

การไฟฟ้าฝ่ายผลิตแห่งประเทศไทย

**REGISTRATION FORM**

INVITATION TO BID NO. TS12-L-10

FOR SUPPLY AND CONSTRUCTION OF TRANSMISSION LINES

230 KV BAN PONG 2 - KAMPHAENG SAEN

AND SECTIONALIZING OF 230 KV THA TAKO - NONG BUA RAWE TO

BUENG SAM PHAN SUBSTATION

TRANSMISSION SYSTEM EXPANSION PROJECT NO. 12

AVAILABLE DURATION FOR PURCHASING April 30, 2019 TO June 14, 2019

PRICE USD 160.- OR THB 5,000.-

**COMPLETE DATA IS REQUIRED FOR THE BIDDER'S OWN BENEFITS**

(โปรดกรอกรายละเอียดให้ครบถ้วนเพื่อประโยชน์ของบริษัท)

**Step 1** : Fill out this Registration Form in English (Typing is preferred)

**Step 2** : Submit this form for payment at Receivable Cashier Section (1<sup>st</sup> Floor, TOR 100 Bldg., Counter 4-8) Tel no. 02 436 5512

**Step 3** : Bring the payment receipt and the copy of filled-out Registration Form to receive the bidding documents at International Procurement Department - Transmission Segment (Room No. 1202/2, 12<sup>th</sup> Floor, Building Tor. 101) Tel no. 02 436 0241-42

| FOR PURCHASER  |               |   | TAX ID :             |
|--|---------------|---|----------------------|
| NO.  | RECEIPT NO. : | DATE :                                    | PURCHASER (ผู้ซื้อ): |
| <b>BIDDER'S NAME</b><br>(บริษัทผู้ซื้อเอกสาร)              |               |   |                      |
| <b>ADDRESS</b><br>(ที่อยู่)                                |               | <b>COUNTRY :</b>                          |                      |
| ATTN. (ผู้รับผิดชอบ):                                      |               | FAX NO.:                                  | TEL.:                |
| E-mail :   |               |   |                      |
| <b>LOCAL REPRESENTATIVE</b><br>(ตัวแทนในประเทศ)            |               |   |                      |
| <b>ADDRESS</b><br>(ที่อยู่)                                |               | <b>TAX ID :</b>                           |                      |
| ATTN. (ผู้รับผิดชอบ):                                      |               | FAX NO.:                                  | TEL.:                |
| E-mail :   |               |   |                      |
| FOR PROCUREMENT OFFICER                                    |               | CHANGE OF BIDDER'S NAME                   | TAX ID :             |
| <b>NEW BIDDER'S NAME</b><br>(ชื่อผู้ซื้อเอกสารเปลี่ยนเป็น) |               |   |                      |
| <b>ADDRESS</b><br>(ที่อยู่)                                |               | <b>COUNTRY :</b>                          |                      |
| ATTN. (ผู้รับผิดชอบ):                                      |               | FAX NO.:                                  | TEL.:                |
| E-mail :   |               |   |                      |
| <b>LOCAL REPRESENTATIVE</b><br>(ตัวแทนในประเทศ)            |               |   |                      |
| <b>ADDRESS</b><br>(ที่อยู่)                                |               | <b>TAX ID :</b>                           |                      |
| ATTN. (ผู้รับผิดชอบ):                                      |               | FAX NO.:                                  | TEL.:                |
| E-mail :   |               |   |                      |
| FOR PROCUREMENT OFFICER                                    |               | FOR PURCHASER                             |                      |
| Procurement Officer<br>(ผู้ส่งมอบเอกสาร)                   |               | Document received by<br>(ผู้รับมอบเอกสาร) |                      |



**INVITATION TO BID NO. TS12-L-10**  
**SUPPLY AND CONSTRUCTION OF TRANSMISSION LINES**  
**230 KV BAN PONG 2 - KAMPHAENG SAEN**  
**AND SECTIONALIZING OF 230 KV THA TAKO - NONG BUA RAWE TO**  
**BUENG SAM PHAN SUBSTATION**  
**TRANSMISSION SYSTEM EXPANSION PROJECT NO. 12**

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

**Place of Construction** :

- From Ban Pong 2 Substation to Kamphaeng Saen Substation (approx. 22 kilometers)
- From Tha Tako – Nong Bua Rawe Transmission Line to Bueng Sam Phan Substation (approx. 3.8 kilometers)

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

THB 201,000,000.- (excluding cost of the Dismantled Equipment to be purchased by Bidder)

**Eligibility of Bidders**

1. The Bidder shall be a juristic person who provides such services and shall not be named in the List of Work Abandoners published by the Office of Prime Minister 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 in CD-ROM will be available for examination of Bidder's Qualifications and purchase during 8:00 hrs. to 15:00 hrs., Bangkok Standard Time, as from April 30, 2019 to June 14, 2019 at USD 160.- or THB 5,000.- per copy, non-refundable, at the following address :

International Procurement Department - Transmission Segment  
(Room No. 1202/2, 12<sup>th</sup> Floor, Building Tor. 101)  
Procurement and Inventory Management Division  
Electricity Generating Authority of Thailand  
Bangkruai, Nonthaburi 11130, Thailand  
Telephone no. 66 2436 0242  
E-mail : [procurement.tse@egat.co.th](mailto:procurement.tse@egat.co.th)

*Nilanate Osotpanapusi*

For more details and downloading Registration Form for purchasing Bidding Documents on website : <http://www4.egat.co.th/fprocurement/biddingeng/>

Payment can be made by a certified cheque or money order payable to EGAT or by a telegraphic transfer to EGAT's current 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.

Bidding Documents in CD-ROM will be either airmailed or airfreighted to the buyer at EGAT's expense upon receipt of the relevant remittance. In case the buyer requires the Bidding Documents to be sent by Express Mail Service (EMS), the charge will be at the buyer's expense.

**Delivery of Bids**

Bids shall be submitted at Room No. 1202/1, 12<sup>th</sup> Floor, Building Tor. 101 during 9:30 hrs. to 10:00 hrs., Bangkok Standard Time, July 10, 2019 and will be opened publicly at 10:00 hrs.

ELECTRICITY GENERATING AUTHORITY OF THAILAND

April 23, 2019

*Nilanate Osotpavapust*

(Mrs. Nilanate Osotpavapust)

Chief, International Procurement Department -  
Transmission Segment



## ประกาศการไฟฟ้าฝ่ายผลิตแห่งประเทศไทย เรื่อง ประกวดราคาจ้าง เลขที่ TS12-L-10

การไฟฟ้าฝ่ายผลิตแห่งประเทศไทย (กฟผ.) มีความประสงค์จะจัดหาและจ้างก่อสร้างสายส่งไฟฟ้าแรงสูง 230 KV บ้านโป่ง 2 - กำแพงแสน และจัดหาและจ้างก่อสร้างตัดสายส่งไฟฟ้าแรงสูง 230 KV ท่าตะโก - หอนงบัวระเหว ลงที่สถานีไฟฟ้าแรงสูงบึงสามพัน สำหรับโครงการขยายระบบส่งไฟฟ้าระยะที่ 12 โดยทำสัญญาแบบปรับราคาได้ (ค่า k) โดยใช้งบประมาณ กฟผ.

### สถานที่ก่อสร้าง :

- จากสถานีไฟฟ้าแรงสูงบ้านโป่ง 2 ถึง สถานีไฟฟ้าแรงสูงกำแพงแสน (ระยะทางประมาณ 22 กิโลเมตร)
- จากสายส่งไฟฟ้าแรงสูงท่าตะโก - หอนงบัวระเหว ลงที่ สถานีไฟฟ้าแรงสูงบึงสามพัน (ระยะทางประมาณ 3.8 กิโลเมตร)

### ราคากลาง (รวมภาษีมูลค่าเพิ่มและค่าใช้จ่ายอื่นๆ) :

201,000,000.- บาท (ไม่รวมราคาอุปกรณ์รื้อถอนที่กำหนดให้ผู้เสนอราคาปรับซื้อจาก กฟผ.)

### คุณสมบัติของผู้เสนอราคา

1. ต้องเป็นนิติบุคคลผู้มีอาชีพรับจ้างตามประกวดราคาจ้างดังกล่าว และต้องไม่เป็นผู้ทำงานซึ่งสำนักนายกรัฐมนตรีได้แจ้งเวียนชื่อไว้ หรือต้องไม่เป็นผู้ที่ กฟผ. ห้ามติดต่อหรือห้ามเข้าเสนอราคา หรือต้องไม่เป็นผู้ที่ได้รับผลของการสั่งให้นิติบุคคลหรือบุคคลอื่นเป็นผู้ทำงานตามคำสั่ง กฟผ.
2. ต้องไม่เป็นผู้มีผลประโยชน์ร่วมกันกับผู้เสนอราคารายอื่น ณ วันประกาศประกวดราคาครั้งนี้เป็นต้นไป หรือต้องไม่เป็นผู้กระทำการอันเป็นการขัดขวางการแข่งขันราคาอย่างเป็นธรรมในการดำเนินการประกวดราคาครั้งนี้
3. ต้องไม่เป็นที่ปรึกษาของ กฟผ. หรือมีส่วนร่วมในบริษัทที่ปรึกษาของ กฟผ. ในงานนี้ หรือต้องไม่มีผู้ปฏิบัติงาน กฟผ. เข้าไปมีส่วนร่วมในกิจการของผู้เสนอราคา ไม่ว่าจะในฐานะผู้ถือหุ้นที่มีสิทธิควบคุมการจัดการ กรรมการ ผู้อำนวยการ ผู้จัดการ พนักงาน ลูกจ้าง ตัวแทน หรือที่ปรึกษา ยกเว้น ในกรณีที่ผู้ปฏิบัติงานได้รับคำสั่งอย่างเป็นทางการจาก กฟผ. ให้ไปปฏิบัติงานหรือเข้าร่วมในกิจการของผู้เสนอราคา
4. ต้องไม่เป็นผู้ได้รับเอกลิขสิทธิ์หรือความคุ้มครอง ซึ่งอาจปฏิเสธไม่ยอมขึ้นศาลไทย เว้นแต่รัฐบาลของผู้เสนอราคาได้มีคำสั่งให้สละสิทธิ์และความคุ้มครองเช่นว่านั้น
5. ผู้ประสงค์เข้าประกวดราคาในนามของกิจการร่วมค้าหรือกิจการค้าร่วม (Joint Venture or Consortium) จะต้องดำเนินการทุกขั้นตอนของการประกวดราคา ในนามของกิจการร่วมค้าหรือกิจการค้าร่วม ตั้งแต่การเสนอราคาจนถึงสิ้นสุดข้อผูกพันกับ กฟผ.

### การขายเอกสารประกวดราคา

ผู้สนใจติดต่อขอทราบรายละเอียด เพื่อตรวจสอบคุณสมบัติของผู้เสนอราคา และขอซื้อเอกสารประกวดราคา ในราคาชุดละ 5,000.- บาท ได้ที่ แผนกจัดจ้างต่างประเทศสายงานระบบส่ง (ห้อง 1202/2 ชั้น 12 อาคาร ท.101) กองจัดซื้อจัดจ้างต่างประเทศสายงานระบบส่ง ฝ่ายจัดซื้อจัดจ้างและบริหารพัสดุ การไฟฟ้าฝ่ายผลิตแห่งประเทศไทย เชียงสะพานพระราม 7 จังหวัดนนทบุรี ในวันทำการระหว่างเวลา 08:00 น. ถึง 15:00 น. ตั้งแต่วันที่ 30 เมษายน 2562 ถึงวันที่ 14 มิถุนายน 2562 หรือสอบถามทางโทรศัพท์ หมายเลข 0 2436 0242 หรืออีเมลล์ [procurement.tse@egat.co.th](mailto:procurement.tse@egat.co.th) ทั้งนี้ สามารถ download แบบฟอร์มลงทะเบียนผู้ซื้อเอกสารประกวดราคาได้ที่เว็บไซต์ <http://www4.egat.co.th/fprocurement/biddingeng/>

นางแสง ใจฉกาอภิง

## การยื่นซองประกวดราคา

กำหนดยื่นซองประกวดราคา ในวันที่ 10 กรกฎาคม 2562 เวลา 9:30 น. ถึง 10:00 น. และเปิดซองประกวดราคา เวลา 10:00 น. ณ ห้อง 1202/1 ชั้น 12 อาคาร ท.101 การไฟฟ้าฝ่ายผลิตแห่งประเทศไทย เชียงสะพานพระราม 7 จังหวัดนนทบุรี

ประกาศ ณ วันที่ 23 เมษายน 2562

**นิงเนต ใสงองตมิ**

(นางนิลเนตร ไอสถภาวุชิต)

หัวหน้ากองจัดซื้อจัดจ้างต่างประเทศสายงานระบบส่ง

ตารางแสดงวงเงินงบประมาณที่ได้รับจัดสรรและราคากลาง(ราคาอ้างอิง)  
ในการจัดซื้อจัดจ้างที่มีใช้งานก่อสร้าง

1. ชื่อโครงการ ประกวตราคา เลขที่ TS12-L-10  
จัดหาและจ้างก่อสร้างสายส่ง 230 KV บ้านโป่ง 2 - กำแพงแสน และจัดหาและจ้างก่อสร้างตัด  
สายส่ง 230 KV ท่าตะโก - หนองบัวระเหว ลงที่ สฟ.บึงสามพัน  
โครงการขยายระบบส่งไฟฟ้าระยะที่ 12  
/หน่วยงานเจ้าของโครงการ ฝ่ายแผนงานและโครงการระบบส่ง การไฟฟ้าฝ่ายผลิตแห่งประเทศไทย
2. วงเงินงบประมาณที่ได้รับจัดสรร  
โครงการขยายระบบส่งไฟฟ้าระยะที่ 12 งบประมาณ 60,000 ล้านบาท
3. วันที่กำหนดราคากลาง 20 มีนาคม 2562 (วันที่ ชสพ. อนุมัติ )  
ราคารวมภาษีมูลค่าเพิ่มและค่าใช้จ่ายอื่นๆ เป็นเงิน 201,000,000.00 บาท ราคา/หน่วย ตามเอกสารแนบ
4. แหล่งที่มาของราคากลาง หลักเกณฑ์การกำหนดราคากลางงานจัดซื้อจัดจ้างสายงานพัฒนาระบบส่ง
5. รายชื่อเจ้าหน้าที่ผู้กำหนดราคากลาง
  - 5.1 นายศุภฤกษ์ สุจารีรัตนพงษ์ นวส-วช.
  - 5.2 นายสมปอง บวรธีระกิจชัย หปส-ส. กวสส-ส.
  - 5.3 นางสาวสิรินยา ดันส์จจา วศ.7 หปส-ส. กวสส-ส.

หมายเหตุ ค่าใช้จ่ายอื่นๆ ได้แก่ ค่าใช้จ่ายที่ กพผ. ต้องจ่ายตามวิธีการพิจารณาเปรียบเทียบราคาที่กำหนดไว้  
ในเอกสารประกวดราคา เช่น อากรขาเข้า เป็นต้น



นางสาววัลลภา ชีวนากรณ์กุล  
ทจตส-ท.

23 เม.ย. 2562

**DETAILS OF THE MEDIUM COST FOR BID NO. TS12-L-10**

**SCHEDULE 1 : 230 kV Ban Pong 2 - Kamphaeng Saen ( 22 km)**

| Description   | Total<br>(Baht)       |
|---|-----------------------|
| 1A : PRELIMINARY WORK                                     | 1,548,590.00          |
| 1B : TOWER FOUNDATIONS                                    | 22,247,129.00         |
| 1C : TOWERS   | 57,439,511.25         |
| 1D : INSULATOR STRING AND OVERHEAD GROUND WIRE ASSEMBLIES | 16,366,308.00         |
| 1E : CONDUCTOR AND OVERHEAD GROUND WIRE                   | 7,716,162.50          |
| 1F : LINE ACCESSORIES                                     | 1,287,600.00          |
| 1G : GROUNDING MATERIALS                                  | 777,974.00            |
| 1H : OPTICAL FIBER AND LINE ACCESSORIES                   | 5,468,808.50          |
| 1I : DISMANTLING WORK                                     | 2,254,000.00          |
| 1N : TEST OF EQUIPMENT                                    | 393,750.00            |
| 1O : SUPPLY OF SERVICE OF VEHICLES                        | 3,588,000.00          |
| 1P : SUPPLY OF SPARE EQUIPMENT                            | 4,470,317.29          |
| 1Q : DISMANTLING OF TEMPORARY DETOUR LINE                 | 4,393,000.00          |
| <b>Total for Schedule 1</b>                               | <b>127,951,150.54</b> |
| <b>Adjusted Price (Import Duty &amp; Tax + VAT)</b>       | <b>8,956,580.54</b>   |
| <b>Total Price Schedule 1</b>                             | <b>136,907,731.08</b> |

**SCHEDULE 2 : Sectionalizing of 230 kV Tha Tako - Nong Bua Rawe to Bung Sam Phan ( 3.55 km)**

| Description   | Total<br>(Baht)      |
|---|----------------------|
| 2A : PRELIMINARY WORK                                     | 319,930.00           |
| 2B : TOWER FOUNDATIONS                                    | 14,429,603.25        |
| 2C : TOWERS   | 29,976,704.88        |
| 2D : INSULATOR STRING AND OVERHEAD GROUND WIRE ASSEMBLIES | 6,426,777.00         |
| 2E : CONDUCTOR AND OVERHEAD GROUND WIRE                   | 3,298,802.50         |
| 2F : LINE ACCESSORIES                                     | 423,990.00           |
| 2G : GROUNDING MATERIALS                                  | 223,940.00           |
| 2H : OPTICAL FIBER AND LINE ACCESSORIES                   | 1,613,575.00         |
| 2I : DISMANTLING WORK                                     | 47,380.00            |
| 2J : TEMPORARY DETOUR LINES                               | 3,456,001.15         |
| 2N : TEST OF EQUIPMENT                                    | 183,750.00           |
| 2Q : DISMANTLING OF TEMPORARY DETOUR LINE                 | 61,985.00            |
| <b>Total for Schedule 2</b>                               | <b>60,462,438.78</b> |
| <b>Adjusted Price (Import Duty &amp; Tax + VAT)</b>       | <b>4,232,370.72</b>  |
| <b>Total Price Schedule 2</b>                             | <b>64,694,809.50</b> |

|   |                       |
|---|-----------------------|
| <b>Summary Price (Schedule 1 and 2)</b>             | <b>188,413,589.32</b> |
| <b>Adjusted Price (Import Duty &amp; Tax + VAT)</b> | <b>13,188,951.26</b>  |
| <b>Total Price for Schedule 1 and 2</b>             | <b>201,602,540.58</b> |

|   |                       |
|---|-----------------------|
| <b>MEDIUM COST OF BID NO. TS12-L-10</b> | <b>201,000,000.00</b> |
|---|-----------------------|

Depun

นางสาววัลลภา ชิวธน  
หจทส-ท

(นางสาวพนา สุทวกุล)

22 มี.ค. 62

**Important Information**  
**for**  
**Invitation to Bid No. TS12-L-10**

---

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 B-2. Bid Prices:**

The prices for dismantled Equipment, previously specified as minimum prices, shall be **exact prices** as stated in Data Sheet.

**Article F-10. Payment:**

The exchange rate used for payment of foreign currency to the local Contractor, in case the local Contractor requires total or part of foreign currency or currencies to be paid directly to him, has been changed from the buying rate on the bid opening date to be *the selling rate on the payment date*.

The number of days which payment for the first portion of foreign supply will be made after delivery, previously specified as 45 days, has been **deleted**.



# DATA SHEET

for

## Invitation to Bid No. TS12-L-10

---

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

1. Article B-2. Bid Prices

The price including VAT for the dismantled Equipment shall be

- THB 7,050,000.- for Schedule 1
- THB 176,000.- for Schedule 2

2. Article B-3. Bid Security

The amount of bid security shall be USD 315,340.- or THB 10,050,000.-.

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. TS12-L-10**  
**SUPPLY AND CONSTRUCTION OF TRANSMISSION LINES**  
**230 kV BAN PONG 2 - KAMPHAENG SAEN**  
**AND SECTIONALIZING OF 230 kV THA TAKO - NONG BUA RAWE TO**  
**BUENG SAM PHAN SUBSTATION**  
**TRANSMISSION SYSTEM EXPANSION PROJECT NO.12**

---

## **Invitation**

The Electricity Generating Authority of Thailand (EGAT) hereby invites sealed bids for Supply and Construction of Transmission Lines 230 kV Ban Pong 2 - Kamphaeng Saen and Sectionalizing of 230 kV Tha Tako - Nong Bua Rawe to Bueng Sam Phan Substation under Transmission System Expansion Project No.12 in accordance with the terms and conditions, technical specifications and drawings described in these bidding documents.

## **Work Description**

The scope of Work under this Invitation is composed of two (2) Schedules as described below :

### Schedule 1: Supply and Construction of 230 kV Ban Pong 2 – Kamphaeng Saen Transmission Line

The Work for this Schedule is supply and construction of 230 kV transmission line which is 50 Hz, 3 phase, single conductor per phase, double circuit on self-supporting lattice steel towers extending from Ban Pong 2 Substation to Kamphaeng Saen Substation in the central region of Thailand, having a distance of approximately 22 kilometers on the existing right-of-way with 12 meters in width on each side of the center line of the transmission line.

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

The dismantling Work of the existing 115 kV Ban Pong 2 – Kamphaeng Saen Transmission Line which is single circuit strung with 477 MCM ACSR/GA (HAWK) conductor, having a distance of approximately 22 kilometers, and the existing 115 kV Ban Pong 2 – Kamphaeng Saen Temporary Detour Line which is single circuit strung with 795 MCM ACSR/GA conductor, having a distance of approximately 29.5 kilometers shall also be performed under this Schedule.

Schedule 2: Sectionalizing of 230 kV Tha Tako – Nong Bua Rawe Transmission Line to Bueng Sam Phan Substation

The transmission line to be supplied and constructed under this Schedule consists of four (4) portions as follows :

Portion 1 : The Work for this portion is supply and construction of 230 kV transmission line which is 50 Hz, 3 phase, single conductor per phase, four circuit on self-supporting lattice steel towers extending from Bueng Sam Phan Junction to Bueng Sam Phan Substation in the northern region of Thailand, having a distance of approximately 2.8 kilometers on the new right-of-way with 20 meters in width on each side of the center line of the transmission line.

Portion 2 : The Work for this portion is supply and construction of 115 kV transmission line which is 50 Hz, 3 phase, twin-bundled conductor per phase, double circuit on self-supporting lattice steel towers extending from Bueng Sam Phan Substation (New) to Bueng Sam Phan Substation (Existing) in the northern region of Thailand, having a distance of approximately 0.32 kilometer.

Portion 3 : The Work for this portion is supply and construction of 115 kV transmission line which is 50 Hz, 3 phase, single conductor per phase, double circuit on four circuit self-supporting lattice steel towers extending from Bueng Sam Phan Substation (New) to Bueng Sam Phan Substation (Existing) in the northern region of Thailand, having a distance of approximately 0.38 kilometer.

Portion 4 : The Work for this portion is supply and construction of 115 kV Tha Tako – Bueng Sam Phan transmission line which is 50 Hz, 3 phase, single conductor per phase, double circuit on self-supporting lattice steel towers at Bueng Sam Phan Substation (New) in the northern region of Thailand, having a distance of approximately 0.3 kilometer.

The 1272 MCM ACSR/GA conductor and the 3/8 inch nominal diameter, high strength galvanized steel overhead ground wire will be employed for Portion 1 and Portion 2. The conductor will be supplied by EGAT whereas the overhead ground wire shall be supplied by the Contractor.

The 795 MCM ACSR/GA conductor, the 3/8 inch nominal diameter, high strength galvanized steel overhead ground wire and the composite overhead ground wire with 36-core optical fiber will be employed for Portion 3 and Portion 4. The conductor will be supplied by EGAT whereas both types of overhead ground wires shall be supplied by the Contractor.

The scope of work under this Schedule shall also include supply and construction of 115 kV Tha Tako – Bueng Sam Phan Temporary Detour Line which is double circuit with a distance of approximately 0.27 kilometer at Bueng Sam Phan Substation. The temporary detour line shall be constructed as indicated in the Specifications No. TL-05 (Rev. 1) : Construction of Temporary Detour Line. The conductor to be employed will be 795 MCM ACSR/GA supplied by EGAT. Two

types of overhead ground wires will be employed ; one of which is 3/8 inch nominal diameter, high strength galvanized steel overhead ground wire and the other is composite overhead ground wire with 36-core optical fiber. Both types of overhead ground wires shall be supplied by the Contractor.

The dismantling Work of the existing 115 kV Tha Tako – Bueng Sam Phan Transmission Line (at Bueng Sam Phan Substation) which is double circuit strung with 477 MCM ACSR/GA (HAWK) conductor, having a distance of approximately 0.4 kilometer as well as the 115 kV temporary detour line having a distance of approximately 0.27 kilometer mentioned above shall also be performed under this Schedule.

It shall also be noted that all dismantling Work shall be conducted in accordance with the requirements in Specifications No. TL-07(Rev.3) : Dismantling Work. All dismantled Equipment to be purchased by the Contractor has been listed in the Price Schedule and Attachment No. 2 : List of Equipment to be Dismantled by the Contractor. The price offered for the purchase of such dismantled Equipment shall include value added tax. 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.

All types of steel towers and foundations have already been designed by EGAT. Furthermore, detailed fabrication / erection drawings, stub & setting dimensions and details & bar bending schedules for all tower types will be provided to the Contractor by EGAT.

However, the Contractor shall also note that the detailed fabrication/ erection drawings for some tower leg extensions as well as stub & setting dimensions for some tower types may not be available. In such case, the Contractor shall perform and provide these drawings for EGAT's approval.

Detailed fabrication/ erection drawings of steel towers provided by EGAT will be furnished to the Contractor after Award of the Contract. The Contractor shall carefully scrutinize EGAT's furnished detailed fabrication/ erection drawings, make the minor modifications as necessary and submit all revised drawings to EGAT for review and approval. The full responsibility for adequacy and accuracy of all detailed drawings shall rest with the Contractor and he shall have no right to claim for additional compensation as a result of his misinterpretation or failure to check the drawings for compliance with the design requirements, inaccuracies, errors and omissions.

Reproducible drawings and CD-ROM of EGAT's furnished detailed fabrication/ erection drawings of steel towers will not be required. The approved drawings, reproducible drawings and CD-ROM of these steel towers required to be submitted for this Contract shall therefore be bill of material. However, in case the Contractor makes modifications to EGAT's furnished detailed fabrication/ erection drawings of steel towers or prepares drawings of which leg extensions and/or stub & setting dimensions are not available, such drawings shall be submitted for EGAT's approval and therefore reproducible drawings and CD-ROM of these drawings shall be required.

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.

**Eligibility of Bidders: General Requirements**

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 Office of the Prime Minister 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 shall be a purchaser of the bidding documents from EGAT. For a joint venture or consortium, only one (1) member of the joint venture or consortium is required to purchase the bidding documents.***

***In the case where the Bidder is not the purchaser of the bidding documents, the purchaser shall notify EGAT of the name of the Bidder in writing prior to the bid opening.***

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.

### **Eligibility of Bidders: Technical Requirements**

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

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

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

- 1) Having a record of experience in executing at least one (1) turnkey contract as contractor (not as subcontractor) with its overall performance satisfactory to other electricity authorities in Thailand on overhead transmission line at a voltage level of 115 kV or higher is eligible for the requirement for the Work of supply and construction of 115 kV transmission line.
- 2) Having a record of experience in executing at least one (1) turnkey contract as contractor (not as subcontractor) with EGAT on transmission line at a voltage level of 115 kV is eligible for the requirement for the Work of supply and construction of 230 kV transmission line.

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

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

- 110 kV or higher for the Work of supply and construction of 115 kV transmission line
- 220 kV or higher for the Work of supply and construction of 230 kV transmission line

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

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

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

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

- c. Himself, or either firm of the joint venture/consortium, or his subcontractor or the combination thereof, having adequate technical knowledge and practical experience in stringing of line conductors or overhead ground wire or OPGW parallel to a live line. This eligibility will be applicable in case that scope of work under this Invitation requires stringing of circuit conductor, overhead ground wire and/or OPGW on towers on which the other circuit conductor is under energizing condition while performing such work.
- d. Himself, or either firm of the joint venture/consortium or his subcontractor or the combination thereof, having excellent reputation and adequate technical knowledge and having at least three years experience in the construction of transmission line having accumulative distance of overhead ground wire with optical fiber not less than 20 kilometers in length. This eligibility will not be applicable if such Equipment is not required under this Invitation.

With respect to item b., c., and d., experience record of the Bidder or either firm of the joint venture/consortium, including experience record derived from being a firm of other joint venture or consortium in previous project(s) is acceptable, provided that there is a letter from the project owner certifying that the Works as described in b., c., and d. above were performed by the Bidder or either firm of the joint venture/consortium of this project.

However, reference records of either the parent or affiliated companies of the Bidder or of either firm of the joint venture/consortium shall not be acceptable. If the Bidder is a new company formed by acquisition of or merger with other companies or business units before submitting the Bid, the experience records of any of such previous companies or business units

that meet the requirements set forth herein are acceptable as the experience records of the Bidder.

- e. Proposing towers, conductor, insulators for conductor, hardware assemblies and line accessories for conductor, dampers and spacer dampers for conductor, and composite overhead ground wire with optical fiber (OPGW) manufactured by regular manufacturers of excellent reputation having significant technical knowledge and at least three (3) years experience in the design, manufacture and testing of such Equipment, having manufacturing capacity available to perform the Work properly and expeditiously within the time specified, and having satisfactory past experience, with additional requirements as follows:
- 1) Tower manufacturer being an eligible local firm having set up a plant for fabrication of steel towers in Thailand
  - 2) Hardware assemblies and line accessories for conductor manufacturer being an eligible local firm having set up a plant in Thailand
  - 3) Damper and spacer damper for conductor manufacturer being an eligible local firm having set up a plant in Thailand
  - 4) Insulator for conductor manufacturer having a record of a minimum three (3) consecutive years of successful operation/use of at least 10,000 units of insulators of the same or similar ANSI class as those required under this Invitation in any one transmission line operating in the transmission network electric utility in overseas country (not his own country) during the last ten years at the following voltage levels :
    - 110 kV or higher for the Work of supply and construction of 115 kV transmission line
    - 220 kV or higher for the Work of supply and construction of 230 kV transmission line
  - 5) Composite overhead ground wire with optical fiber (OPGW) manufacturer having a record of at least three (3) consecutive years of successful operation/use of the same or similar type as those required under this Invitation in the transmission line having accumulated distance of not less than 20 kilometers

If the manufacturer is a new company formed by acquisition of or merger with other companies or business units, and any of such previous companies or business units has the experience records that meet the requirements set forth herein, such experience records are acceptable as the experience records of the new company, provided that each item of the Equipment to be supplied under this Bid shall be manufactured from the same source of supply as indicated in each of such relevant supply records as described in Item I.e.1) thru I.e.5) above. Otherwise, it shall not be acceptable and shall be sufficient grounds for rejection.



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

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

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

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

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

- a. Having sufficient capacity to carry out the Work.
- b. Proposing overhead ground wire, hardware assemblies and line accessories for overhead ground wire and for OPGW, grounding materials, fiber optic transmission system Equipment, and other Equipment manufactured by regular manufacturers of excellent reputation having significant technical knowledge and at least three (3) years experience in the design, manufacture and testing of such Equipment, having manufacturing capacity available to perform the Work properly and expeditiously within the time specified, and having satisfactory past experience, with additional requirements as follows:
  - Manufacturers for overhead ground wire (galvanized steel wire strand), hardware assemblies and line accessories for overhead ground wire and for OPGW, and non-metallic optical fiber cable (OFC) being an eligible local firm having set up a plant in Thailand

If the manufacturer is a new company formed by acquisition of or merger with other companies or business units, and any of such previous companies or business units has the experience records that meet the requirements set forth herein, such experience records are acceptable as the experience records of the new company, provided that each item of the Equipment to be supplied under this Bid shall be manufactured from the same source of supply as indicated in each of such relevant supply records.

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

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

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

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

- c. Proposing reputable subcontractors, for the portion of the Work to be subcontracted, having adequate technical knowledge, ability and capacity and practical experience to perform such work. If any proposed subcontractor(s) is(are) not qualified in the opinion of EGAT, the Bidder is required to select other subcontractor(s) at his own cost to the satisfaction of EGAT.
- d. Having no just or proper claims pending against him with respect to breach in the performance of Contract on other similar works awarded by EGAT. If Bidder is a new company formed by acquisition of or merger with other companies or business units, the pending claim of any of such previous companies or business units shall be considered pending claim of the Bidder.
- e. Himself or his subcontractors, at the time of submitting this proposal, not carrying excessive work or not being in a default position with respect to work with EGAT. Unsatisfactory past performance on contract awarded by EGAT may be a sufficient reason of being disqualified.

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

## 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

#### **UA WITHYA PUBLIC COMPANY LIMITED**

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

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

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

tse  
เอกสารควบคุม

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

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

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

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

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

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

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

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

94 T, Shinnawatra Building  
3<sup>rd</sup> floor, Sukhumvit Soi 23  
Klong Toey Nua, Wattana  
Bangkok 10110  
Tel : 0 2706 6717  
Fax : 0 2706 6716

- (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

tse  
เอกสารควบคุม

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

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

3) **OVERHEAD GROUND WIRE**

**Thai Wire Products Public Company Limited**

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

**USHA Siam Steel Industries Public Company Limited**

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

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

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

4) **GROUNDING MATERIALS**

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

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

5) **CONDUCTOR**

**Bangkok Cable Co., Ltd.**

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



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

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

**Phelps Dodge International (Thailand) Limited**

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

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

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

**Venine Cable Electric Wire Company Limited**

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

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

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

233 Moo 6, Soi Watchangrueng,  
Suksawat Road,  
Naiklongbangplakot, Phrasamutchedi,  
Samutprakarn 10290  
Tel : 0 2817 5590-3  
Fax : 0 2817 5311

**HBC Telecom Co., Ltd.**

187/1 Rajadamri Road,  
Lumpinee, Pathumwan  
Bangkok 10330  
Tel : 0 2650 5002 To 3 Ext.111,112  
Fax : 0 2651 9261

tse  
เอกสารควบคุม



**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

tse  
เอกสารควบคุม



## SECTION H ATTACHMENTS

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



## ATTACHMENT NO. 1

### LIST OF EQUIPMENT TO BE FURNISHED BY EGAT

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

| <u>Item</u> | <u>Description</u>  | <u>Estimated Quantity</u> |
|-------------|---|---------------------------|
| 1.          | 1272 MCM ACSR/GA Conductor<br>as per Schedule 1E Item 1E1.1 | 134.52 km                 |
| 2.          | 1272 MCM ACSR/GA Conductor<br>as per Schedule 2E Item 2E1.1 | 35.34 km                  |
| 3.          | 1272 MCM ACSR/GA Conductor<br>as per Schedule 2E Item 2E3.1 | 4.56 km                   |
| 4.          | 795 MCM ACSR/GA Conductor<br>as per Schedule 2E Item 2E5.1  | 2.70 km                   |
| 5.          | 795 MCM ACSR/GA Conductor<br>as per Schedule 2E Item 2E8.1  | 0.90 km                   |
| 6.          | 795 MCM ACSR/GA Conductor<br>as per Schedule 2J Item 2J6.1  | 1.80 km                   |

Note : 1. The estimated quantity of conductor shown above is an approximate amount. The actual quantity of conductor to be furnished by EGAT will be in accordance with the actual horizontal distance of the section to be installed after checking survey and staking have been performed, Plus a Fixed extra of 1.5 percent to cover sag, terrain irregularities and wastage.

2. The conductor furnished will have characteristics as specified in Specifications No. C-2 (Revision 6)

## ATTACHMENT NO. 2

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

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

| <u>Item</u>   | <u>Description</u>                            | <u>Estimated Quantity</u> |
|---|---|---------------------------|
| <b>Part 1 : <u>The existing 115 kV Ban Pong 2 – Kamphaeng Saen Transmission Line</u></b><br>(The dismantled Equipment as listed below shall be purchased by the Contractor) |   |                           |
| <b>1.1</b>  | <b>Steel Tower</b>                            |                           |
|   | Tower type SA1 + Leg extension -3.0 m         | 5 towers                  |
|   | Tower type SA1 + Leg extension -2.0 m         | 8 towers                  |
|   | Tower type SA1 + Leg extension -1.0 m         | 15 towers                 |
|   | Tower type SA1 + Leg extension 0.0 m          | 16 towers                 |
|   | Tower type SA1 + Leg extension +1.0 m         | 11 towers                 |
|   | Tower type SA1 + Leg extension +2.0 m         | 2 towers                  |
|   | Tower type SA1 + Leg extension +3.0 m         | 1 tower                   |
|   | Tower type SA1 + Leg extension +6.0 m         | 1 tower                   |
|   | Tower type SB1 + Leg extension -1.0 m         | 1 tower                   |
|   | Tower type SB1 + Leg extension +0.0 m         | 1 tower                   |
|   | Tower type SB1 + Leg extension +2.0 m         | 1 tower                   |
|   | Tower type SD1 + Leg extension -3.0 m         | 1 tower                   |
|   | Tower type SD1 + Leg extension 0.0 m          | 1 tower                   |
|   | Tower type SD1 + Leg extension 2.0 m          | 2 towers                  |
|   | Tower type SDE + Leg extension -3.0 m         | 1 tower                   |
|   | Tower type SDE + Leg extension 0.0 m          | 1 tower                   |
| <b>1.2</b>  | <b>Hardware Assemblies</b>                    |                           |
|   | Single string suspension insulator assemblies | 138 sets                  |
|   | Double string suspension insulator assemblies | 39 sets                   |
|   | Bypass string suspension insulator assemblies | 6 sets                    |
|   | Single string tension insulator assemblies    | 51 sets                   |
|   | Double string tension insulator assemblies    | 15 sets                   |
|   | Overhead ground wire suspension assemblies    | 59 sets                   |
|   | Overhead ground wire tension assemblies       | 26 sets                   |
| <b>1.3</b>  | <b>Line Accessories</b>                       |                           |
|   | Vibration damper for conductor                | 378 sets                  |
|   | Vibration damper for overhead ground wire     | 16 sets                   |

| <u>Item</u>   | <u>Description</u>   | <u>Estimated Quantity</u> |            |
|---|--|---------------------------|------------|
| 1.4   | <b>Insulator</b><br>Insulator ANSI CLASS 52-3 (15,000 lbs)                 | 2,500                     | discs      |
| 1.5   | <b>1x477 MCM ACSR/GA (HAWK) Conductor</b>                                  | 66                        | km         |
| 1.6   | <b>3/8 " high strength galvanized steel overhead ground wire</b>           | 22                        | km         |
| <b>Part 2 : <u>The existing 115 kV Ban Pong 2 - Kamphaeng Saen Temporary Detour Line</u></b><br>(The dismantled Equipment as listed below shall be purchased by the Contractor) |  |                           |            |
| 2.1   | <b>Steel Tower</b>   |                           |            |
|   | Tower type WSA ; 14.00 M   | 8                         | towers     |
|   | Tower type WSA ; 16.00 M   | 12                        | towers     |
|   | Tower type WSA ; 18.00 M   | 8                         | towers     |
|   | Tower type WSA ; 20.00 M   | 4                         | towers     |
|   | Tower type WSA ; 22.00 M   | 1                         | tower      |
|   | Tower type WSD ; 14.00 M   | 2                         | towers     |
|   | Tower type WSD ; 18.00 M   | 1                         | tower      |
|   | Tower type WSDE ; 10.50 M  | 8                         | towers     |
|   | Tower type WSDE ; 14.00 M  | 7                         | towers     |
|   | Tower type WSDE ; 16.00 M  | 11                        | towers     |
|   | Tower type WSDE ; 18.00 M  | 2                         | towers     |
| 2.2   | <b>Concrete Structure</b>  |                           |            |
|   | Concrete structure type TSA-115  | 171                       | structures |
|   | Concrete structure type TSAH-115   | 72                        | structures |
|   | Concrete structure type TSD-115  | 21                        | structures |
|   | Concrete structure type TSDE-115   | 36                        | structures |
|   | Concrete structure type CSA-115  | 4                         | structures |
| 2.3   | <b>Hardware Assemblies</b>   |                           |            |
|   | Hardware for horizontal vee for WSA  | 99                        | sets       |
|   | Hardware for composite line post insulator for TSA+TSAH+CSA                | 741                       | sets       |
|   | Hardware for bypass composite line post insulator for TSD, TSDE, WSD, WSDE | 357                       | sets       |
|   | Single string tension insulator assemblies                                 | 540                       | sets       |
|   | Overhead ground wire suspension assemblies                                 | 280                       | sets       |
|   | Overhead ground wire tension assemblies                                    | 179                       | sets       |
| 2.4   | <b>Insulator</b>   |                           |            |
|   | Composite line post insulator  | 1,197                     | discs      |
|   | Composite suspension insulator   | 639                       | discs      |

| <u>Item</u>   | <u>Description</u>   | <u>Estimated Quantity</u> |       |
|---|--|---------------------------|-------|
| 2.5   | 1x795 MCM ACSR/GA Conductor                                | 89.8                      | km    |
| 2.6   | 3/8 " high strength galvanized steel overhead ground wire  | 29.5                      | km    |
| <b>Part 3 : <u>The existing 115 kV Tha Tako – Bueng Sam Phan Transmission Line</u></b><br>(The dismantled Equipment as listed below shall be purchased by the Contractor) |  |                           |       |
| 3.1   | <b>Steel Tower</b><br>Tower type DA1 + Leg extension 3.0 m | 1                         | tower |
| 3.2   | <b>Hardware Assemblies</b>                                 |                           |       |
|   | Single string suspension insulator assemblies              | 6                         | sets  |
|   | Bypass string suspension insulator assemblies              | 9                         | sets  |
|   | Single string tension insulator assemblies                 | 14                        | sets  |
|   | Single string tension inverted insulator assemblies        | 4                         | sets  |
|   | Overhead ground wire suspension assemblies                 | 1                         | set   |
|   | Overhead ground wire tension assemblies                    | 5                         | sets  |
|   | OPGW suspension assemblies                                 | 1                         | set   |
|   | OPGW tension assemblies                                    | 3                         | sets  |
| 3.3   | <b>Line Accessories</b>                                    |                           |       |
|   | Vibration damper for conductor                             | 18                        | sets  |
|   | Vibration damper for overhead ground wire                  | 1                         | set   |
|   | Vibration damper for OPGW                                  | 1                         | set   |
| 3.4   | <b>Insulator</b><br>Insulator ANSI CLASS 52-3 (15,000 lbs) | 318                       | discs |
| 3.5   | 1x477 MCM ACSR/GA (HAWK) Conductor                         | 2.4                       | km    |
| 3.6   | 3/8 " high strength galvanized steel overhead ground wire  | 0.4                       | km    |
| 3.7   | Composite overhead ground wire with 36-core optical fiber  | 0.4                       | km    |

| <u>Item</u>     | <u>Description</u>  | <u>Estimated Quantity</u> |        |
|-----------------|---|---------------------------|--------|
| <b>Part 4 :</b> | <b><u>115 kV Tha Tako – Bueng Sam Phan Temporary Detour Line</u></b><br>(The dismantled Equipment as listed below shall be purchased by the Contractor) |                           |        |
| <b>4.1</b>      | <b>Tower</b><br>Tower type TDDE 17.0 m  | 2                         | towers |
| <b>4.2</b>      | <b>Hardware Assemblies</b><br>Hardware for bypass composite line post insulator for TDDE  | 12                        | sets   |
|                 | Single string tension insulator assemblies  | 36                        | sets   |
|                 | Overhead ground wire tension assemblies   | 6                         | sets   |
|                 | OPGW tension assemblies   | 6                         | sets   |
| <b>4.3</b>      | <b>Insulator</b><br>Composite line post insulator   | 12                        | discs  |
|                 | Composite suspension insulator  | 36                        | discs  |
| <b>4.4</b>      | <b>1x795 MCM ACSR/GA Conductor</b>  | 1.6                       | km     |
| <b>4.5</b>      | <b>3/8 " high strength galvanized steel overhead ground wire</b>  | 0.27                      | km     |
| <b>4.6</b>      | <b>Composite overhead ground wire with 36-core optical fiber</b>  | 0.27                      | km     |

### ATTACHMENT NO. 3

## REQUIREMENTS FOR DISMANTLING WORK AND CONDITIONS OF SALE OF DISMANTLED EQUIPMENT

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

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

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

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

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

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

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

### 3. Payment

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

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