Contractor shall connect the new grounding system of substation to the grounding system of the existing telecommunication tower (if necessary).

7. Grid-Connected Solar Photovoltaics (PV) Rooftop System

- 7.1 The Contractor shall design, supply, deliver, install, construct, test, commission and maintain the Grid-Connected Solar PV rooftop system, which shall be completed with all necessary accessories and minor items to facilitate the correct completion of the work. All requirements of relevant standards over these works shall be applied. The 60 kWp Solar on Grid system with string inverters shall be installed at the rooftop of GIS with control building or control building. All the Solar PV rooftop system should be metered and the energy generated from the PV rooftop system shall be recorded.

General Requirement

- 7.1.1 The grid-connected rooftop solar power system shall consist of the following equipment/components but not limited to:

- Photovoltaic modules (PV modules) with grid-connected rooftop solar power support structure
- Grid-connected inverter
- DC combiner box
- AC panel
- DC fuse or DC circuit breaker & AC circuit breaker
- DC & AC surge arrester
- DC & AC cable
- Conduit & Cable tray
- DC & AC connector
- Identification plate
- Monitor equipment
- Tools required for operation and maintenance
- Any other item(s) that may be required to successfully commission, operation and maintain the grid-connected solar PV rooftop system.

- 7.1.2 All equipment/components parts used in the grid-connected solar PV rooftop system shall conform to the single line diagram and Technical Specifications of systems as shown in Dwg. No. SE-PV-0-01-01/01 & SE-PV-0-02-01/02 – 02/02 or internationally-accepted standards.

- 7.1.3 Submittals for documents, drawings, catalogs and manuals of equipment, warranty cards and spare parts shall conform to Technical Specifications of systems as shown in Dwg. No. SE-PV-0-02-01/02 – 02/02.
- 7.1.4 All documents and drawings shall be certified and signed by the Contractor's authorized senior professional engineers certified by Thailand's Council of Engineers.
- 7.1.5 The contractor or subcontractor shall have experience in executing at least two (2) contracts as the contractor for design and installation of Solar PV rooftop system in Thailand which has the capacity of PV system more than 60 kWp, with successful operation of at least two (2) consecutive years.
- 7.1.6 Testing and commissioning of the grid-connected solar PV rooftop system shall conform to the internationally-accepted standards.
- 7.1.7 Mentoring and training to EGAT's operating staff for operation and maintenance.
- 7.1.8 The insurance period for workmanship and Materials shall conform to Technical Specifications of systems as shown in SE-PV-0-02-01/02 – 02/02.

8. Other work

- 8.1 Supply and Installation of miscellaneous hardware required for suspension and post insulators assembly.
- 8.2 Installation of suspension and post insulators and all hardware for suspension and post insulator assembly.
- 8.3 Installation of heat shrinkable insulation material for 33 kV aluminum conductor for the following:
 - The connection of 33 kV drop-out fuses and distribution transformers.
 - All conductors where the phase spacing distance are less than 1.00 m.
- 8.4 Modification of junction box supporting structure (JB003) for the installation of outdoor receptacle box (ORB1 and ORB2) and common cubicle for maintenance (CCM).
- 8.5 Modification of BS202 for installation of 33 kV XLPE cables, 33 kV disconnecting switches, 33 kV power fuses and 33 kV surge arresters.
- 8.6 Modification of BS204 for installation of safety switches and 33 kV power fuses.
- 8.7 Design, supply and installation of cabling from the outdoor marshalling cubical (MC002) to the associated equipment.

- 8.8 Removal of the lamp posts, equipment, structures in the existing 115 kV conventional substation. Details of removal are shown on the bidding document drawings. All removed equipment shall be carefully packed by the contractor and returned to EGAT at Songkhla substation. Songkhla substation is located at Phawong subdistrict, Muang district, Songkhla province.
- 8.9 Design, supply and installation of the new identification plates for 115 kV and 33 kV capacitor banks.
- 8.10 Supply and installation of cabling for control and protection system of the 115 kV and 33 kV capacitors.
- 8.11 Supply and installation of labels or sign plates to identify the underground route of low voltage cable that shall be installed direct burial or ran in conduit.

9. Testing and commissioning

- 9.1 Testing and commissioning of all equipment required to make the substation function properly.

Work not included in this contract

The Work not included in this contract shall be as shown on the drawings and as follows:

1. The stringing work for the connection between the 115 kV substations take-off structures and the dead-end towers of the transmission lines.
2. Dismantlement, relocation and installation of 115-33-11 kV power transformers “KT1A, KT2A” except supply and installation of cabling work for control and protection system and grounding system work.
3. Dismantlement, relocation and installation of 115 kV and 33 kV capacitor banks except supply and installation of cabling work for control and protection system and grounding system work.
4. Supply station post and suspension insulators.

CONTROL AND PROTECTION PART

Work included in this Contract

1. Design, supply, installation, wiring, test and commissioning of the complete control and protection system based on IEC 61850 standard which comprises at least the following equipment :

For Process Level

- Merging unit cubicle
- 400/230 VAC board, 125 VDC power panel and 125 VDC distribution board

For Bay Level

- Protective IED panel (swing-rack type)
- Bay Control Unit (BCU) panel (swing-rack type)
- Metering panel (swing-rack type)

Each energy meter shall be calibrated by EGAT's Energy Meter Department before being installed in each metering panel.

- Ethernet switch panel for station bus (19" rack type)
- Ethernet switch panel for process bus (19" rack type)
- E1 converter panel (19" rack type)
- Fault Recording System (FRS) panel (19" rack type)
- 400/230 VAC board, 125 VDC power panel and 125 VDC distribution board

For Station Level

- GPS receiver and gateway panel (19" rack type)
- Outdoor antenna and accessories
- HMI and accessories
- Engineering workstation (EWS) and accessories
- Redundant UPS systems to power HMI and EWS
- Complete set of operator console and chair
- 400/230 VAC board, 125 VDC power panel and 125 VDC distribution board

For Loose Part

- Optical fiber cables, copper cables, patch cord cables and accessories
- EFLEX conduits for optical fiber cables outside buildings
Outdoor optical fiber cables shall be wired in EFLEX conduits laying in cable trench as per drawing no. TP-E-20.13.
- Loose equipment as specified in price schedules.

2. Design, supply, installation, wiring, test and commissioning of the complete operator console, engineering workstation, HMIs, gateways, and all required system software and hardware in order to successfully run the IEC 61850 based substation protection and automation system.
3. The separated industrial desktop computers running on the latest licensed Microsoft Windows operating system with the licensed antivirus program shall be provided in order to be used as HMIs and engineering workstation. The EGAT SCADA X software which will be supplied by EGAT for local substation control and signal monitoring shall be installed in the HMIs by the System Integrator. Moreover, the EGAT gateway software which will be supplied by EGAT for remote substation control, gateway configuration, and interfacing to EGAT's SCADA system which at least consists of National Control Center (NCC), Backup National Control Center (BNCC), Regional Control Center (RCC), Backup Regional Control Center (BRCC), Group Control Center (GCC), and Backup Group Control Center (BGCC) shall also be installed in the engineering workstation by the System Integrator. In addition, IEC 60870-5-104 is used for EGAT's SCADA system.
4. The System Integrator shall be responsible for at least the following scope of works:
 - Design the complete IEC 61850 based substation protection and automation system as well as the communication network based on IEC 61850 standard in order to coordinate with the existing equipment and/or equipment supplied by EGAT.
 - Configure each IED and communication network in order to completely fulfill the designed IEC 61850 based substation protection and automation system.
 - Design the engineering workstation, HMIs, gateways, and all required system software including both EGAT SCADA X software and EGAT gateway software installation in order to successfully run the IEC 61850 based substation protection and automation system. In addition, the signal lists to be displayed/controlled via engineering workstation, HMIs and the EGAT's SCADA system shall be discussed with EGAT after the Award of Contract.
 - Perform at least the following tests:
 - o Individual test

This test is to verify each IED performance including IEDs that supplied as spare parts which shall comply with EGAT's Specifications as well as the relevant drawings and documents. In addition, the internal logic of each IED shall be adapted according to EGAT's comments in case the IED performance does not fulfill EGAT's requirements.

- Service setting test

This test is to verify the response of all protection related functions with the calculated parameters setting implementation for all IEDs. The calculation report using the given data which will be provided after the Award of Contract shall be done by the System Integrator and submitted to EGAT for approval before configuring to all IEDs.

- Factory Acceptance Test (FAT)

This test is to verify system performance with configured IEDs and Fault Recording System (FRS) which shall comply with EGAT's Specifications as well as the relevant drawings and documents.

- Site Acceptance Test (SAT)

This test is to finally verify the complete IEC 61850 based substation protection and automation system with the existing equipment and/or equipment supplied by EGAT at site which the system performance shall comply with EGAT's Specifications as well as the relevant drawings and documents. In addition, the test will be under EGAT's supervision.

All test reports shall at least clearly show the following details:

- Test procedures
- All used data such as parameters, standards, and etc.
- Test results
- Conclusion

In addition, all tests shall be witnessed by EGAT's staff. Moreover, EGAT shall have access to all necessary data for complete understanding of the tests as well as the validity of the results.

5. The Contractor shall be responsible for providing both hardcopies and electronic files of the complete schematic and wiring diagrams of the IEC 61850 based substation protection and automation system including programmable logic schemes of each IED, programmable logic schemes of parallel transformer (if any), HMI graphic display, SSD files, ICD files, SCD files, CID files, signal lists of SV, GOOSE and MMS, and communication network connection diagram. Moreover, the required software for the above-said SCL files configuration shall also be supplied. In case of the SCD file configuration, the supplied software shall be compatible with all IEDs operated in the substation and shall also support multi-vendor IEDs. In addition, the Contractor can use the substation system network topology on drawing no. TP-E-20.3 as a guideline. The said drawing can be modified by the Contractor. However, it shall be submitted to EGAT for approval.

6. The Contractor shall be responsible for providing both hardcopies and ACAD files of the complete schematic and wiring diagrams of the interfacing work between IEC 61850 based substation protection and automation system and the existing equipment and/or equipment supplied by EGAT. In addition, the approved final revision of green-red drawings and final drawings shall be printed and submitted in A1 paper size.
7. The contractor shall be responsible for performing wiring checks to verify that the details of equipment, schematic and wiring diagrams shown in the drawings comply with all IED equipment configurations.
8. The Contractor shall provide the draftsman working at the site during the commissioning stage in order to be in charge of writing the as-built drawings of control and protection system.
9. The contractor shall be responsible for providing a location with appropriate temperature and sufficient area to accommodate all equipment for the Factory Acceptance Test (FAT).

Works Not Included in This Contract

- Supply of EGAT SCADA X software and EGAT gateway software.

COMMUNICATION PART

Work included in this Contract

CCTV system

1. Design, supply, and installation of the substation CCTV system which complies with the following qualifications:
 - 1.1 The system can be operated 24 hours a day.
 - 1.2 All cameras in the system shall be IP-camera type.
 - 1.3 At least 2 monitoring locations are required, the guardhouse and the control room.
 - 1.4 Installation space in the control room shall be prepared for rack cabinet(s) and CCTV operation desk(s) positions.
 - 1.5 In case of outdoor installation, all devices shall be weather-proof type which can be operated in all outdoor weather conditions, robust and durable.
 - 1.6 The bidder or a subcontractor shall be authorized by a representative or a branch office of manufacturer in Thailand.
 - 1.7 The bidder or a subcontractor shall be able to supply the spare parts of CCTV equipment in this contract for at least five (5) years starting from the date of EGAT acceptance.
 - 1.8 The calculation and required drawing according to the attached Bidding Document Specification shall be submitted to EGAT for approval.

CIVIL AND ARCHITECTURAL PART

Work included in this Contract

ARCHITECTURAL WORK

1. Design and construction of
 - 1.1. 115 kV GIS and Control Building.
 - 1.1.1 Structure & foundation. The proper structure can be selected for the design and construction and shall be submitted to EGAT for approval.
 - 1.1.2 RC and/or steel structure for roof.
 - 1.1.3 Fire protection for steel structure shall conform to legal provision, EGAT's specifications and Design manual for substation.
 - 1.1.4 Architecture of the whole building.
 - 1.1.5 The contractor shall construct the building in accordance with "IEEE STD- 979-1994 (R2004)" (IEEE Guide for Substation Fire Protection).
 - 1.1.6 115 kV GIS and Control Building shall be designed with reference to Yala 1 Substation (Dwg.No.YL1-GIS-7-01A) Equipment layouts and cable block out shall conform to electrical drawing Dwg.no.SE-GIS-0-01-01/01 and Dwg.No.YL1-S-7 and Dwg.No.YL1-S-6. Other facilities layouts shall conform to requirements with reference to architectural drawings and scope of work.
 - 1.1.7 The design of building shall analyze and take the following aspects into consideration: Site, Environment, Context, Function, Climate (sunlight, wind, rain, heat etc.), Energy efficiency, Safety and including aesthetic of architecture to encourage EGAT corporate identity.
 - 1.1.8 For exterior surface of the building, there shall be at least 20% of total building area which uses yellow color that represents corporate image of EGAT.
 - 1.1.9 GIB Block out of the building shall be filled with fire stop material-mortar or sealant or foam with 2-hour fire resistance rate and install in accordance to the manufacturer's instruction.
 - 1.1.10 Building facilities
 - Electricity and illumination system including cable work for illumination, ventilation system, power supply, air conditioning system, and telephone system.
 - Plumbing system for water supply, building drain and vent, storm water drainage including sanitary wares and fittings.
 - Storm water drainage system.
 - Miscellaneous including grounding and labeling.
 - Cable routing and cable support (cable tray and cable ladder) installed in cable room and main cable trench.

- Overhead traveling crane, of lifting capacity not less than 5 metric tons and wireless crane remote control. Overhead traveling crane shall have cat-walk for maintenance the equipment on ceiling and complete with 2 sides of guard rail along the cat-walk.
- Overhead traveling crane shall comply with standard DIN EN 15011 standard.
- Overhead traveling crane motors shall be dual speed or inverter and have operation speed as below.

Operating speed	High speed	Low speed
Cross travel	20 m/min	5 m/min
Long travel	32 m/min	5 m/min
Lifting	5 m/min	0.8 m/min

- Overhead traveling crane shall be inspected and maintained for 2 years, not less than 4 times per year and not less than manufacturers' recommendation.
- Life line shall be installed above along runway rail of overhead traveling crane.
- Hoist crane, for loading area, of lifting capacity not less than 2 metric tons and wireless crane remote control.
- Lightning protection system.
- Emergency lighting system.
- Signboard on building and room name sign on each room.
- Warning sign provided in accordance with EIT Standard or Quality and Safety Development Division Standard (EGAT).
- The access floor system material in the Specification No.3001 (Civil and Architectural work) No.3001-10.8.3.5 Access Floor System (Raised Flooring System) shall be cancelled

2. Construction of

2.1 33 kV Switchgear Building.

- Fire protection for steel structure shall conform to legal provision, EGAT's specifications and Design manual for substation.

WATER SUPPLY AND FIRE PROTECTION SYSTEM

1. Design and construction of

1.1 Fire protection system for 115 kV GIS and Control/Relay Building.

- 1.1.1 Control/Relay area shall consist of Total Flood Clean Agent Fire Suppression System with heat detector, addressable type smoke detector and aspirated smoke detector.
- 1.1.2 GIS area shall consist of optical beam smoke detector.

- 1.1.3 Fire protection system of 115 kV GIS and Control/Relay Building shall have trouble and operation visual and audible signals (environmental monitoring), which indicate change of state of any connected device, shown and recorded at control room in 115 kV GIS and Control/Relay Building. The installation practice shall be in accordance with the last edition of NFPA 72.
- 1.1.4 There shall be sounder and beacon on the roof of the building.
- 1.1.5 For system requirements for indoor fire protection system as shown on specification 3001-10.13.1 part e, item no.1 and 6 shall be changed to the new details as follow
- (1) System description and operation: Supply and Installation of a Total Flood Clean Agent Fire Suppression System utilizing IG-100 shall cover all these zones:
Zone 1: Equipment (Control/Relay) Room;
Zone 2: Electrical Room;
Zone 3: Under Raised Floor;
Zone 4: Battery Room;
Zone 5: Cable Room;
Zone 6: Inert Gas Room
Other zone (If required)
Each protected zone shall have its own set of IG-100 cylinders.
 - (6) Detectors shall be cross-zoned detection requiring 2 detectors to be in alarm before discharge. A zone of A or B of addressable smoke detector and a zone C of all ASD shall be crossed.
- 1.1.6 For air sampling smoke detector as shown on specification 3001- 10.13.2 part i item no.1, 7, 13 and 14 shall be changed to the new details as followings :
- i. Air Sampling Smoke Detector.
 - (1) Shall consist of a high sensitivity type detector, using light scatter technology.
 - (7) Detection system for all cabinet shall be omitted.
 - (13) The minimum sensitivity settings for a single sampling hole are so that the detection system alarm at 1.5% obs/ft (4.95%obs/m). A sampling hole maximum coverage area is 400.0 sq.ft (37.2 sq.m).
 - (14) Maximum transport time from the most remote port to the detection unit of an air-sampling system shall be a maximum of 90 seconds.

- 1.1.7 Fire protection system, fire alarm system, installation room and accessories shall be in accordance with the applicable requirements set forth in the latest edition of the following codes and standards:
 - NFPA 2001: Clean Agent Fire Extinguishing Systems
 - NFPA 70: National Electrical Code.
 - NFPA 72: National Fire Alarm Code.
 - NFPA 75: Standard for the Fire Protection of Information Technology Equipment.
 - NFPA 76: Standard for the Fire Protection of Telecommunications Facilities.
 - IEEE Std 979: IEEE Guide for Substation Fire Protection
 - NFPA 850: Recommended Practice for Fire Protection for Electric Generating Plants and High Voltage Direct Current Converter Substations.
- 1.1.8 There shall be one control panel which controls fire detection system and IG-100 fire suppression system in the building.
- 1.1.9 There shall be a protective clear polycarbonate cover which can be immediately lifted or opened for all IG-100 manual release stations.
- 1.1.10 Battery room shall be furnished with an all-stainless steel, wall-mounted emergency eyewash. Contractor shall submit the catalog and proposed location of the eyewash to EGAT for approval.
- 1.2 Fire protection system for 22/33 kV Switchgear Building.
 - 1.2.1 Switchgear Building shall consist of Total Flood Clean Agent Fire Suppression System with addressable type smoke detector and aspirated smoke detector.
 - 1.2.2 Fire protection system of Switchgear Building shall have trouble and operation visual and audible signals (environmental monitoring), which indicate change of state of any connected device, shown and recorded at control room in 115 kV GIS and Control/Relay Building. The installation practice shall be in accordance with the last edition of NFPA 72.
 - 1.2.3 There shall be sounder and beacon on the roof of the building.
 - 1.2.4 For system requirements for indoor fire protection system as shown on specification 3001-10.13.1 part e, item 6 shall be changed to the new details as follow
 - (6) Detectors shall be cross-zoned detection requiring 2 detectors to be in alarm before discharge. A zone of A or B of addressable smoke detector and a zone C of all ASD shall be crossed.
 - 1.2.5 For air sampling smoke detector as shown on specification 3001- 10.13.2 part i item no.1, 7, 13 and 14 shall be changed to the new details as followings :
 - i. Air Sampling Smoke Detector.
 - (1) Shall consist of a high sensitivity type detector, using light scatter technology.
 - (7) Detection system for all cabinet shall be omitted.

- (13) The minimum sensitivity settings for a single sampling hole are so that the detection system alarm at 1.5% obs/ft (4.95% obs/m). A sampling hole maximum coverage area is 400.0 sq.ft (37.2 sq.m).
- (14) Maximum transport time from the most remote port to the detection unit of an air-sampling system shall be a maximum of 90 seconds.

1.2.6 Fire protection system, fire alarm system, installation room and accessories shall be in accordance with the applicable requirements set forth in the latest edition of the following codes and standards:

- NFPA 2001: Clean Agent Fire Extinguishing Systems
- NFPA 70: National Electrical Code.
- NFPA 72: National Fire Alarm Code.
- NFPA 75: Standard for the Fire Protection of Information Technology Equipment.
- NFPA 76: Standard for the Fire Protection of Telecommunications Facilities.
- IEEE Std 979: IEEE Guide for Substation Fire Protection
- NFPA 850: Recommended Practice for Fire Protection for Electric Generating Plants and High Voltage Direct Current Converter Substations

1.2.7 There shall be a protective clear polycarbonate cover which can be immediately lifted or opened for all IG-100 manual release stations.

1.3 Fire protection system for the switchyard to meet the requirement as specified in IEEE Guide for Substation Fire Protection: IEEE Std 979, all requirements of NFPA 850.

1.4 Fire Pump System. (conforming to NFPA 14, 20, 22, 24, 72).

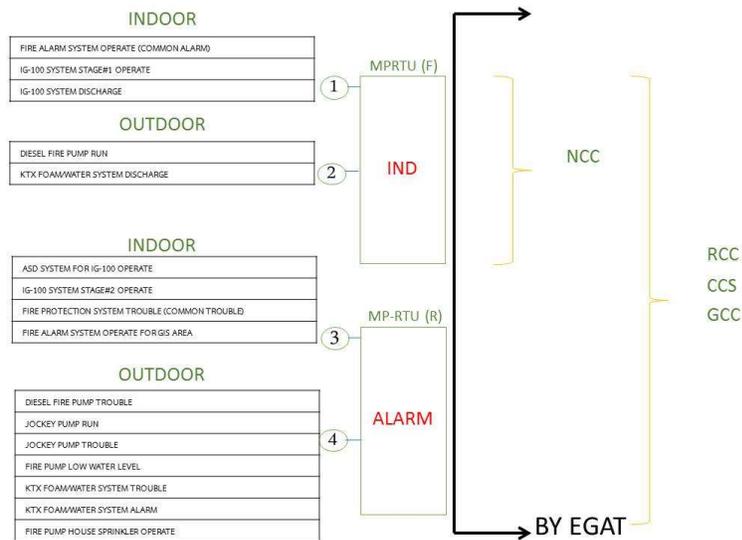
1.5 250 cu.m. water storage tank, fire pump, and jockey pump shall have trouble and operation visual and audible signals (environmental monitoring), which indicate change of state of any connected devices, shown and recorded at control room in 115 kV GIS and Control/Relay Building. The installation practice shall be in accordance with the latest edition of NFPA 72.

1.6 There shall be one fire alarm system graphic annunciator at each building to enable responding personnel to identify the location of a fire accurately and to indicate the status of emergency equipment or fire safety functions.

1.7 There shall be one graphic annunciator which displays alarm, discharge and trouble signals of fire alarm system of other buildings, (fire pump houses, transformers, shunt reactors) at the building where control room locates.

1.8 Fire protection system circuits for buildings and switchyards: notification appliance circuits, and signaling line circuits, shall be class A circuit. Initiating device circuits can be class B circuit.

1.9 For fire protection system monitoring system, contractor shall be responsible for procuring and installing a system comprising of monitoring and automatic alarm equipment; and for connecting the system to EGAT SCADA using Protocol Modbus or other Protocols that EGAT supports via TCP/IP port RJ45. When detectors detect smoke or heat, or equipment abnormality occurs, or fire protection system operates, the monitoring system will send alarm signals and record the even location, event date, start time, end time, and other necessary information. The event log must be appropriate for analyzing the cause of the event. The signals shall be verifiable and sent through (CCS) RTU and EGAT SCADA to NCC (National Control Center). The equipment shall be installed in control building or other location specified by EGAT. Signals of indoor fire protection system of each room and signals of outdoor fire protection system of each transformer / shunt reactor shall be sent to local CCS, GCC, RCC, and NCC as following details;



1.10 There shall be only one subcontractor engaging in design, supply and installation of Fire Protection System for Buildings and Switchyard.

1.11 Water supply system.

1.12 All building wall openings for fire protection dampers shall be provided with stainless steel louvers and insect screens to install inside of building.

1.13 For portable fire extinguisher as shown on specification 3001- 10.13.3 shall be changed to the new details as followings :

- The fire extinguishers shall be conformed to latest TIS standards. The portable and mobile fire extinguishers shall be carbon dioxide (CO₂) conforming to TIS 881 and/or dry chemical conforming to TIS 332, capacity 10 lbs/set. The fitting accessories shall be provided.
- The portable fire extinguishers shall be installed according to the latest NFPA 10.

- 1.14 There shall be safety signs for fire extinguisher, manual release station and fire alarm device.
- 1.15 Contractor shall warranty the fire protection system for one full year starting the date after contract final completion. Fire protection system shall be inspected and maintained for 2 years, not less than 4 times per year and not less than manufacturers' recommendation, at contractor's cost and expense.
- 1.16 Notwithstanding the expiration of any warranty period described in this contract, the warranty period for any fire protection system or equipment and maintenance period shall be extended by a period equal to the sum of any periods during the warranty period when such system or equipment cannot be used for the purposes for which they were intended or the delays in maintenance, starting from the date EGAT has given contractor notice.
- 1.17 There shall be a set of computer desk with chair, a set of CPU which suitable for fire protection system software and operate 24 hours a day and a set of 24" LED monitor which show the status of fire protection system in control room in 115 kV GIS and Control/Relay Building. One set of laser jet printer shall be provided.
- 1.18 Consumable materials for fire protection system, for example, filters, liquids, and seals shall be provided according to manufacturer's instructions for a period of two years.
- 1.19 Fire pump house shall be installed a sound proof system.
- 1.20 For all buildings, piping or cable penetrating the wall/floor and block out at wall/floor shall be enclosed with fire stop material. Fire stop material shall be approved by UL Listed/FM Approved and comply with NFPA 80 (Standard for Fire Doors and Other Opening Protectives) and other relevant standards. The installer shall be certified by manufacturer and have experience in installation of material for at least 5 years, of at least 10 projects.
- 1.21 Fire detection devices in substation shall be as table below.

Protected Area	Detector
1. Control, Relay and Telecommunication Rooms, Thyristor valve room	ASD and SD
2. Under-Raised Floor	ASD and SD
3. Feeder Sections and Switchgear areas	ASD and SD
4. Electrical Room	ASD and SD
5. Battery room	
5.1 Battery room Vented Type	HD
5.2 Battery room Dry Type	HD
6. GIS Area	OBSD
7. Inert Gas Room	SD
8. Other Room such as Shops, Office, Warehouse and Pantry	HD or SD
9. Emergency Diesel generator room or Emergency Generator Set House	HD

10. Transformer, Shunt Reactor	LHD
11. Cable Spreading Rooms and Cable Tunnels	<ul style="list-style-type: none"> ▪ SD when environmental condition is acceptable. ▪ LHD when environmental condition is out of range for SD ▪ ASD in high risk area and required early response.
12. Main Cable Trench of GIS Area	LHD

Abbreviations

1. Heat detector, HD
2. Addressable Spot-Type Photoelectric Smoke detector, SD
3. Linear Heat Detector, LHD
4. Aspirated smoke detectors, ASD
5. Optical beam smoke detector, OBSD

- 1.22 Pipe coating system shall conform to ASME A13.1 standard and ANSI-A13.1
- 1.23 Underground water piping shall have indicator sign.
- 1.24 For Fire protection system design shall be conformed to NFPA 101 (Life Safety Code).
- 1.25 All junction boxes or electrical equipment in rooms on ground floor shall be 1.2 m higher from room floor elevation.
- 1.26 All firestops for penetration from outside cable trenches to cable room and from cable room to under raised floor area shall be multi cable transit fire stop. Other firestops shall be block type being able to be removed and reinstalled conveniently. Firestop catalog and installation detail drawings shall be submitted to EGAT for approval. The cables penetrating from outside the building into building shall be coated with firestop cable coating with the length of 50 cm. measuring from building's exterior wall outward.
2. Construction of
 - 2.1 Fire pump house.
 - 2.2 Cabinets with 2x50 lbs wheel fire extinguisher.
 - 2.3 Water storage tank for fire protection system (capacity not less than 250 cu.m).
 - 2.4 Underground water tank 50 cu.m.
 - 2.5 Water tank tower 15 cu.m.

CIVIL WORK

1. Design and construction of
 - 1.1 Steel structure and foundations for Specified equipment and the others not shown in “For Construction drawings” and / or EGAT’s specification.
 - 1.1.1 115 kV Cable riser support structure foundation
 - 1.1.2 115 kV Circuit Breaker foundation
 - 1.1.3 115 kV Disconnecting switch support foundation
 - 1.1.4 115 kV RC slab skid base foundation
 - 1.1.5 36 kV 3.6 MVar Capacitor bank skid base foundation
 - 1.1.6 Isolating transformer foundation
 - 1.2 Road and drainage system.
 - 1.3 Drainage system for cable trench.
 - 1.4 Sizing of Oil containing pit (value of L, B, W, W1 and W2).
 - 1.5 Sizing of Oil separator (value of A and D).
 - 1.6 Cable trench for XLPE system with RC cover.
 - 1.7 Cable trench for XLPE system with steel cover.
 - 1.8 Modification lamp post on concrete fence.
 - 1.9 RC covering steel post and bracing of existing telecommunication.
 - 1.10 RC covering opening between ground floor and 1st floor of existing control building.
 - 1.11 Concrete pole strain bus structure.
 - 1.12 Site office.
 - 1.13 33 kV Switchgear building.
 - Modify structure of CDU area as per Architectural drawing.
2. Construction of
 - 2.1 Site preparation.
 - 2.2 Steel structure foundation.
 - 2.3 Equipment structure foundation with sub trench (if required).
 - 2.4 Transformer foundation.
 - 2.5 Transformer loading.
 - 2.6 Cable trench.
 - 2.7 RC. Road.
 - 2.8 Oil separator.
 - 2.9 Oil containing pit with steel grating and black steel spiral-seam pipes (TIS 427- latest edition) with protection method according to AWWA C205, C217.
 - 2.10 Crushed rock surfacing.
 - 2.11 Wire mesh fence.
 - 2.12 Concrete fence.
 - 2.13 Lamp post for fence and access road lighting LED type foundation.

3. The Contractor shall remove existing structure with reference to Dwg.no. YL1-C-1, YL1-C-2, YL1-C-3, YL1-C-6 and YL1-C-9.
4. The drawings and calculation of all buildings shall be verified with adequate details for intended application and submitted to EGAT for approval.
5. All design works and the fabrication drawings for all steel structures shall be submitted to EGAT for approval.
6. All design, construction and testing shall be in accordance with Specification No.3001: Civil and Architectural Work.
7. EGAT's Soil Investigation Report (attached to the Contract) is a document that can be a reference for design, however; the review of the soil investigation report shall be under responsibility of the Contractor and the warranty of work shall remain following all obligations as specified in the Contract.
8. All foundations shall be as specified in layout drawing. Except the result of soil investigation shows that the specified foundations are not appropriate, the Contractor shall design the proposed foundations.
9. The Contractor shall perform a static load test for 115 kV GIS Building and Control Building foundations in accordance with ASTM D1143-latest edition.
10. Dynamic load test (DLT) according to ASTM D4945-latest edition shall be applied to at least 2% of driven piles (if driven pile type is required) except for driven pile of fence and lamp post.
11. Seismic load test (sonic integrity test) according to ASTM D5882-latest edition shall be applied to all bored piles (if bored pile type is required).
12. Plate bearing test according to ASTM D1194-latest edition shall be submitted to EGAT for approval. (if pad type foundation is required).
13. The Contractor shall remove all debris from construction material and other works in order to make the site clean and be in the condition acceptable to EGAT.
14. According to the Contract Document Section G-3: Contractor's Office and Other Construction Facilities; the detail in paragraph 3 shall be changed as follows: The Contractor shall provide for EGAT an office container at the site during construction with a minimum space of 36 sq.m for office area, 24 sq.m for conference room which shall both be air-conditioned and 4 sq.m for toilet. The facilities as shown on the section G-3 are required for 2 sets.

SOLAR ROOFTOP SYSTEM

1. Design and construction of
 - 1.1 The solar rooftop system for 115 kV GIS and Control Building
 - 1.1.1 The materials and equipment for solar rooftop system installation shall meet electrical criteria and standard qualifications in order to safely and properly install the system in buildings by professional installer.
 - 1.1.2 The Contractor shall design safe access for routine inspection and maintenance and there shall be accessible paths between solar cell arrays for operators to safely and conveniently work.
 - 1.1.3 The steel structure materials shall be hot dip galvanizing by following ASTM standard.
 - 1.1.4 The tools of construction shall be both properly assembled and disassembled.
 - 1.1.5 The equipment or mounting of the PV solar module attached to the construction shall be in proper size and shall be made from stainless steel or corrosion-prevented materials whose grade is not below 304 stainless steel or AL6005-T5 or equivalent.
 - 1.1.6 The system installation shall provide strong, stable and proper mounting for the roof profile and provide a solid mount that does not penetrate the roof surface.
 - 1.1.7 The PV module support structure shall be strongly, durably and securely fastened to the roof structure. All structural parts shall be designed for wind resistance not less than the maximum wind speed of tropical storm, and seismic (Earthquake) load requirement according to official declaration of Meteorology Department or regulations relevant to the area, if any.
 - 1.1.8 Water supply system with cable and conduit for cleaning solar roof top of the building shall have automatic pump with pressure tank and PE water tank at ground floor. The automatic pump with pressure tank shall have sufficient capacity and delivery head. The Contractor shall submit water supply design calculation to EGAT for approval.

Work not included in this Contract

1. Supply of spare grass and weed killer and accessories. (Specification 3001-4.2.4)

2. 115 KV YALA 2 SUBSTATION

GENERAL

The existing 115 kV Yala 2 substation is located in Tambon Bannang Sareng, Amphur Mueang Yala Province. The existing 115 kV Yala 2 substation is an outdoor conventional type, with Breaker and a half scheme. The control and protection system shall be improved and upgraded and some 115 kV existing equipment shall be replaced with new equipment to successfully connect to Yala 1 Substation (GIS) Substation, which shall be upgraded to digital substation.

The contractor shall supply equipment, perform construction and installation work necessary for completion of operation substation in accordance with the contract documents. The design work shall include, but not limited to, technical calculation, preparation of drawings, bill of materials for installation and construction work. For accomplishment of complete operational substation, Scope of contractor's work shall include connection to all public utilities i.e. electrical power, water and drainage. Testing and commissioning of all equipment required to make the substation function properly.

Besides, all detailed engineering design work, calculations, drawing preparation, submission of backup data, test reports instruction books (and) , etc. shall be included.

- 1) As stated elsewhere in these bidding documents, the drawings included in the bidding documents except drawing mark " For Construction" are for bidding purposes only and shall not be used for execution of the work.
- 2) The submitted drawings which are incomplete/ unacceptable, or are the bidding document copies with minor modifications shall be returned unmarked to the contractor.
- 3) The drawings shall be furnished which provide all details required for thoroughly described equipment as well as installation methods and requirements. However, EGAT retains the right to request additional details if those furnished are perceived inadequate.
- 4) Calculations, backup data and documentation are required for all parts of the design. The furnished data shall verify completely that design is adequate for application purpose.

ELECTRICAL PART

Work included in this Contract

The Work included in this Contract to be performed by the Contractor shall be as specified in the Contract Documents and as follows:

1. Conventional substation

- 1.1 Design, supply and replacement of CT equipment and structures. The detail of replacement are shown on the bidding document drawing.
- 1.2 Design, supply and installation of equipment required for a complete upgrade to support a connection to a digital substation.

2. Grounding system

- 2.1 Design, supply and installation the grounding system of the following:
 - 115 kV substation
- 2.2 The grounding conductor of the substation grounding system shall be of 4/0 AWG bare copper wire type.
- 2.3 The contractor shall design, supply and install the conductor size 2x4/0 AWG bare copper wire type connect from ground grid to steel structure and equipment.
- 2.4 Modification of the existing grounding system. (If necessary)

3. Other work

- 3.1 Design, supply and Installation of the identification plates of all equipment and other necessary plates.
- 3.2 Design, supply and installation of all hardware for suspension insulator assembly.
- 3.3 Removal of equipment and support structures in existing 115 kV conventional substation. Details of removal are shown on the bidding document drawing.
- 3.4 All removed equipment shall be carefully packed by the contractor and delivered to EGAT at Yala 2 Substation.

4. Testing and commissioning

- 4.1 Testing and commissioning of all equipment required to make the substation function properly.

CONTROL AND PROTECTION PART

Work included in this Contract

1. Design, supply, installation, wiring, test and commissioning of complete control and protection system which comprises at least the following equipment.
 - Swing rack type switchboard panel.
 - E1 Converter and accessories.
 - Loose equipment as specified in price schedules.
 - Related accessory equipment which is required for interfacing between the existing equipment and new equipment.
 - Cable and accessories as well as connection of cables among all the new equipment, the existing panels and the associated equipment in order to complete the function of the control and protection system.
2. Design, modification, wiring, test and commissioning of the existing equipment which comprises at least the following equipment in order to incorporate the new equipment.
 - The existing panels such as AC/DC distribution boards, existing control and protection panels, marshalling panels, primary equipment, EGAT RTU and Fault Recording System.
3. Design and modification of the schematic and wiring diagram of the additional and replacement inputs to the existing EGAT RTU, including test and commissioning of the complete EGAT RTU. Providing completed EGAT RTU I/O List in both hardcopy and electronic file.
4. Design and modification of the schematic and wiring diagrams of the additional and replacement inputs to the existing Fault Recording System (FRS), including wiring, configuration, calibration, test and commissioning of the completed FRS.
5. Any modification and interfacing works to the existing panels, including supply of related accessory equipment which is required for incorporating the new equipment. The modified existing drawings shall be modified by the Contractor and submitted to EGAT for approval. The final drawings shall be submitted as ACAD files.
6. The contractor shall be responsible for providing complete schematic and wiring diagrams of the control and protection systems.
7. The contractor shall be responsible to perform the individual tests of Multifunction IEDs to verify each IED's performance which shall comply with EGAT's specifications based on IEC 61850 as well as the relevant drawings and documents.
8. The contractor shall be responsible to perform the local, remote and end-to-end function tests to verify that all relay and IED performance complies with EGAT's Specifications and requirements as well as to ensure consistent inter-substation functionality.

9. Removal of the unused equipment of existing control and protection panel shall be neatly kept in a suitable place recommended by EGAT.
10. Removal of the unused existing cables. The removed cable shall be neatly reeled and kept in a suitable place recommended by EGAT.
11. Contractor shall provide the draftsman working at site during the commissioning stage in order to be in charge of writing the As-built Drawings of Control and Protection System.

CONTROL AND PROTECTION PART

Work included in this Contract

1. Design, supply, installation, wiring, test and commissioning of complete control and protection system which comprises at least the following equipment.
 - Multifunction IED for replacing existing main Protective Relay in Panel no.4R.
 - E1 Converter and accessories.
 - Loose equipment as specified in price schedules.
 - Related accessory equipment which is required for interfacing between the existing equipment and new equipment.
 - Cable and accessories as well as connection of cables among all the new equipment, the existing panels and the associated equipment in order to complete the function of the control and protection system.
2. Design, modification, wiring, test and commissioning of the existing equipment which comprises at least the following equipment in order to incorporate the new equipment.
 - The existing panels such as AC/DC distribution boards, existing control and protection panels, marshalling panels, primary equipment and EGAT RTU.
3. Design and modification of the schematic and wiring diagram of the additional and replacement inputs to the existing EGAT RTU, including test and commissioning of the complete EGAT RTU. Providing completed EGAT RTU I/O List in both hardcopy and electronic file.
4. Any modification and interfacing works to the existing panels, including supply of related accessory equipment which is required for incorporating the new equipment. The modified existing drawings shall be modified by the Contractor and submitted to EGAT for approval. The final drawings shall be submitted as ACAD files.
5. The contractor shall be responsible for providing complete schematic and wiring diagrams of the control and protection systems.
6. The contractor shall be responsible to perform the individual test of Multifunction IED to verify each IED's performance which shall comply with EGAT's specifications based on IEC 61850 as well as the relevant drawings and documents.
7. The contractor shall be responsible to perform the local, remote and end-to-end function tests to verify that all relay and IED performance complies with EGAT's Specifications and requirements as well as to ensure consistent inter-substation functionality
8. Removal of the unused equipment of existing control and protection panel shall be neatly kept in a suitable place recommended by EGAT.

9. Removal of the unused existing cables. The removed cable shall be neatly reeled and kept in a suitable place recommended by EGAT.
10. The contractor shall provide the draftsman working at site during the commissioning stage in order to be in charge of writing the As-built Drawings of Control and Protection System.