

# 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](mailto: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](mailto: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](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) Download the Registration Form and fill out all necessary information by typing. (Complete data is required.)
- 2) 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.

- 3) Submit the fill-out Registration Form and the proof of payment from 1) to the email address of the in-charge officer and [procurement.tse@egat.co.th](mailto:procurement.tse@egat.co.th) in the CC. before 15.00 hrs. Bangkok Standard Time.
- 4) 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.

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# Registration Form

Invitation to Bid No. TIPE-L-06

Supply and Construction of Transmission Lines

230 kV Rayong 2 – Bang Lamung 2 Junction and 230 kV Ao Phai – Bo Win

Transmission System Improvement Project in Eastern Region to Enhance System Security

Available Duration for Purchasing : June 11, 2024 - July 11, 2024

Price of Bidding Documents : USD 100.- or THB 3,000.-

## Instructions

- 1) Fill out this Registration Form in English by typing. (Complete data is required.)
- 2) 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.
- 3) Submit the filled-out Registration Form and the proof of payment to the in-charge officer via email [aradee.s@egat.co.th](mailto:aradee.s@egat.co.th) (with cc. [procurement.tse@egat.co.th](mailto:procurement.tse@egat.co.th)) before 15.00 hrs. Bangkok Standard Time.
- 4) 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, which will take approximately 3 working days.

|   |  |                         |            |
|---|--|-------------------------|------------|
| For Purchaser                                   |  |                         | TAX ID :   |
| No.   | Receipt No. :  | Date :                  |            |
| Bidder's Name                                   |  |                         |            |
| Address   |  |                         |            |
|   |  |                         | Country :  |
| Name of Contact Person :                        |  | Tel.                    | Mobile No. |
| Email Address :                                 |  |                         |            |
| Local Representative                            |  |                         |            |
| Address   |  |                         |            |
|   |  |                         | Tax ID :   |
| Name of Contact Person :                        |  | Tel.                    | Mobile No. |
| Email Address :                                 |  |                         |            |
| For Procurement Officer                         |  | Change of Bidder's Name | TAX ID :   |
| Bidder's Letter No. :                           |  |                         | Dated :    |
| New Bidder's Name                               |  |                         |            |
| Address   |  |                         |            |
|   |  |                         | Country :  |
| Name of Contact Person :                        |  | Tel.                    | Mobile No. |
| Email Address :                                 |  |                         |            |
| <u>Contact Information of In-charge Officer</u> |  |                         |            |
| Name  | Ms. Aradee Srisomon  |                         |            |
| Email address                                   | <a href="mailto:aradee.s@egat.co.th">aradee.s@egat.co.th</a> |                         |            |
| Telephone No.                                   | 66 2 436 0342  |                         |            |
| Mobile No.                                      | 669 6186 5269  |                         |            |



Invitation to Bid No. TIPE-L-06

(Revision 1)

**Supply and Construction of Transmission Lines**

**230 kV Rayong 2 – Bang Lamung 2 Junction and 230 kV Ao Phai – Bo Win**

**Transmission System Improvement Project in Eastern Region to Enhance System Security**

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 :**

- From Rayong 2 Substation to Bang Lamung 2 Junction (approx. 26.7 kilometers)
- From Sectionalizing at the 230 kV Ao Phai – Rayong 2 Transmission Line and Sectionalizing of the 230 kV Rayong 2 – Bo Win Transmission Line on the new right-of-way to be connected to the 230 kV Ao Phai – Bo Win circuit no. 3 and 4 (approx. 1.0 kilometers)

**Medium Cost (including Value Added Tax and other expenses):**

***Medium Cost is revised from THB 182,100,000.- to THB 182,900,000.- (excluding cost of the Dismantled Equipment to be purchased by Bidder)***

**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.

*Chattiya C.*

**Availability of Bidding Documents**

Bidding Documents are available for online purchase during 8:00 hrs. to 15:00 hrs., Bangkok Standard Time, as from June 11, 2024 to July 11, 2024 at USD 100.- or Baht 3,000.- per copy, non-refundable.

Please find more details for online purchasing process at <http://www4.egat.co.th/fprocurement/biddingeng/> or contact for further information at telephone no. 66 2436 0342 or [procurement.tse@egat.co.th](mailto:procurement.tse@egat.co.th).

**Delivery of Bids**

*Bid Opening Date is postponed from September 3, 2024 around two (2) weeks.*

ELECTRICITY GENERATING AUTHORITY OF THAILAND

*August 23, 2024*

*Chattiya C.*

(Miss Chattiya Chandhanayingyong)

Chief

International Procurement Department - Transmission Segment





ประกาศการไฟฟ้าฝ่ายผลิตแห่งประเทศไทย  
เรื่อง ประกวดราคาจ้าง เลขที่ TIPE-L-06

(ฉบับแก้ไข ครั้งที่ 1)

การไฟฟ้าฝ่ายผลิตแห่งประเทศไทย (กฟผ.) มีความประสงค์จะจัดซื้อและจ้างก่อสร้างสายส่งไฟฟ้าแรงสูง 230 kV ระยะยง 2 - บริเวณจุดแยกบางละมุง 2 และ 230 kV อ่าวไผ่ - บ่อวิน สำหรับโครงการปรับปรุงระบบส่งไฟฟ้า บริเวณภาคตะวันออกเพื่อเสริมความมั่นคงระบบไฟฟ้า โดยทำสัญญาแบบปรับราคาได้ (ค่า k) โดยใช้งบประมาณ กฟผ.

**สถานที่ก่อสร้าง :**

- จากสถานีไฟฟ้าแรงสูงระยะยง 2 ถึง จุดแยกบางละมุง 2 (ระยะทางประมาณ 26.7 กิโลเมตร)
- ตัดสายส่งไฟฟ้าแรงสูงบริเวณ 230 kV อ่าวไผ่ - ระยะยง 2 และ 230 kV ระยะยง 2 - บ่อวิน ในแนว right-of-way ใหม่ เพื่อเชื่อมกับสายส่งไฟฟ้าแรงสูง 230 kV อ่าวไผ่ - บ่อวิน วงจรที่ 3 และ 4 (ระยะทางประมาณ 1.0 กิโลเมตร)

**ราคากลาง (รวมภาษีมูลค่าเพิ่มและค่าใช้จ่ายอื่นๆ) :**

แก้ไขราคากลาง จาก 182,100,000.- บาท เป็น 182,900,000.- บาท (ไม่รวมราคาอุปกรณ์หรือถนนที่กำหนดให้ผู้เสนอราคารับซื้อจาก กฟผ.)

**คุณสมบัติของผู้เสนอราคา**

1. ต้องเป็นนิติบุคคลผู้มีอาชีพรับจ้างตามประกวดราคาจ้างดังกล่าว และต้องไม่เป็นผู้ที่งานซึ่งปลัดกระทรวงการคลังได้แจ้งเวียนชื่อไว้ หรือต้องไม่เป็นผู้ที่ กฟผ. ห้ามติดต่อหรือห้ามเข้าเสนอราคา หรือต้องไม่เป็นผู้ที่ได้รับผลของการสั่งให้นิติบุคคลหรือบุคคลอื่นเป็นผู้ทำงานตามคำสั่ง 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. ผู้ประสงค์เข้าประกวดราคาในนามของกิจการร่วมค้าหรือกิจการค้าร่วม (Joint Venture or Consortium) จะต้องดำเนินการทุกขั้นตอนของการประกวดราคา ในนามของกิจการร่วมค้าหรือกิจการค้าร่วม ตั้งแต่การเสนอราคาจนสิ้นสุดข้อผูกพันกับ กฟผ.

**การขายเอกสารประกวดราคา**

ผู้สนใจติดต่อซื้อเอกสารประกวดราคา ในราคาชุดละ 3,000.- บาท ในวันทำการระหว่างเวลา 08:00 น. ถึง 15:00 น. ตั้งแต่วันที่ 11 มิถุนายน 2567 ถึงวันที่ 11 กรกฎาคม 2567 ทั้งนี้ สามารถดูรายละเอียดการซื้อเอกสารประกวดราคาได้ที่เว็บไซต์ <http://www4.egat.co.th/fprocurement/biddingeng/> หรือสอบถามข้อมูลเพิ่มเติมทางโทรศัพท์ หมายเลข 0 2436 0342 หรืออีเมล [procurement.tse@egat.co.th](mailto:procurement.tse@egat.co.th)

การยื่นซองประกวดราคา

กำหนดยื่นซองประกวดราคาเลื่อนจากวันที่ 3 กันยายน 2567 ออกไปประมาณ 2 สัปดาห์

ประกาศ ณ วันที่ 23 สิงหาคม 2567



(นางสาวฉัตรดิยา จันทนยิ่งยง)

หัวหน้ากองจัดซื้อจัดจ้างต่างประเทศสายงานระบบส่ง

ตารางแสดงวงเงินงบประมาณที่ได้รับจัดสรรและราคากลาง(ราคาอ้างอิง)  
ในการจัดซื้อจัดจ้างที่มีใช้งานก่อสร้าง

|                                       |  |
|---------------------------------------|--|
| 1. ชื่อโครงการ                        | Bid No. TIPE-L-06  |
|                                       | งานจัดซื้อและจ้างก่อสร้างสายส่ง 230 KV ระยะยง 2 - บริเวณจุดแยกบางละมุง 2 และ 230 KV อ่าวไผ่ - บ่อวิน<br>โครงการปรับปรุงระบบส่งไฟฟ้าบริเวณภาคตะวันออกเพื่อเสริมความมั่นคงระบบไฟฟ้า<br>/หน่วยงานเจ้าของโครงการ ฝ่ายแผนงานและโครงการระบบส่ง การไฟฟ้าฝ่ายผลิตแห่งประเทศไทย |
| 2. วงเงินงบประมาณที่ได้รับจัดสรร      | โครงการปรับปรุงระบบส่งไฟฟ้าบริเวณภาคตะวันออกเพื่อเสริมความมั่นคงระบบไฟฟ้า<br>งบประมาณ 21,000 ล้านบาท   |
| 3. วันที่กำหนดราคากลาง                | 9 สิงหาคม 2567 (วันที่ ชสพ. อนุมัติ )  |
|                                       | ราคารวมภาษีมูลค่าเพิ่มและค่าใช้จ่ายอื่นๆ เป็นเงิน 182,900,000.00 บาท ราคา/หน่วย ตามเอกสารแนบ   |
| 4. แหล่งที่มาของราคากลาง              | หลักเกณฑ์การกำหนดราคากลางการจัดซื้อและจัดจ้างงานก่อสร้างระบบส่งไฟฟ้าของสายงานระบบส่ง   |
| 5. รายชื่อเจ้าหน้าที่ผู้กำหนดราคากลาง |  |
| 5.1 นายวิฑูรย์                        | บรรดาศักดิ์ นวส-นร. กวสส-ส.  |
| 5.2 นางสาวสิรินยา                     | ต้นสังกัด ทปส-ส. กวสส-ส.   |
| 5.3 นายฐกานต์                         | นิโครวนจำรัส วศ.4 ทปส-ส. กวสส-ส.   |
| หมายเหตุ                              | ค่าใช้จ่ายอื่นๆ ได้แก่ ค่าใช้จ่ายที่ กฟผ. ต้องจ่ายตามวิธีการพิจารณาเปรียบเทียบราคาที่กำหนดไว้ในเอกสารประกวดราคา เช่น อกรขาเข้า เป็นต้น   |



**DETAILS OF MEDIUM COST FOR BID NO. TIPE-L-06****SCHEDULE 1 : 230 KV RAYONG 2 - BANG LAMUNG 2 JUNCTION (26.7 KM)**

| Description   | Total<br>(THB)        |
|---|-----------------------|
| 1A : PRELIMINARY WORK                                     | 1,421,900.00          |
| 1B : TOWER FOUNDATIONS                                    | 22,213,250.00         |
| 1C : TOWERS   | 83,220,585.60         |
| 1D : INSULATOR STRING AND OVERHEAD GROUND WIRE ASSEMBLIES | 21,311,160.00         |
| 1E : CONDUCTOR AND OVERHEAD GROUND WIRE                   | 10,875,300.00         |
| 1F : LINE ACCESSORIES                                     | 6,665,200.00          |
| 1G : GROUNDING MATERIALS                                  | 872,000.00            |
| 1H : OPTICAL FIBER AND LINE ACCESSORIES                   | 4,745,400.00          |
| 1I : DISMANTLING WORK                                     | 7,271,784.80          |
| 1N : TEST OF EQUIPMENT                                    | 604,000.00            |
| 1O : SUPPLY OF SERVICE OF VEHICLES                        | 2,100,000.00          |
| <b>Total price for Schedule 1 (After 1st adjusted)</b>    | <b>161,300,580.40</b> |

**SCHEDULE 2 : 230 KV AO PHAI - BO WIN (1 KM)**

| Description   | Total<br>(THB)      |
|---|---------------------|
| 2A : PRELIMINARY WORK                                     | 87,800.00           |
| 2B : TOWER FOUNDATIONS                                    | 2,614,500.00        |
| 2C : TOWERS   | 4,700,371.20        |
| 2D : INSULATOR STRING AND OVERHEAD GROUND WIRE ASSEMBLIES | 1,471,400.00        |
| 2E : CONDUCTOR AND OVERHEAD GROUND WIRE                   | 516,000.00          |
| 2F : LINE ACCESSORIES                                     | 95,200.00           |
| 2G : GROUNDING MATERIALS                                  | 65,600.00           |
| 2I : DISMANTLING WORK                                     | 10,500.00           |
| <b>Total price for Schedule 2 (After 1st adjusted)</b>    | <b>9,561,371.20</b> |

|   |                       |
|---|-----------------------|
| <b>Total price for All Schedule (After 1st adjusted)</b>                                | <b>170,861,951.60</b> |
| <b>Adjusted Price (Import Duty &amp; Tax + VAT)</b>                                     | <b>11,960,336.61</b>  |
| <b>Total Price for All Schedule (All factor included + Import duty &amp; Tax + VAT)</b> | <b>182,822,288.21</b> |

|   |                       |
|---|-----------------------|
| <b>MEDIUM COST OF BID NO. TIPE-L-06</b> | <b>182,900,000.00</b> |
|---|-----------------------|

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 23 ส.ค. 67

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 09 Aug 2024

รายการคำนวณ

**INVITATION TO BID NO. TIPE-L-06**  
**TOTAL PRICE FOR SCHEDULE NO. 1**  
**230 KV RAYONG 2 - BANG LAMUNG 2 JUNCTION**  
**Line Length 26.7 KM.**

**SUPPLY AND CONSTRUCTION OF TRANSMISSION LINE 230 KV RAYONG 2 - BANG LAMUNG 2 JUNCTION**  
**TRANSMISSION SYSTEM IMPROVEMENT PROJECT IN EASTERN REGION TO ENHANCE SYSTEM SECURITY**

| Description   | Currency | Supply of Equipment |                | Foreign Currency | Local Currency | Local Transportation | Local Transportation,<br>Construction and<br>Installation | Purchase Price Offered for<br>Dismantled Equipment |
|---|----------|---------------------|----------------|------------------|----------------|----------------------|---|--|
|   |          | Foreign Supply      | Local Supply   |                  |                |                      |   |  |
|   |          | Ex-works Price      | Ex-works Price |                  |                |                      |   |  |
|   |          | Amount              | Amount         |                  |                |                      |   |  |
| 1A : PRELIMINARY WORK                                     |          |                     |                |                  |                |                      | 1,421,900.00  |  |
| 1B : TOWER FOUNDATIONS                                    |          |                     | 3,804,250.00   |                  |                |                      | 18,409,000.00   |  |
| 1C : TOWERS   |          |                     | 73,386,375.00  |                  |                |                      | 9,834,210.60  |  |
| 1D : INSULATOR STRING AND OVERHEAD GROUND WIRE ASSEMBLIES | THB      | 12,520,860.00       | 8,790,300.00   |                  |                |                      |   |  |
| 1E : CONDUCTOR AND OVERHEAD GROUND WIRE                   |          |                     | 756,000.00     |                  |                |                      | 10,119,300.00   |  |
| 1F : LINE ACCESSORIES                                     |          |                     | 6,495,200.00   |                  |                |                      | 170,000.00  |  |
| 1G : GROUNDING MATERIALS                                  |          |                     | 662,000.00     |                  |                |                      | 210,000.00  |  |
| 1H : OPTICAL FIBER AND LINE ACCESSORIES                   | THB      | 2,361,750.00        | 966,150.00     |                  |                |                      | 35,437,500.00   |  |
| II : DISMANTLING WORK                                     |          |                     |                |                  |                |                      | 7,271,784.80  |  |

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*Dr. Gao*  
 นายประวิทย์ เลิศโกวิทย์  
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 09 Aug 2024

| Description  | Currency   | Supply of Equipment  | Supply of Equipment                         | Foreign Currency  | Local Currency | Local Transportation | Local Transportation,<br>Construction and<br>Installation | Purchase Price Offered for<br>Dismantled Equipment |
|--|------------|----------------------|---|-------------------|----------------|----------------------|---|--|
|  |            | Foreign Supply       | Local Supply                                |                   |                |                      |   |  |
|  |            | CIF Thai Port        | Ex-works Price<br>( excluding VAT )<br>Baht |                   |                |                      |   |  |
|  |            | Amount               | Amount                                      |                   |                |                      |   |  |
| IN : TEST OF EQUIPMENT   | THB        |                      |   | 604,000.00        |                |                      |   |  |
| IO : SUPPLY OF SERVICE OF VEHICLES                                 |            |                      |   |                   |                | 2,100,000.00         |   |  |
| <b>TOTAL PRICE</b>   | <b>THB</b> | <b>14,882,610.00</b> | <b>Baht</b>                                 | <b>604,000.00</b> | <b>Baht</b>    | <b>Baht</b>          | <b>Baht</b>   | <b>Baht</b>  |
|  |            |                      |   |                   |                |                      | <b>84,973,695.40</b>                                      |  |
| <b>IZ : DISMANTLED EQUIPMENT TO BE PURCHASED BY THE CONTRACTOR</b> |            |                      |   |                   |                |                      | <b>Baht</b>   | <b>-22,955,000.00</b>                              |

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 09 Aug 2024

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 23 ส.ค. 67

1A : PRELIMINARY WORK

| Item No.                  | Description   | Estimated Qty. | Unit | Local Transportation, Construction and Installation<br>(excluding VAT)<br>Baht |                     |
|---------------------------|---|----------------|------|--|---------------------|
|                           |   |                |      | Unit Price   | Amount              |
| 1A1                       | Check survey and staking of tower location (Approximately 26.7 kilometers in transmission line distance)  | lump sum       | each | 801,000.00   | 801,000.00          |
| 1A2                       | Subsoil tests and preliminary measurement of ground resistance and earth resistivity (to be performed at tower locations directed by EGAT)            |                |      |  |                     |
| 1A2.1                     | Light ram sound tests with hand auger and preliminary measurement of ground resistance and earth resistivity from ground surface to 5 meters in depth | 39             | bore | 6,300.00   | 245,700.00          |
| 1A2.2                     | Light ram sound tests with hand auger and preliminary measurement of ground resistance and earth resistivity from ground surface to 7 meters in depth | 34             | bore | 6,900.00   | 234,600.00          |
| 1A3                       | Boundary post along boundary line of right-of-way   | 148            | post | 950.00   | 140,600.00          |
| <b>Total Price for 1A</b> |   |                |      | <b>Baht</b>  | <b>1,421,900.00</b> |

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 09 Aug 2024

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 23 ส.ค. 67

**1B : TOWER FOUNDATIONS**

| Item No. | Description  | Estimated Qty. | Unit  | Currency | Supply of Equipment |        | Supply of Equipment |            | Local Transportation, Construction and Installation |              |
|----------|--|----------------|-------|----------|---------------------|--------|---------------------|------------|---|--------------|
|          |  |                |       |          | Foreign Supply      |        | Local Supply        |            | ( excluding VAT )<br>Baht                           |              |
|          |  |                |       |          | CIF Thai Port       |        | Ex-works Price      |            |   |              |
|          |  |                |       |          | Unit Price          | Amount | Unit Price          | Amount     | Unit Price  | Amount       |
| 1B1      | Foundation for Tower Type WA1                                |                |       |          |                     |        |                     |            |   |              |
| 1B1.1    | Stub type CS (230-2x1272 WA1) and pad foundation type CS     | 6              | tower |          | XXXXX               | XXXXX  | 37,250.00           | 223,500.00 | 262,000.00  | 1,572,000.00 |
| 1B1.2    | Stub type CIII (230-2x1272 WA1) and pad foundation type CIII | 17             | tower |          | XXXXX               | XXXXX  | 37,250.00           | 633,250.00 | 214,000.00  | 3,638,000.00 |
| 1B1.3    | Stub type CIV (230-2x1272 WA1) and pad foundation type CIV   | 17             | tower |          | XXXXX               | XXXXX  | 36,062.50           | 613,062.50 | 146,000.00  | 2,482,000.00 |
| 1B1.4    | Stub type CV (230-2x1272 WA1) and pad foundation type CV     | 12             | tower |          | XXXXX               | XXXXX  | 36,062.50           | 432,750.00 | 101,000.00  | 1,212,000.00 |
| 1B2      | Foundation for Tower Type WB2                                |                |       |          |                     |        |                     |            |   |              |
| 1B2.1    | Stub type CS (230-2x1272 WB2) and pad foundation type CS     | 1              | tower |          | XXXXX               | XXXXX  | 58,750.00           | 58,750.00  | 411,000.00  | 411,000.00   |
| 1B2.2    | Stub type CIII (230-2x1272 WB2) and pad foundation type CIII | 2              | tower |          | XXXXX               | XXXXX  | 56,312.50           | 112,625.00 | 368,000.00  | 736,000.00   |
| 1B2.3    | Stub type CIV (230-2x1272 WB2) and pad foundation type CIV   | 1              | tower |          | XXXXX               | XXXXX  | 56,312.50           | 56,312.50  | 225,000.00  | 225,000.00   |
| 1B2.4    | Stub type CV (230-2x1272 WB2) and pad foundation type CV     | 2              | tower |          | XXXXX               | XXXXX  | 54,500.00           | 109,000.00 | 164,000.00  | 328,000.00   |
| 1B3      | Foundation for Tower Type WC2                                |                |       |          |                     |        |                     |            |   |              |
| 1B3.1    | Stub type CS (230-2x1272 WC2) and pad foundation type CS     | 1              | tower |          | XXXXX               | XXXXX  | 90,000.00           | 90,000.00  | 556,000.00  | 556,000.00   |
| 1B3.2    | Stub type CIII (230-2x1272 WC2) and pad foundation type CIII | 3              | tower |          | XXXXX               | XXXXX  | 88,750.00           | 266,250.00 | 497,000.00  | 1,491,000.00 |
| 1B3.3    | Stub type CIV (230-2x1272 WC2) and pad foundation type CIV   | 1              | tower |          | XXXXX               | XXXXX  | 85,000.00           | 85,000.00  | 333,000.00  | 333,000.00   |
| 1B3.4    | Stub type CV (230-2x1272 WC2) and pad foundation type CV     | 2              | tower |          | XXXXX               | XXXXX  | 84,375.00           | 168,750.00 | 230,000.00  | 460,000.00   |

*2km5*

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 23 ส.ค. 67

*[Signature]*

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 09 Aug 2024



| Item No.                  | Description  | Estimated Qty. | Unit  | Currency | Supply of Equipment |        | Supply of Equipment |                     | Local Transportation, Construction and Installation |                      |
|---------------------------|--|----------------|-------|----------|---------------------|--------|---------------------|---------------------|---|----------------------|
|                           |  |                |       |          | Foreign Supply      |        | Local Supply        |                     | ( excluding VAT )<br>Baht                           |                      |
|                           |  |                |       |          | CIF Thai Port       |        | Ex-works Price      |                     |   |                      |
|                           |  |                |       |          | Unit Price          | Amount | Unit Price          | Amount              | Unit Price  | Amount               |
| 1B4                       | Foundation for Tower Type WD2                                  |                |       |          |                     |        |                     |                     |   |                      |
| 1B4.1                     | Stub type CIII (230-2x1272 WD2) and pad foundation type CIII   | 1              | tower |          | XXXXX               | XXXXX  | 121,250.00          | 121,250.00          | 741,000.00  | 741,000.00           |
| 1B5                       | Foundation for Tower Type WDE                                  |                |       |          |                     |        |                     |                     |   |                      |
| 1B5.1                     | Stub type CIII (230-2x1272 WDE) and pad foundation type CIII   | 1              | tower |          | XXXXX               | XXXXX  | 121,250.00          | 121,250.00          | 741,000.00  | 741,000.00           |
| 1B5.2                     | Stub type CIV (230-2x1272 WDE) and pad foundation type CIV     | 1              | tower |          | XXXXX               | XXXXX  | 113,125.00          | 113,125.00          | 521,000.00  | 521,000.00           |
| 1B5.3                     | Stub type CV (230-2x1272 WDE) and pad foundation type CV       | 1              | tower |          | XXXXX               | XXXXX  | 113,125.00          | 113,125.00          | 366,000.00  | 366,000.00           |
| 1B6                       | Foundation for Tower Type WDE90                                |                |       |          |                     |        |                     |                     |   |                      |
| 1B6.1                     | Stub type CIII (230-2x1272 WDE90) and pad foundation type CIII | 2              | tower |          | XXXXX               | XXXXX  | 125,000.00          | 250,000.00          | 810,000.00  | 1,620,000.00         |
| 1B6.2                     | Stub type CIV (230-2x1272 WDE90) and pad foundation type CIV   | 1              | tower |          | XXXXX               | XXXXX  | 118,125.00          | 118,125.00          | 579,000.00  | 579,000.00           |
| 1B6.3                     | Stub type CV (230-2x1272 WDE90) and pad foundation type CV     | 1              | tower |          | XXXXX               | XXXXX  | 118,125.00          | 118,125.00          | 397,000.00  | 397,000.00           |
| <b>Total Price for 1B</b> |  |                |       |          |                     |        | <b>Baht</b>         | <b>3,804,250.00</b> | <b>Baht</b>   | <b>18,409,000.00</b> |

*2km6*

นางสาวเบญญาลักษณ์ ศรีสัมพันธ์  
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 23 ส.ค. 67

*นายประวิทย์ เลิศโกวิท*

นายประวิทย์ เลิศโกวิท  
 ผู้อำนวยการฝ่ายวิศวกรรมระบบส่ง  
 09 Aug 2024

1C : TOWERS

| Item No. | Description                           | Estimated Qty. | Unit | Currency | Supply of Equipment |        | Supply of Equipment |               | Local Transportation, Construction and Installation |              |
|----------|---------------------------------------|----------------|------|----------|---------------------|--------|---------------------|---------------|---|--------------|
|          |                                       |                |      |          | Foreign Supply      |        | Local Supply        |               | ( excluding VAT )<br>Baht                           |              |
|          |                                       |                |      |          | CIF Thai Port       |        | Ex-works Price      |               |   |              |
|          |                                       |                |      |          | Unit Price          | Amount | Unit Price          | Amount        | Unit Price  | Amount       |
| 1C1      | Tower type WA1                        |                |      |          |                     |        |                     |               |   |              |
| 1C1.1    | Basic body (230-2x1272 WA1)           | 52             | body |          | XXXXX               | XXXXX  | 599,375.00          | 31,167,500.00 | 79,597.00   | 4,139,044.00 |
| 1C1.2    | Body extension 7.0 m (230-2x1272 WA1) | 35             | body |          | XXXXX               | XXXXX  | 211,875.00          | 7,415,625.00  | 28,137.00   | 984,795.00   |
| 1C1.3    | Leg extension 1.0 m (230-2x1272 WA1)  | 8              | leg  |          | XXXXX               | XXXXX  | 7,750.00            | 62,000.00     | 1,029.20  | 8,233.60     |
| 1C1.4    | Leg extension 2.0 m (230-2x1272 WA1)  | 8              | leg  |          | XXXXX               | XXXXX  | 11,625.00           | 93,000.00     | 1,543.80  | 12,350.40    |
| 1C1.5    | Leg extension 3.0 m (230-2x1272 WA1)  | 12             | leg  |          | XXXXX               | XXXXX  | 16,750.00           | 201,000.00    | 2,224.40  | 26,692.80    |
| 1C1.6    | Leg extension 4.0 m (230-2x1272 WA1)  | 68             | leg  |          | XXXXX               | XXXXX  | 20,562.50           | 1,398,250.00  | 2,730.70  | 185,687.60   |
| 1C1.7    | Leg extension 5.0 m (230-2x1272 WA1)  | 40             | leg  |          | XXXXX               | XXXXX  | 25,812.50           | 1,032,500.00  | 3,427.90  | 137,116.00   |
| 1C1.8    | Leg extension 6.0 m (230-2x1272 WA1)  | 24             | leg  |          | XXXXX               | XXXXX  | 29,375.00           | 705,000.00    | 3,901.00  | 93,624.00    |
| 1C1.9    | Leg extension 7.0 m (230-2x1272 WA1)  | 16             | leg  |          | XXXXX               | XXXXX  | 36,375.00           | 582,000.00    | 4,830.60  | 77,289.60    |
| 1C1.10   | Leg extension 9.0 m (230-2x1272 WA1)  | 32             | leg  |          | XXXXX               | XXXXX  | 44,937.50           | 1,438,000.00  | 5,967.70  | 190,966.40   |
| 1C2      | Tower type WB2                        |                |      |          |                     |        |                     |               |   |              |
| 1C2.1    | Basic body (230-2x1272 WB2)           | 6              | body |          | XXXXX               | XXXXX  | 750,000.00          | 4,500,000.00  | 99,600.00   | 597,600.00   |
| 1C2.2    | Body extension 7.0 m (230-2x1272 WB2) | 2              | body |          | XXXXX               | XXXXX  | 212,500.00          | 425,000.00    | 28,220.00   | 56,440.00    |
| 1C2.3    | Leg extension 3.0 m (230-2x1272 WB2)  | 4              | leg  |          | XXXXX               | XXXXX  | 19,187.50           | 76,750.00     | 2,548.10  | 10,192.40    |
| 1C2.4    | Leg extension 4.0 m (230-2x1272 WB2)  | 4              | leg  |          | XXXXX               | XXXXX  | 22,625.00           | 90,500.00     | 3,004.60  | 12,018.40    |
| 1C2.5    | Leg extension 5.0 m (230-2x1272 WB2)  | 4              | leg  |          | XXXXX               | XXXXX  | 28,875.00           | 115,500.00    | 3,834.60  | 15,338.40    |
| 1C2.6    | Leg extension 9.0 m (230-2x1272 WB2)  | 12             | leg  |          | XXXXX               | XXXXX  | 50,375.00           | 604,500.00    | 6,689.80  | 80,277.60    |

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 23 ส.ค. 67

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 ผู้อำนวยการฝ่ายวิศวกรรมระบบส่ง  
 09 Aug 2024

| Item No. | Description                            | Estimated Qty. | Unit | Currency | Supply of Equipment |        | Supply of Equipment |              | Local Transportation, Construction and Installation |            |
|----------|--|----------------|------|----------|---------------------|--------|---------------------|--------------|---|------------|
|          |  |                |      |          | Foreign Supply      |        | Local Supply        |              | ( excluding VAT )<br>Baht                           |            |
|          |  |                |      |          | CIF Thai Port       |        | Ex-works Price      |              |   |            |
|          |  |                |      |          | Unit Price          | Amount | Unit Price          | Amount       | Unit Price  | Amount     |
| 1C3      | Tower type WC2                         |                |      |          |                     |        |                     |              |   |            |
| 1C3.1    | Basic body (230-2x1272 WC2)            | 7              | body |          | XXXXX               | XXXXX  | 1,043,750.00        | 7,306,250.00 | 138,610.00  | 970,270.00 |
| 1C3.2    | Body extension 7.0 m (230-2x1272 WC2)  | 4              | body |          | XXXXX               | XXXXX  | 387,500.00          | 1,550,000.00 | 51,460.00   | 205,840.00 |
| 1C3.3    | Leg extension 4.0 m (230-2x1272 WC2)   | 12             | leg  |          | XXXXX               | XXXXX  | 30,500.00           | 366,000.00   | 4,050.40  | 48,604.80  |
| 1C3.4    | Leg extension 6.0 m (230-2x1272 WC2)   | 8              | leg  |          | XXXXX               | XXXXX  | 43,187.50           | 345,500.00   | 5,735.30  | 45,882.40  |
| 1C3.5    | Leg extension 7.0 m (230-2x1272 WC2)   | 4              | leg  |          | XXXXX               | XXXXX  | 50,125.00           | 200,500.00   | 6,656.60  | 26,626.40  |
| 1C3.6    | Leg extension 9.0 m (230-2x1272 WC2)   | 4              | leg  |          | XXXXX               | XXXXX  | 64,375.00           | 257,500.00   | 8,549.00  | 34,196.00  |
| 1C4      | Tower type WD2                         |                |      |          |                     |        |                     |              |   |            |
| 1C4.1    | Basic body (230-2x1272 WD2)            | 1              | body |          | XXXXX               | XXXXX  | 1,106,250.00        | 1,106,250.00 | 146,910.00  | 146,910.00 |
| 1C4.2    | Body extension 7.0 m (230-2x1272 WD2)  | 1              | body |          | XXXXX               | XXXXX  | 367,500.00          | 367,500.00   | 48,804.00   | 48,804.00  |
| 1C4.3    | Leg extension 6.0 m (230-2x1272 WD2)   | 4              | leg  |          | XXXXX               | XXXXX  | 53,562.50           | 214,250.00   | 7,113.10  | 28,452.40  |
| 1C5      | Tower type WDE                         |                |      |          |                     |        |                     |              |   |            |
| 1C5.1    | Basic body (230-2x1272 WDE)            | 3              | body |          | XXXXX               | XXXXX  | 1,093,750.00        | 3,281,250.00 | 145,250.00  | 435,750.00 |
| 1C5.2    | Body extension 7.0 m (230-2x1272 WDE)  | 1              | body |          | XXXXX               | XXXXX  | 367,500.00          | 367,500.00   | 48,804.00   | 48,804.00  |
| 1C5.3    | Leg extension 8.0 m (230-2x1272 WDE)   | 4              | leg  |          | XXXXX               | XXXXX  | 71,250.00           | 285,000.00   | 9,462.00  | 37,848.00  |
| 1C5.4    | Leg extension 9.0 m (230-2x1272 WDE)   | 12             | leg  |          | XXXXX               | XXXXX  | 78,125.00           | 937,500.00   | 10,375.00   | 124,500.00 |
| 1C6      | Tower type WDE(90)                     |                |      |          |                     |        |                     |              |   |            |
| 1C6.1    | Basic body (230-2x1272 WDE90)          | 4              | body |          | XXXXX               | XXXXX  | 1,312,500.00        | 5,250,000.00 | 174,300.00  | 697,200.00 |
| 1C6.2    | Leg extension 4.0 m (230-2x1272 WDE90) | 4              | leg  |          | XXXXX               | XXXXX  | 51,062.50           | 204,250.00   | 6,781.10  | 27,124.40  |

นางสาวเบญญาลักษณ์ ศรีสัมพันธ์  
 หจตส-ห.  
 23 ส.ค. 67

นายประวิทย์ เลิศโกวิทย์  
 ผู้อำนวยการฝ่ายวิศวกรรมระบบส่ง  
 09 Aug 2024

| Item No.                  | Description                            | Estimated Qty. | Unit | Currency | Supply of Equipment |        | Supply of Equipment                       |              | Local Transportation, Construction and Installation<br>(excluding VAT)<br>Baht |                     |  |
|---------------------------|--|----------------|------|----------|---------------------|--------|---|--------------|--|---------------------|--|
|                           |  |                |      |          | Foreign Supply      |        | Local Supply                              |              |  |                     |  |
|                           |  |                |      |          | CIF Thai Port       |        | Ex-works Price<br>(excluding VAT)<br>Baht |              |  |                     |  |
|                           |  |                |      |          | Unit Price          | Amount | Unit Price                                | Amount       | Unit Price   | Amount              |  |
| 1C6.3                     | Leg extension 6.0 m (230-2x1272 WDE90) | 4              | leg  |          | XXXXX               | XXXXXX | 71,250.00                                 | 285,000.00   | 9,462.00   | 37,848.00           |  |
| 1C6.4                     | Leg extension 9.0 m (230-2x1272 WDE90) | 12             | leg  |          | XXXXX               | XXXXXX | 96,250.00                                 | 1,155,000.00 | 12,782.00  | 153,384.00          |  |
| 1C7                       | Tower signs                            |                |      |          |                     |        |   |              |  |                     |  |
| 1C7.1                     | Aerial patrol signs                    | 25             | set  |          | XXXXX               | XXXXXX | XXXXX                                     | XXXXXX       | 2,500.00   | 62,500.00           |  |
| 1C7.2                     | Phasing signs (3 pieces per set)       | 4              | set  |          | XXXXX               | XXXXXX | XXXXX                                     | XXXXXX       | 6,500.00   | 26,000.00           |  |
| <b>Total Price for 1C</b> |  |                |      |          |                     |        | <b>Baht</b>                               |              | <b>73,386,375.00</b>   | <b>Baht</b>         |  |
|                           |  |                |      |          |                     |        |   |              |  | <b>9,834,210.60</b> |  |

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 ผู้อำนวยการฝ่ายวิศวกรรมระบบส่ง  
 09 Aug 2024

นางสาวเบญญาลักษณ์ ศรีสัมพันธ์  
 หจตส-ห.  
 23 ส.ค. 67

**1D : INSULATOR STRING AND OVERHEAD GROUND WIRE ASSEMBLIES**

| Item No. | Description   | Estimated Qty. | Unit | Currency | Supply of Equipment |        | Supply of Equipment |              | Local Transportation, Construction and Installation |                            |
|----------|---|----------------|------|----------|---------------------|--------|---------------------|--------------|---|----------------------------|
|          |   |                |      |          | Foreign Supply      |        | Local Supply        |              | ( excluding VAT )<br>Baht                           |                            |
|          |   |                |      |          | CIF Thai Port       |        | Ex-works Price      |              |   |                            |
|          |   |                |      |          | Unit Price          | Amount | Unit Price          | Amount       | Unit Price  | Amount                     |
| 1D1      | Single string suspension insulator assemblies with armor rods for two-bundled 1272 MCM ACSR/GA conductor, 16300 kg ultimate strength, coupling type K (without insulator and arcing horn) | 210            | set  |          | XXXXX               | XXXXX  | 10,000.00           | 2,100,000.00 | included in stringing work                          | included in stringing work |
| 1D2      | Double string suspension insulator assemblies with armor rods for two-bundled 1272 MCM ACSR/GA conductor, 16300 kg ultimate strength, coupling type K (without insulator and arcing horn) | 102            | set  |          | XXXXX               | XXXXX  | 12,000.00           | 1,224,000.00 | included in stringing work                          | included in stringing work |
| 1D3      | Bypass string suspension insulator assemblies for two-bundled 1272 MCM ACSR/GA conductor, 12000 kg ultimate strength, coupling type J (without insulator and arcing horn)                 | 75             | set  |          | XXXXX               | XXXXX  | 9,000.00            | 675,000.00   | included in stringing work                          | included in stringing work |
| 1D4      | Single string tension insulator assemblies for two-bundled 1272 MCM ACSR/GA conductor, 13000 kg ultimate strength, coupling type J (without insulator and arcing horn)                    | 67             | set  |          | XXXXX               | XXXXX  | 14,000.00           | 938,000.00   | included in stringing work                          | included in stringing work |
| 1D5      | Double string tension insulator assemblies for two-bundled 1272 MCM ACSR/GA conductor, 26000 kg ultimate strength, coupling type K (without insulator and arcing horn)                    | 210            | set  |          | XXXXX               | XXXXX  | 17,000.00           | 3,570,000.00 | included in stringing work                          | included in stringing work |
| 1D6      | Single string tension inverted insulator assemblies for two-bundled 1272 MCM ACSR/GA conductor, 13000 kg ultimate strength, coupling type J (without insulator and arcing horn)           | 5              | set  |          | XXXXX               | XXXXX  | 14,000.00           | 70,000.00    | included in stringing work                          | included in stringing work |

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 23 ส.ค. 67

*Dr. G. S.*  
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 09 Aug 2024

| Item No.                  | Description   | Estimated Qty. | Unit | Currency | Supply of Equipment  |               | Supply of Equipment                       |                     | Local Transportation, Construction and Installation<br>(excluding VAT)<br>Baht |                            |
|---------------------------|---|----------------|------|----------|----------------------|---------------|---|---------------------|--|----------------------------|
|                           |   |                |      |          | Foreign Supply       |               | Local Supply                              |                     |  |                            |
|                           |   |                |      |          | CIF Thai Port        |               | Ex-works Price<br>(excluding VAT)<br>Baht |                     |  |                            |
|                           |   |                |      |          | Unit Price           | Amount        | Unit Price                                | Amount              | Unit Price   | Amount                     |
| 1D7                       | Double string tension inverted insulator assemblies for two-bundled 1272 MCM ACSR/GA conductor, 26000 kg ultimate strength, coupling type K (without insulator and arcing horn)   | 6              | set  |          | XXXXX                | XXXXX         | 17,000.00                                 | 102,000.00          | included in stringing work   | included in stringing work |
| 1D8                       | Overhead ground wire suspension assemblies with armor rod for 3/8" high strength, galvanized steel overhead ground wire, 5000 kg ultimate strength  | 52             | set  |          | XXXXX                | XXXXX         | 1,400.00                                  | 72,800.00           | included in stringing work   | included in stringing work |
| 1D9                       | Overhead ground wire tension assemblies for 3/8" high strength, galvanized steel overhead ground wire, 5000 kg ultimate strength  | 52             | set  |          | XXXXX                | XXXXX         | 700.00                                    | 36,400.00           | included in stringing work   | included in stringing work |
| 1D10                      | Porcelain or glass insulator ANSI CLASS 52-5 (25,000 lbs) with corrosion proof type pin   | 2134           | disc | THB      | 690.00               | 1,472,460.00  |   |                     | included in stringing work   | included in stringing work |
| 1D11                      | Porcelain or glass insulator ANSI CLASS 52-8 (36,000 lbs) with corrosion proof type pin   | 12276          | disc | THB      | 900.00               | 11,048,400.00 |   |                     | included in stringing work   | included in stringing work |
| 1D12                      | Overhead ground wire tension assemblies for 3/8" high strength, galvanized steel overhead ground wire, 5000 kg ultimate strength to be employed for the installation with insulators supplied under Item 1D9 on take-off structures | 3              | set  |          | XXXXX                | XXXXX         | 700.00                                    | 2,100.00            | included in stringing work   | included in stringing work |
| <b>Total Price for 1D</b> |   |                |      | THB      | <b>12,520,860.00</b> |               | Baht                                      | <b>8,790,300.00</b> | <b>Baht</b>  |                            |

นางสาวเบญญาลักษณ์ ศรีลัมพ์  
 หจตส-ห.  
 23 ส.ค. 67

นายประวิทย์ เลิศโกวิทย์  
 ผู้อำนวยการฝ่ายวิศวกรรมระบบส่ง  
 09 Aug 2024

**1E : CONDUCTOR AND OVERHEAD GROUND WIRE**

| Item No. | Description  | Estimated Qty. | Unit | Currency | Supply of Equipment |        | Supply of Equipment |        | Local Transportation, Construction and Installation |                            |
|----------|--|----------------|------|----------|---------------------|--------|---------------------|--------|---|----------------------------|
|          |  |                |      |          | Foreign Supply      |        | Local Supply        |        | ( excluding VAT )<br>Baht                           |                            |
|          |  |                |      |          | CIF Thai Port       |        | Ex-works Price      |        |   |                            |
|          |  |                |      |          | Unit Price          | Amount | Unit Price          | Amount | Unit Price  | Amount                     |
| 1E1      | 1272 MCM ACSR/GA Conductor   |                |      |          |                     |        |                     |        |   |                            |
| 1E1.1    | 1272 MCM ACSR/GA Conductor, furnishing conductor for Item 1E1.2 (to be supplied by EGAT, see Article F-3, approx. 26.7 km in transmission line distance)   |                | km   |          | XXXXX               | XXXXX  | XXXXX               | XXXXX  | included in stringing work                          | included in stringing work |
| 1E1.2    | Stringing of conductor by controlled tension method, double circuit, 3 phase, twin-bundled conductor per phase, measured based on horizontal distance of line route from the existing STR.No.2/4 type QWDE to the existing deadend STR.No.28/2 type QWDE(90) at Bang Lamung 2 junction (including connecting loop circuit No.3&4 at STR.No.2/4 and STR.No.28/2, as per drawing No.T04-001 and T04-002) | 26.7           | km   |          | XXXXX               | XXXXX  | XXXXX               | XXXXX  | 354,000.00  | 9,451,800.00               |



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 ผู้อำนวยการฝ่ายวิศวกรรมระบบส่ง  
 09 Aug 2024



นางสาวเบญญาลักษณ์ ศรีสัมพันธ์  
 หจตส-ห.  
 23 ส.ค. 67

| Item No.                  | Description  | Estimated Qty. | Unit | Currency | Supply of Equipment |           | Supply of Equipment    |                            | Local Transportation, Construction and Installation |            |
|---------------------------|--|----------------|------|----------|---------------------|-----------|------------------------|----------------------------|---|------------|
|                           |  |                |      |          | Foreign Supply      |           | Local Supply           |                            | ( excluding VAT )<br>Baht                           |            |
|                           |  |                |      |          | CIF Thai Port       |           | Ex-works Price         |                            |   |            |
|                           |  |                |      |          | Unit Price          | Amount    | Unit Price             | Amount                     | Unit Price  | Amount     |
| 1E2                       | 3/8" nominal diameter, high strength galvanized steel overhead ground wire, Class A coating  |                |      |          |                     |           |                        |                            |   |            |
| 1E2.1                     | 3/8" High strength galvanized steel wire, furnishing for Item 1E2.2 based on linear length (Linear length = No. of overhead ground wire x horizontal distance of line route + 1.5%)  | 27             | km   |          |                     | 28,000.00 | 756,000.00             | included in stringing work | included in stringing work                          |            |
| 1E2.2                     | Stringing of one overhead ground wire by running line method, measured based on horizontal distance of line route from the existing STR.No.2/4 type QWDE to the existing deadend STR.No.28/2 type QWDE(90) at Bang Lamung 2 junction (including connecting loop circuit No.3&4 at STR.No.2/4 and STR.No.28/2, as per drawing No.T04-001 and T04-002) | 26.7           | km   |          | XXXXX               | XXXXX     | XXXXX                  | XXXXX                      | 25,000.00   | 667,500.00 |
| <b>Total Price for 1E</b> |  |                |      |          |                     |           | <b>Baht 756,000.00</b> |                            | <b>Baht 10,119,300.00</b>                           |            |


นายประวิทย์ เลิศโกวิทย์  
 ผู้อำนวยการฝ่ายวิศวกรรมระบบส่ง  
 09 Aug 2024

นางสาวเบญญาลักษณ์ ศรีสัมพันธ์  
 หจตส-ห.  
 23 ส.ค. 67



**1F : LINE ACCESSORIES**

| Item No.                  | Description  | Estimated Qty. | Unit | Currency | Supply of Equipment |        | Supply of Equipment      |              | Local Transportation, Construction and Installation |                            |
|---------------------------|--|----------------|------|----------|---------------------|--------|--------------------------|--------------|---|----------------------------|
|                           |  |                |      |          | Foreign Supply      |        | Local Supply             |              | ( excluding VAT )<br>Baht                           |                            |
|                           |  |                |      |          | CIF Thai Port       |        | Ex-works Price           |              |   |                            |
|                           |  |                |      |          | Unit Price          | Amount | Unit Price               | Amount       | Unit Price  | Amount                     |
| 1F1                       | Tension sleeve for 1272 MCM ACSR/GA conductor  | 285            | set  |          | XXXXX               | XXXXX  | 1,400.00                 | 399,000.00   | included in stringing work                          | included in stringing work |
| 1F2                       | Spacer damper for two-bundled 1272 MCM ACSR/GA conductor (for double circuit, approx. 26.7 km in transmission line distance) | lump sum       | each |          | XXXXX               | XXXXX  | 5,874,000.00             | 5,874,000.00 | included in stringing work                          | included in stringing work |
| 1F3                       | Rigid type spacer for two-bundled 1272 MCM ACSR/GA conductor   | 288            | set  |          | XXXXX               | XXXXX  | 600.00                   | 172,800.00   | included in stringing work                          | included in stringing work |
| 1F4                       | Vibration damper for 3/8" high strength galvanized steel overhead ground wire  | 76             | set  |          | XXXXX               | XXXXX  | 650.00                   | 49,400.00    | included in stringing work                          | included in stringing work |
| 1F5                       | Field test of spacer damper for two-bundled 1272 MCM ACSR/GA conductor as per Specifications No.TL-03                        | 1              | test |          | XXXXX               | XXXXX  | XXXXX                    | XXXXX        | 170,000.00  | 170,000.00                 |
| <b>Total Price for 1F</b> |  |                |      |          |                     |        | <b>Baht 6,495,200.00</b> |              | <b>Baht 170,000.00</b>                              |                            |

  
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 23 ส.ค. 67

  
 นายประวิทย์ เลิศโกวิทย์  
 ผู้อำนวยการฝ่ายวิศวกรรมระบบส่ง  
 09 Aug 2024

**1G : GROUNDING MATERIALS**

| Item No.                  | Description  | Estimated Qty. | Unit | Currency | Supply of Equipment |          | Supply of Equipment |                        | Local Transportation, Construction and Installation |        |
|---------------------------|--|----------------|------|----------|---------------------|----------|---------------------|------------------------|---|--------|
|                           |  |                |      |          | Foreign Supply      |          | Local Supply        |                        | ( excluding VAT )<br>Baht                           |        |
|                           |  |                |      |          | CIF Thai Port       |          | Ex-works Price      |                        |   |        |
|                           |  |                |      |          | Unit Price          | Amount   | Unit Price          | Amount                 | Unit Price  | Amount |
| 1G1                       | 1.6 cm. nominal diameter x 3.0 m. (5/8" diameter x 10') copper-covered steel single length sectional ground rod with ground rod clamp, ground connecting wire and stub angle connector | 292            | set  |          |                     | 1,200.00 | 350,400.00          | 200.00                 | 58,400.00   |        |
| 1G2                       | 1.6 cm. nominal diameter x 1.8 m. (5/8" diameter x 6') copper-covered steel sectional ground rod with coupling   | 32             | set  |          |                     | 800.00   | 25,600.00           | 200.00                 | 6,400.00  |        |
| 1G3                       | Connector set (No.4 AWG annealed copper ground connecting wire 0.6 m. long with stub angle connector)  | 88             | set  |          |                     | 300.00   | 26,400.00           | 100.00                 | 8,800.00  |        |
| 1G4                       | Counterpoise No.2 AWG solid copper-clad steel wire 30% conductivity  | 1320           | m    |          |                     | 180.00   | 237,600.00          | 90.00                  | 118,800.00  |        |
| 1G5                       | Heavy duty exothermic or compression type connector  | 88             | set  |          |                     | 250.00   | 22,000.00           | 200.00                 | 17,600.00   |        |
| <b>Total Price for 1G</b> |  |                |      |          |                     |          |                     | <b>Baht 662,000.00</b> | <b>Baht 210,000.00</b>                              |        |



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09 Aug 2024

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23 ส.ค. 67

**IH : OPTICAL FIBER AND LINE ACCESSORIES**

| Item No. | Description  | Estimated Qty. | Unit      | Currency | Supply of Equipment |              | Supply of Equipment                       |            | Local Transportation, Construction and Installation<br>(excluding VAT)<br>Baht |                        |
|----------|--|----------------|-----------|----------|---------------------|--------------|---|------------|--|------------------------|
|          |  |                |           |          | Foreign Supply      |              | Local Supply                              |            |  |                        |
|          |  |                |           |          | CIF Thai Port       |              | Ex-works Price<br>(excluding VAT)<br>Baht |            |  |                        |
|          |  |                |           |          | Unit Price          | Amount       | Unit Price                                | Amount     | Unit Price   | Amount                 |
| 1H1      | Composite overhead ground wire with 36 core optical fibers (OPGW) (referred section F-4.3)   |                |           |          |                     |              |   |            |  |                        |
| 1H1.1    | 13.5mm dia. Composite Overhead Ground Wire with Optical Fiber (OPGW)   | lump sum       | kilometer | THB      | 2,361,750.00        | 2,361,750.00 | 966,150.00                                | 966,150.00 | Included in Item 1H1.2   | Included in Item 1H1.2 |
| 1H1.2    | Stringing by controlled tension method, one OPGW measured based on horizontal distance of line route 230kV RY2 - BL2(J.) from Tower No. 75 to Banglamung 2 T.O.S. (RY2 S/S) CCT.2 ( RY2 direction to BL2 ) | 25             | kilometer |          | XXXXX               | XXXXX        | XXXXX                                     | XXXXX      | 1,417,500.00   | 35,437,500.00          |
| 1H2      | Joint boxes for optical fiber cable  |                |           |          |                     |              |   |            |  |                        |
| 1H2.1    | 2-way joint box with accessories for two OPGW cables (including splicing work)   | lump sum       | set       |          |                     |              |   |            |  |                        |
| 1H2.2    | 2-way joint box with accessories for two OPGW cables at Tower No. 75 (including splicing work) (BL2(J.))   | 1              | set       |          |                     |              |   |            |  |                        |
| 1H2.3    | 2-way joint box with accessories for OPGW cable and 36 cores non-metallic optical fiber cable at Banglamung 2 T.O.S. (including splicing work between optical fiber cable and OPGW) (RY2 S/S)              | 1              | set       |          |                     |              |   |            |  |                        |
| 1H3      | Hardware assembly for OPGW   |                |           |          |                     |              |   |            |  |                        |
| 1H3.1    | Tension assembly for OPGW with accessories (grounded type)   | lump sum       | set       |          |                     |              |   |            |  |                        |
| 1H3.2    | Suspension assembly for OPGW with accessories (grounded type)  | lump sum       | set       |          |                     |              |   |            |  |                        |
| 1H4      | Line accessories   |                |           |          |                     |              |   |            |  |                        |
| 1H4.1    | Vibration damper assembly for OPGW with accessories  | lump sum       | set       |          |                     |              |   |            |  |                        |
| 1H4.2    | Parallel groove clamps   | lump sum       | set       |          |                     |              |   |            |  |                        |
| 1H4.3    | Grounding clamps   | lump sum       | set       |          |                     |              |   |            |  |                        |
| 1H4.4    | 1-wire cleat with accessories for OPGW down-lead to joint box (Ground)   | lump sum       | set       |          |                     |              |   |            |  |                        |
| 1H4.5    | 2-wire cleats with accessories for OPGW down-lead to joint box (Ground)  | lump sum       | set       |          |                     |              |   |            |  |                        |

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09 Aug 2024

| Item No.                  | Description   | Estimated Qty. | Unit  | Currency   | Supply of Equipment |        | Supply of Equipment                       |                   | Local Transportation, Construction and Installation<br>(excluding VAT)<br>Baht |                        |                      |
|---------------------------|---|----------------|-------|------------|---------------------|--------|---|-------------------|--|------------------------|----------------------|
|                           |   |                |       |            | Foreign Supply      |        | Local Supply                              |                   |  |                        |                      |
|                           |   |                |       |            | CIF Thai Port       |        | Ex-works Price<br>(excluding VAT)<br>Baht |                   |  |                        |                      |
|                           |   |                |       |            | Unit Price          | Amount | Unit Price                                | Amount            | Unit Price   | Amount                 |                      |
| 1H4.6                     | 6-wire cleats with accessories for OPGW down-lead to joint box (Ground)   | lump sum       | set   |            |                     |        |   |                   |  |                        |                      |
| 1H4.7                     | 6-wire cleats with insulator and accessories for OPGW down-lead to joint box at BL2 T.O.S. (RY2 S/S)  | 4              | set   |            |                     |        |   |                   |  |                        |                      |
| 1H4.8                     | Porcelain or glass insulator ANSI CLASS 52-3 (15,000 lbs) with corrosion proof type pin   | 1              | each  |            |                     |        |   |                   |  |                        |                      |
| 1H4.9                     | 3/8" High strength galvanized steel wire for grounding OPGW to towers   | lump sum       | meter |            |                     |        |   |                   |  |                        |                      |
| 1H5                       | Non-metallic optical fiber cable  |                |       |            |                     |        |   |                   |  |                        |                      |
| 1H5.1                     | 36 Cores Non-metallic Optical Fiber Cable from joint box at Banglamung 2 take-off structure (RY2 S/S) to fiber frame termination cabinet at Rayong 2 control building | 450            | meter |            |                     |        |   |                   |  | included in item 1H5.2 |                      |
| 1H5.2                     | Laying of optical fiber cable with accessories for item 1H5.1, 1H5.3 and 1H5.4  | 450            | meter |            | XXXXX               | XXXXX  | XXXXX                                     | XXXXX             |  | included in item 1H5.2 |                      |
| 1H5.3                     | Rigid Steel Conduit from take-off structure to cable trench for item 1H5.1  | lump sum       | meter |            |                     |        |   |                   |  | included in item 1H5.2 |                      |
| 1H5.4                     | EFLEX and/or HDPE Conduit with Hot-dip galvanized steel clamp for item 1H5.1  | lump sum       | meter |            |                     |        |   |                   |  | included in item 1H5.2 |                      |
| 1H5.5                     | Fiber frame termination cabinet with cable tray (PDG Control building-1)  | 1              | set   |            |                     |        |   |                   |  | included in item 1H5.2 |                      |
| 1H5.6                     | 36 Pigtaills (1.5 meters) (PDG Control building-1)  | 1              | set   |            |                     |        |   |                   |  |                        |                      |
| 1H5.7                     | 6-wire cleats with accessories for OFC down-lead to joint box at BL2 T.O.S. (RY2 S/S)   | 4              | set   |            |                     |        |   |                   |  |                        |                      |
| 1H6                       | Field testing for optical fiber for OPGW RY2 - BL2  | 1              | job   |            | XXXXX               | XXXXX  | XXXXX                                     | XXXXX             |  |                        |                      |
| <b>Total Price for 1H</b> |   |                |       | <b>THB</b> | <b>2,361,750.00</b> |        | <b>Baht</b>                               | <b>966,150.00</b> |  | <b>Baht</b>            | <b>35,437,500.00</b> |

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 23 ส.ค. 67

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 ผู้อำนวยการฝ่ายวิศวกรรมระบบส่ง  
 09 Aug 2024

**II : DISMANTLING WORK**

| Item No.                  | Description   | Estimated Qty. | Unit | Local Transportation, Construction and Installation<br>(excluding VAT)<br>Baht |                     |
|---------------------------|---|----------------|------|--|---------------------|
|                           |   |                |      | Unit Price   | Amount              |
| 111                       | Dismantling of the existing 230 kV Ao Phai - Bang Lamung 2 Transmission Line which is double circuit, single conductor per phase from Str. No. 20/1 type DA1 to Str. No. 23/2A type DDE, approx. 3.76 km in transmission line distance. | lump sum       | each | 784,784.80   | 784,784.80          |
| 112                       | Dismantling of the existing 230 kV Rayong 2 - Bo Win Transmission Line which is double circuit, single conductor per phase from Str. No.3/1 type WB2 to Str. No.33/1 type WA1, approx. 29.7 km in transmission line distance.           | lump sum       | each | 6,487,000.00   | 6,487,000.00        |
| <b>Total Price for II</b> |   |                |      | <b>Baht</b>  | <b>7,271,784.80</b> |



นายประวิทย์ เลิศโกวิทย์  
ผู้อำนวยการฝ่ายวิศวกรรมระบบส่ง  
09 Aug 2024



นางสาวเบญญาลักษณ์ ศรีสัมพันธ์  
หจตส-ห.  
23 ส.ค. 67

**1N : TEST OF EQUIPMENT**

| Item No.                  | Description  | Estimated Qty. | Unit | Currency | Foreign Currency |  | Local Currency<br>( excluding VAT )<br>Baht |        |
|---------------------------|--|----------------|------|----------|------------------|--|---|--------|
|                           |  |                |      |          | Unit Price       | Amount   | Unit Price                                  | Amount |
|                           |  |                |      |          | 1N1              | Steep front wave impulse test on insulator ANSI Class 52-3 (18,000 lbs), as per Specification No. TL-01 (Rev. 2) | 1   | test   |
| 1N2                       | Steep front wave impulse test on insulator ANSI Class 52-5 (25,000 lbs), as per Specification No. TL-01 (Rev. 2)   | 1              | test | THB      | 151,000.00       | 151,000.00   |   |        |
| 1N3                       | Steep front wave impulse test on insulator ANSI Class 52-8 (36,000 lbs), as per Specification No. TL-01 (Rev. 2)   | 1              | test | THB      | 151,000.00       | 151,000.00   |   |        |
| 1N4                       | Laboratory test of spacer damper for two-bundled 1272 MCM ACSR/GA Conductor as per Specification No. TL-03 (Rev.0) | 1              | test | THB      | 151,000.00       | 151,000.00   |   |        |
| <b>Total Price for 1N</b> |  |                |      |          | <b>THB</b>       | <b>604,000.00</b>  | <b>Baht</b>                                 |        |



นายประวิทย์ เลิศโกวิทย์  
 ผู้อำนวยการฝ่ายวิศวกรรมระบบส่ง  
 09 Aug 2024



นางสาวเบญญาลักษณ์ ศรีลิ้มพ์  
 หจตส-ห.  
 23 ส.ค. 67

**10 : SUPPLY OF SERVICE OF VEHICLES**

| Item No.                  | Description  | Estimated Qty. | Unit      | Local Transportation, Construction and Installation<br>( excluding VAT )<br>Baht |                     |
|---------------------------|--|----------------|-----------|--|---------------------|
|                           |  |                |           | Unit Price   | Amount              |
| 101                       | Services of four-wheel-driven vehicle (for Specifications and requirements of Vehicles, refer to Article G-6. Housing and Other Facilities.) | 42             | car-month | 50,000.00  | 2,100,000.00        |
| <b>Total Price for 10</b> |  |                |           | <b>Baht</b>  | <b>2,100,000.00</b> |



นายประวิทย์ เลิศโกวิทย์  
 ผู้อำนวยการฝ่ายวิศวกรรมระบบส่ง  
 09 Aug 2024



นางสาวเบญญาลักษณ์ ศรีสัมพันธ์  
 หจตส-ห.  
 23 ส.ค. 67

**1Z : DISMANTLED EQUIPMENT TO BE PURCHASED BY THE CONTRACTOR**

| Item No.                  | Description   | Estimated Qty. | Unit | Purchase Price Offered for Dismantled Equipment<br>( including VAT )<br>Baht |   |
|---------------------------|---|----------------|------|--|---|
|                           |   |                |      | Unit Price   | Amount  |
|                           |   |                |      | 1Z1  | Dismantling equipment of the existing 230 kV Ao Phai - Bang Lamung 2 Transmission Line which is double circuit, single conductor per phase from Str. No. 20/1 type DA1 to Str. No. 23/2A type DDE, approx. 3.76 km in transmission line distance. |
| 1Z2                       | Dismantling equipment of the existing 230 kV Rayong 2 - Bo Win Transmission Line which is double circuit, single conductor per phase from Str. No.3/1 type WB2 to Str. No.33/1 type WA1, approx. 29.7 km in transmission line distance. |                |      |  |   |
| <b>Total Price for 1Z</b> |   |                |      | <b>Baht</b>  | <b>22,955,000.00</b>  |



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 ผู้อำนวยการฝ่ายวิศวกรรมระบบส่ง  
 09 Aug 2024



นางสาวเบญญาลักษณ์ ศรีสัมพันธ์  
 หจตส-ห.  
 23 ส.ค. 67



**INVITATION TO BID NO. TIPE-L-06**  
**TOTAL PRICE FOR SCHEDULE NO. 2**  
**230 KV AO PHAI - BO WIN**  
**Line Length 1 KM.**

**SUPPLY AND CONSTRUCTION OF TRANSMISSION LINE 230 KV AO PHAI - BO WIN**  
**TRANSMISSION SYSTEM IMPROVEMENT PROJECT IN EASTERN REGION TO ENHANCE SYSTEM SECURITY**

| Description   | Currency | Supply of Equipment |                                | Foreign Currency | Local Currency | Local Transportation | Local Transportation, Construction and Installation | Purchase Price Offered for Dismantled Equipment |
|---|----------|---------------------|--------------------------------|------------------|----------------|----------------------|---|---|
|   |          | Foreign Supply      | Local Supply                   |                  |                |                      |   |   |
|   |          | CIF Thai Port       | Ex-works Price (excluding VAT) |                  |                |                      |   |   |
|   |          | Amount              | Amount                         |                  |                |                      |   |   |
| 2A : PRELIMINARY WORK                                     |          |                     |                                |                  |                |                      | 87,800.00   |   |
| 2B : TOWER FOUNDATIONS                                    |          |                     | 262,500.00                     |                  |                |                      | 2,352,000.00  |   |
| 2C : TOWERS   |          |                     | 4,054,000.00                   |                  |                |                      | 646,371.20  |   |
| 2D : INSULATOR STRING AND OVERHEAD GROUND WIRE ASSEMBLIES | THB      | 794,200.00          | 677,200.00                     |                  |                |                      |   |   |
| 2E : CONDUCTOR AND OVERHEAD GROUND WIRE                   |          |                     | 28,000.00                      |                  |                |                      | 488,000.00  |   |



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**09 Aug 2024**

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**23 ส.ค. 67**

| Description              | Currency   | Supply of Equipment | Supply of Equipment                         | Foreign Currency | Local Currency | Local Transportation | Local Transportation,<br>Construction and<br>Installation | Purchase Price Offered for<br>Dismantled Equipment |
|--------------------------|------------|---------------------|---|------------------|----------------|----------------------|---|--|
|                          |            | Foreign Supply      | Local Supply                                |                  |                |                      |   |  |
|                          |            | CIF Thai Port       | Ex-works Price<br>( excluding VAT )<br>Baht |                  |                |                      |   |  |
|                          |            | Amount              | Amount                                      |                  |                |                      |   |  |
| 2F : LINE ACCESSORIES    |            |                     | 95,200.00                                   |                  |                |                      |   |  |
| 2G : GROUNDING MATERIALS |            |                     | 48,400.00                                   |                  |                | 17,200.00            |   |  |
| 2I : DISMANTLING WORK    |            |                     |   |                  |                | 10,500.00            |   |  |
| <b>TOTAL PRICE</b>       | <b>THB</b> | <b>794,200.00</b>   | <b>Baht</b>                                 |                  | <b>Baht</b>    | <b>Baht</b>          | <b>Baht</b>   | <b>Baht</b>  |
|                          |            |                     | 5,165,300.00                                |                  |                |                      | 3,601,871.20  |  |
|                          |            |                     |   |                  |                |                      | <b>Baht</b>   |  |

นายประวิทย์ เลิศโกวิทย์  
 ผู้อำนวยการฝ่ายวิศวกรรมระบบส่ง  
 09 Aug 2024

นางสาวเบญญาลักษณ์ ศรีลิ้มพ์  
 หจตส-ห.  
 23 ส.ค. 67

**2A : PRELIMINARY WORK**

| Item No.                  | Description   | Estimated Qty. | Unit | Local Transportation, Construction and Installation<br>( excluding VAT )<br>Baht |                  |
|---------------------------|---|----------------|------|--|------------------|
|                           |   |                |      | Unit Price   | Amount           |
| 2A1                       | Check survey and staking of tower location (Approximately 1 kilometer in transmission line distance)  | lump sum       | each | 30,000.00  | 30,000.00        |
| 2A2                       | Clearing right-of-way of 20 meters on each side of center line of the transmission line (Approximately 1 km in transmission line distance)            | lump sum       | each | 25,000.00  | 25,000.00        |
| 2A3                       | Subsoil tests and preliminary measurement of ground resistance and earth resistivity (to be performed at tower locations directed by EGAT)            |                |      |  |                  |
| 2A3.1                     | Light ram sound tests with hand auger and preliminary measurement of ground resistance and earth resistivity from ground surface to 5 meters in depth | 4              | bore | 6,300.00   | 25,200.00        |
| 2A3.2                     | Boundary post along boundary line of right-of-way   | 8              | post | 950.00   | 7,600.00         |
| <b>Total Price for 2A</b> |   |                |      | <b>Baht</b>  | <b>87,800.00</b> |



นายประวิทย์ เลิศโกวิทย์  
ผู้อำนวยการฝ่ายวิศวกรรมระบบส่ง  
09 Aug 2024



นางสาวเบญญาลักษณ์ ศรีสัมพันธ์  
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23 ส.ค. 67

**2B : TOWER FOUNDATIONS**

| Item No.                  | Description                       | Estimated Qty. | Unit  | Currency | Supply of Equipment |        | Supply of Equipment |                   | Local Transportation, Construction and Installation |                     |
|---------------------------|-----------------------------------|----------------|-------|----------|---------------------|--------|---------------------|-------------------|---|---------------------|
|                           |                                   |                |       |          | Foreign Supply      |        | Local Supply        |                   | ( excluding VAT )<br>Baht                           |                     |
|                           |                                   |                |       |          | CIF Thai Port       |        | Ex-works Price      |                   |   |                     |
|                           |                                   |                |       |          | Unit Price          | Amount | Unit Price          | Amount            | Unit Price  | Amount              |
| 2B1                       | Foundation for Tower Type DDE     |                |       |          |                     |        |                     |                   |   |                     |
| 2B1.1                     | Stub type CIII (230-1x1272 DDE)   | 1              | tower |          | XXXXX               | XXXXX  | 65,625.00           | 65,625.00         | 693,000.00  | 693,000.00          |
| 2B1.2                     | Stub type CV (230-1x1272 DDE)     | 1              | tower |          | XXXXX               | XXXXX  | 65,625.00           | 65,625.00         | 322,000.00  | 322,000.00          |
| 2B2                       | Foundation for Tower Type DDE90   |                |       |          |                     |        |                     |                   |   |                     |
| 2B2.1                     | Stub type CIII (230-1x1272 DDE90) | 1              | tower |          | XXXXX               | XXXXX  | 65,625.00           | 65,625.00         | 919,000.00  | 919,000.00          |
| 2B2.2                     | Stub type CV (230-1x1272 DDE90)   | 1              | tower |          | XXXXX               | XXXXX  | 65,625.00           | 65,625.00         | 418,000.00  | 418,000.00          |
| <b>Total Price for 2B</b> |                                   |                |       |          |                     |        | <b>Baht</b>         | <b>262,500.00</b> | <b>Baht</b>   | <b>2,352,000.00</b> |



นายประวิทย์ เลิศโกวิท  
 ผู้อำนวยการฝ่ายวิศวกรรมระบบส่ง  
 09 Aug 2024



นางสาวเบญญาลักษณ์ ศรีลิ้มพ์  
 หจตส-ห.  
 23 ส.ค. 67

2C : TOWERS


| Item No.                  | Description                            | Estimated Qty. | Unit | Currency | Supply of Equipment |        | Supply of Equipment |              | Local Transportation, Construction and Installation |             |                   |
|---------------------------|--|----------------|------|----------|---------------------|--------|---------------------|--------------|---|-------------|-------------------|
|                           |  |                |      |          | Foreign Supply      |        | Local Supply        |              | ( excluding VAT )<br>Baht                           |             |                   |
|                           |  |                |      |          | CIF Thai Port       |        | Ex-works Price      |              |   |             |                   |
|                           |  |                |      |          | Unit Price          | Amount | Unit Price          | Amount       | Unit Price  | Amount      |                   |
| 2C1                       | Tower type DDE                         |                |      |          |                     |        |                     |              |   |             |                   |
| 2C1.1                     | Basic body (230-1x1272 DDE)            | 2              | body |          | XXXXX               | XXXXX  | 868,750.00          | 1,737,500.00 | 115,370.00  | 230,740.00  |                   |
| 2C1.2                     | Leg extension 4.0 m (230-1x1272 DDE)   | 4              | leg  |          | XXXXX               | XXXXX  | 24,875.00           | 99,500.00    | 3,303.40  | 13,213.60   |                   |
| 2C1.3                     | Leg extension 6.0 m (230-1x1272 DDE)   | 4              | leg  |          | XXXXX               | XXXXX  | 36,437.50           | 145,750.00   | 4,838.90  | 19,355.60   |                   |
| 2C2                       | Tower type DDE(90)                     |                |      |          |                     |        |                     |              |   |             |                   |
| 2C2.1                     | Basic body (230-1x1272 DDE90)          | 2              | body |          | XXXXX               | XXXXX  | 968,750.00          | 1,937,500.00 | 128,650.00  | 257,300.00  |                   |
| 2C2.2                     | Leg extension 1.0 m (230-1x1272 DDE90) | 4              | leg  |          | XXXXX               | XXXXX  | 16,187.50           | 64,750.00    | 2,149.70  | 8,598.80    |                   |
| 2C2.3                     | Leg extension 2.0 m (230-1x1272 DDE90) | 4              | leg  |          | XXXXX               | XXXXX  | 17,250.00           | 69,000.00    | 2,290.80  | 9,163.20    |                   |
| 2C3                       | Tower signs                            |                |      |          |                     |        |                     |              |   |             |                   |
| 2C3.1                     | Aerial patrol signs                    | 14             | set  |          | XXXXX               | XXXXX  | XXXXX               | XXXXX        | 2,500.00  | 35,000.00   |                   |
| 2C3.2                     | Danger signs                           | 4              | set  |          | XXXXX               | XXXXX  | XXXXX               | XXXXX        | 3,000.00  | 12,000.00   |                   |
| 2C3.3                     | Circuit name signs                     | 4              | set  |          | XXXXX               | XXXXX  | XXXXX               | XXXXX        | 5,500.00  | 22,000.00   |                   |
| 2C3.4                     | Phasing signs (3 pieces per set)       | 6              | set  |          | XXXXX               | XXXXX  | XXXXX               | XXXXX        | 6,500.00  | 39,000.00   |                   |
| <b>Total Price for 2C</b> |  |                |      |          |                     |        |                     | <b>Baht</b>  | <b>4,054,000.00</b>                                 | <b>Baht</b> | <b>646,371.20</b> |

นางสาวเบญญาลักษณ์ ศรีลิ้มพ์  
 หจตส-ห.  
 23 ส.ค. 67

นายประวิทย์ เลิศโกวิทย์  
 ผู้อำนวยการฝ่ายวิศวกรรมระบบส่ง  
 09 Aug 2024

**2D : INSULATOR STRING AND OVERHEAD GROUND WIRE ASSEMBLIES**

| Item No. | Description  | Estimated Qty. | Unit | Currency | Supply of Equipment |        | Supply of Equipment |            | Local Transportation, Construction and Installation |                            |
|----------|--|----------------|------|----------|---------------------|--------|---------------------|------------|---|----------------------------|
|          |  |                |      |          | Foreign Supply      |        | Local Supply        |            | ( excluding VAT )<br>Baht                           |                            |
|          |  |                |      |          | CIF Thai Port       |        | Ex-works Price      |            |   |                            |
|          |  |                |      |          | Unit Price          | Amount | Unit Price          | Amount     | Unit Price  | Amount                     |
| 2D1      | Bypass string suspension insulator assemblies for 1272 MCM ACSR/GA conductor, 8000 kg ultimate strength, coupling type B (without insulator and arcing horn) | 18             | set  |          | XXXXX               | XXXXX  | 6,000.00            | 108,000.00 | included in stringing work                          | included in stringing work |
| 2D2      | Single string tension insulator assemblies for 1272 MCM ACSR/GA conductor, 12000 kg ultimate strength, coupling type B (without insulator and arcing horn)   | 24             | set  |          | XXXXX               | XXXXX  | 8,500.00            | 204,000.00 | included in stringing work                          | included in stringing work |
| 2D3      | Single string tension insulator assemblies with arcing horn for 1272 MCM ACSR/GA conductor, 12000 kg ultimate strength, coupling type B (without insulator)  | 24             | set  |          | XXXXX               | XXXXX  | 9,000.00            | 216,000.00 | included in stringing work                          | included in stringing work |
| 2D4      | Double string tension insulator assemblies for 1272 MCM ACSR/GA conductor, 14000 kg ultimate strength, coupling type B (without insulator and arcing horn)   | 6              | set  |          | XXXXX               | XXXXX  | 11,000.00           | 66,000.00  | included in stringing work                          | included in stringing work |
| 2D5      | Double string tension insulator assemblies with arcing horn for 1272 MCM ACSR/GA conductor, 14000 kg ultimate strength, coupling type B (without insulator ) | 6              | set  |          | XXXXX               | XXXXX  | 12,000.00           | 72,000.00  | included in stringing work                          | included in stringing work |

  
 นางสาวเบญญาลักษณ์ ครลิ้มพ์  
 หจตส-ห.  
 23 ส.ค. 67

  
 นายประวิทย์ เลิศโกวิทย์  
 ผู้อำนวยการฝ่ายวิศวกรรมระบบส่ง  
 09 Aug 2024

| Item No.                  | Description  | Estimated Qty. | Unit | Currency | Supply of Equipment |            | Supply of Equipment                       |                   | Local Transportation, Construction and Installation<br>(excluding VAT)<br>Baht |                            |
|---------------------------|--|----------------|------|----------|---------------------|------------|---|-------------------|--|----------------------------|
|                           |  |                |      |          | Foreign Supply      |            | Local Supply                              |                   |  |                            |
|                           |  |                |      |          | CIF Thai Port       |            | Ex-works Price<br>(excluding VAT)<br>Baht |                   |  |                            |
|                           |  |                |      |          | Unit Price          | Amount     | Unit Price                                | Amount            | Unit Price   | Amount                     |
| 2D6                       | Overhead ground wire tension assemblies for 3/8" high strength, galvanized steel overhead ground wire, 5000 kg ultimate strength | 16             | set  |          | XXXXX               | XXXXX      | 700.00                                    | 11,200.00         | included in stringing work   | included in stringing work |
| 2D7                       | Porcelain or glass insulator ANSI CLASS 52-3 (18,000 lbs) with corrosion proof type pin  | 1444           | disc | THB      | 550.00              | 794,200.00 |   |                   | included in stringing work   | included in stringing work |
| <b>Total Price for 2D</b> |  |                |      | THB      | <b>794,200.00</b>   |            | Baht                                      | <b>677,200.00</b> | Baht   |                            |

นายประวิทย์ เลิศโกวิทย์  
 ผู้อำนวยการฝ่ายวิศวกรรมระบบส่ง  
 09 Aug 2024

นางสาวเบญญาลักษณ์ ศรีลิ้มพ์  
 หจตส-ห.  
 23 ส.ค. 67

**2E : CONDUCTOR AND OVERHEAD GROUND WIRE**


| Item No. | Description  | Estimated Qty. | Unit | Currency | Supply of Equipment |        | Supply of Equipment |        | Local Transportation, Construction and Installation |                            |
|----------|--|----------------|------|----------|---------------------|--------|---------------------|--------|---|----------------------------|
|          |  |                |      |          | Foreign Supply      |        | Local Supply        |        | ( excluding VAT )<br>Baht                           |                            |
|          |  |                |      |          | CIF Thai Port       |        | Ex-works Price      |        |   |                            |
|          |  |                |      |          | Unit Price          | Amount | Unit Price          | Amount | Unit Price  | Amount                     |
| 2E1      | 1272 MCM ACSR/GA Conductor   |                |      |          |                     |        |                     |        |   |                            |
| 2E1.1    | 1272 MCM ACSR/GA Conductor, furnishing conductor for Item 2E1.2 and 2E1.3 (to be supplied by EGAT, see Article F-3, approx. 1 km in transmission line distance)  |                | km   |          | XXXXX               | XXXXX  | XXXXX               | XXXXX  | included in stringing work                          | included in stringing work |
| 2E1.2    | Stringing of conductor by controlled tension method, double circuit, 3 phase, single conductor per phase, measured based on horizontal distance of line route from the existing Str. No.19/3 type DA1 to the existing Str. No.20/5 type DA1 to be 230kV Ao Phai - Bowin transmission line (including connecting loop circuit at Tower No. 19/3 and 20/5 as per drawing No.T02-001) | 1              | km   |          | XXXXX               | XXXXX  | XXXXX               | XXXXX  | 304,000.00  | 304,000.00                 |
| 2E1.3    | Installation of conductor, double circuit, 3 phase, single conductor per phase, between the existing deadend Str. No.32/2 type DDE and take-off structure at Bo Win Substation, approx. 0.1 km. in transmission line distance  | lump sum       | each |          | XXXXX               | XXXXX  | XXXXX               | XXXXX  | 134,000.00  | 134,000.00                 |

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 หจตส-ห.  
 23 ส.ค. 67

นายประวิทย์ เลิศโกวิทย์  
 ผู้อำนวยการฝ่ายวิศวกรรมระบบส่ง  
 09 Aug 2024



| Item No.                  | Description  | Estimated Qty. | Unit | Currency | Supply of Equipment |           | Supply of Equipment |                            | Local Transportation, Construction and Installation |             |                   |
|---------------------------|--|----------------|------|----------|---------------------|-----------|---------------------|----------------------------|---|-------------|-------------------|
|                           |  |                |      |          | Foreign Supply      |           | Local Supply        |                            | ( excluding VAT )<br>Baht                           |             |                   |
|                           |  |                |      |          | CIF Thai Port       |           | Ex-works Price      |                            |   |             |                   |
|                           |  |                |      |          | Unit Price          | Amount    | Unit Price          | Amount                     | Unit Price  | Amount      |                   |
| 2E2                       | 3/8" nominal diameter, high strength galvanized steel overhead ground wire, Class A coating  |                |      |          |                     |           |                     |                            |   |             |                   |
| 2E2.1                     | 3/8" High strength galvanized steel wire, furnishing for Item 2E2.2 and 2E2.3 based on linear length (Linear length = No. of overhead ground wire x horizontal distance of line route + 1.5%)  | 1              | km   |          |                     | 28,000.00 | 28,000.00           | included in stringing work | included in stringing work                          |             |                   |
| 2E2.2                     | Stringing of one overhead ground wire by running line method, measured based on horizontal distance of line route from the existing Tower No.19/3 type DA1 to the existing Tower No.20/5 type DA1, approx. 1 km. in transmission line distance | 1              | km   |          | XXXXX               | XXXXX     | XXXXX               | XXXXX                      | 25,000.00   | 25,000.00   |                   |
| 2E2.3                     | Installation of three overhead ground wires between the existing deadend Str. No.32/2 type DDE and take-off structure at Bo Win Substation, approx. 0.1 km. in transmission line distance  | lump sum       | each |          | XXXXX               | XXXXX     | XXXXX               | XXXXX                      | 25,000.00   | 25,000.00   |                   |
| <b>Total Price for 2E</b> |  |                |      |          |                     |           |                     | <b>Baht</b>                | <b>28,000.00</b>                                    | <b>Baht</b> | <b>488,000.00</b> |

  
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 หจตส-ห.  
 23 ส.ค. 67

  
 นายประวิทย์ เลิศโกวิทย์  
 ผู้อำนวยการฝ่ายวิศวกรรมระบบส่ง  
 09 Aug 2024

**2F : LINE ACCESSORIES**

| Item No.                  | Description   | Estimated Qty. | Unit | Currency | Supply of Equipment |        | Supply of Equipment   |           | Local Transportation, Construction and Installation |                            |
|---------------------------|---|----------------|------|----------|---------------------|--------|-----------------------|-----------|---|----------------------------|
|                           |   |                |      |          | Foreign Supply      |        | Local Supply          |           | ( excluding VAT )<br>Baht                           |                            |
|                           |   |                |      |          | CIF Thai Port       |        | Ex-works Price        |           |   |                            |
|                           |   |                |      |          | Unit Price          | Amount | Unit Price            | Amount    | Unit Price  | Amount                     |
| 2F1                       | Vibration damper for 1272 MCM ACSR/GA conductor                               | 60             | set  |          | XXXXX               | XXXXX  | 1,500.00              | 90,000.00 | included in stringing work                          | included in stringing work |
| 2F2                       | Vibration damper for 3/8" high strength galvanized steel overhead ground wire | 8              | set  |          | XXXXX               | XXXXX  | 650.00                | 5,200.00  | included in stringing work                          | included in stringing work |
| <b>Total Price for 2F</b> |   |                |      |          |                     |        | <b>Baht 95,200.00</b> |           | <b>Baht</b>   |                            |



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ผู้อำนวยการฝ่ายวิศวกรรมระบบส่ง  
09 Aug 2024



นางสาวเบญญาลักษณ์ ศรีลัมพ์  
หจตส-ห.  
23 ส.ค. 67

**2G : GROUNDING MATERIALS**

| Item No.                  | Description  | Estimated Qty. | Unit | Currency | Supply of Equipment |                       | Supply of Equipment |                       | Local Transportation, Construction and Installation |        |
|---------------------------|--|----------------|------|----------|---------------------|-----------------------|---------------------|-----------------------|---|--------|
|                           |  |                |      |          | Foreign Supply      |                       | Local Supply        |                       | ( excluding VAT )<br>Baht                           |        |
|                           |  |                |      |          | CIF Thai Port       |                       | Ex-works Price      |                       |   |        |
|                           |  |                |      |          | Unit Price          | Amount                | Unit Price          | Amount                | Unit Price  | Amount |
| 2G1                       | 1.6 cm. nominal diameter x 3.0 m. (5/8" diameter x 10') copper-covered steel single length sectional ground rod with ground rod clamp, ground connecting wire and stub angle connector | 16             | set  |          |                     | 1,200.00              | 19,200.00           | 200.00                | 3,200.00  |        |
| 2G2                       | 1.6 cm. nominal diameter x 1.8 m. (5/8" diameter x 6') copper-covered steel sectional ground rod with coupling   | 4              | set  |          |                     | 800.00                | 3,200.00            | 200.00                | 800.00  |        |
| 2G3                       | Connector set (No.4 AWG annealed copper ground connecting wire 0.6 m. long with stub angle connector)  | 8              | set  |          |                     | 300.00                | 2,400.00            | 100.00                | 800.00  |        |
| 2G4                       | Counterpoise No.2 AWG solid copper-clad steel wire 30% conductivity  | 120            | m    |          |                     | 180.00                | 21,600.00           | 90.00                 | 10,800.00   |        |
| 2G5                       | Heavy duty exothermic or compression type connector  | 8              | set  |          |                     | 250.00                | 2,000.00            | 200.00                | 1,600.00  |        |
| <b>Total Price for 2G</b> |  |                |      |          |                     | <b>Baht 48,400.00</b> |                     | <b>Baht 17,200.00</b> |   |        |



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ผู้อำนวยการฝ่ายวิศวกรรมระบบส่ง  
09 Aug 2024



นางสาวเบญญาลักษณ์ ศรีลิ้มพ์  
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23 ส.ค. 67

**2I : DISMANTLING WORK**

| Item No.                  | Description  | Estimated Qty. | Unit | Local Transportation, Construction and Installation (excluding VAT) Baht |                  |
|---------------------------|--|----------------|------|--|------------------|
|                           |  |                |      | Unit Price   | Amount           |
| 211                       | Dismantling of the existing 230 kV Rayong 2 - Bo Win Transmission Line which is double circuit, single conductor per phase from Str. No. 45/1 type DDE to take-off structure at Bo Win substation, approx. 0.1 km in transmission line distance. | lump sum       | each | 10,500.00  | 10,500.00        |
| <b>Total Price for 2I</b> |  |                |      | <b>Baht</b>  | <b>10,500.00</b> |



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 09 Aug 2024



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 23 ส.ค. 67

**Important Information**  
**for**  
**Invitation to Bid No. TIPE-L-06**

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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:

**Additional Regulation**

Information to be submitted with Bid as required in Item 3.2 has been revised.

The following paragraph in Remarks Item 4. of page 11 of Additional Regulation has been deleted :-

“In case that any Major Shareholder(s) of the Bidder is (are) juristic person(s), and such juristic person(s) has (have) Major Shareholder(s) who is (are) juristic person(s), the Bidder shall submit the list of the Major Shareholder(s)/ the Names of Manager/ Managing Partner/ Managing Director/ Executive/ Person Who Is Authorized to Manage the Business/ Partner/ Partner with Unlimited Liability/ of such juristic person(s) as per page 10-11 of this Additional Regulation. The requirement of submission of list of the Major Shareholder(s)/ the Names of Manager/ Managing Partner/ Managing Director/ Executive/ Person Who Is Authorized to Manage the Business/ Partner/ Partner with Unlimited Liability/ of such juristic person(s) shall apply to 2 tiers of Major Shareholder(s) who is(are) juristic person(s).”

**Article B-3. Bid Security**

Terms and conditions regarding the forms of bid security have been revised.

**Article E-15. Performance Security and Specimen of Performance Security**

Terms and conditions regarding the forms and the amount of performance security have been revised.

**Article E-16. Inspection and Tests**

Terms and conditions regarding inspection and tests have been revised.

**Article E-36. Advance Payment Security**

Terms and conditions regarding the forms of advance payment security have been revised.

**Article F-8. Drawings and Data to be Furnished by the Contractor**

Terms and conditions regarding EGAT's document management system in item d. have been added and the number of copies of the drawings and documents in Print and CD-ROM has been revised.

**Article F-12. Liquidated Damages for Late Completion and Late Delivery**

The total amount of liquidated damages shall not exceed ten (10) per cent of the total Contract Price, thereafter EGAT shall have the right, at its sole discretion, to terminate the Contract.

**Article F-17. Maintenance Guarantee and Article F-18. Maintenance Security**

In case all obligations on the part of the Contractor for the work under separated guarantee period under the Contract have been fulfilled, the Contractor is entitled to request EGAT to return the maintenance security guaranteed for such work regardless of the non-issuance of the Final Acceptance Certificate.

**Article F-18. Maintenance Security and Specimen of Maintenance Guarantee**

Terms and conditions regarding the forms and the amount of maintenance security have been revised.

**Article G-3. Safety Program**

Safety terms and conditions have been revised. The Contractor shall observe and comply with the revised terms and conditions including Table 1. Safety Criteria and Conditions, Table 2. Contractor's Safety Information, and Table 3. Contractor Safety Evaluation Checklist which have been added at the end of Section G.

# DATA SHEET

for

## Invitation to Bid No. TIPE-L-06

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

1. Article B-3. Bid Security

The amount of bid security shall be USD 266,860.- or THB 9,600,000.-.

2. Article B-4. Validity of Bids

The validity of the bid shall be for two hundred and ten (210) Days from the date specified for opening of bid.

3. Article B-12. Evaluation and Comparison of Bids

Evaluation and comparison of Bids shall be as specified in Article B-12. Evaluation and Comparison of Bids.

# ELECTRICITY GENERATING AUTHORITY OF THAILAND

Nonhaburi  
Thailand

## INVITATION TO BID NO. TIPE-L-06

### SUPPLY AND CONSTRUCTION OF TRANSMISSION LINES 230 kV RAYONG 2 – BANG LAMUNG 2 JUNCTION AND 230 kV AO PHAI – BO WIN

#### TRANSMISSION SYSTEM IMPROVEMENT PROJECT IN EASTERN REGION TO ENHANCE SYSTEM SECURITY

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#### **A-1. Invitation**

The Electricity Generating Authority of Thailand (EGAT) hereby invites sealed bids for Supply and Construction of Transmission Lines 230 kV Rayong2 – Bang Lamung 2 Junction and 230 kV Ao Phai – Bo Win under Transmission System Improvement Project in Eastern Region to Enhance System Security in accordance with the Terms and Conditions, Technical Specifications and Drawings described in these Bidding Documents.

#### **A-2 Work Description**

The scope of Work under this Invitation is supply and construction of 230 kV transmission lines located in the eastern region of Thailand. The Work is composed of two (2) Schedules as described below :

##### Schedule 1: Supply and Construction of 230 kV Rayong 2 – Bang Lamung 2 Junction Transmission Line

The Work for this Schedule is supply and construction of 230 kV transmission line which is 50 Hz, 3 phase, twin-bundled conductor per phase, double circuit self-supporting lattice towers extending from 230 kV Rayong 2 - Bang Lamung 2 Junction, having a distance of approximately 26.7 kilometers on the existing right-of-way with 34 and 40 meters of the transmission line.

The scope of Work for this Schedule shall also include the dismantling Work which consisted of two (2) portions as described below :

Portion 1 : The dismantling Work for this portion is the existing 230 kV Rayong 2 – Bo Win Transmission Line at Rayong 2 Substation which is twin-bundled conductor per phase, double circuit strung with 1272 MCM ACSR/GA conductor, having a distance of approximately 29.70 kilometers.

Portion 2 : The dismantling Work for this portion is the existing 230 kV Ao Phai – Bang Lamung 2 Transmission Line at Ao Phai Substation to Bo Win



Substation which is single conductor per phase, single circuit strung with 1272 MCM ACSR/GA conductor, having a distance of approximately 3.8 kilometers.

The said dismantling Work shall be conducted in accordance with the requirements in Specifications No. TL-07 (Rev.3) : Dismantling Work. All dismantled Equipment to be purchased by the Contractor has been listed in the Price Schedule and Attachment No. 2 : List of Equipment to be Dismantled by the Contractor. Conditions regarding the purchase of the dismantled Equipment are stipulated in Attachment No. 3 : Requirements for Dismantling Work and Conditions of Sale of Dismantled Equipment.

The conductor to be employed under this schedule will be 1272 MCM ACSR/GA supplied by EGAT. Two types of shield wires will be employed ; one of which is 3/8 inch nominal diameter, high strength galvanized steel shield wire and the other is composite overhead ground wire with 36-core optical fiber. Both types of shield wires shall be supplied by the Contractor.

#### Schedule 2: Supply and Construction of 230 kV Ao Phai – Bo Win Transmission Line

The Work for this Schedule is supply and construction of 230 kV transmission line which is 50 Hz, 3 phase, single conductor per phase, double circuit self-supporting lattice steel sectionalizing at the 230 kV Ao Phai – Rayong 2 transmission line and the sectionalizing of the 230 kV Rayong 2 – Bo Win transmission line to be connected to the 230 kV Ao Phai – Bo Win circuit no. 3 and 4, having a distance of approximately 1 kilometer on the new right-of-way with 40 meters of the transmission line.

The scope of Work for this Schedule shall also include the dismantling Work of the 230 kV Rayong 2 - Bo Win transmission line which is single conductor per phase, double circuit strung with 1272 MCM ACSR/GA conductor, having a distance of approximately 0.1 kilometer shall also be performed under this Schedule. The said dismantling Work shall be conducted in accordance with the requirements in Specifications No. TL-07 (Rev.3) : Dismantling Work. All dismantled Equipment to be purchased by the Contractor has been listed in the Price Schedule and Attachment No. 2 : List of Equipment to be Dismantled by the Contractor. Conditions regarding the purchase of the dismantled Equipment are stipulated in Attachment No. 3 : Requirements for Dismantling Work and Conditions of Sale of Dismantled Equipment.

The conductor to be employed under this schedule will be 1272 MCM ACSR/GA supplied by EGAT. The shield wire will be employed is 3/8 inch nominal diameter, high strength galvanized steel shield wire. The shield wire shall be supplied by the Contractor.

All types of steel towers have already been designed by EGAT. However, the fabrication/erection drawings, stub & setting dimensions for all tower types, as well as details & bar bending schedule for all foundation types including pile foundation shall be prepared and submitted for EGAT's approval by the Contractor. It shall also be noted that the modifications and re-design for towers and foundations may be required. In such case, the Contractor shall perform and provide these drawings for EGAT's approval.

Reproducible drawings and CD-ROM of the drawings for towers, stub & setting dimensions, including details & bar bending schedule of foundations as well as for modified and re-designed towers and foundations (if any) shall be required to be submitted to EGAT by the Contractor.

The full responsibility for adequacy and accuracy of all detailed drawings shall rest with the Contractor and he shall have no right to claim for additional compensation as a result of his misinterpretation or failure to check the drawings for compliance with the design requirements, inaccuracies, errors and omissions.

The Contractor shall also be responsible for the design of any other necessary parts for completion of the Work, including the manufacture, supply, testing, construction and installation of the various components of the transmission line.

Services required to complete the Work are shown in the Bid Price Schedules and included in these Bidding Documents.

**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 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 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 proceedings under Thai Court; provided that such Bidder's government declares that such special privilege is waived.

h. In case of being a joint venture or a 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 bid 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 funds 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. Himself, or either firm of the joint venture/consortium, having a record of experience in executing at least one (1) turnkey contract as contractor (not as subcontractor) in overseas country (not his own country) or with EGAT on the construction and installation of transmission line at the following voltage levels :
- 110 kV or higher for the Work of supply and construction of 115 kV transmission line
  - 220 kV or higher for the Work of supply and construction of 230 kV transmission line

However, the following cases are eligible to the requirement under this Item :

- 1) Having a record of experience in executing at least one (1) turnkey contract as contractor (not as subcontractor) with its overall performance satisfactory to other electricity authorities in Thailand on overhead transmission line at a voltage level of 115 kV or

higher is eligible for the requirement for the Work of supply and construction of 115 kV transmission line.

- 2) Having a record of experience in executing at least one (1) turnkey contract as contractor (not as subcontractor) with EGAT on transmission line at a voltage level of 115 kV is eligible for the requirement for the Work of supply and construction of 230 kV transmission line.

Experience record of the Bidder or either firm of the joint venture/consortium, including experience record derived from being a firm of other joint venture or consortium in previous project(s) is acceptable.

- b. Himself, or either firm of the joint venture/consortium or the combination thereof, having excellent reputation and adequate technical knowledge and record(s) of experience on the construction of transmission line at the following voltage levels :
  - 110 kV or higher for the Work of supply and construction of 115 kV transmission line
  - 220 kV or higher for the Work of supply and construction of 230 kV transmission line

Moreover, the accumulative circuit distance shall be not less than 50 kilometers or not less than the Work specified under this Invitation.

Further to the case mentioned in a.1), the Bidder himself, or either firm of the joint venture/consortium, each having an experience of at least two (2) contracts on the construction of 115 kV transmission line with their overall performance satisfactory to other electricity authorities in Thailand is required. Moreover, accumulative circuit distance of not less than 50 kilometers is required to be eligible for this Item.

However, it is allowed to combine the record(s) of circuit distance in the construction of 115 kV transmission line(s) of each firm of the joint venture/consortium in order to meet the requirements of this item.

Further to the case mentioned in a.2), an experience with EGAT on the construction of 115 kV transmission line having accumulative circuit distance not less than 50 kilometers is required to be eligible for this Item.

- c. Himself, or either firm of the joint venture/consortium, or his subcontractor or the combination thereof, having adequate technical knowledge and practical experience in stringing of line conductors or overhead ground wire or OPGW parallel to a live line. This eligibility will be applicable in case that scope of work under this Invitation requires stringing of circuit conductor, overhead ground wire and/or OPGW on towers on which the other circuit conductor is under energizing condition while performing such work.

- d. Himself, or either firm of the joint venture/consortium or his subcontractor or the combination thereof, having excellent reputation and adequate technical knowledge and having at least three years experience in the construction of transmission line having accumulative distance of overhead ground wire with optical fiber not less than 20 kilometers in length. This eligibility will not be applicable if such Equipment is not required under this Invitation.

With respect to item b., c., and d., experience record of the Bidder or either firm of the joint venture/consortium, including experience record derived from being a firm 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 b., c., and d. above were performed by the Bidder or either firm of the joint venture/consortium of this project.

However, reference records of either the parent or affiliated companies of the Bidder or of either firm of the joint venture/consortium shall not be acceptable. 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.

- e. Proposing towers, conductor, insulators for conductor, hardware assemblies and line accessories for conductor, dampers and spacer dampers for conductor, and composite overhead ground wire with optical fiber (OPGW) manufactured by regular manufacturers of excellent reputation having significant technical knowledge and at least three (3) years experience in the design, manufacture and testing of such Equipment, having manufacturing capacity available to perform the Work properly and expeditiously within the time specified, and having satisfactory past experience, with additional requirements as follows:
- 1) Tower manufacturer being an eligible local firm having set up a plant for fabrication of steel towers in Thailand
  - 2) Hardware assemblies and line accessories for conductor manufacturer being an eligible local firm having set up a plant in Thailand
  - 3) Damper and spacer damper for conductor manufacturer being an eligible local firm having set up a plant in Thailand
  - 4) Insulator for conductor manufacturer having a record of a minimum three (3) consecutive years of successful operation/use of at least 10,000 units of insulators of the same or similar ANSI class as those required under this Invitation in any one transmission line operating in the transmission network electric utility in overseas country (not his own country) during the last ten years at the following voltage levels :
    - 110 kV or higher for the Work of supply and construction of 115 kV transmission line

- 220 kV or higher for the Work of supply and construction of 230 kV transmission line
- 5) Composite overhead ground wire with optical fiber (OPGW) manufacturer having a record of at least three (3) consecutive years of successful operation/use of the same or similar type as those required under this Invitation in the transmission line having accumulated distance of not less than 20 kilometers

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.e.1) thru I.e.5) above. 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.

However, the Bidder may propose any qualified local manufacturer who does not have experiences in design, manufacture and testing as well as a record of successful operation/use of his Equipment as specified above but has obtained special permission from EGAT for manufacture and/or fabrication of the specific Equipment within the scope specified in the letter of permission issued by EGAT, or propose any local manufacturer who is in the list of Eligible Local Manufacturers Accepted by EGAT as shown herein at the end of this Section.

In the event that the Bidder proposes the Equipment of the manufacturer who, at the time of bidding, fails to meet requirements of any contract(s) with EGAT regarding major defects or malfunctioning of such Equipment and such failure has not yet satisfactorily been proved to and/or settled with EGAT, EGAT reserves the right to reject his Bid.

The eligibility will not be applicable for any Equipment which is not required under this Invitation.

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

- a. Having sufficient capacity to carry out the Work.
- b. Proposing overhead ground wire, hardware assemblies and line accessories for overhead ground wire and for OPGW, grounding materials, fiber optic transmission system Equipment, and other Equipment manufactured by regular manufacturers of excellent reputation having significant technical knowledge and at least three (3) years experience in the design, manufacture and testing of such Equipment, having manufacturing capacity available to perform the

Work properly and expeditiously within the time specified, and having satisfactory past experience, with additional requirements as follows:

- Manufacturers for overhead ground wire (galvanized steel wire strand), hardware assemblies and line accessories for overhead ground wire and for OPGW, and non-metallic optical fiber cable (OFC) being an eligible local firm having set up a plant in Thailand

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.

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.

However, the Bidder may propose any qualified local manufacturer who does not have experience in design, manufacture and testing as well as a record of successful operating/use of his Equipment as specified above but has obtained special permission from EGAT for manufacture and/or fabrication of the specific Equipment within the scope specified in the letter of permission issued by EGAT, or propose any local manufacturer who is in the list of Eligible Local Manufacturers Accepted by EGAT as shown herein at the end of this Section.

In the event that the Bidder proposes the Equipment of the manufacturer who, at the time of bidding, fails to meet the requirements of any contract(s) with EGAT regarding major defects or malfunctioning of such Equipment, and such failure has not yet satisfactorily been proved to and/or settled with EGAT, EGAT reserves the right to reject his Bid.

The eligibility will not be applicable for any Equipment which is not required under this Invitation.

- c. Proposing reputable subcontractors, for the portion of the Work to be subcontracted, having adequate technical knowledge, ability and capacity and practical experience to perform such work. 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.
- d. Having no just or proper claims pending against him with respect to breach in the performance of Contract on other similar works awarded by EGAT. 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.

- e. Himself or his subcontractors, at the time of submitting this proposal, not carrying excessive work or not being 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.

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

**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 and three (3) hard copies, in English, on the bid forms included for this purpose and shall be accompanied with a bid security as required under the Article pertaining to Bid Security in Section B : Instructions to Bidders. The bid security in accordance with Article B-3. Bid Security shall be submitted in a separate sealed envelope.

The envelope of the bids will be marked in capital letters in the lower left-hand corner as follows :

**INVITATION TO BID NO. TIPE-L-06**

**SUPPLY AND CONSTRUCTION OF TRANSMISSION LINES  
230 kV RAYONG 2 – BANG LAMUNG 2 JUNCTION AND 230 kV  
AO PHAI – BO WIN**

**TRANSMISSION SYSTEM IMPROVEMENT PROJECT IN  
EASTERN REGION TO ENHANCE SYSTEM SECURITY**

and 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.

Bids will be opened publicly at ***Bidding Room, 1<sup>st</sup> floor, Tor 082 Building*** and at the time specified above.

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

**A-7. Availability of Bidding Documents**

The Bidding Documents in CD-ROM are available for examination and can be obtained from EGAT at the hereunder address upon payment to EGAT, non-refundable, in the amount of USD...100.-...- or Baht...3,000.-...; these prices include the value added tax.

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

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.

## **ELIGIBLE LOCAL MANUFACTURERS ACCEPTED BY EGAT**

The following local manufacturers are eligible for proposing each specific equipment for this Invitation; provided that the scope of their offerings shall be within that specified in the Certificate of Acceptance issued by EGAT.

### **1) STEEL TOWERS**

#### **Ajikawa & SCI Metal Tech Co., Ltd.**

49/1 Moo 9, Marppong  
Phantong  
Chonburi 20160  
Tel : 038 451 473-6  
Fax : 038 451 478

#### **Siam Steel Tower Co., Ltd.**

9/10 Moo 10 Tambol Koke-Yae  
Amphur Nong Khae  
Saraburi 18230, Thailand  
Tel : (662) 705-8755-63  
Fax : (662) 705-8765

#### **Thai-Scandic Steel Company Limited**

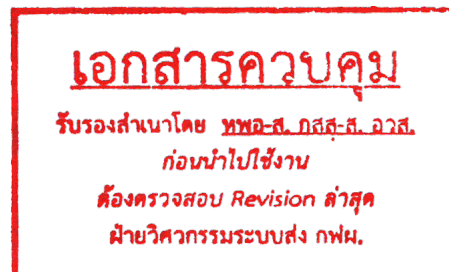
7 I-5 Road, Maptaphut Industrial Estate  
Amphur Muang  
Rayong 21150  
Tel : (66-38) 683070  
Fax : (66-38) 683065

#### **Sky Tower Public Company Limited**

247 Romklao Road  
Saensaeb  
Minburi, Bangkok 10510  
Thailand  
Tel : 662-543-9020-8  
Fax : 662-915-2114, 915-2714, 543-9029

#### **Demco Power Company Limited**

59 Moo 1, Suanphrikthai  
Muangpathumthani  
Pathumthani 12000  
Tel : 0 2959 5811 Ext.1612  
Fax : 0 2959 5915



21 กุมภาพันธ์ 2567

2) **HARDWARE ASSEMBLIES AND LINE ACCESSORIES FOR CONDUCTOR, OVERHEAD GROUND WIRE AND OPGW**

**Preformed Line Products (Thailand ) Ltd.**

296 Moo 4, Lardkrabang Industrial Estate  
EPZ 3 Chalongkrung Road  
Lumpratew, Lardkrabang  
Bangkok 10520  
Tel : 0 2739 4026  
Fax : 0 2326 0564

- (For 1. Hardware assemblies and line accessories (except damper) for single, twin-bundled and quad-bundled conductor for 115 kV, 230 kV and 500 kV transmission lines  
2. Hardware assemblies and line accessories (except damper) for overhead ground wire and OPGW  
3. Vibration dampers for conductor, overhead ground wire and OPGW  
4. Spacer dampers and rigid spacers for twin-bundled and quad-bundled conductor for 115 kV, 230 kV and 500 kV transmission lines)

**MacLean - Dulhunty Power (Thailand) Ltd.**

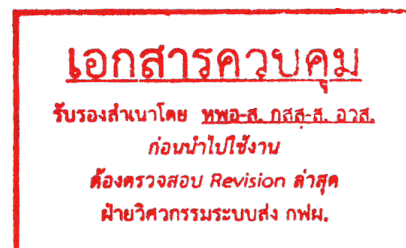
3/2 Moo 7 Suwintawong Road  
Tambon Kloungluangphang  
Amphur Muang Chachoengsao  
Chachoengsao 24000  
Tel : 038 845 675  
Fax : 038 845 674

- (For 1. Hardware assemblies and line accessories (except damper) for single, twin-bundled and quad-bundled conductor for 115 kV, 230 kV and 500 kV transmission lines  
2. Hardware assemblies and line accessories (except damper) for overhead ground wire and OPGW  
3. Vibration dampers for conductor, overhead ground wire and OPGW  
4. Spacer dampers and rigid spacers for twin-bundled and quad-bundled conductor for 115 kV, 230 kV and 500 kV transmission lines)

**Mosdorfer (Thailand) Co., Ltd.**

10/96 The Trendy Building, 6<sup>th</sup> floor  
Soi Sukhumvit 13 (Sangjan)  
Klong Toey Nuea, Wattana  
Bangkok 10110  
Tel : 02 182 8351  
Fax : 02 182 8350

- (For 1. Hardware assemblies and line accessories (except damper) for single, twin-bundled and quad-bundled conductor for 115 kV, 230 kV and 500 kV transmission lines  
2. Hardware assemblies and line accessories (except damper) for overhead ground wire and OPGW



21 กุมภาพันธ์ 2567

3. Vibration dampers for conductor, overhead ground wire and OPGW
4. Spacer dampers and rigid spacers for twin-bundled and quad-bundled conductor for 115 kV, 230 kV and 500 kV transmission lines)

It shall be noted that the spacer damper for quad-bundled conductor for 500 kV transmission line is allowed to be initially supplied to only one contract. Any further contracts shall be allowed after the said Equipment under the first contract has been certified by a certification issued by EGAT for its successful operation in EGAT's transmission line for an appropriate period of time.

### 3) **OVERHEAD GROUND WIRE**

#### **Thai Wire Products Public Company Limited**

99/2 MOO 8 ZEER STREET BUILDING 7TH FL  
Phahonyothin Road, Lamlookka  
Pathum Thani 12130  
Tel : 0 2992 6863-7  
Fax : 0 2992 6870-1

#### **USHA Siam Steel Industries Public Company Limited**

209/1 K-Tower-B. 22<sup>nd</sup> Floor  
Unit 3/1 Sukhumvit 21 Road (Asok)  
Bangkok 10110  
Tel : 0 2261 7361-4  
Fax : 0 2640 8227

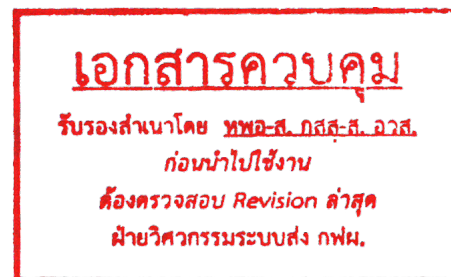
#### **Charoong Thai Wire & Cable Public Company Limited**

589/71 Central City Tower  
Floor 12A, Bangna-Trad Road  
Bangna, Bangna District  
Bangkok 10260  
Tel : 0 2745 6118  
Fax : 0 2745 6131-32

### 4) **GROUNDING MATERIALS**

#### **K.M.L. Technology Co., Ltd.**

100/3 Thasabansongkrow Road  
Ladyao, Jatujak  
Bangkok 10900  
Tel : 0 2954 3455  
Fax : 0 2591 7891



21 กุมภาพันธ์ 2567

**G.K. Assembly Co., Ltd.**

110/9-10 Moo 2  
Maha Sawat, Bang Kruai District  
Nonthaburi 11130  
Tel : 0 2985 2250-3  
Fax. 0 2985 1910

5) **CONDUCTOR**

**Bangkok Cable Co., Ltd.**

187/1 Rajdamri Road  
Lumpinee, Pathumwan  
Bangkok 10330  
Tel : 0 2254 4550-6  
Fax : 0 2253 5973, 0 2253 6028, 0 2254 3859

**Charoong Thai Wire & Cable Public Company Limited**

589/71 Central City Tower  
Floor 12A, Bangna -Trad Road  
Bangna, Bangna District  
Bangkok 10260  
Tel : 0 2745 6118  
Fax : 0 2745 6131-32

**Phelps Dodge International (Thailand) Limited**

16<sup>th</sup> Floor, Maneeya Center Building  
518/5 Ploenchit Road  
Lumpinee, Pathumwan  
Bangkok 10330  
Tel : 0 2652 0588, 0 2680 5862  
Fax : 0 2680 5896

**Thai-Yazaki Electric Wire Co., Ltd.**

27<sup>th</sup> Floor, Two Pacific Place Building  
142 Sukhumvit Road  
Klongtoey District  
Bangkok 10110  
Tel : 0 2653 2550, 0 2463 0058 Ext. 342  
Fax : 0 2463 6364, 0 2463 6354-5

**Venine Cable Electric Wire Company Limited**

88/8-9 Moo 2 Ladbualuang-Maitra Rd.  
Ladbualuang, Ladbualuang  
Ayutthaya 13230  
Tel : 0 3528 0493  
Fax : 0 3528 0494

**เอกสารควบคุม**

รับรองสำเนาโดย ทพอ.ส.กสสุ.ส. อวส.  
ก่อนนำไปใช้งาน  
ต้องตรวจสอบ Revision ล่าสุด  
ฝ่ายวิศวกรรมระบบส่ง กฟผ.

21 กุมภาพันธ์ 2567

**Fuhrer Wire and Cable Co., Ltd.**

70 Moo 2, Bankao-Panthong Road

Panthong

Chonburi 20160

Tel : 0 3845 2906-7

Fax : 0 3845 2899

(For manufacturing of Transmission Line Conductor up to 230 kV)

6) **NON-METALLIC OPTICAL FIBER CABLE (OFC)**

**Thai China Fiber Optics Co., Ltd.**

488 Soi Ratchadapisek 26,

Samsenog, Huaykwang,

Bangkok 10310

Tel : 0 2975 9901

Fax : 0 2975 9925

**Thai Fiber Optics Co., Ltd.**

233 Moo 6, Soi Watchangrueng,

Suksawat Road,

Naiklongbangplakot, Phrasamutchedi,

Samutprakarn 10290

Tel : 0 2817 5590-3

Fax : 0 2817 5311

**HBC Telecom Co., Ltd.**

187/1 Rajadamri Road,

Lumpinee, Pathumwan

Bangkok 10330

Tel : 0 2650 5002 To 3 Ext.111,112

Fax : 0 2651 9261

**Siam Fiber Optics Co., Ltd.**

Floor 12 A, Central City Tower

589/71 Bangna-Trad Road, Km.3

Bangna, Bangna,

Bangkok 10260

Tel : 0 2745 6118-30

Fax : 0 2745 6575

**เอกสารควบคุม**

รับรองสำเนาโดย ทพอ-ส. กสส-ส. อวส.

ก่อนนำไปใช้งาน

ต้องตรวจสอบ Revision ล่าสุด

ฝ่ายวิศวกรรมระบบส่ง กฟผ.

21 กุมภาพันธ์ 2567

7) **CROSS-LINKED POLYETHYLENE (XLPE) CABLE**

**Phelps Dodge International (Thailand) Limited**

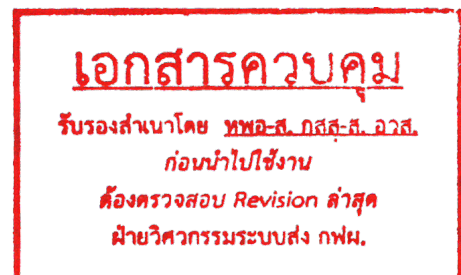
16th Floor, Maneeya Center Building  
518/5 Ploenchit Road  
Lumpinee, Pathumwan  
Bangkok 10330  
Tel : 0 2652 0588, 0 2680 5862  
Fax : 0 2680 5896

(For 230 kV Underground Transmission Line with XLPE Cable)

It shall be noted that the 230 kV XLPE Cable is allowed to be supplied to only one contract at the first stage. Any further contracts shall be allowed after the said Equipment under the first contract is certified by a certification letter issued by EGAT that it has been provided at least one (1) year successful operation in EGAT system.



Bid No. TIPE-L-06



21 กุมภาพันธ์ 2567

**SECTION H**  
**ATTACHMENTS**

- Attachment No. 1 : List of Equipment to be Furnished by EGAT
- Attachment No. 2 : List of Equipment to be Dismantled by the Contractor
- Attachment No. 3 : Requirements for Dismantling Work and Conditions of Sale of Dismantled Equipment



## ATTACHMENT NO. 1

### LIST OF EQUIPMENT TO BE FURNISHED BY EGAT

The Equipment listed herein shall be furnished by EGAT in Bangkok and/or its vicinity, at the point to be designated by EGAT as soon as possible after confirmation of Letter of Award of Contract. Any Equipment not listed herein but required for construction for completion of the Work shall be furnished by the Contractor at his own expenses.

| <u>Item</u> | <u>Description</u>  | <u>Estimated Quantity</u> |
|-------------|---|---------------------------|
| 1.          | 1272 MCM ACSR/GA Conductor<br>as per Schedule 1E Item 1E1.1 | 325.21 km                 |
| 2.          | 1272 MCM ACSR/GA Conductor<br>as per Schedule 2E Item 2E1.1 | 6.7 km                    |

- Note :
1. The estimated quantity of conductor shown above is an approximate amount. The actual quantity of conductor to be furnished by EGAT will be in accordance with the actual horizontal distance of the section to be installed after checking survey and staking have been performed, Plus a Fixed extra of 1.5 percent to cover sag, terrain irregularities and wastage.
  2. The conductor furnished will have characteristics as specified in Specifications No. C-2 (Revision 6)

## ATTACHMENT NO. 2

### LIST OF EQUIPMENT TO BE DISMANTLED BY THE CONTRACTOR

The following are the Equipment to be dismantled under this Contract. Types and quantities shown are approximate and provided as primary information. The Bidder shall be deemed to have carefully examined the exact quantities for his quotation of dismantling services.

| <u>Item</u>     | <u>Description</u>  | <u>Estimated Quantity</u> |
|-----------------|---|---------------------------|
| <b>Part 1 :</b> | <b><u>The existing 230 kV Ao Phai – Bang Lamung 2 Transmission Line</u></b><br><i>(The dismantled Equipment as listed below shall be purchased by the Contractor)</i> |                           |
| <b>1.1</b>      | <b>Steel Tower</b>  |                           |
|                 | <i>Tower Type DA1</i>   |                           |
|                 | <i>Basic body</i>   | 7 bodies                  |
|                 | <i>Leg extension -3.0 m.</i>  | 5 bodies                  |
|                 | <i>Leg extension -2.0 m.</i>  | 6 leg                     |
|                 | <i>Leg extension -1.0 m.</i>  | 1 leg                     |
|                 | <i>Leg extension +0.0 m.</i>  | 5 legs                    |
|                 | <i>Leg extension +1.0 m.</i>  | 1 leg                     |
|                 | <i>Leg extension +2.0 m.</i>  | 1 leg                     |
|                 | <i>Leg extension +3.0 m.</i>  | 1 leg                     |
|                 | <i>Leg extension +4.0 m.</i>  | 2 legs                    |
|                 | <i>Leg extension +6.0 m.</i>  | 6 legs                    |
|                 | <br><i>Tower type DB2</i>   |                           |
|                 | <i>Basic body</i>   | 3 bodies                  |
|                 | <i>Leg extension -1.0 m.</i>  | 2 legs                    |
|                 | <i>Leg extension +0.0 m.</i>  | 8 legs                    |
|                 | <i>Leg extension +2.0 m.</i>  | 2 legs                    |
| <b>1.2</b>      | <b>Hardware Assemblies</b>  |                           |
|                 | <i>Single string suspension insulator assemblies</i>  | 42 sets                   |
|                 | <i>Bypass string suspension insulator assemblies</i>  | 6 sets                    |
|                 | <i>Single string tension insulator assemblies</i>   | 15 sets                   |
|                 | <i>Double string tension insulator assemblies</i>   | 36 sets                   |
|                 | <i>Single inverted string tension insulator assemblies</i>  | 3 sets                    |
|                 | <i>Overhead ground wire suspension assemblies</i>   | 7 sets                    |
|                 | <i>Overhead ground wire tension assemblies</i>  | 7 sets                    |
|                 | <i>OPGW suspension assemblies</i>   | 7 sets                    |
|                 | <i>OPGW tension assemblies</i>  | 7 sets                    |
| <b>1.3</b>      | <b>Line Accessories</b>   |                           |
|                 | <i>Spacer damper for conductor</i>  | 222 sets                  |
|                 | <i>Vibration damper for overhead ground wire</i>  | 11 sets                   |
|                 | <i>Vibration damper for OPGW</i>  | 11 sets                   |

| <u>Item</u> | <u>Description</u>   | <u>Estimated Quantity</u> |
|-------------|--|---------------------------|
| 1.4         | <b>Insulator</b><br>Insulator ANSI Class 52-3 (18,000 lbs)       | 2,022 discs               |
| 1.5         | <b>1272 MCM ACSR/GA Conductor</b>                                | 22.90 km                  |
| 1.6         | <b>3/8 " high strength galvanized steel overhead ground wire</b> | 3.76 km                   |

**Part 2 : The existing 230 kV Rayong 2 – Bowin Transmission Line (from Str. No. 3/1 to Str. No. 33/1)**

(The dismantled Equipment as listed below shall be purchased by the Contractor)

|            |                       |           |
|------------|-----------------------|-----------|
| <b>2.1</b> | <b>Steel Tower</b>    |           |
|            | Tower Type DA1        |           |
|            | Basic body            | 54 bodies |
|            | Body extension 7.0 m. | 6 bodies  |
|            | Leg extension +1.0 m. | 12 leg    |
|            | Leg extension +2.0 m. | 14 legs   |
|            | Leg extension +3.0 m. | 24 legs   |
|            | Leg extension +4.0 m. | 6 legs    |
|            | Leg extension +5.0 m. | 23 legs   |
|            | Leg extension +6.0 m. | 26 legs   |
|            | Leg extension +7.0 m. | 48 legs   |
|            | Leg extension +8.0 m. | 28 legs   |
|            | Leg extension +9.0 m. | 35 legs   |
|            | Tower type LDA1       |           |
|            | Basic body            | 3 bodies  |
|            | Leg extension +1.0 m. | 4 legs    |
|            | Leg extension +3.0 m. | 4 legs    |
|            | Leg extension +7.0 m. | 4 legs    |
|            | Tower type DB2        |           |
|            | Basic body            | 7 bodies  |
|            | Leg extension +1.0 m. | 9 legs    |
|            | Leg extension +2.0 m. | 4 legs    |
|            | Leg extension +3.0 m. | 3 legs    |
|            | Leg extension +5.0 m. | 1 leg     |
|            | Leg extension +7.0 m. | 11 legs   |

| <u>Item</u>     | <u>Description</u>  | <u>Estimated Quantity</u> |
|-----------------|---|---------------------------|
|                 | Tower type DC2  |                           |
|                 | Basic body  | 10 bodies                 |
|                 | Leg extension +1.0 m.   | 16 legs                   |
|                 | Leg extension +3.0 m.   | 2 legs                    |
|                 | Leg extension +5.0 m.   | 8 legs                    |
|                 | Leg extension +7.0 m.   | 14 legs                   |
|                 | Tower type DD2  |                           |
|                 | Basic body  | 6 bodies                  |
|                 | Leg extension +1.0 m.   | 20 legs                   |
|                 | Leg extension +7.0 m.   | 4 legs                    |
| <b>2.2</b>      | <b>Hardware Assemblies</b>  |                           |
|                 | Single string suspension insulator assemblies   | 300 sets                  |
|                 | Double string suspension insulator assemblies   | 42 sets                   |
|                 | Bypass string suspension insulator assemblies   | 15 sets                   |
|                 | Double string tension insulator assemblies  | 264 sets                  |
|                 | Double inverted string tension insulator assemblies   | 6 sets                    |
|                 | Overhead ground wire suspension assemblies  | 114 sets                  |
|                 | Overhead ground wire tension assemblies   | 92 sets                   |
| <b>2.3</b>      | <b>Line Accessories</b>   |                           |
|                 | Spacer damper for conductor   | 726 sets                  |
|                 | Vibration damper for overhead ground wire   | 160 sets                  |
| <b>2.4</b>      | <b>Insulator</b>  |                           |
|                 | Insulator ANSI Class 52-3 (18,000 lbs)  | 14,628 discs              |
| <b>2.5</b>      | <b>1272 MCM ACSR/GA Conductor</b>   | 180.87 km                 |
| <b>2.6</b>      | <b>3/8 " high strength galvanized steel overhead ground wire</b>  | 29.7 km                   |
| <b>Part 3 :</b> | <b><u>The existing 230 kV Rayong 2 – Bo Win Transmission Line (from Str. No. 45/1 to take-off structure at Bo Win Substation)</u></b> |                           |
|                 | (The dismantled Equipment as listed below shall be purchased by the Contractor)   |                           |
| <b>3.1</b>      | <b>Hardware Assemblies</b>  |                           |
|                 | Single string suspension insulator assemblies   | 12 sets                   |
| <b>3.2</b>      | <b>Insulator</b>  |                           |
|                 | Insulator ANSI Class 52-3 (18,000 lbs)  | 192 discs                 |
| <b>3.3</b>      | <b>1272 MCM ACSR/GA Conductor</b>   | 0.49 km                   |
| <b>3.4</b>      | <b>3/8 " high strength galvanized steel overhead ground wire</b>  | 0.08 km                   |

### ATTACHMENT NO. 3

#### REQUIREMENTS FOR DISMANTLING WORK AND

#### CONDITIONS OF SALE OF DISMANTLED EQUIPMENT

The requirements for Dismantling Work and Conditions of Sale of Dismantled Equipment shall apply to this Invitation to Bid.

##### **1. Scope of Dismantling Work**

The scope of dismantling work shall be as listed in the Price Schedule, which covers the provisions of dismantling and a portion of dismantled Equipment returned to EGAT and dismantling with conditions for the Contractor to purchase the dismantled Equipment, as the case may be, and shall be in accordance with Specifications No. TL-07 (Rev. 3) Dismantling Work.

##### **2. Responsibility of Contractor**

The Contractor shall be deemed to have carefully inspected and examined all of the conditions and circumstances of the Equipment as appearing in the existing transmission line to be dismantled under this Contract. EGAT will not be responsible for any defect, imperfection or fault of such Equipment.

For dismantled Equipment to be purchased by the Contractor, the Contractor shall, not later than fifteen (15) Days before the day of de-energizing for the dismantling work, pay the value added tax collectible on the payment for the dismantled Equipment to be sold to the Contractor to EGAT. Upon payment of the value added tax by the Contractor to EGAT, EGAT will issue a tax invoice to the Contractor. Ownership of the Equipment to be dismantled shall be transferred to the Contractor when the transmission line is de-energized for the dismantling work.

In the event that the Contractor shall return a portion of the dismantled Equipment to EGAT, the ownership of the dismantled Equipment is the property of EGAT, but this shall not be construed as relieving the Contractor from the sole responsibility as provided under this Contract for the care, protection, and maintenance of the Equipment. The Contractor shall be responsible for any loss or damages of the Equipment until acceptance has been made by EGAT. The submission of the dismantled Equipment to EGAT shall be performed upon completion of each dismantling portion as scheduled.

### 3. Payment

Ninety (90) per cent of the amount and the adjusted amount due, if any, for the dismantling work will be paid by EGAT to the Contractor after the date of completion of the dismantling work and in case of the returned dismantled Equipment to EGAT after the dismantled Equipment has been delivered at the site(s) specified and acceptance has been made by EGAT.

In case the scope of the Contract requires the Contractor to purchase any item of dismantled Equipment, payment for cost of dismantled Equipment shall be made by the Contractor as scheduled in the Contract Documents regardless of the actual dismantling to be incurred. In case no schedule is set forth, payment shall be made as soon as possible but not later than two (2) Months after completion of each portion of dismantling work. In case no payment is made within the aforementioned period, EGAT reserves the right to claim directly from the Contractor or from the Performance Security or the Maintenance Security, as the case may be, or deduct or set off from any and all money due to the Contractor under this Contract for the amount together with interest at the rate of Minimum Overdraft Rate (MOR) plus two (2) per cent calculated from the due date up to the date the payment is made in full.