

การไฟฟ้าฝ่ายผลิตแห่งประเทศไทย

REGISTRATION FORM

INVITATION TO BID NO. TIWS-L-10

FOR SUPPLY AND CONSTRUCTION OF TRANSMISSION LINES 500 KV BANG SAPHAN 2 - SURAT THANI 2
(FROM KM. 180 TO KM. 217) AND SECTIONALIZING OF 230 KV CHUMPHON - SURAT THANI TO LANG SUAN SUBSTATION
TRANSMISSION SYSTEM IMPROVEMENT PROJECT IN WESTERN AND SOUTHERN REGIONS TO ENHANCE SYSTEM SECURITY

AVAILABLE DURATION FOR PURCHASING May 28, 2018 TO June 22, 2018

PRICE USD 256.- OR THB 8,000.-

COMPLETE DATA IS REQUIRED FOR THE BIDDER'S OWN BENEFITS

(โปรดกรอกรายละเอียดให้ครบถ้วนเพื่อประโยชน์ของบริษัท)

Step 2 : Bring the payment receipt and filled-out registration Form (in English) to receive the bidding documents at Transmission System Development Area Foreign Procurement Department (Room No. 1202/2, 12th Floor, Building Tor. 101) Tel no. 02 436 0241-42

FOR PURCHASER		TAX ID :	
NO.	RECEIPT NO. :	DATE :	
PURCHASER (ผู้ซื้อ):			
BIDDER'S NAME (บริษัทผู้ซื้อเอกสาร)			
ADDRESS (ที่อยู่)			
		COUNTRY :	
ATTN. (ผู้รับผิดชอบ):	FAX NO.:	TEL.:	
E-mail :	e-GP Registration Date :		
LOCAL REPRESENTATIVE (ตัวแทนในประเทศ)			
ADDRESS (ที่อยู่)			
		TAX ID :	
ATTN. (ผู้รับผิดชอบ):	FAX NO.:	TEL.:	
E-mail :			
FOR PROCUREMENT OFFICER		CHANGE OF BIDDER'S NAME	TAX ID :
BIDDER'S LETTER NO. :		DATED :	
NEW BIDDER'S NAME (ชื่อผู้ซื้อเอกสารเปลี่ยนเป็น)			
ADDRESS (ที่อยู่)			
		COUNTRY :	
ATTN. (ผู้รับผิดชอบ):	FAX NO.:	TEL.:	
E-mail :	e-GP Registration Date :		
LOCAL REPRESENTATIVE (ตัวแทนในประเทศ)			
ADDRESS (ที่อยู่)			
		TAX ID :	
ATTN. (ผู้รับผิดชอบ):	FAX NO.:	TEL.:	
E-mail :	e-GP Registration Date :		
FOR PROCUREMENT OFFICER		FOR PURCHASER	
Procurement Officer (ผู้ส่งมอบเอกสาร)		Document received by (ผู้รับมอบเอกสาร)	

Step 1 : Submit this part for payment at Receivable Cashier Section (1st Floor, TOR 100 Bldg., Counter 4-8) Tel no. 02 436 5512

FOR PURCHASER		TAX ID :
BIDDER'S NAME (บริษัทผู้ซื้อเอกสาร)		
ADDRESS (ที่อยู่)		
BID NO. <u>TIWS-L-10</u>	PRICE <u>USD 256.-</u> OR <u>THB 8,000.-</u>	
	DURATION FOR PURCHASING <u>May 28, 2018</u> TO <u>June 22, 2018</u>	

Transmission System Development Area Foreign Procurement Department Tel no. 02 436 0241-42

(รพพศ.)



INVITATION TO BID NO. TIWS-L-10

SUPPLY AND CONSTRUCTION OF TRANSMISSION LINES 500 kV BANG SAPHAN 2 - SURAT THANI 2 (FROM KM. 180 TO KM. 217) AND SECTIONALIZING OF 230 kV CHUMPHON - SURAT THANI TO LANG SUAN SUBSTATION TRANSMISSION SYSTEM IMPROVEMENT PROJECT IN WESTERN AND SOUTHERN REGIONS TO ENHANCE SYSTEM SECURITY

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

Place of Construction : From KM. 180 to KM. 217 (approx. 38 kilometers)
From Lang Suan Junction A to Lang Suan Substation (approx. 1.4 kilometers)

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

THB 640,000,000.- (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 neither fail to submit the Revenue and Expense Accounts nor fail to present proper and complete accounts under the Notification of National Anti-Corruption Commission Concerning Principles and Methods of Preparing Revenue and Expense Accounts of Project between Individual/Company and Government Agencies B.E. 2554 (A.D. 2011) issued on August 11, 2011 as amended from time to time ("the Notification").
3. The Bidder shall register for e-Government Procurement (e-GP) at Thai Government Procurement website (www.gprocurement.go.th at telephone No. 66 2127 7386 - 89) of the Comptroller General's Department of Thailand.
4. 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.
5. 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.
6. 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.
7. 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 May 28, 2018 to June 22, 2018 at USD 256.- or THB 8,000.- per copy, non-refundable, at the following address :

Transmission System Development Area Foreign Procurement Department
(Room No. 1202/2, 12th Floor, Building Tor. 101)
Foreign Supply and Procurement Division
Electricity Generating Authority of Thailand
Bangkruai, Nonthaburi 11130, Thailand
Fax no. 66 2433 6317, 66 2433 5523, 66 2434 4064
Telephone no. 66 2436 0242
E-mail : procurement.tse@egat.co.th

Niravati Osirapavapusi

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.

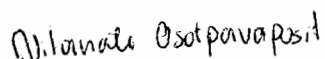
Bidding Documents in CD-ROM will be either airmailed or airfreighted to the buyer at EGAT's expense upon receipt of the relevant remittance. In case the buyer requires the Bidding Documents to be sent by Express Mail Service (EMS), the charge will be at the buyer's expense.

Delivery of Bids

Bids shall be submitted at Room No. 1202/1, 12th Floor, Building Tor. 101 during 9:30 hrs. to 10:00 hrs., Bangkok Standard Time, July 17, 2018 and will be opened publicly at 10:00 hrs.

ELECTRICITY GENERATING AUTHORITY OF THAILAND

May 17, 2018



(Mrs. Nilanate Osotpavaposit)

Chief, Transmission System Development Area
Foreign Procurement Department



ประกาศการไฟฟ้าฝ่ายผลิตแห่งประเทศไทย เรื่อง ประกวดราคาจ้าง เลขที่ TIWS-L-10

การไฟฟ้าฝ่ายผลิตแห่งประเทศไทย (กฟผ.) มีความประสงค์จะจัดหาและจ้างก่อสร้างสายส่งไฟฟ้าแรงสูงขนาด 500 kV บางสะพาน 2 - สุราษฎร์ธานี 2 (จากกิโลเมตรที่ 180 ถึง กิโลเมตรที่ 217) และจัดหาและจ้างก่อสร้างตัดสายส่งไฟฟ้าแรงสูงขนาด 230 kV ชุมพร - สุราษฎร์ธานี ลงที่สถานีไฟฟ้าแรงสูงหลังสวน สำหรับโครงการปรับปรุงระบบส่งไฟฟ้าบริเวณภาคตะวันตกและภาคใต้เพื่อเสริมความมั่นคงระบบไฟฟ้า โดยทำสัญญาแบบปรับราคาได้ (ค่า k) โดยใช้งบประมาณ กฟผ.

สถานที่ก่อสร้าง : จากกิโลเมตรที่ 180 ถึง กิโลเมตรที่ 217 (ระยะทางประมาณ 38 กิโลเมตร)
จากจุดแยกหลังสวน A ถึง สถานีไฟฟ้าแรงสูงหลังสวน (ระยะทางประมาณ 1.4 กิโลเมตร)

ราคากลาง (รวมภาษีมูลค่าเพิ่มและค่าใช้จ่ายอื่นๆ) :

640,000,000.- บาท (ไม่รวมราคาอุปกรณ์หรือถนนที่กำหนดให้ผู้เสนอราคาปรับซื้อจาก กฟผ.)

คุณสมบัติของผู้เสนอราคา

1. ต้องเป็นนิติบุคคลผู้มีอาชีพรับจ้างตามประกวดราคาจ้างดังกล่าว และต้องไม่เป็นผู้ทำงานซึ่งสำนักนายกรัฐมนตรีได้แจ้งเวียนชื่อไว้ หรือต้องไม่เป็นผู้ที่ กฟผ. ห้ามติดต่อหรือห้ามเข้าเสนอราคา หรือต้องไม่เป็นผู้ที่ได้รับผลของการสั่งให้นิติบุคคลหรือบุคคลอื่นเป็นผู้ทำงานตามคำสั่ง กฟผ.
2. ต้องไม่อยู่ในฐานะเป็นผู้ไม่แสดงบัญชีรายรับรายจ่าย หรือแสดงบัญชีรายรับรายจ่ายไม่ถูกต้องครบถ้วนในสาระสำคัญ ตามประกาศคณะกรรมการป้องกันและปราบปรามการทุจริตแห่งชาติ เรื่อง หลักเกณฑ์และวิธีการจัดทำและแสดงบัญชีรายการรับจ่ายของโครงการที่บุคคลหรือนิติบุคคลเป็นคู่สัญญากับหน่วยงานของรัฐ พ.ศ. 2554 และที่แก้ไขเพิ่มเติม
3. ต้องเป็นนิติบุคคลที่ได้ลงทะเบียนในระบบอิเล็กทรอนิกส์ (e-Government Procurement : e-GP) ของกรมบัญชีกลางที่เว็บไซต์ศูนย์ข้อมูลจัดซื้อจัดจ้างภาครัฐ (www.gprocurement.go.th) โทรศัพท์ หมายเลข 0 2127 7386 – 89
4. ต้องไม่เป็นผู้ผลประโยชน์ร่วมกันกับผู้เสนอการรายอื่น ณ วันประกาศประกวดราคาครั้งนี้เป็นต้นไป หรือต้องไม่เป็นผู้กระทำการอันเป็นการขัดขวางการแข่งขันราคาอย่างเป็นธรรมในการดำเนินการประกวดราคาครั้งนี้
5. ต้องไม่เป็นที่ปรึกษาของ กฟผ. หรือมีส่วนร่วมในบริษัทที่ปรึกษาของ กฟผ. ในงานนี้ หรือต้องไม่มีผู้ปฏิบัติงาน กฟผ. เข้าไปมีส่วนร่วมในกิจการของผู้เสนอราคา ไม่ว่าจะในฐานะผู้ถือหุ้นที่มีสิทธิควบคุมการจัดการ กรรมการ ผู้อำนวยการ ผู้จัดการ พนักงาน ลูกจ้าง ตัวแทนหรือที่ปรึกษา ยกเว้น ในกรณีที่ผู้ปฏิบัติงานได้รับคำสั่งอย่างเป็นทางการจาก กฟผ. ให้ไปปฏิบัติงานหรือเข้าร่วมในกิจการของผู้เสนอราคา
6. ต้องไม่เป็นผู้ได้รับเอกสิทธิ์หรือความคุ้มกัน ซึ่งอาจปฏิเสธไม่ยอมขึ้นศาลไทย เว้นแต่รัฐบาลของผู้เสนอราคาได้มีคำสั่งให้สละสิทธิ์และความคุ้มกันเช่นนั้น
7. ผู้ประสงค์เข้าประกวดราคาในนามของกิจการร่วมค้า (Joint Venture or Consortium) จะต้องดำเนินการทุกขั้นตอนของการประกวดราคา ในนามของกิจการร่วมค้าตั้งแต่การเสนอราคาจนสิ้นสุดข้อผูกพันกับ กฟผ.

ให้เลขที่ 10/2554

การขายเอกสารประกวดราคา

ผู้สนใจติดต่อขอทราบรายละเอียด เพื่อตรวจสอบคุณสมบัติของผู้เสนอราคา และขอซื้อเอกสารประกวดราคา ในราคาชุดละ 8,000.- บาท ได้ที่ แผนกจ้างงานวิศวกรรมระบบส่ง (ห้อง 1202/2 ชั้น 12 อาคาร ท.101) กองจัดหาต่างประเทศสายงานพัฒนาระบบส่ง ฝ่ายพัสดุและจัดหาต่างประเทศ การไฟฟ้าฝ่ายผลิตแห่งประเทศไทย เชียงสะพานพระราม 7 จังหวัดนนทบุรี ในวันทำการ ระหว่างเวลา 08:00 น. ถึง 15:00 น. ตั้งแต่วันที่ 28 พฤษภาคม 2561 ถึงวันที่ 22 มิถุนายน 2561 หรือสอบถามทางโทรศัพท์ หมายเลข 0 2436 0242 หรืออีเมล procurement.tse@egat.co.th ทั้งนี้ สามารถ download แบบฟอร์มลงทะเบียนผู้ซื้อเอกสารประกวดราคาได้ที่เว็บไซต์ <http://www4.egat.co.th/fprocurement/biddingeng/>

การยื่นซองประกวดราคา

กำหนดยื่นซองประกวดราคา ในวันที่ 17 กรกฎาคม 2561 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 17 พฤษภาคม 2561

นางเนตร โอสงามญา

(นางนิลเนตร โอสงามญา)

หัวหน้ากองจัดหาต่างประเทศสายงานพัฒนาระบบส่ง

**ตารางแสดงวงเงินงบประมาณที่ได้รับจัดสรรและราคากลาง(ราคาอ้างอิง)
ในการจัดซื้อจัดจ้างที่มีใช้งานก่อสร้าง**

1. **ชื่อโครงการ** ประกวตราคาเลขที่ TIWS-L-10
งานจัดหาและจ้างก่อสร้างสายส่ง 500 kV บางสะพาน 2 – สุราษฎร์ธานี 2 (จากกิโลเมตรที่ 180 ถึง
กิโลเมตรที่ 217) และจัดหาและจ้างก่อสร้างตัดสายส่ง 230 kV ชุมพร – สุราษฎร์ธานี ลงที่ สฟ. หลังสวน
โครงการปรับปรุงระบบส่งไฟฟ้าบริเวณภาคตะวันตกและภาคใต้เพื่อเสริมความมั่นคงระบบไฟฟ้า
/หน่วยงานเจ้าของโครงการ ฝ่ายแผนงานและโครงการระบบส่ง การไฟฟ้าฝ่ายผลิตแห่งประเทศไทย
2. **วงเงินงบประมาณที่ได้รับจัดสรร**
โครงการปรับปรุงระบบส่งไฟฟ้าบริเวณภาคตะวันตกและภาคใต้เพื่อเสริมความมั่นคงระบบไฟฟ้า
งบประมาณ 63,200 ล้านบาท
3. **วันที่กำหนดราคากลาง** 26 เมษายน 2561 (วันที่ รวพส. โดย ขพสว. อนุมัติ)
ราคารวมภาษีมูลค่าเพิ่มและค่าใช้จ่ายอื่นๆ เป็นเงิน 640,000,000.00 บาท ราคา/หน่วย ตามเอกสารแนบ
4. **แหล่งที่มาของราคากลาง** หลักเกณฑ์การกำหนดราคากลางงานจัดซื้อจัดจ้างสายงานพัฒนาระบบส่ง
5. **รายชื่อเจ้าหน้าที่ผู้กำหนดราคากลาง**
 - 5.1 นายพิทักษ์ ปิ่นอนงค์ กวส-พส.
 - 5.2 นายสมปอง บวรธีระกิจชัย หปส-พส. กวส-พส.
 - 5.3 นายอภิณพ กุลวงศ์ วศ.8 หปส-พส. กวส-พส.

หมายเหตุ ค่าใช้จ่ายอื่นๆ ได้แก่ ค่าใช้จ่ายที่ กฟผ. ต้องจ่ายตามวิธีการพิจารณาเปรียบเทียบราคาที่กำหนดไว้
ในเอกสารประกวดราคา เช่น อากรขาเข้า เป็นต้น



นางสาว ชวชนาภรณ์ กู๊ด

หงส-ห.

17 พ.ค. 2561

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

SCHEDULE 1 : 500 kV Bang Saphan 2 - Surat Thani 2 Transmission Line (from KM. 180 to KM. 217) (38 km)

Description	Total (Baht)
1A : PRELIMINARY WORK	3,284,064.00
1B : TOWER FOUNDATIONS	102,365,424.00
1C : TOWERS	284,307,387.36
1D : INSULATOR STRING AND OVERHEAD GROUND WIRE ASSEMBLIES	95,823,525.00
1E : CONDUCTOR AND OVERHEAD GROUND WIRE	26,514,558.00
1F : LINE ACCESSORIES	9,191,280.00
1G : GROUNDING MATERIALS	2,923,118.52
1H : OPTICAL FIBER AND LINE ACCESSORIES	10,331,666.52
1I : DISMANTLING WORK	9,676,800.00
1J : TEMPORARY DETOUR LINES	1,007,790.00
1K : LINE CONNECTION	6,103,633.62
1N : TEST OF EQUIPMENT	3,570,000.00
1O : SUPPLY OF SERVICE OF VEHICLES	4,717,440.00
1Q : DISMANTLING OF TEMPORARY DETOUR LINE	151,200.00
Total for Schedule 1	559,967,887.02
Adjusted Price (Import Duty & Tax + VAT)	39,197,752.09
Total Price Schedule 1	599,165,639.11

SCHEDULE 2 : Sec. 230 kV Chumphon - Surat Thani to Lang Suan Substation (1.40 km)

Description	Total (Baht)
2A : PRELIMINARY WORK	145,866.00
2B : TOWER FOUNDATIONS	9,388,312.50
2C : TOWERS	14,992,349.81
2D : INSULATOR STRING AND OVERHEAD GROUND WIRE ASSEMBLIES	5,344,920.00
2E : CONDUCTOR AND OVERHEAD GROUND WIRE	1,295,143.50
2F : LINE ACCESSORIES	314,580.00
2G : GROUNDING MATERIALS	57,348.90
2H : OPTICAL FIBER AND LINE ACCESSORIES	2,362,279.43
2I : DISMANTLING WORK	1,241,551.50
2J : TEMPORARY DETOUR LINES	2,002,171.50
2K : LINE CONNECTION	947,879.35
2Q : DISMANTLING OF TEMPORARY DETOUR LINE	82,110.00
Total for Schedule 2	38,174,512.50
Adjusted Price (Import Duty & Tax + VAT)	2,672,215.88
Total Price Schedule 2	40,846,728.38

Summary Price (Schedule 1 and 2)	598,142,399.52
Adjusted Price (Import Duty & Tax + VAT)	41,869,967.96
Total Price (Schedule 1 and 2)	640,012,367.48

MEDIUM COST OF BID NO. TIWS-L-10	640,000,000.00
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วิไลดา ชีวนากรณกุล

(นางสาวพนา สุภาวกุล)

TIWS-L-10

หงส-ห. 17 พ.ค. 2561

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DATA SHEET

for

Invitation to Bid No. TIWS-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 minimum proposed price including VAT for the dismantled Equipment shall be

- THB 21,500,000.- for Schedule No.1

- THB 2,750,000.- for Schedule No.2

2. Article B-3. Bid Security

The amount of bid security shall be USD 1,007,680.- or THB 32,000,000.-.

INVITATION TO BID NO. TIWS-L-10
SUPPLY AND CONSTRUCTION OF TRANSMISSION LINES
500 kV BANG SAPHAN 2 - SURAT THANI 2 (FROM KM.180 TO
KM.217) AND SECTIONALIZING OF 230 kV CHUMPHON -
SURAT THANI TO LANG SUAN SUBSTATION
TRANSMISSION SYSTEM IMPROVEMENT PROJECT
IN WESTERN AND SOUTHERN REGIONS
TO ENHANCE SYSTEM SECURITY

Invitation

The Electricity Generating Authority of Thailand (EGAT) hereby invites sealed bids for Supply and Construction of Transmission Lines 500 kV Bang Saphan 2 – Surat Thani 2 (from KM.180 to KM.217) and Sectionalizing of 230 kV Chumphon – Surat Thani to Lang Suan Substation under Transmission System Improvement Project in Western and Southern Regions to Enhance System Security 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 500 kV Bang Saphan 2 - Surat Thani 2
Transmission Line (from KM. 180 to KM. 217)

The transmission line to be supplied and constructed under this Schedule is 500 kV, 50 Hz, 3 phase, quad-bundled conductor per phase, double circuit on self-supporting lattice steel towers extending from KM. 180 to KM. 217 of 500 kV Bang Saphan 2 - Surat Thani 2 Transmission Line in the southern region of Thailand with a distance of approximately 38 kilometers on the existing right-of-way having 25 meters in width on each side of the center line of the transmission line.

It shall be noted that the entire length of this transmission line has been designed as the anti-polluted zone. The conductor to be employed will be 1272 MCM ACSR/AW and 1272 MCM ACSR/GA supplied by EGAT. Three types of shield wire/overhead ground wire will be employed ; one of which is 7 No. 8 AWG aluminum-clad steel wire, another 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. All types of shield wire/overhead ground wire shall be supplied by the Contractor.

The scope of Work under this Schedule also includes supply and construction of the temporary detour line. This line is 230 kV, 50 Hz, 3 phase, double circuit at KM. 180 and at KM. 217, having a distance of approximately 1 kilometer. The 1272 MCM ACSR/GA conductor and 3/8 inch nominal diameter, high strength galvanized steel overhead ground wire will be employed for this temporary detour line. The conductor will be supplied by EGAT while the overhead ground wire shall be supplied by the Contractor.

The dismantling Work of the existing 230 kV Lang Suan - Surat Thani Transmission Line which is double circuit strung with 1272 MCM ACSR/GA conductor, having a distance of approximately 38 kilometers as well as of the 230 kV temporary detour line mentioned above is also required to be performed under this Schedule.

Schedule 2: Sectionalizing of 230 kV Chumphon - Surat Thani to Lang Suan Substation

The transmission line to be supplied and constructed under this Schedule is 230 kV, 50 Hz, 3 phase, twin-bundled conductor per phase, four circuit on self-supporting lattice towers extending from Lang Suan Junction A to Lang Suan Substation in the southern region of Thailand with a distance of approximately 1.40 kilometers on the existing right-of-way having 24 meters in width on each side of the center line of the transmission line to sectionalize the four circuit of the 230 kV Chumphon - Surat Thani to Lang Suan Substation.

The conductors to be employed for this line will be 1272 MCM ACSR/GA and 795 MCM ACSR/GA supplied by EGAT. Two types of overhead ground wire 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 wire shall be supplied by the Contractor.

The scope of Work under this Schedule also includes supply and construction of temporary detour line. This line is 230 kV, 50 Hz, 3 phase, single circuit extending from Lang Suan Substation to Lang Suan Junction B, having a distance of approximately 2 kilometers. The conductor to be employed for this temporary detour line will be 1272 MCM ACSR/GA supplied by EGAT. Two types of overhead ground wire will be employed ; one of which is composite overhead ground wire with 36-core optical fiber which will be supplied by EGAT, and the other is 3/8 inch nominal diameter, high strength galvanized steel overhead ground wire which shall be supplied by the Contractor.

The dismantling Work of the existing 230 kV Bang Saphan 1 - Lang Suan, 230 kV Surat Thani - Lang Suan, and 230 kV Chumphon – Surat Thani Transmission Lines strung with 1272 MCM ACSR/GA conductor, having a distance of approximately 1.50, 1.50 and 0.2 kilometers respectively as well as of the 230 kV temporary detour line mentioned above is also required to be performed under this Schedule.

The construction of the temporary detour lines under Schedule 1 and 2 shall be performed as indicated in the Specifications No. TL-05 (Rev.1) : Construction of Temporary Detour Line. Moreover, since the stringing of the lines shall be executed

while the other circuit is being energized, the Contractor shall perform the said Work with full precaution in accordance with the requirements of the Specifications No. TL-06 (Rev. 0) : Stringing of Conductor, Overhead Ground Wire and OPGW Parallel to Live Line.

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 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 for 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 for 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 be a juristic person who neither fails to submit the Revenue and Expense Accounts nor fails to present proper and complete accounts to the Revenue Department of Thailand, in accordance with the Notification of the National Anti-Corruption Commission Concerning Principles and Methods of Preparing Revenue and Expense Accounts of Project between Individual/Company and Government Agencies B.E. 2554 (A.D. 2011) as amended from time to time (“the Notification”).
- f. The Bidder shall be a juristic person who registers for e-Government Procurement (e-GP) at Thai Government Procurement website (www.gprocurement.go.th at telephone No. 662 1277386 – 89) of the Comptroller General’s Department of Thailand.

Due to the fact that the e-GP system is not ready for registration for foreign Bidders who have no taxpayer identification number at this moment, foreign Bidders are, therefore, temporarily released from this qualification. However, whenever the e-GP system is ready, all foreign Bidders shall register in the e-GP system.

- g. 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.
- h. 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.

- i. 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.
- j. 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.
- k. The Bidder shall have purchased the Bidding Documents from EGAT as described under Article A-7. Availability of Bidding Documents. For a joint venture or consortium, only one member of the joint venture or consortium is required to purchase the Bidding Documents.

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 a multi but not less than four-bundled conductor transmission line of 380 kV or higher; having a circuit distance of not less than thirty (30) kilometers.

However, the exception will be allowed for the following cases:

- 1) For foreign firm not having experiences in executing turnkey contract(s) in overseas or with EGAT as mentioned above, his experiences in executing at least five (5) turnkey contracts as contractor (not as subcontractor) in his own country on a multi but not less than four-bundled conductor transmission line of 380 kV or higher, with the circuit distance of the transmission line for each contract being not less than thirty (30) kilometers is eligible in case that he proposes his bid as a joint venture with a local (Thai) firm who has an experience in executing at least two (2) turnkey contracts as contractor (not as subcontractor) with EGAT on supply and

construction of transmission line, having a circuit distance of the transmission line for each contract not less than thirty (30) kilometers and one of which shall be a two-bundled conductor transmission line at a voltage level of 230 kV or higher.

- 2) For local firm or the joint venture/consortium of local firms, himself or either firm of the joint venture/consortium having an experience in executing at least one (1) turnkey contract as contractor (not as subcontractor) with EGAT on a four-bundled conductor transmission line at a voltage level of 230 kV or higher is eligible to the requirement under this Item.

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 the combination thereof, having excellent reputation, and adequate technical knowledge and experience in construction of extra high voltage transmission lines, and involving accumulated circuit distance in excess of 200 kilometers for multi but not less than four-bundled conductor transmission line of 380 kV or higher having been successfully operated for at least one (1) consecutive year.

The record of such construction experience as well as a successful operation as required above shall be of the Work executed by the Bidder no longer than fifteen (15) years before the date specified for opening of this Bid.

However, for local firm or the joint venture/consortium of local firms further to the exception case of eligible bidders as mentioned in a.2), an experience of his or either firm of the joint venture/consortium in construction of four-bundled conductor transmission line at a voltage level of 230 kV or higher having received Provisional Acceptance from EGAT is eligible to the requirement under this Item.

- c. Himself, or either firm of the joint venture/consortium or his subcontractor or the combination thereof, having excellent reputation and adequate technical knowledge and at least three (3) 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. 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 towers, conductor, insulators, hardware assemblies and line accessories for conductor, spacers and spacer dampers for conductor, composite overhead ground wire with optical fiber (OPGW) and fiber optic transmission system 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:
- 1) Tower manufacturer being an eligible local firm having set up a plant for fabrication of steel towers in Thailand
 - 2) Insulator manufacturer having a record of three (3) consecutive years of successful operation/use of at least 100,000 units of insulator ANSI Class 52-8 or similar and at least 20,000 units of insulator ANSI Class 52-11 or similar in transmission line(s) operated in the transmission network electric utility in overseas country (not his own country) at a voltage level of 380 kV or higher during the last ten years
 - 3) Conductor hardware assemblies and line accessories manufacturer having a record of three (3) consecutive years of successful operation/use of the same or similar type as those required under this Invitation and used in multi but not less than four-bundled conductor transmission lines operated at a voltage level of 380 kV or higher having accumulated circuit distance of not less than 200 kilometers
 - 4) Spacer dampers manufacturer having a record of five (5) consecutive years of successful operation/use of the same or similar type as those required under this Invitation and used in multi but not less than four-bundled conductor transmission lines operated at a voltage level of 380 kV or higher having accumulated circuit distance of not less than 200 kilometers
 - 5) Composite overhead ground wire with optical fiber (OPGW) and fiber optic transmission system equipment manufacturers 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

- 6) For proposed conductor, according to the Industrial Product Standards Act B.E. 2511 which stipulates that the conductor is an industrial product that is required to conform with the Thai Industrial Standards – TIS 85-2548;

In case of locally supplied conductor, the manufacturer of the conductor shall receive a license from the Industrial Product Standards Council, Ministry of Industry, for manufacture of the industrial product and use of a standard mark, and

In case of foreign supplied conductor, the conductor shall be imported by a person having received a license from the Industrial Product Standards Council, Ministry of Industry, for importation of the industrial product.

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 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 with 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.

This 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 shield wire, insulator for shield wire, shield wire and OPGW hardware assemblies, line accessories for shield wire and OPGW, grounding materials, 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 shield wire, and hardware assemblies and line accessories (except damper) for OPGW 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 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 with 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 this Bid.

This 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

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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
3rd 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 and 230 kV transmission lines
 2. Hardware assemblies and line accessories (except damper) for overhead ground wire and OPGW

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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 and 230 kV transmission lines)

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

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

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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.

27th 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

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

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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/AW Conductor as per Schedule 1E Item 1E1.1 (500 kV)	926.40 km
2.	1272 MCM ACSR/GA Conductor as per Schedule 1J Item 1J1.1 (230 kV)	6.84 km
3.	1272 MCM ACSR/AW Conductor as per Schedule 1K Item 1K1.1 (500 kV)	4.80 km
4.	1272 MCM ACSR/GA Conductor as per Schedule 1K Item 1K4.1 (230 kV)	3.42 km
5.	1272 MCM ACSR/GA Conductor as per Schedule 2E Item 2E1.1 (230 kV)	35.34 km
6.	1272 MCM ACSR/GA Conductor as per Schedule 2J Item 2J1.1 (230 kV)	5.70 km
7.	795 MCM ACSR/GA Conductor as per Schedule 2K Item 2K1.1 (115 kV)	1.80 km
8.	1272 MCM ACSR/GA Conductor as per Schedule 2K Item 2K4.1 (230 kV)	1.14 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), Section B : Circuit Conductors and Specifications No. L-500 kV, Section B : Conductors.

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>	
Part 1 : <u>230 kV Lang Suan - Surat Thani Transmission Line</u> (The dismantled Equipment as listed below shall be purchased by the Contractor)			
1.1	Tower		
	Tower type DA1	45	towers
	Tower type LDA1	21	towers
	Tower type DB2	20	towers
	Tower type DC2	2	towers
	Tower type DD2	2	towers
1.2	Hardware Assemblies		
	Single string suspension insulator assemblies	294	sets
	Double string suspension insulator assemblies	102	sets
	Bypass string suspension insulator assemblies	6	sets
	Double string tension insulator assemblies	252	sets
	Double string tension inverted insulator assemblies	36	sets
	Overhead ground wire suspension assemblies	132	sets
	Overhead ground wire tension assemblies	96	sets
1.3	Line Accessories		
	Vibration damper for conductor	822	sets
	Vibration damper for overhead ground wire	184	sets
1.4	Insulator		
	Insulator ANSI CLASS 52-3 (15,000 lbs)	16,776	discs
1.5	1272 MCM ACSR/GA Conductor	232	km
1.6	3/8 " high strength galvanized steel overhead ground wire	38	km
1.7	Composite overhead ground wire with 36-core optical fiber	38	km

<u>Item</u>	<u>Description</u>	<u>Estimated Quantity</u>	
Part 2 :	<u>230 kV Lang Suan - Surat Thani Temporary Detour Line</u> (The dismantled Equipment as listed below shall be purchased by the Contractor)		
2.1	Hardware Assemblies Single string tension insulator assemblies	24	sets
2.2	Line Accessories Vibration damper for conductor Vibration damper for overhead ground wire	48 1	sets set
2.3	Insulator Insulator ANSI CLASS 52-3 (15,000 lbs)	384	discs
2.4	1272 MCM ACSR/GA Conductor	6.09	km
2.5	3/8 " high strength galvanized steel overhead ground wire	1	km
Part 3 :	<u>230 kV Bang Saphan 1- Lang Suan and Surat Thani - Lang Suan Transmission Line (Lang Suan Junction A)</u> (The dismantled Equipment as listed below shall be purchased by the Contractor)		
3.1	Tower Tower type QA1 Tower type QB2 Tower type QDE Tower type DDE	1 2 2 4	tower towers towers towers
3.2	Hardware Assemblies V string suspension insulator assemblies Single string tension insulator assemblies Double string tension insulator assemblies Single string tension inverted insulator assemblies Overhead ground wire tension assemblies	12 48 72 36 10	sets sets sets sets sets
3.3	Line Accessories Vibration damper for conductor Vibration damper for overhead ground wire	72 1	sets set
3.4	Insulator Insulator ANSI CLASS 52-3 (15,000 lbs)	3,756	discs
3.5	1272 MCM ACSR/GA Conductor	18.27	km
3.6	3/8 " high strength galvanized steel overhead ground wire	0.4	km

<u>Item</u>	<u>Description</u>	<u>Estimated Quantity</u>	
3.7	Composite overhead ground wire with 36-core optical fiber	3	km
Part 4 :	<u>230 kV Bang Saphan 1- Lang Suan and Surat Thani - Lang Suan Transmission Line (Lang Suan Junction B)</u> (The dismantled Equipment as listed below shall be purchased by the Contractor)		
4.1	Hardware Assemblies		
	Single string tension insulator assemblies	6	sets
	Double string tension insulator assemblies	6	sets
4.2	Line Accessories		
	Vibration damper for conductor	48	sets
	Vibration damper for overhead ground wire	1	set
4.3	Insulator		
	Insulator ANSI CLASS 52-3 (18,000 lbs)	270	discs
4.4	1272 MCM ACSR/GA Conductor	0.88	km
Part 5 :	<u>115 kV Lang Suan - Ranong Transmission Line (Lang Suan Junction A, Lang Suan Substation)</u> (The dismantled Equipment as listed below shall be purchased by the Contractor)		
5.1	Hardware Assemblies		
	Bypass string suspension insulator assemblies	3	sets
	Single string tension insulator assemblies	21	sets
	Double string tension insulator assemblies	3	sets
5.2	Line Accessories		
	Vibration damper for conductor	24	sets
	Vibration damper for overhead ground wire	1	set
5.3	Insulator		
	Insulator ANSI CLASS 52-3 (18,000 lbs)	285	discs
5.4	1272 MCM ACSR/GA Conductor	0.55	km
Part 6 :	<u>115 kV Lang Suan -Ranong Transmission Line</u> (The dismantled Equipment as listed below shall be purchased by the Contractor)		
6.1	Hardware Assemblies		
	Bypass string suspension insulator assemblies	3	sets
	Single string tension insulator assemblies	21	sets
	Double string tension insulator assemblies	3	sets

<u>Item</u>	<u>Description</u>	<u>Estimated Quantity</u>	
6.2	Line Accessories		
	Vibration damper for conductor	24	sets
	Vibration damper for overhead ground wire	1	set
6.3	Insulator		
	Insulator ANSI CLASS 52-3 (18,000 lbs)	285	discs
6.4	795 MCM ACSR/GA Conductor	3.65	km
Part 7 :	<u>230 kV Chumphon - Surat Thani Transmission Line</u> (The dismantled Equipment as listed below shall be purchased by the Contractor)		
7.1	Hardware Assemblies		
	Double string tension insulator assemblies	9	sets
	Double string tension inverted insulator assemblies	3	sets
	Overhead ground wire tension assemblies	4	sets
7.2	Line Accessories		
	Vibration damper for conductor	1	set
	Vibration damper for overhead ground wire	1	set
7.3	Insulator		
	Insulator ANSI CLASS 52-8 (36,000 lbs)	360	discs
7.4	1272 MCM ACSR/GA Conductor	1.28	km
7.5	3/8 " high strength galvanized steel overhead ground wire	0.21	km
7.6	Composite overhead ground wire with 36-core optical fiber	0.21	km
Part 8 :	<u>115 kV Lang Suan – Ranong Transmission Line (OPGW 24-core)</u> (The dismantled Equipment as listed below shall be purchased by the Contractor)		
8.1	Hardware Assemblies		
	Overhead ground wire suspension assemblies	1	set
	Overhead ground wire tension assemblies	10	sets
8.2	Line Accessories		
	Vibration damper for overhead ground wire	7	set
8.3	Composite overhead ground wire with 24-core optical fiber	1.3	km

<u>Item</u>	<u>Description</u>	<u>Estimated Quantity</u>	
Part 9 :	<u>230 kV Bang Saphan 1 - Lang Suan Temporary Detour Line</u> (The dismantled Equipment as listed below shall be purchased by the Contractor)		
9.1	Hardware Assemblies		
	Bypass string suspension insulator assemblies	3	sets
	Single string tension insulator assemblies	12	sets
	Double string tension insulator assemblies	1	set
9.2	Line Accessories		
	Vibration damper for conductor	1	set
	Vibration damper for overhead ground wire	1	set
9.3	Insulator		
	Insulator ANSI CLASS 52-3 (18,000 lbs)	180	discs
9.4	1272 MCM ACSR/GA Conductor	0.52	km
9.5	3/8 " high strength galvanized steel overhead ground wire	0.17	km
Part 10 :	<u>230 kV Surat Thani - Lang Suan Temporary Detour Line</u> (The dismantled Equipment as listed below shall be purchased by the Contractor)		
10.1	Hardware Assemblies		
	Single string tension insulator assemblies	12	sets
	Single string tension inverted insulator assemblies	3	sets
	Double string tension insulator assemblies	3	sets
10.2	Line Accessories		
	Vibration damper for conductor	1	set
	Vibration damper for overhead ground wire	1	set
10.3	Insulator		
	Insulator ANSI CLASS 52-3 (18,000 lbs)	315	discs
10.4	1272 MCM ACSR/GA Conductor	1.5	km
Part 11:	<u>115 kV Lang Suan - Lang Suan Junction A Transmission Line (from Str. No. 1/3 to Str. No. 1/3A to Str. No. 55/2)</u> (The dismantled Equipment as listed below shall be purchased by the Contractor)		
11.1	Concrete Tower		
	Tower type TSDE-230 ; 10.50M	1	structure
	Pole extension	1	set
11.2	Composite overhead ground wire with 36-core optical fiber	0.1	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.