

Public Relations Information and Channels for Submitting
Suggestions or Complaints Regarding the Promotion of Integrity
and Transparency in Operations



Channels for Submitting Suggestions or Complaints *



Submission of Suggestions or Complaints via the EGAT Official Website *



EGAT Supplier Code of Conduct **

* This is not a channel for submitting comments on the draft Terms of Reference (TOR), draft technical specifications for procurement, draft announcements, or draft bidding documents.

** EGAT has established and published the Supplier Code of Conduct to provide all EGAT suppliers with guidelines for conducting business ethically and with good governance, taking into account environmental, social, and corporate governance (ESG) principles, legal compliance, and respect for human rights, as detailed in the EGAT Supplier Code of Conduct QR Code.

ข้อมูลประชาสัมพันธ์และช่องทางรับข้อคิดเห็นหรือข้อร้องเรียน
ด้านการส่งเสริมคุณธรรมและความโปร่งใสในการดำเนินการ



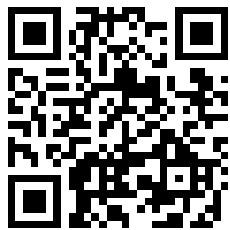
นโยบายต่อต้านการให้หรือรับสินบนเพื่อป้องกันการทุจริต
และประพฤติมิชอบ



จรรยาบรรณของผู้ปฏิบัติงานจัดซื้อจัดจ้างและบริหารพัสดุ



ช่องทางรับข้อคิดเห็นหรือข้อร้องเรียน *



การแจ้งข้อคิดเห็นหรือข้อร้องเรียนทางเว็บไซต์ กฟผ. *



จรรยาบรรณคู่ค้า กฟผ. **

* ไม่ใช่ช่องทางแสดงความคิดเห็นร่างขอบเขตของงานหรือรายละเอียดคุณลักษณะเฉพาะของพัสดุที่จะซื้อหรือจ้าง/ ร่างประกาศ/ ร่างเอกสารประกวดราคาฯ

** กฟผ. จัดทำและเผยแพร่จรรยาบรรณคู่ค้า เพื่อให้คู่ค้าของ กฟผ. ทุกฝ่ายมีแนวปฏิบัติในการดำเนินธุรกิจอย่างมีจริยธรรมและธรรมาภิบาล โดยคำนึงถึงสิ่งแวดล้อม สังคม การกำกับดูแลกิจการที่ดี ปฏิบัติตามกฎหมาย และเคารพหลักสิทธิมนุษยชน ดังมีรายละเอียดระบุใน QR Code จรรยาบรรณคู่ค้า กฟผ."

Notice to Bidder

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

The Contractors should be aware of the following:

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

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

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

Telephone : 1303

Email : coe@saraban.mail.go.th

ประชาสัมพันธ์ผู้ประกอบการเพื่อทราบ

เพื่อให้การดำเนินงานสำหรับงานจ้างก่อสร้างที่มีลักษณะงานด้านการออกแบบหรือควบคุมงานก่อสร้าง สอดคล้องกับพระราชบัญญัติวิศวกร พ.ศ. 2542 จึงขอแจ้งแนวทางในการดำเนินงาน ดังนี้

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

หมายเหตุ หากมีข้อสงสัย โปรดติดต่อ สภาวิศวกร

ที่อยู่ : 1616/1 ถนนลาดพร้าว แขวงวังทองหลาง เขตวังทองหลาง กรุงเทพมหานคร 10310

เบอร์ติดต่อ : 1303

อีเมล : coe@saraban.mail.go.th

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

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

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



The Redaction of Sensitive Personal Data

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

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

ประกาศความเป็นส่วนตัว (Privacy Notice) สำหรับการจัดซื้อจัดจ้าง การบริหารพัสดุ และการบริหารสัญญาของ กฟผ.

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



การขิดฆ่าข้อมูลส่วนบุคคลอ่อนไหว

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

Notice to Bidder

Subject : Online Payment for Purchase of Bidding Documents

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

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

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

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

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



Invitation to Bid No. TNRP-L20-OP

Supply and Construction for Replacement of Overhead Ground Wire with Composite Overhead Ground Wire with Optical Fiber (OPGW) Telecommunication Network Renovation Project (TNRP) Phase 20

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 :

Schedule 1

- 115 kV Khon Kaen 1 - Khon Kaen 2 Transmission Line (approx. 7.13 kilometers)
- 230 kV Chaiyaphum - Nakhon Ratchasima 2 Transmission Line (approx. 101.46 kilometers)
- 115 kV Surin 1 - Surin 2 Transmission Line (approx. 1.20 kilometers)
- 230 kV Sikhiu 2 (Junction) - Nakhon Ratchasima 2 Transmission Line (approx. 33.34 kilometers)
- 230 kV Chaiyaphum - Khon Kaen 3 Transmission Line (approx. 97.69 kilometers)
- 115 kV Pak Mun - Ubon Ratchathani 2 Transmission Line (approx. 70.76 kilometers)
- 115 kV Nong Bua Lam Phu - Udon Thani 1 Transmission Line (approx. 50.94 kilometers)
- 230 kV Nakhon Phanom - Nakhon Phanom 2 Transmission Line (approx. 17.54 kilometers)
- 230 kV Nakhon Phanom 2 - Sakon Nakhon 2 Transmission Line (approx. 72.82 kilometers)

Schedule 2

- 115 kV Ang Thong 1 – Sing Buri Transmission Line (approx. 33.16 kilometers)
- 115 kV Doembang Nangbuat – Ang Thong 2 Transmission Line (approx. 37.35 kilometers)

Schedule 3

- 115 kV Lamphun 2 – Chom Thong (Junction) Transmission Line (approx. 33.00 kilometers)
- 115 kV Phrae – Nan Transmission Line (approx. 108.16 kilometers)
- 230 kV Nong Bua Rawe – Bueng Sam Phan Transmission Line (approx. 96.00 kilometers)

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

THB 149,100,000.- (excluding cost of the Dismantled Equipment to be purchased by Bidder)

Wallop

Eligibility of Bidders

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

Availability of Bidding Documents

Bidding Documents are available for online purchase during 8:00 hrs. to 15:00 hrs., Bangkok Standard Time, as from August 11, 2026 to August 28, 2026 at USD 100.- or THB 3,000.- per copy, non-refundable.

Please find more details for online purchasing process at <https://www4.egat.co.th/fprocurement/biddingeng> or contact for further information at telephone no. 66 2436 0348 or procurement.tse@egat.co.th.

Delivery of Bids

Bids shall be submitted at Bidding Room, 1st Floor, Tor 137 Building at EGAT's Head Office, Nonthaburi during 9:00 hrs. to 10:00 hrs., Bangkok Standard Time, September 23, 2026 and will be opened publicly at 10:00 hrs.

ELECTRICITY GENERATING AUTHORITY OF THAILAND

August 11, 2026



(Miss Wallapa Chewadhnakorlkul)

Chief, Procurement Department – Transmission System Segment



ประกาศการไฟฟ้าฝ่ายผลิตแห่งประเทศไทย เรื่อง ประกวดราคาจ้าง เลขที่ TNRP-L20-OP

การไฟฟ้าฝ่ายผลิตแห่งประเทศไทย (กฟผ.) มีความประสงค์จะจัดซื้อและจ้างก่อสร้างเปลี่ยนสาย Overhead Ground Wire เป็น Composite Overhead Ground Wire with Optical Fiber (OPGW) สำหรับโครงการปรับปรุงโครงข่ายโทรคมนาคมระยะที่ 20 โดยทำสัญญาแบบปรับราคาได้ (ค่า k) โดยใช้ประมาณ กฟผ.

สถานที่ก่อสร้าง :

Schedule 1

- จากสายส่ง 115 kV ขอนแก่น 1 ถึง ขอนแก่น 2 (ระยะทางประมาณ 7.13 กิโลเมตร)
- จากสายส่ง 230 kV ชัยภูมิ ถึง นครราชสีมา 2 (ระยะทางประมาณ 101.46 กิโลเมตร)
- จากสายส่ง 115 kV สุรินทร์ 1 ถึง สุรินทร์ 2 (ระยะทางประมาณ 1.20 กิโลเมตร)
- จากสายส่ง 230 kV จุดแยกสี่คิ้ว 2 ถึง นครราชสีมา 2 (ระยะทางประมาณ 33.34 กิโลเมตร)
- จากสายส่ง 230 kV ชัยภูมิ ถึง ขอนแก่น 3 (ระยะทางประมาณ 97.69 กิโลเมตร)
- จากสายส่ง 115 kV ปากมูล ถึง อุบลราชธานี 2 (ระยะทางประมาณ 70.76 กิโลเมตร)
- จากสายส่ง 115 kV หนองบัวลำภู ถึง อุตรธานี 1 (ระยะทางประมาณ 50.94 กิโลเมตร)
- จากสายส่ง 230 kV นครพนม ถึง นครพนม 2 (ระยะทางประมาณ 17.54 กิโลเมตร)
- จากสายส่ง 230 kV นครพนม 2 ถึง สกลนคร 2 (ระยะทางประมาณ 72.82 กิโลเมตร)

Schedule 2

- จากสายส่ง 115 kV อ่างทอง 1 ถึง สิงห์บุรี (ระยะทางประมาณ 33.16 กิโลเมตร)
- จากสายส่ง 115 kV เดิมบางนางบวช ถึง อ่างทอง 2 (ระยะทางประมาณ 37.35 กิโลเมตร)

Schedule 3

- จากสายส่ง 115 kV ลำพูน 2 ถึง จุดแยกจอมทอง (ระยะทางประมาณ 33.00 กิโลเมตร)
- จากสายส่ง 115 kV แพร่ ถึง น่าน (ระยะทางประมาณ 108.16 กิโลเมตร)
- จากสายส่ง 230 kV หนองบัวระเหว ถึง ปึงสามพัน (ระยะทางประมาณ 96.00 กิโลเมตร)

ราคากลาง (รวมภาษีมูลค่าเพิ่มและค่าใช้จ่ายอื่น ๆ) :

149,100,000.- บาท (ไม่รวมราคาอุปกรณ์รื้อถอนที่กำหนดให้ผู้เสนอราคาซื้อจาก กฟผ.)

คุณสมบัติของผู้เสนอราคา

1. ต้องเป็นนิติบุคคลผู้มีอาชีพรับจ้างตามประกวดราคาจ้างดังกล่าว และต้องไม่เป็นผู้ที่งานซึ่งปลัดกระทรวงการคลังได้แจ้งเวียนชื่อไว้ หรือต้องไม่เป็นผู้ที่ กฟผ. ห้ามติดต่อหรือห้ามเข้าเสนอราคา หรือต้องไม่เป็นผู้ที่ได้รับผลของการสั่งให้นิติบุคคลหรือบุคคลอื่นเป็นผู้ทำงานตามคำสั่ง กฟผ.
2. ต้องไม่เป็นผู้มีผลประโยชน์ร่วมกันกับผู้เสนอราคารายอื่น ณ วันประกาศประกวดราคาครั้งนี้เป็นต้นไป หรือต้องไม่เป็นผู้กระทำการอันเป็นการขัดขวางการแข่งขันราคาอย่างเป็นธรรมในการดำเนินการประกวดราคาครั้งนี้

๖๑๑๓

3. ต้องไม่เป็นที่ปรึกษาของ กฟผ. หรือมีส่วนร่วมในบริษัทที่ปรึกษาของ กฟผ. ในงานนี้ หรือต้องไม่มีผู้ปฏิบัติงาน กฟผ. เข้าไปมีส่วนร่วมในกิจการของผู้เสนอราคา ไม่ว่าจะในฐานะผู้ถือหุ้นที่มีสิทธิควบคุมการจัดการ กรรมการ ผู้อำนวยการ ผู้จัดการ พนักงาน ลูกจ้าง ตัวแทน หรือที่ปรึกษา ยกเว้น ในกรณีที่ผู้ปฏิบัติงานได้รับคำสั่งอย่างเป็นทางการจาก กฟผ. ให้ไปปฏิบัติงานหรือเข้าร่วมในกิจการของผู้เสนอราคา
4. ต้องไม่เป็นผู้ได้รับเอกสิทธิ์หรือความคุ้มกัน ซึ่งอาจปฏิเสธไม่ยอมขึ้นศาลไทย เว้นแต่รัฐบาลของผู้เสนอราคาได้มีคำสั่งให้สละสิทธิ์และความคุ้มกันเช่นนั้น
5. ผู้ประสงค์เข้าประกวดราคาในนามของกิจการร่วมค้าหรือกิจการร่วม (Joint Venture or Consortium) จะต้องดำเนินการทุกขั้นตอนของการประกวดราคา ในนามของกิจการร่วมค้าหรือกิจการร่วม ตั้งแต่การเสนอราคาจนสิ้นสุดข้อผูกพันกับ กฟผ.

การขายเอกสารประกวดราคา

ผู้สนใจติดต่อซื้อเอกสารประกวดราคา ในราคาชุดละ 3,000.- บาท ในวันทำการระหว่างเวลา 08:00 น. ถึง 15:00 น. ตั้งแต่วันที่ 11 สิงหาคม 2569 ถึงวันที่ 28 สิงหาคม 2569 ทั้งนี้ สามารถดูรายละเอียดการซื้อเอกสารประกวดราคาได้ที่เว็บไซต์ <https://www4.egat.co.th/fprocurement/biddingeng> หรือสอบถามข้อมูลเพิ่มเติมได้ทางโทรศัพท์ หมายเลข 0 2436 0348 หรืออีเมล procurement.tse@egat.co.th

การยื่นซองประกวดราคา

กำหนดยื่นซองประกวดราคา ในวันที่ 23 กันยายน 2569 เวลา 09:00 น. ถึง 10:00 น. และเปิดซองประกวดราคา เวลา 10:00 น. ณ ห้องประกวดราคา ชั้น 1 อาคาร ท.137 การไฟฟ้าฝ่ายผลิตแห่งประเทศไทย เชียงสะพานพระราม 7 จังหวัดนนทบุรี

ประกาศ ณ วันที่ 11 สิงหาคม 2569



(นางสาววัลลภา ชีวธนากรณ์กุล)

หัวหน้ากองจัดซื้อจัดจ้างสายงานระบบส่ง

ตารางแสดงวงเงินงบประมาณที่ได้รับจัดสรรและราคากลาง (ราคาอ้างอิง)
ในการจัดซื้อจัดจ้างที่มีใช้งานก่อสร้าง

1. **ชื่อโครงการ** ประกวตราค่าเลขที่ TNRP-L20-OP
การจัดซื้อและจ้างก่อสร้างเปลี่ยนสาย Overhead Ground Wire เป็น Composite Overhead Ground Wire with Optical Fiber (OPGW)
โครงการปรับปรุงโครงข่ายโทรคมนาคมระยะที่ 20
/หน่วยงานเจ้าของโครงการ ฝ่ายระบบสื่อสาร การไฟฟ้าฝ่ายผลิตแห่งประเทศไทย
2. **วงเงินงบประมาณที่ได้รับจัดสรร**
แผนงานระยะยาว งานปรับปรุงระบบสื่อสาร กฟผ. พ.ศ. 2566 – 2570 (ICS3)
งบประมาณรวมภาษีมูลค่าเพิ่ม 179.1 ล้านบาท
3. **วันที่กำหนดราคากลาง** 14 มกราคม 2569 (วันที่ อรส. อนุมัติ)
ราคารวมภาษีมูลค่าเพิ่มและค่าใช้จ่ายอื่นๆ เป็นเงิน 149,100,000.00 บาท **ราคา/หน่วย** ตามเอกสารแนบ
4. **แหล่งที่มาของราคากลาง** หลักเกณฑ์การคำนวณราคากลางเพื่อจัดซื้อจัดจ้างอุปกรณ์สื่อสาร
5. **รายชื่อเจ้าหน้าที่ผู้กำหนดราคากลาง**
 - 5.1. นายสมประสงค์ พัฒนคุณเจริญกิจ กวส-ส., อรส.
 - 5.2. นายวัชร สุกวิญญาน หวอส-ส., กวส-ส., อรส.
 - 5.3. นางสาววริษา กุลเจริญวิรัตน์ วศ.4, หวอส-ส., กวส-ส., อรส.

หมายเหตุ ค่าใช้จ่ายอื่นๆ ได้แก่ ค่าใช้จ่ายที่ กฟผ. ต้องจ่ายตามวิธีการพิจารณาเปรียบเทียบราคาที่กำหนดไว้ในเอกสารประกวดราคา เช่น อกรขาเข้า เป็นต้น

DETAILS OF THE MEDIUM COST FOR BID NO. TNRP-L20-OP

Schedule 1	Description	Total (Baht)
1I	DISMANTLING WORK	1,258,100.64
1O	SUPPLY OF SERVICE OF VEHICLES	2,454,330.00
1P	SUPPLY OF SPARE EQUIPMENT	2,226,481.00
1Q	115 KV KHON KAEN 1 - KHON KAEN 2 TRANSMISSION LINE	2,140,422.21
1R	230 KV CHAIYAPHUM – NAKHON RATCHASIMA 2 TRANSMISSION LINE	16,988,201.47
1S	115 KV SURIN 1 – SURIN 2 TRANSMISSION LINE	896,476.49
1T	230 KV SIKHIU 2 (JUNCTION) – NAKHON RATCHASIMA 2 TRANSMISSION LINE	6,775,809.59
1U	230 KV CHAIYAPHUM – KHON KAEN 3 TRANSMISSION LINE	16,198,230.45
1V	115 KV PAK MUN – UBON RATCHATHANI 2 TRANSMISSION LINE	12,732,426.21
1W	115 KV NONG BUA LAM PHU – UDON THANI 1 TRANSMISSION LINE	10,141,072.82
1X	230 KV NAKHON PHANOM – NAKHON PHANOM 2 TRANSMISSION LINE	4,488,340.25
1Y	230 KV NAKHON PHANOM 2 – SAKON NAKHON 2 TRANSMISSION LINE	12,759,051.54
TOTAL PRICES FOR SCHEDULE 1 (Excluding VAT)		89,058,942.67

Schedule 2	Description	Total (Baht)
2I	DISMANTLING WORK	195,876.78
2O	SUPPLY OF SERVICE OF VEHICLES	654,488.00
2P	SUPPLY OF SPARE EQUIPMENT	1,018,837.00
2Q	115 KV ANG THONG 1 - SING BURI TRANSMISSION LINE	6,795,972.88
2R	115 KV DOEMBANG NANGBUAT – ANG THONG 2 TRANSMISSION LINE	7,623,442.94
TOTAL PRICES FOR SCHEDULE 2 (Excluding VAT)		16,288,617.60

Schedule 3	Description	Total (Baht)
3I	DISMANTLING WORK	658,830.48
3O	SUPPLY OF SERVICE OF VEHICLES	818,110.00
3P	SUPPLY OF SPARE EQUIPMENT	1,268,989.00
3Q	115 KV LAMPHUN 2 - CHOM THONG (JUNCTION) TRANSMISSION LINE	6,615,070.75
3R	115 KV PHRAE - NAN TRANSMISSION LINE	8,530,453.00
3S	230 KV NONG BUA RAWE – BUENG SAM PHAN TRANSMISSION LINE	16,088,841.18
TOTAL PRICES FOR SCHEDULE 3 (Excluding VAT)		33,980,294.41

TOTAL PRICES FOR ALL SCHEDULES (All Factors included)	139,327,854.68
Adjusted Price (Import Duty & Tax + Vat)	9,752,949.83
TOTAL PRICES FOR ALL SCHEDULES (All Factors included + Import Duty & Tax + Vat)	149,080,804.51

MEDIUM COST FOR BID NO. TNRP-L20-OP	149,100,000.00
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MEDIUM PRICE FOR BID NO. TNRP-L20-OP

INVITATION TO BID NO. TNRP-L20-OP

TOTAL PRICE FOR SCHEDULE NO. 1

115 KV KHON KAEN 1 - KHON KAEN 2, 230 KV CHAIYAPHUM - NAKHON RATCHASIMA 2, 115 KV SURIN 1 - SURIN 2, 230 KV SIKHIU 2 - NAKHON RATCHASIMA 2, 230 KV CHAIYAPHUM - KHON KAEN 3, 115 KV PAK MUN - UBON RATCHATHANI 2, 115 KV NONG BUA LAM PHU - UDON THANI 1, 230 KV NAKHON PHANOM - NAKHON PHANOM 2, 230 KV NAKHON PHANOM 2 - SAKON NAKHON 2

Line Length 452.88 KM

SUPPLY AND CONSTRUCTION FOR REPLACEMENT OF OVERHEAD GROUND WIRE WITH COMPOSITE OVERHEAD GROUND WIRE WITH OPTICAL FIBER (OPGW)
TELECOMMUNICATION NETWORK RENOVATION PROJECT (TNRP) PHASE 20

Description	Currency	Supply of Equipment	Supply of Equipment	Foreign Currency	Local Currency	Local Transportation	Local Transportation, Construction and Installation	Purchase Price Offered for Dismantled Equipment (including VAT)
		Foreign Supply	Local Supply					
		CIF Thai Port	Ex-works Price (excluding VAT) Baht					
		Amount	Amount		Amount	Amount	Amount	Amount
II : DISMANTLING WORK							1,258,100.64	
IO : SUPPLY OF SERVICE OF VEHICLES								
							2,454,330.00	
IP : SUPPLY OF SPARE EQUIPMENT								
	THB	1,395,520.00	805,080.00			25,881.00		
IQ : 115 kV KHON KAEN 1 - KHON KAEN 2 TRANSMISSION LINE								
	THB	649,565.08	606,563.06				884,294.07	
IR : 230 kV CHAIYAPHUM – NAKHON RATCHASIMA 2 TRANSMISSION LINE								
	THB	8,803,162.09	2,702,529.12				5,482,510.26	
IS : 115 kV SURIN 1 – SURIN 2 TRANSMISSION LINE								
	THB	114,529.61	266,759.60				515,187.28	
IT : 230 kV SIKHIU 2 (JUNCTION) – NAKHON RATCHASIMA 2 TRANSMISSION LINE								
	THB	3,037,377.24	1,219,403.67				2,519,028.68	

MEDIUM PRICE FOR BID NO. TNRP-L20-OP

Description	Currency	Supply of Equipment	Supply of Equipment	Foreign Currency	Local Currency	Local Transportation	Local Transportation, Construction and Installation	Purchase Price Offered for Dismantled Equipment (including VAT)
		Foreign Supply	Local Supply					
		CIF Thai Port	Ex-works Price (excluding VAT)					
		Amount	Baht Amount		(excluding VAT) Baht Amount	(excluding VAT) Baht Amount	(excluding VAT) Baht Amount	(including VAT) Baht Amount
1U : 230 kV CHAIYAPHUM – KHON KAEN 3 TRANSMISSION LINE	THB		2,541,062.68				5,181,109.18	
		8,476,058.59						
1V : 115 kV PAK MUN – UBON RATCHATHANI 2 TRANSMISSION LINE	THB		2,254,446.93				4,338,498.21	
		6,139,481.07						
1W : 115 kV NONG BUA LAM PHU – UDON THANI 1 TRANSMISSION LINE	THB		1,846,774.75				3,653,506.32	
		4,640,791.75						
1X : 230 kV NAKHON PHANOM – NAKHON PHANOM 2 TRANSMISSION LINE	THB		1,182,200.91				1,708,191.03	
		1,597,948.31						
1Y : 230 kV NAKHON PHANOM 2 – SAKON NAKHON 2 TRANSMISSION LINE	THB		2,176,004.00				4,264,830.87	
		6,318,216.67						
TOTAL PRICE	THB	41,172,650.41	Baht		Baht	Baht	Baht	Baht
			15,600,824.72			25,881.00	32,259,586.54	
IZ : DISMANTLED EQUIPMENT TO BE PURCHASED BY THE CONTRACTOR							Baht	-679,320.00


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11 : DISMANTLING WORK

IMPORTANT :

1. Dismantling of the existing transmission line shall generally conform to Specification No. TL-07 (Rev.3) : Dismantling Work.
2. Dismantled Equipment as shown in Attachment No.2 shall be purchased by the Contractor at the prices offered in 1Z.

Item No.	Description	Estimated Qty.	Unit	Local Transportation, Construction and Installation (excluding VAT) Baht	
				Unit Price	Amount
111	Dismantling work of the existing overhead ground wire of 115 kV KHON KAEN 1 - KHON KAEN 2 TRANSMISSION LINE (approx. 7.13 km in transmission line distance)	lump sum	each	19,807.14	19,807.14
112	Dismantling work of the existing overhead ground wire of 230 kV CHAIYAPHUM – NAKHON RATCHASIMA 2 TRANSMISSION LINE (approx. 101.46 km in transmission line distance)	lump sum	each	281,855.88	281,855.88
113	Dismantling work of the existing overhead ground wire of 115 kV SURIN 1 – SURIN 2 TRANSMISSION LINE (approx. 1.2 km in transmission line distance)	lump sum	each	3,333.60	3,333.60
114	Dismantling work of the existing overhead ground wire of 230 kV SIKHIU 2 (JUNCTION) – NAKHON RATCHASIMA 2 TRANSMISSION LINE (approx. 33.34 km in transmission line distance)	lump sum	each	92,618.52	92,618.52
115	Dismantling work of the existing overhead ground wire of 230 kV CHAIYAPHUM – KHON KAEN 3 TRANSMISSION LINE (approx. 97.69 km in transmission line distance)	lump sum	each	271,382.82	271,382.82

MEDIUM PRICE FOR BID NO. TNRP-L20-OP

Item No.	Description	Estimated Qty.	Unit	Local Transportation, Construction and Installation (excluding VAT) Baht	
				Unit Price	Amount
116	Dismantling work of the existing overhead ground wire of 115 kV PAK MUN – UBON RATCHATHANI 2 TRANSMISSION LINE (approx. 70.76 km in transmission line distance)	lump sum	each	196,571.28	196,571.28
117	Dismantling work of the existing overhead ground wire of 115 kV NONG BUA LAM PHU – UDON THANI 1 TRANSMISSION LINE (approx. 50.94 km in transmission line distance)	lump sum	each	141,511.32	141,511.32
118	Dismantling work of the existing overhead ground wire of 230 kV NAKHON PHANOM – NAKHON PHANOM 2 TRANSMISSION LINE (approx. 17.54 km in transmission line distance)	lump sum	each	48,726.12	48,726.12
119	Dismantling work of the existing overhead ground wire of 230 kV NAKHON PHANOM 2 – SAKON NAKHON 2 TRANSMISSION LINE (approx. 72.82 km in transmission line distance)	lump sum	each	202,293.96	202,293.96
Total Price for 11				Baht	1,258,100.64


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MEDIUM PRICE FOR BID NO. TNRP-L20-OP

10 : SUPPLY OF SERVICE OF VEHICLES

IMPORTANT :

Item No.	Description	Estimated Qty.	Unit	Local Transportation, Construction and Installation (excluding VAT) Baht	
				Unit Price	Amount
101	Facilities and service of four-wheel-driven, four doors vehicles, at least one ton capacity, 2000 cc. nominal, gasoline engine or 2500 cc. Nominal diesel engine, equipped with air-condition. The vehicles shall be in good condition, which shall be approved by EGAT. In case used Vehicles are proposed, the used period shall not exceed two years. (refer to Article G-6. Housing and Other Facilities.) for 115 kV KHON KAEN 1 - KHON KAEN 2, 230 kV CHAIYAPHUM – NAKHON RATCHASIMA 2, 115 kV SURIN 1 – SURIN 2, 230 kV SIKHIU 2 (JUNCTION) – NAKHON RATCHASIMA 2, 230 kV CHAIYAPHUM – KHON KAEN 3, 115 kV PAK MUN – UBON RATCHATHANI 2, 115 kV NONG BUA LAM PHU – UDON THANI 1, 230 kV NAKHON PHANOM – NAKHON PHANOM 2, 230 kV NAKHON PHANOM 2 – SAKON NAKHON 2 TRANSMISSION LINE	30	car-month	81,811.00	2,454,330.00
Total Price for 10				Baht	2,454,330.00


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MEDIUM PRICE FOR BID NO. TNRP-L20-OP

1P : SUPPLY OF SPARE EQUIPMENT

IMPORTANT :

1. Spare Equipment shall be delivered and stored at Nakhon Ratchasima 2 Substation in Nakhon Ratchasima Province by the Contractor.
2. The Contractor shall perform the test on the Equipment for Item No. 1P1 at EGAT's Store to guarantee that there are no damages during the transportation.

Item No.	Description	Estimated Qty.	Unit	Currency	Supply of Equipment		Supply of Equipment		Local Transportation (excluding VAT) Baht	
					Foreign Supply		Local Supply			
					CIF Thai Port		Ex-works Price (excluding VAT) Baht			
					Unit Price	Amount	Unit Price	Amount	Unit Price	Amount
1P1	Composite overhead ground wire with 36 core optical fibers (11.4 mm. OPGW) 4,000 meter/reel	4	reel	THB	348,880.00	1,395,520.00			Included in item 1P12	Included in item 1P12
1P2	2-way joint box with accessories for two OPGW cables	16	set				14,616.00	233,856.00	Included in item 1P12	Included in item 1P12
1P3	Tension assembly (grounded) with accessories	40	set				1,820.00	72,800.00	Included in item 1P12	Included in item 1P12
1P4	Suspension assembly (grounded) with accessories	20	set				2,654.00	53,080.00	Included in item 1P12	Included in item 1P12
1P5	Fiber frame termination cabinet with cable tray	8	set				12,745.00	101,960.00	Included in item 1P12	Included in item 1P12
1P6	36 Pigtails(1.5 meter)	8	set				4,576.00	36,608.00	Included in item 1P12	Included in item 1P12
1P7	1-wire cleat (grounded)	80	set				794.00	63,520.00	Included in item 1P12	Included in item 1P12
1P8	2-wire cleats (grounded)	160	set				825.00	132,000.00	Included in item 1P12	Included in item 1P12
1P9	6-wire cleats (grounded)	64	set				1,464.00	93,696.00	Included in item 1P12	Included in item 1P12
1P10	Parallel groove clamps	40	set				254.00	10,160.00	Included in item 1P12	Included in item 1P12
1P11	Grounding clamps	40	set				185.00	7,400.00	Included in item 1P12	Included in item 1P12
1P12	Local transportation for item 1P1 to 1P11	lump sum	each		XXXXXX	XXXXXX	XXXXXX	XXXXXX	25,881.00	25,881.00
Total Price for 1P				THB	1,395,520.00		Baht		Baht	
							805,080.00		25,881.00	

MEDIUM PRICE FOR BID NO. TNRP-L20-OP

1Q : 115 kV KHON KAEN 1 - KHON KAEN 2 TRANSMISSION LINE

IMPORTANT :

1. All lump sum price shall be based on horizontal distance of line route as specified else-where between the take-off structure. In case of changing of such horizontal distance of line route, the lump sum prices shall be adjusted accordingly.
2. For breakdown price tab sheet, bidder shall fill in all data required for item No., description, estimated Qty, Unit price. Amount price for each item will be calculated automatically.
3. The existing OPGW shall not be terminated during the stringing process as the critical services are still in operation. The contractor shall be permitted to dismantle it after the new OPGW is fully strung and tested.

Item No.	Description	Estimated Qty.	Unit	Currency	Supply of Equipment		Supply of Equipment		Local Transportation, Construction and Installation (excluding VAT) Baht	
					Foreign Supply		Local Supply			
					CIF Thai Port		Ex-works Price (excluding VAT) Baht			
					Unit Price	Amount	Unit Price	Amount	Unit Price	Amount
1Q1	Composite overhead ground wire with 36 cores Optical fibers (OPGW) (referred section F-4.3)									
1Q1.1	Furnishing OPGW (Ø 11.4 mm)	lump sum	each	THB	649,565.08	649,565.08	403,364.06	403,364.06	Included in Item 1Q1.2	Included in Item 1Q1.2
1Q1.2	Stringing by controlled tension method, one OPGW measured based on horizontal distance of line route from Khon kaen 1 substation to Khon kaen 2 substation	7.13	km		XXXXXX	XXXXXX	XXXXXX	XXXXXX	78,005.76	556,181.07


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MEDIUM PRICE FOR BID NO. TNRP-L20-OP

Item No.	Description	Estimated Qty.	Unit	Currency	Supply of Equipment		Supply of Equipment		Local Transportation, Construction and Installation (excluding VAT) Baht	
					Foreign Supply		Local Supply			
					CIF Thai Port		Ex-works Price (excluding VAT) Baht			
					Unit Price	Amount	Unit Price	Amount	Unit Price	Amount
1Q1.3	Supply and intallation of hardware assemblies and line accessories include splicing work for overhead ground wire with optical fiber (OPGW) including: (a) 2-way joint box with accessories (lump sum) (b) OPGW suspension (Grounded) assembly 22 with armor rods (excluding vibration damper) (lump sum) (c) OPGW tension (Insulated) assembly 23 with armor rods and arcing horns (excluding insulator and vibration damper) (lump sum) (d) OPGW tension (Grounded) assembly 24 with armor rods (excluding vibration damper) (lump sum) (e) Vibration damper assembly with accessories (lump sum) (f) Parallel groove clamps (lump sum) (g) Grounding clamps (lump sum) (h) 1-wire cleat without insulator (lump sum) (i) 2-wire cleat without insulator (lump sum) (j) 6-wire cleat without insulator (lump sum) (k) 1-wire cleat with insulator (lump sum) (l) 6-wire cleat with insulator (lump sum) (m) Clevis type insulator ANSI CLASS 52-4 (292 mm minimum leakage distance and 6,800 kg minimum electromechanical failing load to be used at take-off structure (lump sum) (n) 3/8" High strength galvanized steel wire for grounding OPGW to tower (lump sum)	lump sum	each							
1Q2	Optical fiber cable from joint box at take-off structure to fiber frame termination cabinet at Khon kaen 1 115 kV GIS building at Khon kaen 1 substation									


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MEDIUM PRICE FOR BID NO. TNRP-L20-OP

Item No.	Description	Estimated Qty.	Unit	Currency	Supply of Equipment		Supply of Equipment		Local Transportation, Construction and Installation (excluding VAT) Baht	
					Foreign Supply		Local Supply			
					CIF Thai Port		Ex-works Price (excluding VAT) Baht			
					Unit Price	Amount	Unit Price	Amount	Unit Price	Amount
1Q2.1	Supply and installation (Including splicing work) of optical fiber cable and accessories including: (a) 36-core non-metallic optical fiber cable (approx. 250 meters) (b) Rigid steel conduit from take-off structure to cable trench (lump sum) (c) EFLEX and/or HDPE conduit with hot-dip galvanized steel clamp (lump sum) (d) Rack cabinet and accessories (1 set) (e) Fiber frame termination cabinet with cable tray (1 set) (f) 36 pigtails (1.5 meter) (1 set) (g) 2-way joint box with insulator and accessories for OPGW cable and 36 core non-metallic optical fiber cable at take-off structure (1 set)	lump sum	each				120,342.00	120,342.00	166,728.00	166,728.00
1Q3	Optical fiber cable from joint box at take-off structure to fiber frame termination cabinet at Khon kaen 2 control building at Khon kaen 2 substation									
1Q3.1	Supply and installation (Including splicing work) of optical fiber cable and accessories including: (a) 36-core non-metallic optical fiber cable (approx. 200 meters) (b) Rigid steel conduit from take-off structure to cable trench (lump sum) (c) EFLEX and/or HDPE conduit with hot-dip galvanized steel clamp (lump sum) (d) Fiber frame termination cabinet with cable tray (1 set) (e) 36 pigtails (1.5 meter) (1 set) (f) 2-way joint box with insulator and accessories for OPGW cable and 36 core non-metallic optical fiber cable at take-off structure (1 set)	lump sum	each				82,857.00	82,857.00	139,385.00	139,385.00
1Q4	Field testing for optical fiber	1	test		XXXXXX	XXXXXX	XXXXXX	XXXXXX	22,000.00	22,000.00
Total Price for 1Q				THB	649,565.08		Baht		Baht	
							606,563.06		884,294.07	


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MEDIUM PRICE FOR BID NO. TNRP-L20-OP

1R : 230 kV CHAIYAPHUM – NAKHON RATCHASIMA 2 TRANSMISSION LINE

IMPORTANT :

1. All lump sum price shall be based on horizontal distance of line route as specified else-where between the take-off structure. In case of changing of such horizontal distance of line route, the lump sum prices shall be adjusted accordingly.
2. For breakdown price tab sheet, bidder shall fill in all data required for item No., description, estimated Qty, Unit price. Amount price for each item will be calculated automatically.

Item No.	Description	Estimated Qty.	Unit	Currency	Supply of Equipment		Supply of Equipment		Local Transportation, Construction and Installation (excluding VAT) Baht	
					Foreign Supply		Local Supply			
					CIF Thai Port		Ex-works Price (excluding VAT) Baht			
					Unit Price	Amount	Unit Price	Amount	Unit Price	Amount
1R1	Composite overhead ground wire with 36 cores Optical fibers (OPGW) (referred section F-4.3)									
1R1.1	Furnishing OPGW (Ø 11.4 mm)	lump sum	each	THB	8,803,162.09	8,803,162.09	2,391,615.12	2,391,615.12	Included in Item 1R1.2	Included in Item 1R1.2
1R1.2	Stringing by controlled tension method, one OPGW measured based on horizontal distance of line route from Chiyaphum substation to Nakhon ratchasima 2 substation	101.46	km		XXXXXX	XXXXXX	XXXXXX	XXXXXX	48,753.60	4,946,540.26


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MEDIUM PRICE FOR BID NO. TNRP-L20-OP

Item No.	Description	Estimated Qty.	Unit	Currency	Supply of Equipment		Supply of Equipment		Local Transportation, Construction and Installation (excluding VAT) Baht	
					Foreign Supply		Local Supply			
					CIF Thai Port		Ex-works Price (excluding VAT) Baht			
					Unit Price	Amount	Unit Price	Amount	Unit Price	Amount
1R1.3	Supply and intallation of hardware assemblies and line accessories include splicing work for overhead ground wire with optical fiber (OPGW) including: (a) 2-way joint box with accessories (lump sum) (b) OPGW suspension (Grounded) assembly 22 with armor rods (excluding vibration damper) (lump sum) (c) OPGW tension (Insulated) assembly 23 with armor rods and arcing horns (excluding insulator and vibration damper) (lump sum) (d) OPGW tension (Grounded) assembly 24 with armor rods (excluding vibration damper) (lump sum) (e) Vibration damper assembly with accessories (lump sum) (f) Parallel groove clamps (lump sum) (g) Grounding clamps (lump sum) (h) 1-wire cleat without insulator (lump sum) (i) 2-wire cleat without insulator (lump sum) (j) 6-wire cleat without insulator (lump sum) (k) 1-wire cleat with insulator (lump sum) (l) 6-wire cleat with insulator (lump sum) (m) Clevis type insulator ANSI CLASS 52-4 (292 mm minimum leakage distance and 6,800 kg minimum electromechanical failing load) to be used at take-off structure (lump sum) (n) 3/8" High strength galvanized steel wire for grounding OPGW to tower (lump sum)									
		lump sum	each		Included in Item 1R1.1	Included in Item 1R1.1	Included in Item 1R1.1	Included in Item 1R1.1	Included in Item 1R1.2	Included in Item 1R1.2
1R2	Optical fiber cable from joint box at take-off structure to fiber frame termination cabinet at Chiyaphum control building at Chiyaphum substation									



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MEDIUM PRICE FOR BID NO. TNRP-L20-OP

Item No.	Description	Estimated Qty.	Unit	Currency	Supply of Equipment		Supply of Equipment		Local Transportation, Construction and Installation (excluding VAT) Baht	
					Foreign Supply		Local Supply			
					CIF Thai Port		Ex-works Price (excluding VAT) Baht			
					Unit Price	Amount	Unit Price	Amount	Unit Price	Amount
1R2.1	Supply and installation (Including splicing work) of optical fiber cable and accessories including: (a) 36-core non-metallic optical fiber cable (approx. 500 meters) (b) Rigid steel conduit from take-off structure to cable trench (lump sum) (c) EFLEX and/or HDPE conduit with hot-dip galvanized steel clamp (lump sum) (d) Fiber frame termination cabinet with cable tray (1 set) (e) 36 pigtails (1.5 meter) (1 set) (f) 2-way joint box with accessories for OPGW cable and 36 core non-metallic optical fiber cable at take-off structure (1 set)	lump sum	each				155,457.00	155,457.00	256,985.00	256,985.00
1R3	Optical fiber cable from joint box at take-off structure to fiber frame termination cabinet at Nakhon ratchasima 2 control building at Nakhon ratchasima 2 substation									
1R3.1	Supply and installation (Including splicing work) of optical fiber cable and accessories including: (a) 36-core non-metallic optical fiber cable (approx. 500 meters) (b) Rigid steel conduit from take-off structure to cable trench (lump sum) (c) EFLEX and/or HDPE conduit with hot-dip galvanized steel clamp (lump sum) (d) Fiber frame termination cabinet with cable tray (1 set) (e) 36 pigtails (1.5 meter) (1 set) (f) 2-way joint box with insulator and accessories for OPGW cable and 36 core non-metallic optical fiber cable at take-off structure (1 set)	lump sum	each				155,457.00	155,457.00	256,985.00	256,985.00
1R4	Field testing for optical fiber	1	test		XXXXX	XXXXX	XXXXXX	XXXXXX	22,000.00	22,000.00
Total Price for 1R				THB	8,803,162.09		Baht		Baht	
							2,702,529.12		5,482,510.26	


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MEDIUM PRICE FOR BID NO. TNRP-L20-OP

1S : 115 kV SURIN 1 – SURIN 2 TRANSMISSION LINE

IMPORTANT :

1. All lump sum price shall be based on horizontal distance of line route as specified else-where between the take-off structure. In case of changing of such horizontal distance of line route, the lump sum prices shall be adjusted accordingly.
2. For breakdown price tab sheet, bidder shall fill in all data required for item No., description, estimated Qty, Unit price. Amount price for each item will be calculated automatically.

Item No.	Description	Estimated Qty.	Unit	Currency	Supply of Equipment		Supply of Equipment		Local Transportation, Construction and Installation (excluding VAT) Baht	
					Foreign Supply		Local Supply			
					CIF Thai Port		Ex-works Price (excluding VAT) Baht			
					Unit Price	Amount	Unit Price	Amount	Unit Price	Amount
1S1	Composite overhead ground wire with 36 cores Optical fibers (OPGW) (referred section F-4.3)									
1S1.1	Furnishing OPGW (Ø 11.4 mm)	lump sum	each	THB	114,529.61	114,529.61	113,145.60	113,145.60	Included in Item 1S1.2	Included in Item 1S1.2
1S1.2	Stringing by controlled tension method, one OPGW measured based on horizontal distance of line route from Surin 1 substation to Surin 2 substation	1.2	km		XXXXXX	XXXXXX	XXXXXX	XXXXXX	195,014.40	234,017.28


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Item No.	Description	Estimated Qty.	Unit	Currency	Supply of Equipment		Supply of Equipment		Local Transportation, Construction and Installation (excluding VAT) Baht	
					Foreign Supply		Local Supply			
					CIF Thai Port		Ex-works Price (excluding VAT) Baht			
					Unit Price	Amount	Unit Price	Amount	Unit Price	Amount
1S1.3	Supply and intallation of hardware assemblies and line accessories include splicing work for overhead ground wire with optical fiber (OPGW) including: (a) 2-way joint box with accessories (lump sum) (b) OPGW suspension (Grounded) assembly 22 with armor rods (excluding vibration damper) (lump sum) (c) OPGW tension (Insulated) assembly 23 with armor rods and arcing horns (excluding insulator and vibration damper) (lump sum) (d) OPGW tension (Grounded) assembly 24 with armor rods (excluding vibration damper) (lump sum) (e) Vibration damper assembly with accessories (lump sum) (f) Parallel groove clamps (lump sum) (g) Grounding clamps (lump sum) (h) 1-wire cleat without insulator (lump sum) (i) 2-wire cleat without insulator (lump sum) (j) 6-wire cleat without insulator (lump sum) (k) 1-wire cleat with insulator (lump sum) (l) 6-wire cleat with insulator (lump sum) (m) Clevis type insulator ANSI CLASS 52-4 (292 mm minimum leakage distance and 6,800 kg minimum electromechanical failing load) to be used at take-off structure (lump sum) (n) 3/8" High strength galvanized steel wire for grounding OPGW to tower (lump sum)	lump sum	each		Included in Item 1S1.1	Included in Item 1S1.1	Included in Item 1S1.1	Included in Item 1S1.1	Included in Item 1S1.2	Included in Item 1S1.2
1S2	Optical fiber cable from joint box at take-off structure to fiber frame termination cabinet at Surin 1 control building at Surin 1 substation									



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Item No.	Description	Estimated Qty.	Unit	Currency	Supply of Equipment		Supply of Equipment		Local Transportation, Construction and Installation (excluding VAT) Baht	
					Foreign Supply		Local Supply			
					CIF Thai Port		Ex-works Price (excluding VAT) Baht			
					Unit Price	Amount	Unit Price	Amount	Unit Price	Amount
1S2.1	Supply and installation (Including splicing work) of optical fiber cable and accessories including: (a) 36-core non-metallic optical fiber cable (approx. 150 meters) (b) Rigid steel conduit from take-off structure to cable trench (lump sum) (c) EFLEX and/or HDPE conduit with hot-dip galvanized steel clamp (lump sum) (d) Fiber frame termination cabinet with cable tray (1 set) (e) 36 pigtails (1.5 meter) (1 set) (f) 2-way joint box with insulator and accessories for OPGW cable and 36 core non-metallic optical fiber cable at take-off structure (1 set)	lump sum	each				70,757.00	70,757.00	119,785.00	119,785.00
1S3	Optical fiber cable from joint box at take-off structure to fiber frame termination cabinet at Surin 2 control building at Surin 2 substation									
1S3.1	Supply and installation (Including splicing work) of optical fiber cable and accessories including: (a) 36-core non-metallic optical fiber cable (approx. 200 meters) (b) Rigid steel conduit from take-off structure to cable trench (lump sum) (c) EFLEX and/or HDPE conduit with hot-dip galvanized steel clamp (lump sum) (d) Fiber frame termination cabinet with cable tray (1 set) (e) 36 pigtails (1.5 meter) (1 set) (f) 2-way joint box with insulator and accessories for OPGW cable and 36 core non-metallic optical fiber cable at take-off structure (1 set)	lump sum	each				82,857.00	82,857.00	139,385.00	139,385.00
1S4	Field testing for optical fiber	1	test		XXXXXX	XXXXXX	XXXXXX	XXXXXX	22,000.00	22,000.00
Total Price for 1S				THB	114,529.61		Baht		Baht	
							266,759.60		515,187.28	


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MEDIUM PRICE FOR BID NO. TNRP-L20-OP

1T : 230 kV SIKHIU 2 (JUNCTION) – NAKHON RATCHASIMA 2 TRANSMISSION LINE

IMPORTANT :

1. All lump sum price shall be based on horizontal distance of line route as specified else-where between the take-off structure. In case of changing of such horizontal distance of line route, the lump sum prices shall be adjusted accordingly.
2. For breakdown price tab sheet, bidder shall fill in all data required for item No., description, estimated Qty, Unit price. Amount price for each item will be calculated automatically.

Item No.	Description	Estimated Qty.	Unit	Currency	Supply of Equipment		Supply of Equipment		Local Transportation, Construction and Installation (excluding VAT) Baht	
					Foreign Supply		Local Supply			
					CIF Thai Port		Ex-works Price (excluding VAT) Baht			
					Unit Price	Amount	Unit Price	Amount	Unit Price	Amount
1T1	Composite overhead ground wire with 36 cores Optical fibers (OPGW) (referred section F-4.3)									
1T1.1	Furnishing OPGW (Ø 11.4 mm)	lump sum	each	THB	3,037,377.24	3,037,377.24	1,100,246.67	1,100,246.67	Included in Item 1T1.2	Included in Item 1T1.2
1T1.2	Stringing by controlled tension method, one OPGW measured based on horizontal distance of line route from Sikhiu 2 Junction (Str.84/2B) to Nakhon ratchasima 2 substation	33.34	km		XXXXXX	XXXXXX	XXXXXX	XXXXXX	68,951.52	2,298,843.68


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MEDIUM PRICE FOR BID NO. TNRP-L20-OP

Item No.	Description	Estimated Qty.	Unit	Currency	Supply of Equipment		Supply of Equipment		Local Transportation, Construction and Installation (excluding VAT) Baht	
					Foreign Supply		Local Supply			
					CIF Thai Port		Ex-works Price (excluding VAT) Baht			
					Unit Price	Amount	Unit Price	Amount	Unit Price	Amount
1T1.3	Supply and intallation of hardware assemblies and line accessories include splicing work for overhead ground wire with optical fiber (OPGW) including: (a) 2-way joint box with accessories (lump sum) (b) OPGW suspension (Grounded) assembly 22 with armor rods (excluding vibration damper) (lump sum) (c) OPGW tension (Insulated) assembly 23 with armor rods and arcing horns (excluding insulator and vibration damper) (lump sum) (d) OPGW tension (Grounded) assembly 24 with armor rods (excluding vibration damper) (lump sum) (e) Vibration damper assembly with accessories (lump sum) (f) Parallel groove clamps (lump sum) (g) Grounding clamps (lump sum) (h) 1-wire cleat without insulator (lump sum) (i) 2-wire cleat without insulator (lump sum) (j) 6-wire cleat without insulator (lump sum) (k) 1-wire cleat with insulator (lump sum) (l) 6-wire cleat with insulator (lump sum) (m) Clevis type insulator ANSI CLASS 52-4 (292 mm minimum leakage distance and 6,800 kg minimum electromechanical failing load) to be used at take-off structure (lump sum) (n) 3/8" High strength galvanized steel wire for grounding OPGW to tower (lump sum)									
		lump sum	each		Included in Item 1T1.1	Included in Item 1T1.1	Included in Item 1T1.1	Included in Item 1T1.1	Included in Item 1T1.1	Included in Item 1T1.2
1T2	Optical fiber cable from joint box at take-off structure to fiber frame termination cabinet at Nakhon ratchasima 2 control building at Nakhon ratchasima 2									


 นายพนม จันทะนันทิ
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Item No.	Description	Estimated Qty.	Unit	Currency	Supply of Equipment		Supply of Equipment		Local Transportation, Construction and Installation (excluding VAT) Baht	
					Foreign Supply		Local Supply			
					CIF Thai Port		Ex-works Price (excluding VAT) Baht			
					Unit Price	Amount	Unit Price	Amount	Unit Price	Amount
1T2.1	Supply and installation (Including splicing work) of optical fiber cable and accessories including: (a) 36-core non-metallic optical fiber cable (approx. 350 meters) (b) Rigid steel conduit from take-off structure to cable trench (lump sum) (c) EFLEX and/or HDPE conduit with hot-dip galvanized steel clamp (lump sum) (d) Fiber frame termination cabinet with cable tray (1 set) (e) 36 pigtails (1.5 meter) (1 set) (f) 2-way joint box with insulator and accessories for OPGW cable and 36 core non-metallic optical fiber cable at take-off structure (1 set)	lump sum	each				119,157.00	119,157.00	198,185.00	198,185.00
1T3	Field testing for optical fiber	1	test		XXXXXX	XXXXXX	XXXXXX	XXXXXX	22,000.00	22,000.00
Total Price for 1T				THB	3,037,377.24		Baht		Baht	
							1,219,403.67		2,519,028.68	


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MEDIUM PRICE FOR BID NO. TNRP-L20-OP

1U : 230 kV CHAIYAPHUM – KHON KAEN 3 TRANSMISSION LINE

IMPORTANT :

1. All lump sum price shall be based on horizontal distance of line route as specified else-where between the take-off structure. In case of changing of such horizontal distance of line route, the lump sum prices shall be adjusted accordingly.
2. For breakdown price tab sheet, bidder shall fill in all data required for item No., description, estimated Qty, Unit price. Amount price for each item will be calculated automatically.

Item No.	Description	Estimated Qty.	Unit	Currency	Supply of Equipment		Supply of Equipment		Local Transportation, Construction and Installation (excluding VAT) Baht	
					Foreign Supply		Local Supply			
					CIF Thai Port		Ex-works Price (excluding VAT) Baht			
					Unit Price	Amount	Unit Price	Amount	Unit Price	Amount
1U1	Composite overhead ground wire with 36 cores Optical fibers (OPGW) (referred section F-4.3)									
1U1.1	Furnishing OPGW (Ø 11.4 mm)	lump sum	lump sum	THB	8,476,058.59	8,476,058.59	2,302,748.68	2,302,748.68	Included in Item 1U1.2	Included in Item 1U1.2
1U1.2	Stringing by controlled tension method, one OPGW measured based on horizontal distance of line route from Chaiyaphum substation to Khon kaen 3 substation	97.69	km		XXXXXX	XXXXXX	XXXXXX	XXXXXX	48,753.60	4,762,739.18


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Item No.	Description	Estimated Qty.	Unit	Currency	Supply of Equipment		Supply of Equipment		Local Transportation, Construction and Installation (excluding VAT) Baht	
					Foreign Supply		Local Supply			
					CIF Thai Port		Ex-works Price (excluding VAT) Baht			
					Unit Price	Amount	Unit Price	Amount	Unit Price	Amount
1U1.3	Supply and intallation of hardware assemblies and line accessories include splicing work for overhead ground wire with optical fiber (OPGW) including: (a) 2-way joint box with accessories (lump sum) (b) OPGW suspension (Grounded) assembly 22 with armor rods (excluding vibration damper) (lump sum) (c) OPGW tension (Insulated) assembly 23 with armor rods and arcing horns (excluding insulator and vibration damper) (lump sum) (d) OPGW tension (Grounded) assembly 24 with armor rods (excluding vibration damper) (lump sum) (e) Vibration damper assembly with accessories (lump sum) (f) Parallel groove clamps (lump sum) (g) Grounding clamps (lump sum) (h) 1-wire cleat without insulator (lump sum) (i) 2-wire cleat without insulator (lump sum) (j) 6-wire cleat without insulator (lump sum) (k) 1-wire cleat with insulator (lump sum) (l) 6-wire cleat with insulator (lump sum) (m) Clevis type insulator ANSI CLASS 52-4 (292 mm minimum leakage distance and 6,800 kg minimum electromechanical failing load) to be used at take-off structure (lump sum) (n) 3/8" High strength galvanized steel wire for grounding OPGW to tower (lump sum)									
		lump sum	each		Included in Item 1U1.1	Included in Item 1U1.1	Included in Item 1U1.1	Included in Item 1U1.1	Included in Item 1U1.2	Included in Item 1U1.2
1U2	Optical fiber cable from joint box at take-off structure to fiber frame termination cabinet at Chaiyaphum control building at Chaiyaphum substation									


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Item No.	Description	Estimated Qty.	Unit	Currency	Supply of Equipment		Supply of Equipment		Local Transportation, Construction and Installation (excluding VAT) Baht	
					Foreign Supply		Local Supply			
					CIF Thai Port		Ex-works Price (excluding VAT) Baht			
					Unit Price	Amount	Unit Price	Amount	Unit Price	Amount
1U2.1	Supply and installation (Including splicing work) of optical fiber cable and accessories including: (a) 36-core non-metallic optical fiber cable (approx. 450 meters) (b) Rigid steel conduit from take-off structure to cable trench (lump sum) (c) EFLEX and/or HDPE conduit with hot-dip galvanized steel clamp (lump sum) (d) Fiber frame termination cabinet with cable tray (1 set) (e) 36 pigtails (1.5 meter) (1 set) (f) 2-way joint box with insulator and accessories for OPGW cable and 36 core non-metallic optical fiber cable at take-off structure (1 set)	lump sum	each				143,357.00	143,357.00	237,385.00	237,385.00
1U3	Optical fiber cable from joint box at take-off structure to fiber frame termination cabinet at Khon kaen 3 control building at Khon kaen 3 substation									
1U3.1	Supply and installation (Including splicing work) of optical fiber cable and accessories including: (a) 36-core non-metallic optical fiber cable (approx. 250 meters) (b) Rigid steel conduit from take-off structure to cable trench (lump sum) (c) EFLEX and/or HDPE conduit with hot-dip galvanized steel clamp (lump sum) (d) Fiber frame termination cabinet with cable tray (1 set) (e) 36 pigtails (1.5 meter) (1 set) (f) 2-way joint box with insulator and accessories for OPGW cable and 36 core non-metallic optical fiber cable at take-off structure (1 set)	lump sum	each				94,957.00	94,957.00	158,985.00	158,985.00
1U4	Field testing for optical fiber	1	test		XXXXXX	XXXXXX	XXXXXX	XXXXXX	22,000.00	22,000.00
Total Price for 1U				THB	8,476,058.59		Baht		Baht	
							2,541,062.68		5,181,109.18	

MEDIUM PRICE FOR BID NO. TNRP-L20-OP

1V : 115 kV PAK MUN – UBON RATCHATHANI 2 TRANSMISSION LINE

IMPORTANT :

1. All lump sum price shall be based on horizontal distance of line route as specified else-where between the take-off structure. In case of changing of such horizontal distance of line route, the lump sum prices shall be adjusted accordingly.
2. For breakdown price tab sheet, bidder shall fill in all data required for item No., description, estimated Qty, Unit price. Amount price for each item will be calculated automatically.

Item No.	Description	Estimated Qty.	Unit	Currency	Supply of Equipment		Supply of Equipment		Local Transportation, Construction and Installation (excluding VAT) Baht	
					Foreign Supply		Local Supply			
					CIF Thai Port		Ex-works Price (excluding VAT) Baht			
					Unit Price	Amount	Unit Price	Amount	Unit Price	Amount
1V1	Composite overhead ground wire with 36 cores Optical fibers (OPGW) (referred section F-4.3)									
1V1.1	Furnishing OPGW (Ø 11.4 mm)	lump sum	each	THB	6,139,481.07	6,139,481.07	1,918,147.93	1,918,147.93	Included in Item 1V1.2	Included in Item 1V1.2
1V1.2	Stringing by controlled tension method, one OPGW measured based on horizontal distance of line route from Pak mun substation to Ubon ratchatani 2 substation	70.76	km		XXXXXX	XXXXXX	XXXXXX	XXXXXX	53,628.96	3,794,785.21


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MEDIUM PRICE FOR BID NO. TNRP-L20-OP

Item No.	Description	Estimated Qty.	Unit	Currency	Supply of Equipment		Supply of Equipment		Local Transportation, Construction and Installation (excluding VAT) Baht	
					Foreign Supply		Local Supply			
					CIF Thai Port		Ex-works Price (excluding VAT) Baht			
					Unit Price	Amount	Unit Price	Amount	Unit Price	Amount
1V1.3	Supply and intallation of hardware assemblies and line accessories include splicing work for overhead ground wire with optical fiber (OPGW) including: (a) 2-way joint box with accessories (lump sum) (b) OPGW suspension (Grounded) assembly 22 with armor rods (excluding vibration damper) (lump sum) (c) OPGW tension (Insulated) assembly 23 with armor rods and arcing horns (excluding insulator and vibration damper) (lump sum) (d) OPGW tension (Grounded) assembly 24 with armor rods (excluding vibration damper) (lump sum) (e) Vibration damper assembly with accessories (lump sum) (f) Parallel groove clamps (lump sum) (g) Grounding clamps (lump sum) (h) 1-wire cleat without insulator (lump sum) (i) 2-wire cleat without insulator (lump sum) (j) 6-wire cleat without insulator (lump sum) (k) 1-wire cleat with insulator (lump sum) (l) 6-wire cleat with insulator (lump sum) (m) Clevis type insulator ANSI CLASS 52-4 (292 mm minimum leakage distance and 6,800 kg minimum electromechanical failing load) to be used at take-off structure (lump sum) (n) 3/8" High strength galvanized steel wire for grounding OPGW to tower (lump sum) (o) Orange and white fiber glass sphere with armor rod for composite overhead ground wire with 36 cores optical fiber (OPGW) (9 sets)	lump sum	each		Included in Item 1V1.1	Included in Item 1V1.1	Included in Item 1V1.1	Included in Item 1V1.1	Included in Item 1V1.2	Included in Item 1V1.2
1V2	Optical fiber cable from joint box at take-off structure to fiber frame termination cabinet at Pak mun control building at Pak mun substation									


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Item No.	Description	Estimated Qty.	Unit	Currency	Supply of Equipment		Supply of Equipment		Local Transportation, Construction and Installation (excluding VAT) Baht	
					Foreign Supply		Local Supply			
					CIF Thai Port		Ex-works Price (excluding VAT) Baht			
					Unit Price	Amount	Unit Price	Amount	Unit Price	Amount
1V2.1	Supply and installation (Including splicing work) of optical fiber cable and accessories including: (a) 36-core non-metallic optical fiber cable (approx. 800 meters) (b) Rigid steel conduit from take-off structure to cable trench (lump sum) (c) EFLEX and/or HDPE conduit with hot-dip galvanized steel clamp (lump sum) (d) Rack cabinet and accessories (1 set) (e) Fiber frame termination cabinet with cable tray (1 set) (f) 36 pigtails (1.5 meter) (1 set) (g) 2-way joint box with insulator and accessories for OPGW cable and 36 core non-metallic optical fiber cable at take-off structure (1 set)	lump sum	each				253,442.00	253,442.00	382,328.00	382,328.00
1V3	Optical fiber cable from joint box at take-off structure to fiber frame termination cabinet at Ubon ratchatani 2 control building at Ubon ratchatani 2 substation									
1V3.1	Supply and installation (Including splicing work) of optical fiber cable and accessories including: (a) 36-core non-metallic optical fiber cable (approx. 200 meters) (b) Rigid steel conduit from take-off structure to cable trench (lump sum) (c) EFLEX and/or HDPE conduit with hot-dip galvanized steel clamp (lump sum) (d) Fiber frame termination cabinet with cable tray (1 set) (e) 36 pigtails (1.5 meter) (1 set) (f) 2-way joint box with insulator and accessories for OPGW cable and 36 core non-metallic optical fiber cable at take-off structure (1 set)	lump sum	each				82,857.00	82,857.00	139,385.00	139,385.00
1V4	Field testing for optical fiber	1	test		XXXXXX	XXXXXX	XXXXXX	XXXXXX	22,000.00	22,000.00
Total Price for 1V				THB	6,139,481.07		Baht		Baht	
							2,254,446.93		4,338,498.21	


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MEDIUM PRICE FOR BID NO. TNRP-L20-OP

1W : 115 kV NONG BUA LAM PHU – UDON THANI 1 TRANSMISSION LINE

IMPORTANT :

1. All lump sum price shall be based on horizontal distance of line route as specified else-where between the take-off structure. In case of changing of such horizontal distance of line route, the lump sum prices shall be adjusted accordingly.
2. For breakdown price tab sheet, bidder shall fill in all data required for item No., description, estimated Qty, Unit price. Amount price for each item will be calculated automatically.
3. The existing OPGW shall not be terminated during the stringing process as the critical services are still in operation. The contractor shall be permitted to dismantle it after the new OPGW is fully strung and tested.

Item No.	Description	Estimated Qty.	Unit	Currency	Supply of Equipment		Supply of Equipment		Local Transportation, Construction and Installation (excluding VAT) Baht	
					Foreign Supply		Local Supply			
					CIF Thai Port		Ex-works Price (excluding VAT) Baht			
					Unit Price	Amount	Unit Price	Amount	Unit Price	Amount
1W1	Composite overhead ground wire with 36 cores Optical fibers (OPGW) (referred section F-4.3)									
1W1.1	Furnishing OPGW (Ø 11.4 mm)	lump sum	each	THB	4,640,791.75	4,640,791.75	1,681,060.75	1,681,060.75	Included in Item 1W1.2	Included in Item 1W1.2
1W1.2	Stringing by controlled tension method, one OPGW measured based on horizontal distance of line route from Nong bua lam phu substation to Udon Thani 1 substation	50.94	km		XXXXXX	XXXXXX	XXXXXX	XXXXXX	65.817.36	3,352,736.32


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MEDIUM PRICE FOR BID NO. TNRP-L20-OP

Item No.	Description	Estimated Qty.	Unit	Currency	Supply of Equipment		Supply of Equipment		Local Transportation, Construction and Installation (excluding VAT) Baht	
					Foreign Supply		Local Supply			
					CIF Thai Port		Ex-works Price (excluding VAT) Baht			
					Unit Price	Amount	Unit Price	Amount	Unit Price	Amount
1W1.3	Supply and intallation of hardware assemblies and line accessories include splicing work for overhead ground wire with optical fiber (OPGW) including: (a) 2-way joint box with accessories (lump sum) (b) OPGW suspension (Grounded) assembly 22 with armor rods (excluding vibration damper) (lump sum) (c) OPGW tension (Insulated) assembly 23 with armor rods and arcing horns (excluding insulator and vibration damper) (lump sum) (d) OPGW tension (Grounded) assembly 24 with armor rods (excluding vibration damper) (lump sum) (e) Vibration damper assembly with accessories (lump sum) (f) Parallel groove clamps (lump sum) (g) Grounding clamps (lump sum) (h) 1-wire cleat without insulator (lump sum) (i) 2-wire cleat without insulator (lump sum) (j) 6-wire cleat without insulator (lump sum) (k) 1-wire cleat with insulator (lump sum) (l) 6-wire cleat with insulator (lump sum) (m) Clevis type insulator ANSI CLASS 52-4 (292 mm minimum leakage distance and 6,800 kg minimum electromechanical failing load) to be used at take-off structure (lump sum) (n) 3/8" High strength galvanized steel wire for grounding OPGW to tower (lump sum)	lump sum	each							
1W2	Optical fiber cable from joint box at take-off structure to fiber frame termination cabinet at Nong bua lam phu control building at Nong bua lam phu substation									


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MEDIUM PRICE FOR BID NO. TNRP-L20-OP

Item No.	Description	Estimated Qty.	Unit	Currency	Supply of Equipment		Supply of Equipment		Local Transportation, Construction and Installation (excluding VAT) Baht	
					Foreign Supply		Local Supply			
					CIF Thai Port		Ex-works Price (excluding VAT) Baht			
					Unit Price	Amount	Unit Price	Amount	Unit Price	Amount
1W2.1	Supply and installation (Including splicing work) of optical fiber cable and accessories including: (a) 36-core non-metallic optical fiber cable (approx. 150 meters) (b) Rigid steel conduit from take-off structure to cable trench (lump sum) (c) EFLEX and/or HDPE conduit with hot-dip galvanized steel clamp (lump sum) (d) Fiber frame termination cabinet with cable tray (1 set) (e) 36 pigtails (1.5 meter) (1 set) (f) 2-way joint box with insulator and accessories for OPGW cable and 36 core non-metallic optical fiber cable at take-off structure (1 set)	lump sum	each				70,757.00	70,757.00	119,785.00	119,785.00
1W3	Optical fiber cable from joint box at take-off structure to fiber frame termination cabinet at Udon Thani 1 control building at Udon Thani 1 substation									
1W3.1	Supply and installation (Including splicing work) of optical fiber cable and accessories including: (a) 36-core non-metallic optical fiber cable (approx. 250 meters) (b) Rigid steel conduit from take-off structure to cable trench (lump sum) (c) EFLEX and/or HDPE conduit with hot-dip galvanized steel clamp (lump sum) (d) Fiber frame termination cabinet with cable tray (1 set) (e) 36 pigtails (1.5 meter) (1 set) (f) 2-way joint box with insulator and accessories for OPGW cable and 36 core non-metallic optical fiber cable at take-off structure (1 set)	lump sum	each				94,957.00	94,957.00	158,985.00	158,985.00
1W4	Field testing for optical fiber	1	test		XXXXXX	XXXXXX	XXXXXX	XXXXXX	22,000.00	22,000.00
Total Price for 1W				THB	4,640,791.75		Baht		Baht	
							1,846,774.75		3,653,506.32	

MEDIUM PRICE FOR BID NO. TNRP-L20-OP

1X : 230 kV NAKHON PHANOM – NAKHON PHANOM 2 TRANSMISSION LINE

IMPORTANT :

1. All lump sum price shall be based on horizontal distance of line route as specified else-where between the take-off structure. In case of changing of such horizontal distance of line route, the lump sum prices shall be adjusted accordingly.
2. For breakdown price tab sheet, bidder shall fill in all data required for item No., description, estimated Qty, Unit price. Amount price for each item will be calculated automatically.

Item No.	Description	Estimated Qty.	Unit	Currency	Supply of Equipment		Supply of Equipment		Local Transportation, Construction and Installation (excluding VAT) Baht	
					Foreign Supply		Local Supply			
					CIF Thai Port		Ex-works Price (excluding VAT) Baht			
					Unit Price	Amount	Unit Price	Amount	Unit Price	Amount
1X1	Composite overhead ground wire with 36 cores Optical fibers (OPGW) (referred section F-4.3)									
1X1.1	Furnishing OPGW (Ø 11.4 mm)	lump sum	each	THB	1,597,948.31	1,597,948.31	992,286.91	992,286.91	Included in Item 1X1.2	Included in Item 1X1.2
1X1.2	Stringing by controlled tension method, one OPGW measured based on horizontal distance of line route from Nakhon phanom substation to Nakhon phanom 2 substation	17.54	km		XXXXXX	XXXXXX	XXXXXX	XXXXXX	78,005.76	1,368,221.03


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MEDIUM PRICE FOR BID NO. TNRP-L20-OP

Item No.	Description	Estimated Qty.	Unit	Currency	Supply of Equipment		Supply of Equipment		Local Transportation, Construction and Installation (excluding VAT) Baht	
					Foreign Supply		Local Supply			
					CIF Thai Port		Ex-works Price (excluding VAT) Baht			
					Unit Price	Amount	Unit Price	Amount	Unit Price	Amount
1X1.3	Supply and intallation of hardware assemblies and line accessories include splicing work for overhead ground wire with optical fiber (OPGW) including: (a) 2-way joint box with accessories (lump sum) (b) OPGW suspension (Grounded) assembly 22 with armor rods (excluding vibration damper) (lump sum) (c) OPGW tension (Insulated) assembly 23 with armor rods and arcing horns (excluding insulator and vibration damper) (lump sum) (d) OPGW tension (Grounded) assembly 24 with armor rods (excluding vibration damper) (lump sum) (e) Vibration damper assembly with accessories (lump sum) (f) Parallel groove clamps (lump sum) (g) Grounding clamps (lump sum) (h) 1-wire cleat without insulator (lump sum) (i) 2-wire cleat without insulator (lump sum) (j) 6-wire cleat without insulator (lump sum) (k) 1-wire cleat with insulator (lump sum) (l) 6-wire cleat with insulator (lump sum) (m) Clevis type insulator ANSI CLASS 52-4 (292 mm minimum leakage distance and 6,800 kg minimum electromechanical failing load) to be used at take-off structure (lump sum) (n) 3/8" High strength galvanized steel wire for grounding OPGW to tower (lump sum)	lump sum	each							
1X2	Optical fiber cable from joint box at take-off structure to fiber frame termination cabinet at Nakhon phanom control building at Nakhon phanom substation									


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Item No.	Description	Estimated Qty.	Unit	Currency	Supply of Equipment		Supply of Equipment		Local Transportation, Construction and Installation (excluding VAT) Baht	
					Foreign Supply		Local Supply			
					CIF Thai Port		Ex-works Price (excluding VAT) Baht			
					Unit Price	Amount	Unit Price	Amount	Unit Price	Amount
1X2.1	Supply and installation (Including splicing work) of optical fiber cable and accessories including: (a) 36-core non-metallic optical fiber cable (approx. 250 meters) (b) Rigid steel conduit from take-off structure to cable trench (lump sum) (c) EFLEX and/or HDPE conduit with hot-dip galvanized steel clamp (lump sum) (d) Fiber frame termination cabinet with cable tray (1 set) (e) 36 pigtails (1.5 meter) (1 set) (f) 2-way joint box with insulator and accessories for OPGW cable and 36 core non-metallic optical fiber cable at take-off structure (1 set)	lump sum	each				94,957.00	94,957.00	158,985.00	158,985.00
1X3	Optical fiber cable from joint box at take-off structure to fiber frame termination cabinet at Nakhon phanom 2 control building at Nakhon phanom 2 substation									
1X3.1	Supply and installation (Including splicing work) of optical fiber cable and accessories including: (a) 36-core non-metallic optical fiber cable (approx. 250 meters) (b) Rigid steel conduit from take-off structure to cable trench (lump sum) (c) EFLEX and/or HDPE conduit with hot-dip galvanized steel clamp (lump sum) (d) Fiber frame termination cabinet with cable tray (1 set) (e) 36 pigtails (1.5 meter) (1 set) (f) 2-way joint box with insulator and accessories for OPGW cable and 36 core non-metallic optical fiber cable at take-off structure (1 set)	lump sum	each				94,957.00	94,957.00	158,985.00	158,985.00
1X4	Field testing for optical fiber	1	test		XXXXXX	XXXXXX	XXXXXX	XXXXXX	22,000.00	22,000.00
Total Price for 1X				THB	1,597,948.31		Baht		Baht	
							1,182,200.91		1,708,191.03	


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MEDIUM PRICE FOR BID NO. TNRP-L20-OP

1Y : 230 kV NAKHON PHANOM 2 – SAKON NAKHON 2 TRANSMISSION LINE

IMPORTANT :

1. All lump sum price shall be based on horizontal distance of line route as specified else-where between the take-off structure. In case of changing of such horizontal distance of line route, the lump sum prices shall be adjusted accordingly.
2. For breakdown price tab sheet, bidder shall fill in all data required for item No., description, estimated Qty, Unit price. Amount price for each item will be calculated automatically.

Item No.	Description	Estimated Qty.	Unit	Currency	Supply of Equipment		Supply of Equipment		Local Transportation, Construction and Installation (excluding VAT) Baht	
					Foreign Supply		Local Supply			
					CIF Thai Port		Ex-works Price (excluding VAT) Baht			
					Unit Price	Amount	Unit Price	Amount	Unit Price	Amount
1Y1	Composite overhead ground wire with 36 cores Optical fibers (OPGW) (referred section F-4.3)									
1Y1.1	Furnishing OPGW (Ø 11.4 mm)	lump sum	each	THB	6,318,216.67	6,318,216.67	1,973,990.00	1,973,990.00	Included in Item 1Y1.2	Included in Item 1Y1.2
1Y1.2	Stringing by controlled tension method, one OPGW measured based on horizontal distance of line route from Nakhon phanom 2 substation to Sakon nakhon 2 substation	72.82	km		XXXXXX	XXXXXX	XXXXXX	XXXXXX	53,628.96	3,905,260.87


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Item No.	Description	Estimated Qty.	Unit	Currency	Supply of Equipment		Supply of Equipment		Local Transportation, Construction and Installation (excluding VAT) Baht		
					Foreign Supply		Local Supply				
					CIF Thai Port		Ex-works Price (excluding VAT) Baht				
					Unit Price	Amount	Unit Price	Amount	Unit Price	Amount	
1Y1.3	Supply and intallation of hardware assemblies and line accessories include splicing work for overhead ground wire with optical fiber (OPGW) including: (a) 2-way joint box with accessories (lump sum) (b) OPGW suspension (Grounded) assembly 22 with armor rods (excluding vibration damper) (lump sum) (c) OPGW tension (Insulated) assembly 23 with armor rods and arcing horns (excluding insulator and vibration damper) (lump sum) (d) OPGW tension (Grounded) assembly 24 with armor rods (excluding vibration damper) (lump sum) (e) Vibration damper assembly with accessories (lump sum) (f) Parallel groove clamps (lump sum) (g) Grounding clamps (lump sum) (h) 1-wire cleat without insulator (lump sum) (i) 2-wire cleat without insulator (lump sum) (j) 6-wire cleat without insulator (lump sum) (k) 1-wire cleat with insulator (lump sum) (l) 6-wire cleat with insulator (lump sum) (m) Clevis type insulator ANSI CLASS 52-4 (292 mm minimum leakage distance and 6,800 kg minimum electromechanical failing load) to be used at take-off structure (lump sum) (n) 3/8" High strength galvanized steel wire for grounding OPGW to tower (lump sum)	lump sum	each		Included in Item 1Y1.1	Included in Item 1Y1.1	Included in Item 1Y1.1	Included in Item 1Y1.1	Included in Item 1Y1.2	Included in Item 1Y1.2	
1Y2	Optical fiber cable from joint box at take-off structure to fiber frame termination cabinet at Nakhon phanom 2 control building at Nakhon phanom 2 substation										


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Item No.	Description	Estimated Qty.	Unit	Currency	Supply of Equipment		Supply of Equipment		Local Transportation, Construction and Installation (excluding VAT) Baht	
					Foreign Supply		Local Supply			
					CIF Thai Port		Ex-works Price (excluding VAT) Baht			
					Unit Price	Amount	Unit Price	Amount	Unit Price	Amount
1Y2.1	Supply and installation (Including splicing work) of optical fiber cable and accessories including: (a) 36-core non-metallic optical fiber cable (approx. 250 meters) (b) Rigid steel conduit from take-off structure to cable trench (lump sum) (c) EFLEX and/or HDPE conduit with hot-dip galvanized steel clamp (lump sum) (d) Fiber frame termination cabinet with cable tray (1 set) (e) 36 pigtails (1.5 meter) (1 set) (f) 2-way joint box with insulator and accessories for OPGW cable and 36 core non-metallic optical fiber cable at take-off structure (1 set)	lump sum	each				94,957.00	94,957.00	158,985.00	158,985.00
1Y3	Optical fiber cable from joint box at take-off structure to fiber frame termination cabinet at Sakon nakhon 2 control building at Sakon nakhon 2 substation									
1Y3.1	Supply and installation (Including splicing work) of optical fiber cable and accessories including: (a) 36-core non-metallic optical fiber cable (approx. 300 meters) (b) Rigid steel conduit from take-off structure to cable trench (lump sum) (c) EFLEX and/or HDPE conduit with hot-dip galvanized steel clamp (lump sum) (d) Fiber frame termination cabinet with cable tray (1 set) (e) 36 pigtails (1.5 meter) (1 set) (f) 2-way joint box with insulator and accessories for OPGW cable and 36 core non-metallic optical fiber cable at take-off structure (1 set)	lump sum	each				107,057.00	107,057.00	178,585.00	178,585.00
1Y4	Field testing for optical fiber	1	test		XXXXXX	XXXXXX	XXXXXX	XXXXXX	22,000.00	22,000.00
Total Price for 1Y				THB	6,318,216.67		Baht		Baht	
							2,176,004.00		4,264,830.87	

1Z : DISMANTLED EQUIPMENT TO BE PURCHASED BY THE CONTRACTOR

IMPORTANT :

1. Dismantling of the existing transmission lines shall generally conform to Specifications No. TL-07 (Rev.3) : Dismantling Work .
2. Approximate types and quantity of dismantled Equipment to be purchased are shown in Attachment No.2 : List of Equipment to be Dismantled by the Contractor.

Item No.	Description	Estimated Qty.	Unit	Purchase Price Offered for Dismantled Equipment (including VAT) Baht	
				Unit Price	Amount
1Z1	Dismantled equipment of the existing overhead ground wire and/or existing composite overhead ground wire with optical fiber, including hardware assemblies and line accessories of 115 kV KHON KAEN 1 - KHON KAEN 2 TRANSMISSION LINE (approx. 7.13 km in transmission line distance)	lump sum	each		
1Z2	Dismantled equipment of the existing overhead ground wire and/or existing composite overhead ground wire with optical fiber, including hardware assemblies and line accessories of 230 kV CHAIYAPHUM – NAKHON RATCHASIMA 2 TRANSMISSION LINE (approx. 101.46 km in transmission line distance)	lump sum	each		
1Z3	Dismantled equipment of the existing overhead ground wire and/or existing composite overhead ground wire with optical fiber, including hardware assemblies and line accessories of 115 kV SURIN 1 – SURIN 2 TRANSMISSION LINE (approx. 1.20 km in transmission line distance)	lump sum	each		
1Z4	Dismantled equipment of the existing overhead ground wire and/or existing composite overhead ground wire with optical fiber, including hardware assemblies and line accessories of 230 kV SIKHIU 2 (JUNCTION) – NAKHON RATCHASIMA 2 TRANSMISSION LINE (approx. 33.34 km in transmission line distance)	lump sum	each		
1Z5	Dismantled equipment of the existing overhead ground wire and/or existing composite overhead ground wire with optical fiber, including hardware assemblies and line accessories of 230 kV CHAIYAPHUM – KHON KAEN 3 TRANSMISSION LINE (approx. 97.69 km in transmission line distance)	lump sum	each		

MEDIUM PRICE FOR BID NO. TNRP-L20-OP

Item No.	Description	Estimated Qty.	Unit	Purchase Price Offered for Dismantled Equipment (including VAT) Baht	
				Unit Price	Amount
1Z6	Dismantled equipment of the existing overhead ground wire and/or existing composite overhead ground wire with optical fiber, including hardware assemblies and line accessories of 115 kV PAK MUN – UBON RATCHATHANI 2 TRANSMISSION LINE (approx. 70.76 km in transmission line distance)	lump sum	each		
1Z7	Dismantled equipment of the existing overhead ground wire and/or existing composite overhead ground wire with optical fiber, including hardware assemblies and line accessories of 115 kV NONG BUA LAM PHU – UDON THANI 1 TRANSMISSION LINE (approx. 50.94 km in transmission line distance)	lump sum	each		
1Z8	Dismantled equipment of the existing overhead ground wire and/or existing composite overhead ground wire with optical fiber, including hardware assemblies and line accessories of 230 kV NAKHON PHANOM – NAKHON PHANOM 2 TRANSMISSION LINE (approx. 17.54 km in transmission line distance)	lump sum	each		
1Z9	Dismantled equipment of the existing overhead ground wire and/or existing composite overhead ground wire with optical fiber, including hardware assemblies and line accessories of 230 kV NAKHON PHANOM 2 – SAKON NAKHON 2 TRANSMISSION LINE (approx. 72.82 km in transmission line distance)	lump sum	each		
Total Price for 1Z				Baht	679,320.00


 นายพนธ์ จิตตวิริยะกุล
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MEDIUM PRICE FOR BID NO. TNRP-L20-OP

INVITATION TO BID NO. TNRP-L20-OP

TOTAL PRICE FOR SCHEDULE NO. 2

115 KV ANG THONG 1 - SING BURI, 115 KV DOEMBANG NANGBUAT - ANG THONG 2

Line Length 70.51 KM

SUPPLY AND CONSTRUCTION FOR REPLACEMENT OF OVERHEAD GROUND WIRE WITH COMPOSITE OVERHEAD GROUND WIRE WITH OPTICAL FIBER (OPGW)
TELECOMMUNICATION NETWORK RENOVATION PROJECT (TNRP) PHASE 20

Description	Currency	Supply of Equipment	Supply of Equipment	Foreign Currency	Local Currency	Local Transportation	Local Transportation, Construction and Installation	Purchase Price Offered for Dismantled Equipment (including VAT) Baht
		Foreign Supply	Local Supply					
		CIF Thai Port	Ex-works Price (excluding VAT) Baht					
		Amount	Amount					
2I : DISMANTLING WORK							195,876.78	
2O : SUPPLY OF SERVICE OF VEHICLES								
							654,488.00	
2P : SUPPLY OF SPARE EQUIPMENT								
	THB	697,760.00	295,196.00			25,881.00		
2Q : 115 kV ANG THONG 1 - SING BURI TRANSMISSION LINE								
	THB	3,020,978.69	1,272,120.53				2,502,873.66	
2R : 115 kV DOEMBANG NANGBUAT – ANG THONG 2 TRANSMISSION LINE								
	THB	3,402,700.66	1,422,493.88				2,798,248.40	
TOTAL PRICE	THB	7,121,439.35	Baht		Baht	Baht	Baht	Baht
			2,989,810.41			25,881.00	6,151,486.84	
2Z : DISMANTLED EQUIPMENT TO BE PURCHASED BY THE CONTRACTOR							Baht	-105,770.00


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2I : DISMANTLING WORK

IMPORTANT :

1. Dismantling of the existing transmission line shall generally conform to Specification No. TL-07 (Rev.3) : Dismantling Work.
2. Dismantled Equipment as shown in Attachment No.2 shall be purchased by the Contractor at the prices offered in 2Z.

Item No.	Description	Estimated Qty.	Unit	Local Transportation, Construction and Installation (excluding VAT) Baht	
				Unit Price	Amount
2I1	Dismantling work of the existing overhead ground wire of 115 kV ANG THONG 1 - SING BURI TRANSMISSION LINE (approx. 33.16 km in transmission line distance)	lump sum	each	92,118.48	92,118.48
2I2	Dismantling work of the existing overhead ground wire of 115 kV DOEMBANG NANGBUAT – ANG THONG 2 TRANSMISSION LINE (approx. 37.35 km in transmission line distance)	lump sum	each	103,758.30	103,758.30
Total Price for 2I				Baht	195,876.78


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20 : SUPPLY OF SERVICE OF VEHICLES

IMPORTANT :

Item No.	Description	Estimated Qty.	Unit	Local Transportation, Construction and Installation (excluding VAT) Baht	
				Unit Price	Amount
201	Facilities and service of four-wheel-driven, four doors vehicles, at least one ton capacity, 2000 cc. nominal, gasoline engine or 2500 cc. Nominal diesel engine, equipped with air-condition. The vehicles shall be in good condition, which shall be approved by EGAT. In case used Vehicles are proposed, the used period shall not exceed two years. (refer to Article G-6. Housing and Other Facilities.) for 115 kV ANG THONG 1 - SING BURI, 115 kV DOEMBANG NANGBUAT – ANG THONG 2 TRANSMISSION LINE	8	car-month	81,811.00	654,488.00
Total Price for 20				Baht	654,488.00

MEDIUM PRICE FOR BID NO. TNRP-L20-OP

2P : SUPPLY OF SPARE EQUIPMENT

IMPORTANT :

1. Spare Equipment shall be delivered and stored at Bang pa-in 2 or Phachi 2 Substation in Ayutthaya Province by the Contractor.
2. The Contractor shall perform the test on the Equipment for Item No. 2P1 at EGAT's Store to guarantee that there are no damages during the transportation.

Item No.	Description	Estimated Qty.	Unit	Currency	Supply of Equipment		Supply of Equipment		Local Transportation	
					Foreign Supply		Local Supply			
					CIF Thai Port		Ex-works Price (excluding VAT) Baht			
					Unit Price	Amount	Unit Price	Amount	Unit Price	Amount
2P1	Composite overhead ground wire with 36 core optical fibers (11.4 mm. OPGW) 4,000 meter/reel	2	reel	THB	348,880.00	697,760.00			Included in item 2P12	Included in item 2P12
2P2	2-way joint box with accessories for two OPGW cables	4	set				14,616.00	58,464.00	Included in item 2P12	Included in item 2P12
2P3	Tension assembly (grounded) with accessories	20	set				1,820.00	36,400.00	Included in item 2P12	Included in item 2P12
2P4	Suspension assembly (grounded) with accessories	10	set				2,654.00	26,540.00	Included in item 2P12	Included in item 2P12
2P5	Fiber frame termination cabinetwith cable tray	4	set				12,745.00	50,980.00	Included in item 2P12	Included in item 2P12
2P6	36 Pigtails (1.5 meter)	4	set				4,576.00	18,304.00	Included in item 2P12	Included in item 2P12
2P7	1-wire cleat (grounded)	20	set				794.00	15,880.00	Included in item 2P12	Included in item 2P12
2P8	2-wire cleats (grounded)	40	set				825.00	33,000.00	Included in item 2P12	Included in item 2P12
2P9	6-wire cleats (grounded)	32	set				1,464.00	46,848.00	Included in item 2P12	Included in item 2P12
2P10	Parallel groove clamps	20	set				254.00	5,080.00	Included in item 2P12	Included in item 2P12
2P11	Grounding clamps	20	set				185.00	3,700.00	Included in item 2P12	Included in item 2P12
2P12	Local transportation for item 2P1 to 2P11	lump sum	each		XXXXXX	XXXXXX	XXXXXX	XXXXXX	25,881.00	25,881.00
Total Price for 2P				THB	697,760.00		Baht		Baht	
							295,196.00		25,881.00	

MEDIUM PRICE FOR BID NO. TNRP-L20-OP

2Q : 115 kV ANG THONG 1 - SING BURI TRANSMISSION LINE

IMPORTANT :

1. All lump sum price shall be based on horizontal distance of line route as specified else-where between the take-off structure. In case of changing of such horizontal distance of line route, the lump sum prices shall be adjusted accordingly.
2. For breakdown price tab sheet, bidder shall fill in all data required for item No., description, estimated Qty, Unit price. Amount price for each item will be calculated automatically.

Item No.	Description	Estimated Qty.	Unit	Currency	Supply of Equipment		Supply of Equipment		Local Transportation, Construction and Installation (excluding VAT) Baht	
					Foreign Supply		Local Supply			
					CIF Thai Port		Ex-works Price (excluding VAT) Baht			
					Unit Price	Amount	Unit Price	Amount	Unit Price	Amount
2Q1	Composite overhead ground wire with 36 cores Optical fibers (OPGW) (referred section F-4.3)									
2Q1.1	Furnishing OPGW (Ø 11.4 mm)	lump sum	each	THB	3,020,978.69	3,020,978.69	1,094,306.53	1,094,306.53	Included in Item 2Q1.2	Included in Item 2Q1.2
2Q1.2	Stringing by controlled tension method, one OPGW measured based on horizontal distance of line route from Ang thong 1 substation to Sing buri substation	33.16	km		XXXXXX	XXXXXX	XXXXXX	XXXXXX	65,817.36	2,182,503.66


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MEDIUM PRICE FOR BID NO. TNRP-L20-OP

Item No.	Description	Estimated Qty.	Unit	Currency	Supply of Equipment		Supply of Equipment		Local Transportation, Construction and Installation (excluding VAT) Baht	
					Foreign Supply		Local Supply			
					CIF Thai Port		Ex-works Price (excluding VAT) Baht			
					Unit Price	Amount	Unit Price	Amount	Unit Price	Amount
2Q1.3	Supply and intallation of hardware assemblies and line accessories include splicing work for overhead ground wire with optical fiber (OPGW) including: (a) 2-way joint box with accessories (lump sum) (b) OPGW suspension (Grounded) assembly 22 with armor rods (excluding vibration damper) (lump sum) (c) OPGW tension (Insulated) assembly 23 with armor rods and arcing horns (excluding insulator and vibration damper) (lump sum) (d) OPGW tension (Grounded) assembly 24 with armor rods (excluding vibration damper) (lump sum) (e) Vibration damper assembly with accessories (lump sum) (f) Parallel groove clamps (lump sum) (g) Grounding clamps (lump sum) (h) 1-wire cleat without insulator (lump sum) (i) 2-wire cleat without insulator (lump sum) (j) 6-wire cleat without insulator (lump sum) (k) 1-wire cleat with insulator (lump sum) (l) 6-wire cleat with insulator (lump sum) (m) Clevis type insulator ANSI CLASS 52-4 (292 mm minimum leakage distance and 6,800 kg minimum electromechanical failing load) to be used at take-off structure (lump sum) (n) 3/8" High strength galvanized steel wire for grounding OPGW to tower (lump sum)	lump sum	each							
2Q2	Optical fiber cable from joint box at take-off structure to fiber frame termination cabinet at Ang thong 1 control building at Ang thong 1 substation									


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MEDIUM PRICE FOR BID NO. TNRP-L20-OP

Item No.	Description	Estimated Qty.	Unit	Currency	Supply of Equipment		Supply of Equipment		Local Transportation, Construction and Installation (excluding VAT) Baht	
					Foreign Supply		Local Supply			
					CIF Thai Port		Ex-works Price (excluding VAT) Baht			
					Unit Price	Amount	Unit Price	Amount	Unit Price	Amount
2Q2.1	Supply and installation (Including splicing work) of optical fiber cable and accessories including: (a) 36-core non-metallic optical fiber cable (approx. 250 meters) (b) Rigid steel conduit from take-off structure to cable trench (lump sum) (c) EFLEX and/or HDPE conduit with hot-dip galvanized steel clamp (lump sum) (d) Fiber frame termination cabinet with cable tray (1 set) (e) 36 pigtails (1.5 meter) (1 set) (f) 2-way joint box with insulator and accessories for OPGW cable and 36 core non-metallic optical fiber cable at take-off structure (1 set)	lump sum	each				94,957.00	94,957.00	158,985.00	158,985.00
2Q3	Optical fiber cable from joint box at take-off structure to fiber frame termination cabinet at Sing buri 115 kV GIS building at Sing buri substation									
2Q3.1	Supply and installation (Including splicing work) of optical fiber cable and accessories including: (a) 36-core non-metallic optical fiber cable (approx. 200 meters) (b) Rigid steel conduit from take-off structure to cable trench (lump sum) (c) EFLEX and/or HDPE conduit with hot-dip galvanized steel clamp (lump sum) (d) Fiber frame termination cabinet with cable tray (1 set) (e) 36 pigtails (1.5 meter) (1 set) (f) 2-way joint box with insulator and accessories for OPGW cable and 36 core non-metallic optical fiber cable at take-off structure (1 set)	lump sum	each				82,857.00	82,857.00	139,385.00	139,385.00
2Q4	Field testing for optical fiber	1	test		XXXXXX	XXXXXX	XXXXXX	XXXXXX	22,000.00	22,000.00
Total Price for 2Q				THB	3,020,978.69		Baht		Baht	
							1,272,120.53		2,502,873.66	


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MEDIUM PRICE FOR BID NO. TNRP-L20-OP

2R : 115 kV DOEMBANG NANGBUAT – ANG THONG 2 TRANSMISSION LINE

IMPORTANT :

1. All lump sum price shall be based on horizontal distance of line route as specified else-where between the take-off structure. In case of changing of such horizontal distance of line route, the lump sum prices shall be adjusted accordingly.
2. For breakdown price tab sheet, bidder shall fill in all data required for item No., description, estimated Qty, Unit price. Amount price for each item will be calculated automatically.

Item No.	Description	Estimated Qty.	Unit	Currency	Supply of Equipment		Supply of Equipment		Local Transportation, Construction and Installation (excluding VAT) Baht	
					Foreign Supply		Local Supply			
					CIF Thai Port		Ex-works Price (excluding VAT) Baht			
					Unit Price	Amount	Unit Price	Amount	Unit Price	Amount
2R1	Composite overhead ground wire with 36 cores Optical fibers (OPGW) (referred section F-4.3)									
2R1.1	Furnishing OPGW (Ø 11.4 mm)	lump sum	each	THB	3,402,700.66	3,402,700.66	1,232,579.88	1,232,579.88	Included in Item 2R1.2	Included in Item 2R1.2
2R1.2	Stringing by controlled tension method, one OPGW measured based on horizontal distance of line route from Doembang nangbuat substation to Ang thong 2 substation	37.35	km		XXXXXX	XXXXXX	XXXXXX	XXXXXX	65,817.36	2,458,278.40


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Item No.	Description	Estimated Qty.	Unit	Currency	Supply of Equipment		Supply of Equipment		Local Transportation, Construction and Installation (excluding VAT) Baht	
					Foreign Supply		Local Supply			
					CIF Thai Port		Ex-works Price (excluding VAT) Baht			
					Unit Price	Amount	Unit Price	Amount	Unit Price	Amount
2R1.3	Supply and intallation of hardware assemblies and line accessories include splicing work for overhead ground wire with optical fiber (OPGW) including: (a) 2-way joint box with accessories (lump sum) (b) OPGW suspension (Grounded) assembly 22 with armor rods (excluding vibration damper) (lump sum) (c) OPGW tension (Insulated) assembly 23 with armor rods and arcing horns (excluding insulator and vibration damper) (lump sum) (d) OPGW tension (Grounded) assembly 24 with armor rods (excluding vibration damper) (lump sum) (e) Vibration damper assembly with accessories (lump sum) (f) Parallel groove clamps (lump sum) (g) Grounding clamps (lump sum) (h) 1-wire cleat without insulator (lump sum) (i) 2-wire cleat without insulator (lump sum) (j) 6-wire cleat without insulator (lump sum) (k) 1-wire cleat with insulator (lump sum) (l) 6-wire cleat with insulator (lump sum) (m) Clevis type insulator ANSI CLASS 52-4 (292 mm minimum leakage distance and 6,800 kg minimum electromechanical failing load) to be used at take-off structure (lump sum) (n) 3/8" High strength galvanized steel wire for grounding OPGW to tower (lump sum)									
		lump sum	each		Included in Item 2R1.1	Included in Item 2R1.1	Included in Item 2R1.1	Included in Item 2R1.1	Included in Item 2R1.2	Included in Item 2R1.2
2R2	Optical fiber cable from joint box at take-off structure to fiber frame termination cabinet at Doembang nangbuat control building at Doembang nangbuat substation									


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Item No.	Description	Estimated Qty.	Unit	Currency	Supply of Equipment		Supply of Equipment		Local Transportation, Construction and Installation (excluding VAT) Baht	
					Foreign Supply		Local Supply			
					CIF Thai Port		Ex-works Price (excluding VAT) Baht			
					Unit Price	Amount	Unit Price	Amount	Unit Price	Amount
2R2.1	Supply and installation (Including splicing work) of optical fiber cable and accessories including: (a) 36-core non-metallic optical fiber cable (approx. 150 meters) (b) Rigid steel conduit from take-off structure to cable trench (lump sum) (c) EFLEX and/or HDPE conduit with hot-dip galvanized steel clamp (lump sum) (d) Fiber frame termination cabinet with cable tray (1 set) (e) 36 pigtails (1.5 meter) (1 set) (f) 2-way joint box with insulator and accessories for OPGW cable and 36 core non-metallic optical fiber cable at take-off structure (1 set)	lump sum	each		XXXXXX	XXXXXX	70,757.00	70,757.00	119,785.00	119,785.00
2R3	Optical fiber cable from joint box at take-off structure to fiber frame termination cabinet at Ang thong 2 control building at Ang thong 2 substation									
2R3.1	Supply and installation (Including splicing work) of optical fiber cable and accessories including: (a) 36-core non-metallic optical fiber cable (approx. 350 meters) (b) Rigid steel conduit from take-off structure to cable trench (lump sum) (c) EFLEX and/or HDPE conduit with hot-dip galvanized steel clamp (lump sum) (d) Fiber frame termination cabinet with cable tray (1 set) (e) 36 pigtails (1.5 meter) (1 set) (f) 2-way joint box with insulator and accessories for OPGW cable and 36 core non-metallic optical fiber cable at take-off structure (1 set)	lump sum	each		XXXXXX	XXXXXX	119,157.00	119,157.00	198,185.00	198,185.00
2R4	Field testing for optical fiber	1	test		XXXXXX	XXXXXX	XXXXXX	XXXXXX	22,000.00	22,000.00
Total Price for 2R				THB	3,402,700.66		Baht		Baht	
							1,422,493.88		2,798,248.40	

2Z : DISMANTLED EQUIPMENT TO BE PURCHASED BY THE CONTRACTOR

IMPORTANT :

1. Dismantling of the existing transmission lines shall generally conform to Specifications No. TL-07 (Rev.3) : Dismantling Work .
2. Approximate types and quantity of dismantled Equipment to be purchased are shown in Attachment No.2 : List of Equipment to be Dismantled by the Contractor.

Item No.	Description	Estimated Qty.	Unit	Purchase Price Offered for Dismantled Equipment (including VAT) Baht	
				Unit Price	Amount
2Z1	Dismantled equipment of the existing overhead ground wire and/or existing composite overhead ground wire with optical fiber, including hardware assemblies and line accessories of 115 kV ANG THONG 1 - SING BURI TRANSMISSION LINE (approx. 33.16 km in transmission line distance)	lump sum	each		
2Z2	Dismantled equipment of the existing overhead ground wire and/or existing composite overhead ground wire with optical fiber, including hardware assemblies and line accessories of 115 kV DOEMBANG NANGBUAT – ANG THONG 2 TRANSMISSION LINE (approx. 37.35 km in transmission line distance)	lump sum	each		
Total Price for 2Z				Baht	105,770.00


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MEDIUM PRICE FOR BID NO. TNRP-L20-OP

INVITATION TO BID NO. TNRP-L20-OP

TOTAL PRICE FOR SCHEDULE NO. 3

115 KV LAMPHUN 2 - CHOM THONG, 115 KV PHRAE - NAN, 230 KV NONG BUA RAWE - BUENG SAM PHAN

Line Length 237.16 KM

SUPPLY AND CONSTRUCTION FOR REPLACEMENT OF OVERHEAD GROUND WIRE WITH COMPOSITE OVERHEAD GROUND WIRE WITH OPTICAL FIBER (OPGW)

TELECOMMUNICATION NETWORK RENOVATION PROJECT (TNRP) PHASE 20

Description	Currency	Supply of Equipment	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) Baht					
		Amount	Amount					
3I : DISMANTLING WORK							658,830.48	
3O : SUPPLY OF SERVICE OF VEHICLES								
3P : SUPPLY OF SPARE EQUIPMENT								
	THB	697,760.00	545,348.00			25,881.00		
3Q : 115 kV LAMPHUN 2 - CHOM THONG (JUNCTION) TRANSMISSION LINE								
	THB	3,006,402.19	1,171,883.40				2,436,785.16	
3R : 115 kV PHRAE - NAN TRANSMISSION LINE								
	THB	408,850.85	2,100,538.52				6,021,063.63	
3S : 230 kV NONG BUA RAWE – BUENG SAM PHAN TRANSMISSION LINE								
	THB	8,329,425.98	2,477,026.00				5,282,389.20	
TOTAL PRICE	THB	12,442,439.02	Baht		Baht	Baht	Baht	Baht
			6,294,795.92			25,881.00	15,217,178.47	
							Baht	-355,740.00

3I : DISMANTLING WORK

IMPORTANT :

1. Dismantling of the existing transmission line shall generally conform to Specification No. TL-07 (Rev.3) : Dismantling Work.
2. Dismantled Equipment as shown in Attachment No.2 shall be purchased by the Contractor at the prices offered in 3Z.

Item No.	Description	Estimated Qty.	Unit	Local Transportation, Construction and Installation (excluding VAT) Baht	
				Unit Price	Amount
3I1	Dismantling work of the existing overhead ground wire of 115 kV LAMPHUN 2 - CHOM THONG (JUNCTION) TRANSMISSION LINE (approx. 33.00 km in transmission line distance)	lump sum	each	91,674.00	91,674.00
3I2	Dismantling work of the existing overhead ground wire of 115 kV PHRAE - NAN TRANSMISSION LINE (approx. 108.16 km in transmission line distance)	lump sum	each	300,468.48	300,468.48
3I3	Dismantling work of the existing overhead ground wire of 230 kV NONG BUA RAWE – BUENG SAM PHAN TRANSMISSION LINE (approx. 96.00 km in transmission line distance)	lump sum	each	266,688.00	266,688.00
Total Price for 3I				Baht	658,830.48


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MEDIUM PRICE FOR BID NO. TNRP-L20-OP

30 : SUPPLY OF SERVICE OF VEHICLES

IMPORTANT :

Item No.	Description	Estimated Qty.	Unit	Local Transportation, Construction and Installation (excluding VAT) Baht	
				Unit Price	Amount
301	Facilities and service of four-wheel-driven, four doors vehicles, at least one ton capacity, 2000 cc. nominal, gasoline engine or 2500 cc. Nominal diesel engine, equipped with air-condition. The vehicles shall be in good condition, which shall be approved by EGAT. In case used Vehicles are proposed, the used period shall not exceed two years. (refer to Article G-6. Housing and Other Facilities.) for 115 kV LAMPHUN 2 - CHOM THONG (JUNCTION), 115 kV PHRAE - NAN, 230 kV NONG BUA RAWE – BUENG SAM PHAN TRANSMISSION LINE	10	car-month	81,811.00	818,110.00
Total Price for 30				Baht	818,110.00


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3P : SUPPLY OF SPARE EQUIPMENT

IMPORTANT :

1. Spare Equipment shall be delivered and stored at Kao Liao's Storage in Nakhon Sawan Province by the Contractor.
2. The Contractor shall perform the test on the Equipment for Item No. 3P1 at EGAT's Store to guarantee that there are no damages during the transportation.

Item No.	Description	Estimated Qty.	Unit	Currency	Supply of Equipment		Supply of Equipment		Local Transportation	
					Foreign Supply		Local Supply			
					CIF Thai Port		Ex-works Price (excluding VAT) Baht		(excluding VAT) Baht	
					Unit Price	Amount	Unit Price	Amount	Unit Price	Amount
3P1	Composite overhead ground wire with 36 core optical fibers (11.4 mm. OPGW) 4,000 meter/reel	2	reel	THB	348,880.00	697,760.00			Included in item 3P12	Included in item 3P12
3P2	2-way joint box with accessories for two OPGW cables	12	set				14,616.00	175,392.00	Included in item 3P12	Included in item 3P12
3P3	Tension assembly (grounded) with accessories	30	set				1,820.00	54,600.00	Included in item 3P12	Included in item 3P12
3P4	Suspension assembly (grounded) with accessories	15	set				2,654.00	39,810.00	Included in item 3P12	Included in item 3P12
3P5	Fiber frame termination cabinet with cable tray	4	set				12,745.00	50,980.00	Included in item 3P12	Included in item 3P12
3P6	36 Pigtails (1.5 meter)	4	set				4,576.00	18,304.00	Included in item 3P12	Included in item 3P12
3P7	1-wire cleat (grounded)	30	set				794.00	23,820.00	Included in item 3P12	Included in item 3P12
3P8	2-wire cleats (grounded)	120	set				825.00	99,000.00	Included in item 3P12	Included in item 3P12
3P9	6-wire cleats (grounded)	48	set				1,464.00	70,272.00	Included in item 3P12	Included in item 3P12
3P10	Parallel groove clamps	30	set				254.00	7,620.00	Included in item 3P12	Included in item 3P12
3P11	Grounding clamps	30	set				185.00	5,550.00	Included in item 3P12	Included in item 3P12
3P12	Local transportation for item 3P1 to 3P11	lump sum	each		XXXXXX	XXXXXX	XXXXXX	XXXXXX	25,881.00	25,881.00
Total Price for 3P				THB	697,760.00		Baht		Baht	
							545,348.00		25,881.00	


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MEDIUM PRICE FOR BID NO. TNRP-L20-OP

3Q : 115 kV LAMPHUN 2 - CHOM THONG (JUNCTION) TRANSMISSION LINE

IMPORTANT :

1. All lump sum price shall be based on horizontal distance of line route as specified else-where between the take-off structure. In case of changing of such horizontal distance of line route, the lump sum prices shall be adjusted accordingly.
2. For breakdown price tab sheet, bidder shall fill in all data required for item No., description, estimated Qty, Unit price. Amount price for each item will be calculated automatically.

Item No.	Description	Estimated Qty.	Unit	Currency	Supply of Equipment		Supply of Equipment		Local Transportation, Construction and Installation (excluding VAT) Baht	
					Foreign Supply		Local Supply			
					CIF Thai Port		Ex-works Price (excluding VAT) Baht			
					Unit Price	Amount	Unit Price	Amount	Unit Price	Amount
3Q1	Composite overhead ground wire with 36 cores Optical fibers (OPGW) (referred section F-4.3)									
3Q1.1	Furnishing OPGW (Ø 11.4 mm)	lump sum	each	THB	3,006,402.19	3,006,402.19	1,089,026.40	1,089,026.40	Included in Item 3Q1.2	Included in Item 3Q1.2
3Q1.2	Stringing by controlled tension method, one OPGW measured based on horizontal distance of line route from Lamphun 2 substation to Chom thong junction (Str.32/2)	33.00	km		XXXXXX	XXXXXX	XXXXXX	XXXXXX	68,951.52	2,275,400.16



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MEDIUM PRICE FOR BID NO. TNRP-L20-OP

Item No.	Description	Estimated Qty.	Unit	Currency	Supply of Equipment		Supply of Equipment		Local Transportation, Construction and Installation (excluding VAT) Baht	
					Foreign Supply		Local Supply			
					CIF Thai Port		Ex-works Price (excluding VAT) Baht			
					Unit Price	Amount	Unit Price	Amount	Unit Price	Amount
3Q1.3	Supply and intallation of hardware assemblies and line accessories include splicing work for overhead ground wire with optical fiber (OPGW) including: (a) 2-way joint box with accessories (lump sum) (b) OPGW suspension (Grounded) assembly 22 with armor rods (excluding vibration damper) (lump sum) (c) OPGW tension (Insulated) assembly 23 with armor rods and arcing horns (excluding insulator and vibration damper) (lump sum) (d) OPGW tension (Grounded) assembly 24 with armor rods (excluding vibration damper) (lump sum) (e) Vibration damper assembly with accessories (lump sum) (f) Parallel groove clamps (lump sum) (g) Grounding clamps (lump sum) (h) 1-wire cleat without insulator (lump sum) (i) 2-wire cleat without insulator (lump sum) (j) 6-wire cleat without insulator (lump sum) (k) 1-wire cleat with insulator (lump sum) (l) 6-wire cleat with insulator (lump sum) (m) Clevis type insulator ANSI CLASS 52-4 (292 mm minimum leakage distance and 6,800 kg minimum electromechanical failing load) to be used at take-off structure (lump sum) (n) 3/8" High strength galvanized steel wire for grounding OPGW to tower (lump sum)	lump sum	each		Included in Item 3Q1.1	Included in Item 3Q1.1	Included in Item 3Q1.1	Included in Item 3Q1.1	Included in Item 3Q1.2	Included in Item 3Q1.2


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Item No.	Description	Estimated Qty.	Unit	Currency	Supply of Equipment		Supply of Equipment		Local Transportation, Construction and Installation (excluding VAT) Baht	
					Foreign Supply		Local Supply			
					CIF Thai Port		Ex-works Price (excluding VAT) Baht			
					Unit Price	Amount	Unit Price	Amount	Unit Price	Amount
3Q2	Optical fiber cable from joint box at take-off structure to fiber frame termination cabinet at Lamphun 2 control building at Lamphun 2 substation									
3Q2.1	Supply and installation (Including splicing work) of optical fiber cable and accessories including: (a) 36-core non-metallic optical fiber cable (approx. 200 meters) (b) Rigid steel conduit from take-off structure to cable trench (lump sum) (c) EFLEX and/or HDPE conduit with hot-dip galvanized steel clamp (lump sum) (d) Fiber frame termination cabinet with cable tray (1 set) (e) 36 pigtails (1.5 meter) (1 set) (f) 2-way joint box with insulator and accessories for OPGW cable and 36 core non-metallic optical fiber cable at take-off structure (1 set)									
		lump sum	each				82,857.00	82,857.00	139,385.00	139,385.00
3Q3	Field testing for optical fiber	1	test		XXXXXX	XXXXXX	XXXXXX	XXXXXX	22,000.00	22,000.00
Total Price for 3Q				THB	3,006,402.19		Baht		Baht	
							1,171,883.40		2,436,785.16	


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MEDIUM PRICE FOR BID NO. TNRP-L20-OP

3R : 115 kV PHRAE - NAN TRANSMISSION LINE

IMPORTANT :

1. All lump sum price shall be based on horizontal distance of line route as specified else-where between the take-off structure. In case of changing of such horizontal distance of line route, the lump sum prices shall be adjusted accordingly.
2. For breakdown price tab sheet, bidder shall fill in all data required for item No., description, estimated Qty, Unit price. Amount price for each item will be calculated automatically.
3. 11.4 mm diameter OPGW supplied by EGAT shall be provided at EGAT's Kaoliao store in Nakhonsawan Province and Lanpang 2 store in Lampang Province.
4. Hardware assemblies and line accessories supplied by EGAT shall be provided at EGAT's Kaoliao store in Nakhonsawan Province.

Item No.	Description	Estimated Qty.	Unit	Currency	Supply of Equipment		Supply of Equipment		Local Transportation, Construction and Installation (excluding VAT) Baht	
					Foreign Supply		Local Supply			
					CIF Thai Port		Ex-works Price (excluding VAT) Baht			
					Unit Price	Amount	Unit Price	Amount	Unit Price	Amount
3R1	Composite overhead ground wire with 36 cores Optical fibers (OPGW) (referred section F-4.3)									
3R1.1	Furnishing OPGW (Ø 11.4 mm)	lump sum	each	THB	408,850.85	408,850.85	1,813,824.52	1,813,824.52	Included in Item 3R1.3	Included in Item 3R1.3
3R1.2	Furnishing OPGW (Ø 11.4 mm) to be supplied by EGAT, details in document "OPGW and Hardware from TNRP-L16-OP"	102.908	km		Supplied by EGAT	Supplied by EGAT	Supplied by EGAT	Supplied by EGAT	Included in Item 3R1.3	Included in Item 3R1.3
3R1.3	Stringing by controlled tension method, one OPGW measured based on horizontal distance of line route from Phrae substation to Nan substation	108.16	km		XXXXXX	XXXXXX	XXXXXX	XXXXXX	51,075.20	5,524,293.63


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Item No.	Description	Estimated Qty.	Unit	Currency	Supply of Equipment		Supply of Equipment		Local Transportation, Construction and Installation (excluding VAT) Baht	
					Foreign Supply		Local Supply			
					CIF Thai Port		Ex-works Price (excluding VAT) Baht			
					Unit Price	Amount	Unit Price	Amount	Unit Price	Amount
3R1.4	Supply and intallation of hardware assemblies and line accessories include splicing work for overhead ground wire with optical fiber (OPGW) including: (a) 2-way joint box with accessories (lump sum) (b) OPGW suspension (Grounded) assembly 22 with armor rods (excluding vibration damper) (lump sum) (c) OPGW tension (Insulated) assembly 23 with armor rods and arcing horns (excluding insulator and vibration damper) (lump sum) (d) OPGW tension (Grounded) assembly 24 with armor rods (excluding vibration damper) (lump sum) (e) Vibration damper assembly with accessories (lump sum) (f) Parallel groove clamps (lump sum) (g) Grounding clamps (lump sum) (h) 1-wire cleat without insulator (lump sum) (i) 2-wire cleat without insulator (lump sum) (j) 6-wire cleat without insulator (lump sum) (k) 1-wire cleat with insulator (lump sum) (l) 6-wire cleat with insulator (lump sum) (m) Clevis type insulator ANSI CLASS 52-4 (292 mm minimum leakage distance and 6,800 kg minimum electromechanical failing load) to be used at take-off structure (lump sum) (n) 3/8" High strength galvanized steel wire for grounding OPGW to tower (lump sum)	lump sum	each		Included in Item 3R1.1	Included in Item 3R1.1	Included in Item 3R1.1	Included in Item 3R1.1	Included in Item 3R1.3	Included in Item 3R1.3
3R1.5	Hardware assemblies and line accessories for overhead ground wire with optical fiber (OPGW) to be supplied by EGAT, details as follows: (a) 2-way joint box with accessories (26 sets) (b) 2-wire cleat without insulator (275 sets) (c) 6-wire cleat without insulator (88 sets)	lump sum	each		Supplied by EGAT	Supplied by EGAT	Supplied by EGAT	Supplied by EGAT	Included in Item 3R1.3	Included in Item 3R1.3
3R2	Optical fiber cable from joint box at take-off structure to fiber frame termination cabinet at Phrae control building at Phrae substation									


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Item No.	Description	Estimated Qty.	Unit	Currency	Supply of Equipment		Supply of Equipment		Local Transportation, Construction and Installation (excluding VAT) Baht	
					Foreign Supply		Local Supply			
					CIF Thai Port		Ex-works Price (excluding VAT) Baht			
					Unit Price	Amount	Unit Price	Amount	Unit Price	Amount
3R2.1	Supply and installation (Including splicing work) of optical fiber cable and accessories including: (a) 36-core non-metallic optical fiber cable (approx. 100 meters) (b) Rigid steel conduit from take-off structure to cable trench (lump sum) (c) EFLEX and/or HDPE conduit with hot-dip galvanized steel clamp (lump sum) (d) Fiber frame termination cabinet with cable tray (1 set) (e) 36 pigtails (1.5 meter) (1 set) (f) 2-way joint box with insulator and accessories for OPGW cable and 36 core non-metallic optical fiber cable at take-off structure (1 set)	lump sum	each				58,657.00	58,657.00	100,185.00	100,185.00
3R3	Optical fiber cable from joint box at take-off structure to fiber frame termination cabinet at Nan 500 kV GIS building at Nan substation									
3R3.1	Supply and installation (Including splicing work) of optical fiber cable and accessories including: (a) 36-core non-metallic optical fiber cable (approx. 800 meters) (b) Rigid steel conduit from take-off structure to cable trench (lump sum) (c) EFLEX and/or HDPE conduit with hot-dip galvanized steel clamp (lump sum) (d) Fiber frame termination cabinet with cable tray (1 set) (e) 36 pigtails (1.5 meter) (1 set) (f) 2-way joint box with insulator and accessories for OPGW cable and 36 core non-metallic optical fiber cable at take-off structure (1 set)	lump sum	each				228,057.00	228,057.00	374,585.00	374,585.00
3R4	Field testing for optical fiber	1	test		XXXXX	XXXXX	XXXXX	XXXXX	22,000.00	22,000.00
Total Price for 3R				THB	408,850.85		Baht		Baht	
							2,100,538.52		6,021,063.63	


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MEDIUM PRICE FOR BID NO. TNRP-L20-OP

3S : 230 kV NONG BUA RAWE – BUENG SAM PHAN TRANSMISSION LINE

IMPORTANT :

1. All lump sum price shall be based on horizontal distance of line route as specified else-where between the take-off structure. In case of changing of such horizontal distance of line route, the lump sum prices shall be adjusted accordingly.
2. For breakdown price tab sheet, bidder shall fill in all data required for item No., description, estimated Qty, Unit price. Amount price for each item will be calculated automatically.

Item No.	Description	Estimated Qty.	Unit	Currency	Supply of Equipment		Supply of Equipment		Local Transportation, Construction and Installation (excluding VAT) Baht	
					Foreign Supply		Local Supply			
					CIF Thai Port		Ex-works Price (excluding VAT) Baht			
					Unit Price	Amount	Unit Price	Amount	Unit Price	Amount
3S1	Composite overhead ground wire with 36 cores Optical fibers (OPGW) (referred section F-4.3)									
3S1.1	Furnishing OPGW (Ø 11.4 mm)	lump sum	each	THB	8,329,425.98	8,329,425.98	2,262,912.00	2,262,912.00	Included in Item 3S1.2	Included in Item 3S1.2
3S1.2	Stringing by controlled tension method, one OPGW measured based on horizontal distance of line route from Nong bua rawe substation to Bueng sam phan substation	96.00	km		XXXXXX	XXXXXX	XXXXXX	XXXXXX	51,075.20	4,903,219.20


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MEDIUM PRICE FOR BID NO. TNRP-L20-OP

Item No.	Description	Estimated Qty.	Unit	Currency	Supply of Equipment		Supply of Equipment		Local Transportation, Construction and Installation (excluding VAT) Baht	
					Foreign Supply		Local Supply			
					CIF Thai Port		Ex-works Price (excluding VAT) Baht			
					Unit Price	Amount	Unit Price	Amount	Unit Price	Amount
3S1.3	Supply and intallation of hardware assemblies and line accessories include splicing work for overhead ground wire with optical fiber (OPGW) including: (a) 2-way joint box with accessories (lump sum) (b) OPGW suspension (Grounded) assembly 22 with armor rods (excluding vibration damper) (lump sum) (c) OPGW tension (Insulated) assembly 23 with armor rods and arcing horns (excluding insulator and vibration damper) (lump sum) (d) OPGW tension (Grounded) assembly 24 with armor rods (excluding vibration damper) (lump sum) (e) Vibration damper assembly with accessories (lump sum) (f) Parallel groove clamps (lump sum) (g) Grounding clamps (lump sum) (h) 1-wire cleat without insulator (lump sum) (i) 2-wire cleat without insulator (lump sum) (j) 6-wire cleat without insulator (lump sum) (k) 1-wire cleat with insulator (lump sum) (l) 6-wire cleat with insulator (lump sum) (m) Clevis type insulator ANSI CLASS 52-4 (292 mm minimum leakage distance and 6,800 kg minimum electromechanical failing load) to be used at take-off structure (lump sum) (n) 3/8" High strength galvanized steel wire for grounding OPGW to tower (lump sum)	lump sum	each		Included in Item 3S1.1	Included in Item 3S1.1	Included in Item 3S1.1	Included in Item 3S1.1	Included in Item 3S1.2	Included in Item 3S1.2
3S2	Optical fiber cable from joint box at take-off structure to fiber frame termination cabinet at Nong bua rawe 230 kV GIS building at Nong bua rawe substation									



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MEDIUM PRICE FOR BID NO. TNRP-L20-OP

Item No.	Description	Estimated Qty.	Unit	Currency	Supply of Equipment		Supply of Equipment		Local Transportation, Construction and Installation (excluding VAT) Baht	
					Foreign Supply		Local Supply			
					CIF Thai Port		Ex-works Price (excluding VAT) Baht			
					Unit Price	Amount	Unit Price	Amount	Unit Price	Amount
3S2.1	Supply and installation (Including splicing work) of optical fiber cable and accessories including: (a) 36-core non-metallic optical fiber cable (approx. 300 meters) (b) Rigid steel conduit from take-off structure to cable trench (lump sum) (c) EFLEX and/or HDPE conduit with hot-dip galvanized steel clamp (lump sum) (d) Fiber frame termination cabinet with cable tray (1 set) (e) 36 pigtails (1.5 meter) (1 set) (f) 2-way joint box with insulator and accessories for OPGW cable and 36 core non-metallic optical fiber cable at take-off structure (1 set)	lump sum	each				107,057.00	107,057.00	178,585.00	178,585.00
3S3	Optical fiber cable from joint box at take-off structure to fiber frame termination cabinet at Bueng sam phan control building at Bueng sam phan substation									
3S3.1	Supply and installation (Including splicing work) of optical fiber cable and accessories including: (a) 36-core non-metallic optical fiber cable (approx. 300 meters) (b) Rigid steel conduit from take-off structure to cable trench (lump sum) (c) EFLEX and/or HDPE conduit with hot-dip galvanized steel clamp (lump sum) (d) Fiber frame termination cabinet with cable tray (1 set) (e) 36 pigtails (1.5 meter) (1 set) (f) 2-way joint box with insulator and accessories for OPGW cable and 36 core non-metallic optical fiber cable at take-off structure (1 set)	lump sum	each				107,057.00	107,057.00	178,585.00	178,585.00
3S4	Field testing for optical fiber	1	test		XXXXX	XXXXX	XXXXX	XXXXX	22,000.00	22,000.00
				THB	8,329,425.98		Baht		Baht	
Total Price for 3S							2,477,026.00		5,282,389.20	


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3Z : DISMANTLED EQUIPMENT TO BE PURCHASED BY THE CONTRACTOR

IMPORTANT :

1. Dismantling of the existing transmission lines shall generally conform to Specifications No. TL-07 (Rev.3) : Dismantling Work .
2. Approximate types and quantity of dismantled Equipment to be purchased are shown in Attachment No.2 : List of Equipment to be Dismantled by the Contractor.

Item No.	Description	Estimated Qty.	Unit	Purchase Price Offered for Dismantled Equipment (including VAT) Baht	
				Unit Price	Amount
3Z1	Dismantling work of the existing overhead ground wire of 115 kV LAMPHUN 2 - CHOM THONG (JUNCTION) TRANSMISSION LINE (approx. 33.00 km in transmission line distance)	lump sum	each		
3Z2	Dismantling work of the existing overhead ground wire of 115 kV PHRAE - NAN TRANSMISSION LINE (approx. 108.16 km in transmission line distance)	lump sum	each		
3Z3	Dismantling work of the existing overhead ground wire of 230 kV NONG BUA RAWE – BUENG SAM PHAN TRANSMISSION LINE (approx. 96.00 km in transmission line distance)	lump sum	each		
Total Price for 3Z				Baht	355,740.00


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Important Information
for
Invitation to Bid No. TNRP-L20-OP

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

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

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

Article A-6. Preparation and Delivery of Bids

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

Article A-7. Availability of Bidding Documents

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

Channel of Documents Submission

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

- Article B-1. Preparation of Bids
- Article B-4. Validity of Bids
- Article D-9. Notices
- Article E-20. Documents Required for Each Shipment
- Article F-10. Payment

Article B-2. Bid Prices

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

The following paragraph has also been added :-

“Prices for the following Equipment manufactured outside Thailand which was imported before the technical proposal opening date shall be firm ex-works and quoted in Thai baht, provided that the Bidder shall submit any document(s) evidencing the importation date of such Equipment:

- Joint box for optical fiber cable”

Article E-19. Shipment

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

Article F-10. Payment

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

DATA SHEET
for
Invitation to Bid No. TNRP-L20-OP

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 273,170.- or THB 8,955,000.-.

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

Nonthaburi
Thailand

INVITATION TO BID NO. TNRP-L20-OP

SUPPLY AND CONSTRUCTION FOR REPLACEMENT OF OVERHEAD GROUND WIRE WITH COMPOSITE OVERHEAD GROUND WIRE WITH OPTICAL FIBER (OPGW)

TELECOMMUNICATION NETWORK RENOVATION PROJECT (TNRP) PHASE 20

A-1. Invitation

The Electricity Generating Authority of Thailand (EGAT) hereby invites sealed bids for Supply and Construction for Replacement of Overhead Ground Wire with Composite Overhead Ground Wire with Optical Fiber (OPGW) under Telecommunication Network Renovation Project (TNRP) Phase 20 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 composed of three (3) Schedules as described below :

Schedule 1 : Supply and Construction for Replacement of Overhead Ground Wire with Composite Overhead Ground Wire with Optical Fiber (OPGW) for the 230 kV and 115 kV Transmission Lines in the northeastern region of Thailand as follows :

- 115 kV Khon Kaen 1 - Khon Kaen 2 Transmission Line, having a distance of 7.13 kilometers in length
- 230 kV Chaiyaphum – Nakhon Ratchasima 2 Transmission Line, having a distance of 101.46 kilometers in length
- 115 kV Surin 1 – Surin 2 Transmission Line, having a distance of 1.20 kilometers in length
- 230 kV Sikhiu 2 (Junction) – Nakhon Ratchasima 2 Transmission Line, having a distance of 33.34 kilometers in length
- 230 kV Chaiyaphum – Khon Kaen 3 Transmission Line, having a distance of 97.69 kilometers in length
- 115 kV Pak Mun – Ubon Ratchathani 2 Transmission Line, having a distance of 70.76 kilometers in length
- 115 kV Nong Bua Lam Phu – Udon Thani 1 Transmission Line, having a distance of 50.94 kilometers in length
- 230 kV Nakhon Phanom – Nakhon Phanom 2 Transmission Line, having a distance of 17.54 kilometers in length

- 230 kV Nakhon Phanom 2 – Sakon Nakhon 2 Transmission Line, having a distance of 72.82 kilometers in length

Schedule 2 : Supply and Construction for Replacement of Overhead Ground Wire with Composite Overhead Ground Wire with Optical Fiber (OPGW) for the 115 kV Transmission Lines in the central region of Thailand as follows :

- 115 kV Ang Thong 1 – Sing Buri Transmission Line, having a distance of 33.16 kilometers in length
- 115 kV Doembang Nangbuat – Ang Thong 2 Transmission Line, having a distance of 37.35 kilometers in length

Schedule 3 : Supply and Construction for Replacement of Overhead Ground Wire with Composite Overhead Ground Wire with Optical Fiber (OPGW) for the 230 kV and 115 kV Transmission Line in the northern and northeastern region of Thailand as follows :

- 115 kV Lamphun 2 – Chom Thong (Junction) Transmission Line, having a distance of 33.00 kilometers in length
- 115 kV Phrae – Nan Transmission Line, having a distance of 108.16 kilometers in length
- 230 kV Nong Bua Rawe – Bueng Sam Phan Transmission Line, having a distance of 96.00 kilometers in length

For replacement of overhead ground wire with composite overhead ground wire with optical fiber (OPGW), the Contractor shall perform dismantling of the existing overhead ground wire, including its hardware and line accessories, prior to stringing of OPGW.

To allow the Contractor to perform the Work under this Contract, EGAT will de-energize a circuit of each line during day time (6:00 a.m. to 5:00 p.m.) in the period as specified in the de-energizing plan attached with Attachment No. 1: Additional Conditions for Overhead Ground Wire Replacement Work. The Contractor shall then perform the Work under the condition that one circuit conductor under the to-be-replaced overhead ground wire is de-energized and the other circuit conductor is energized. The Contractor shall therefore take all precautions to protect workmen from any danger which may occur and to prevent and be responsible for any damages during performing such work, which shall be in accordance with Specifications No. TL-06 (Rev.0) : Stringing of Conductor, Overhead Ground Wire and OPGW Parallel to Live Line.

Regarding this, the Bidders shall, for bidding, submit the detailed work procedure, which will include methods of stringing of OPGW and dismantling of existing overhead ground wires and their accessories under the conditions mentioned above, safety program for performing the Work, personnel required for performing the Work, and list of tools and Equipment to be employed with his bid for EGAT's consideration.

Furthermore, the Bidders shall note that the drawings of towers attached in these Bidding Documents are for reference only. Examination of the existing towers and modification of their overhead ground wire cross-arms for stringing of OPGW, if necessary, shall be under the responsibility of the Contractor.

It shall be noted that the dismantling Work of the existing overhead ground wires including hardware assemblies and line accessories shall be conducted in accordance with the requirements in Specifications No. TL-07 (Rev.3) : Dismantling Work. List of dismantled Equipment to be purchased by the Contractor is shown in 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 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. The portion of design and detailing which are provided by EGAT is not under the Contractor's design responsibility.

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 turnkey contract as contractor (not as subcontractor) in overseas country (not his own country) or with EGAT either on the replacement of overhead ground wire with composite overhead ground wire with optical fiber (OPGW) on the transmission line or on supply and construction of transmission line with composite overhead ground wire with optical fiber (OPGW). The voltage level of transmission line for the said Work shown on such record shall be as follows :

- 1) 110 kV or higher for supply and construction for replacement of overhead ground wire with composite overhead ground wire with optical fiber (OPGW) on 115 kV and 230 kV transmission line
- 2) 220 kV or higher for supply and construction for replacement of overhead ground wire with composite overhead ground wire with optical fiber (OPGW) on 500 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. It is not allowed to combine the experience records of each firm of the joint venture/consortium in order to meet the experience requirements.

- b. Himself, or either firm of the joint venture/consortium or his subcontractor or the combination thereof, having excellent reputation and adequate technical knowledge and record(s) of experience either in the replacement of overhead ground wire with composite overhead ground wire with optical fiber (OPGW) on the transmission line or in the construction of transmission line with composite overhead ground wire with optical fiber (OPGW). The voltage level of transmission line for the said Work shown on such record shall be as described in a. 1) and a. 2). The accumulative distance of composite overhead ground wire with optical fiber (OPGW) shall be not less than 20 kilometers in length or not less than the Work specified under this Invitation.
- c. In case the scope of work under this Invitation requires stringing of composite overhead ground wire with optical fiber (OPGW) on which the other circuit conductor is under energizing condition while performing such work, himself, or either firm of the joint venture/consortium or his subcontractor or the combination thereof shall have adequate technical knowledge and practical experience in stringing of line conductors or overhead ground wire or OPGW parallel to a live line having voltage level as described in a. 1) and a. 2).

With respect to item b. and c., 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. and c. 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.

- d. Proposing 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:

- 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 accumulative distance of not less than 20 kilometers.

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.

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, insulators for overhead ground wire and for OPGW, hardware assemblies and line accessories for overhead ground wire and for OPGW, 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:
 - Manufacturer for overhead ground wire, 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

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

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

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

The USB flash drive shall contain electronic files of the proposal in the following formats :

- ***PDF files of all pages of each volume of the proposal, and***
- ***Excel files of filled-in Proposal Data, and***

- *Excel files of filled-in Price Schedule*

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

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

INVITATION TO BID NO. TNRP-L20-OP
SUPPLY AND CONSTRUCTION FOR REPLACEMENT OF OVERHEAD
GROUND WIRE WITH COMPOSITE OVERHEAD GROUND WIRE WITH
OPTICAL FIBER (OPGW)
TELECOMMUNICATION NETWORK RENOVATION PROJECT
(TNRP) PHASE 20

and shall be addressed and delivered to **EGAT** 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 the *place and* time specified *in Tentative Schedule*.

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

A-7. Availability of Bidding Documents

The Bidding Documents are available for examination *and online purchase at <http://www4.egat.co.th/fprocurement/biddingeng/>* and can be obtained *by downloading via link provided by EGAT* upon payment to EGAT, non-refundable, in the amount of USD...100.-... or Baht...3,000.-... . These prices include the value added tax.

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

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
Saensaeab
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

Soravich Hiraman

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
Lumphatew, 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)

Dulhunty Power (Thailand) Co., Ltd.

1/5 Moo 3
Nam Daeng
Muang Chachoengsao
Chachoengsao 24000
Tel : 033 590 841
Fax : 033 590 842

- (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, 6th 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
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)

Sorachit Hiraman

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. 22nd 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

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

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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

16th 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.

21st Floor, O-NES Tower,
6 Sukhumvit Soi 6
Klongtoey Sub-District
Klongtoey District
Bangkok 10110
Tel : 0 2653 2550
Fax : 0 2653 2613-14

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

Soravit Hiraman

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,
Samsennog, Huaykwang,
Bangkok 10310
Tel : 0 2975 9901
Fax : 0 2975 9925

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

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.

Soravich Hiraman

SECTION H

ATTACHMENTS

- Attachment No. 1 : Additional Conditions for Overhead Ground Wire Replacement Work
- 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

ATTACHMENT NO. 1
ADDITIONAL CONDITIONS
FOR OVERHEAD GROUND WIRE REPLACEMENT WORK

EGAT hereby specifies additional conditions and requirements to the Contractor for performing the work of replacement of existing overhead ground wires with new composite overhead ground wires with optical fiber for this Contract as follows :

1. The Contractor shall note that the dismantling of the existing overhead ground wire and stringing of new composite overhead ground wire with optical fiber, including installation of associated hardware and line accessories, shall be performed while one circuit conductor under the replacing overhead ground wire is under de-energized condition and the other circuit conductor is under energized condition. EGAT will allow de-energizing of the specified circuit of each transmission line according to the tentative de-energizing schedule hereto attached, and EGAT will de-energize the transmission lines only at day time (during 6:00 a.m. to 5:00 p.m.)

However, it is to be noted that the attached de-energizing schedule is just a tentative schedule. The effective de-energizing schedule will be discussed and agreed upon by EGAT and the successful Bidder after Award of the Contract. The Contractor shall therefore be responsible for developing detailed work plan, work procedures and safety program describing his activities and the safety and grounding methods that he proposes to implement and to follow while performing such work. The detailed work plan, work procedures and safety program will be applied to all aspects of the Contractor's work performance and shall be submitted to EGAT for review and approval before commencement of the work.

Furthermore, it is required that the Contractor follow appropriate safety and grounding procedures, such as those discussed in IEEE Standard 524-1980 and Specifications No. TL-06 : Stringing of Conductor, Overhead Ground Wire and OPGW Parallel to Live Line, during the course of dismantling and wire stringing activities. Wire stringing operations for OPGW will be conducted in accordance with Specifications attached to these Contract Documents.

2. The Contractor shall estimate quantities of joint boxes to be installed on each transmission line from structure lists furnished in these Contract Documents.

In addition, the Contractor shall be responsible for modification of cable attachment devices of overhead ground wire cross-arms of the existing towers, as necessary, for suitable suspension or termination of hardware assemblies for new composite overhead ground wire with optical fiber. The devices shall be modified to have minimum ultimate tensile strength equal to that of the new OPGW assemblies as specified in the EGAT Telecommunication Equipment Specifications. Such modification shall be submitted to EGAT for approval.

3. The drawings to be submitted for approval shall be in accordance with the list attached herewith.

List of Approval Drawings for fiber Optic Transmission

Item No.	Drawing Description	Drawing Number
1	Location diagram for joint box	DW-FOT-D02-209-Rn-01
2	Position of OPGW stringing	DW-FOT-D02-222-Rn-01
3	Installation arrangement of 2-way joint box and accessories at tower arm #3	DW-FOT-D01-221-01
4	Installation arrangement of joint box and accessories at TOS	DW-FOT-D01-211-01
5	Route of direct buried cable and installation detail	DW-FOT-D03-204-XXXX-02
6	Fiber termination box installation & detail	DW-FOT-D03-216-XXXX-01
7	Rack cabinet & fiber frame termination installation & detail	DW-FOT-D03-215-XXXX-01
8	Repeater station drawing	DW-FOT-D03-217-XXXX-03
9	Installation of optical fiber cable at repeater	DW-FOT-D03-204-XXXX-03
10	Installation drawing and method of OPGW/OFC in joint box at tower and TOS	DW-FOT-D01-233-01
11	Optical fiber connection diagram	DW-FOT-D02-213-Rn-01
12	Equipment drawing for OPGW, OFC joint box, tension & suspension clamp, cleat ground type, vibration damper jumper clamp, Heli formed reinforced rods, fiber optic Heli formed suspension unit, OPGW dead end, bow shackle, twisted bow shackle, chain link, extension link, clevis thimble termination	-
13	Hardware list for OPGW	-
14	OPGW test report	-

Legend

XXXX	Station name
N	Region number
1:	Central region operation division
2:	Northeastern region operation division
3:	Southern region operation division
4:	Northern region operation division
5:	Metropolitan area operation division
All:	more than one region

PROCUREMENT SCHEDULE

Project Name: Telecommunication Network Renovation (TNRP) Phase 20

[illegible]

S = Start of Work

DL = Complete Land Data

Ds = Complete Survey Data

Te = Complete Technical Data

Pe = Medium Cost Approval

A = TOR Approval

B = Bid Issue

C = Bid Opening

C1 = Technical Bid Opening

C2 = Price Opening

G, Gc = Letter of Award of Contract

H = Contract Sign

K = Completion

J = Delivery

SED = Schedule Energized Data

SCOD = Schedule Commercial Operation Data

F.E. = Foreign Equipment

L.C. = Local Content

Constr. = Construction

F.E. = Foreign Equipment

L.C. = Local Content

Constr. = Construction

Previous Plan

Current Plan

 Actual

Schedule

DE-ENERGIZING SCHEDULE

Project Name: Telecommunication Network Renovation Phase 20 (TNRP L20 OP)

No.	Description	Distance (km)	2026 (2569)												2027 (2570)												Remark
			Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec				
1	Received LI																										
2	Equipment shipment																										
3	Construction work																										
3.1	<u>Schedule 1</u>																										
3.1.1	KK1 - KK2	7.129																							on 115 kV KK1 - KK2 transmission line		
3.1.2	CYP - NR2	101.459																							on 230 kV CYP – NR2 transmission line		
3.1.3	SU1 - SU2	1.200																							on 115 kV SU1 – SU2 transmission line		
3.1.4	SK12 (J) – NR2	33.437																							on 230 kV SK12 – NR2 transmission line		
3.1.5	CYP - KK3	97.691																							on 230 kV CYP – KK3 transmission line		
3.1.6	PMN - UB2	70.764																							on 115 kV PMN – UB2 transmission line		
3.1.7	NBL - UD1	50.936																							on 115 kV NBL – UD1 transmission line		
3.1.8	NN - NN2	17.538																							on 230 kV NN – NN2 transmission line		
3.1.9	NN2 - SO2	72.823																							on 230 kV NN2 – SO2 transmission line		
3.2	<u>Schedule 2</u>																										
3.2.1	AT1 - SI	33.16																							on 115 kV AT1 - SI transmission line		
3.2.2	DBN – AT2	37.354																							on 115 kV DBN – AT2 transmission line		
3.3	<u>Schedule 3</u>																										
3.3.1	LN2 - CTG(J)	33.000																							on 115 kV LN2 - CTG transmission line		
3.3.2	PR - NA	108.163																							on 115 kV PR - NA transmission line		
3.3.3	NBR – BGS	96.000																							on 230 kV NBR – BGS transmission line		
Total Distance		760.654																									

ATTACHMENT NO. 2

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>
Part 1 :	<u>115 kV Khon Kaen 1 - Khon Kaen 2 Transmission Line</u> (The dismantled Equipment as listed below shall be purchased by the Contractor)	
1.1	The existing overhead ground wire and/or existing composite overhead ground wire with optical fiber	7.13 km
1.2	Others	To be specified at site
Part 2 :	<u>230 kV Chaivaphum – Nakhon Ratchasima 2 Transmission Line</u> (The dismantled Equipment as listed below shall be purchased by the Contractor)	
2.1	The existing overhead ground wire and/or existing composite overhead ground wire with optical fiber	101.46 km
2.2	Others	To be specified at site
Part 3 :	<u>115 kV Surin 1 – Surin 2 Transmission Line</u> (The dismantled Equipment as listed below shall be purchased by the Contractor)	
3.1	The existing overhead ground wire and/or existing composite overhead ground wire with optical fiber	1.20 km
3.2	Others	To be specified at site

<u>Item</u>	<u>Description</u>	<u>Estimated Quantity</u>
Part 4 : <u>230 kV Sikhiu 2 (Junction) – Nakhon Ratchasima 2 Transmission Line</u> (The dismantled Equipment as listed below shall be purchased by the Contractor)		
4.1	The existing overhead ground wire and/or existing composite overhead ground wire with optical fiber	33.44 km
4.2	Others	To be specified at site
Part 5 : <u>230 kV Chaiphaphum – Khon Kaen 3 Transmission Line</u> (The dismantled Equipment as listed below shall be purchased by the Contractor)		
5.1	The existing overhead ground wire and/or existing composite overhead ground wire with optical fiber	97.69 km
5.2	Others	To be specified at site
Part 6 : <u>115 kV Pak Mun – Ubon Ratchathani 2 Transmission Line</u> (The dismantled Equipment as listed below shall be purchased by the Contractor)		
6.1	The existing overhead ground wire and/or existing composite overhead ground wire with optical fiber	70.76 km
6.2	Others	To be specified at site
Part 7 : <u>115 kV Nong Bua Lam Phu – Udon Thani 1 Transmission Line</u> (The dismantled Equipment as listed below shall be purchased by the Contractor)		
7.1	The existing overhead ground wire and/or existing composite overhead ground wire with optical fiber	50.94 km
7.2	Others	To be specified at site

<u>Item</u>	<u>Description</u>	<u>Estimated Quantity</u>
Part 8 :	<u>230 kV Nakhon Phanom – Nakhon Phanom 2 Transmission Line</u> (The dismantled Equipment as listed below shall be purchased by the Contractor)	
8.1	The existing overhead ground wire and/or existing composite overhead ground wire with optical fiber	17.54 km
8.2	Others	To be specified at site
Part 9 :	<u>230 kV Nakhon Phanom 2 – Sakon Nakhon 2 Transmission Line</u> (The dismantled Equipment as listed below shall be purchased by the Contractor)	
9.1	The existing overhead ground wire and/or existing composite overhead ground wire with optical fiber	72.82 km
9.2	Others	To be specified at site
Part 10 :	<u>115 kV Ang Thong 1 – Sing Buri Transmission Line</u> (The dismantled Equipment as listed below shall be purchased by the Contractor)	
10.1	The existing overhead ground wire and/or existing composite overhead ground wire with optical fiber	33.16 km
10.2	Others	To be specified at site
Part 11 :	<u>115 kV Doembang Nangbuat – Ang Thong 2 Transmission Line</u> (The dismantled Equipment as listed below shall be purchased by the Contractor)	
11.1	The existing overhead ground wire and/or existing composite overhead ground wire with optical fiber	37.35 km
11.2	Others	To be specified at site

<u>Item</u>	<u>Description</u>	<u>Estimated Quantity</u>
Part 12 :	<u>115 kV Lamphun 2 – Chom Thong (Junction) Transmission Line</u> (The dismantled Equipment as listed below shall be purchased by the Contractor)	
12.1	The existing overhead ground wire and/or existing composite overhead ground wire with optical fiber	33.00 km
12.2	Others	To be specified at site
Part 13 :	<u>115 kV Phrae – Nan Transmission Line</u> (The dismantled Equipment as listed below shall be purchased by the Contractor)	
13.1	The existing overhead ground wire and/or existing composite overhead ground wire with optical fiber	108.16 km
13.2	Others	To be specified at site
Part 14 :	<u>230 kV Nong Bua Rawe – Bueng Sam Phan Transmission Line</u> (The dismantled Equipment as listed below shall be purchased by the Contractor)	
14.1	The existing overhead ground wire and/or existing composite overhead ground wire with optical fiber	96.00 km
14.2	Others	To be specified at site

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.