



Energy for life

บริษัท ผลิตไฟฟ้าขนอม จำกัด
112 หมู่ 8 ต.ทองนียบ อ.ขนอม
จ.นครศรีธรรมราช 80210
โทรศัพท์ : 0 7552 9173
 : 0 7552 8884
โทรสาร : 0 7552 8358

KHANOM ELECTRICITY GENERATING COMPANY LIMITED
112 Moo 8 Thongnien, Amphur Khanom,
Nakornsrihammarat 80210, Thailand
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www.egco.com

Tender Announcement

Khanom Electricity Generation Co., Ltd. (KEGCO) would like to invite bids for:

1. Procurement of a Sodium Hypochlorite Generator for the chlorine production system with installation, 1 Set, as detailed in the tender documents number 3000142955 with Term of Reference (TOR) and the attached terms and conditions.
- **Delivery Location:** Khanom Electricity Generation Co., Ltd. (Khanom Power Plant) , 112 Moo 8, Thong Nian Sub-district, Khanom District, Nakhon Si Thammarat Province, 80210 Thailand.
 - **Site Survey Date:** January 15, 2025 (Tenderers must participate in the site survey)
 - **Tender Submission Deadline:**
 - The sealed tender envelope must be submitted **by January 28, 2025.** KEGCO will consider the postmark date as the official submission date.

Tenderers must submit their sealed tender envelope with the label "Tender Submission for Tender No. 3000142955 via EMS mail or through a courier service to the following address:

Procurement Section Manager
Khanom Electricity Generation Co., Ltd.
112 Moo 8, Thong Nian Sub-district, Khanom District, Nakhon Si Thammarat, 80210 Thailand

Tender Document Collection (Tender documents are provided free of charge; interested parties may collect them at the Procurement Section of KEGCO).

Tender documents will be available from January 3, 2025, from 08:00 – 17:00 (except on weekends and public holidays).

For inquiries or to collect the tender documents, please contact the Procurement Section of KEGCO , at:

112 Moo 8, Thong Nian Sub-district, Khanom District, Nakhon Si Thammarat
Tel: (075) 528884, 062-3636942
Email: Orawan.tra@egco.com

Tender Terms and Conditions

1. **Bid Submission:** If a bidder has submitted a bid to **Khanom Electricity Generation Co., Ltd. (KEGCO)** and wishes to cancel or change the price before the bid submission deadline, or if KEGCO accepts the price but the bidder refuses to accept the order or fails to sign the contract within the specified period, KEGCO reserves the right to cease business contact with that bidder.
2. **Contract Compliance:** If the seller/contractor fails to comply with the contract made with KEGCO, such as delivering goods/work late or repeatedly canceling the contract or order without reasonable cause, or if it is proven that the seller/contractor delivered goods/work that are counterfeit, imitation, or used goods that have been refurbished, causing damage to KEGCO, KEGCO will consider ceasing business contact with that seller/contractor.
3. KEGCO reserves the right to accept the price from any bidder or reject all or part of the bids or even cancel this tender if deemed necessary. No bidder may claim compensation or damages in such cases.
4. KEGCO reserves the right to choose any bidder to collaborate with KEGCO. The selection process will not be based solely on the lowest bid but will also consider the accuracy of the details as specified by KEGCO and/or other relevant factors, such as environmental care, energy management, etc.
5. KEGCO reserves the right to open the tender documents/bids on the same day as the deadline for submission or on the following day. The tender opening will be conducted on a "Closed Bid Basis."
6. Unless otherwise specified, KEGCO will not accept any bids submitted after the designated date and time.
7. **Contract Guarantee:** If KEGCO requires a performance guarantee, the selected bidder must provide a cashier's cheque or a bank guarantee according to KEGCO's terms, submitted to KEGCO's Purchasing Department on the day the Purchase Order (PO) or contract is signed.
8. For orders/contracts worth over 1 million Baht and deliveries exceeding 15 days, the seller/contractor must provide a cashier's cheque or a bank guarantee in the amount of 10% of the total contract value to KEGCO's Procurement Section on the day the order/contract is signed, as a guarantee for the performance of the contract/work and the warranty of the goods/work.
9. **Return of Guarantee:** To return the order/contract guarantee, the bidder must submit a document acknowledging receipt of the guarantee issued by KEGCO's Purchasing Department. For performance guarantees under clause 7, KEGCO will return the guarantee after verifying that the goods/work are delivered according to the terms of the order/contract, completed in full, and have met the warranty period with no damage due to the bidder's fault. If the guarantee is under clause 8, KEGCO will return the guarantee after verifying that the goods/work are completed according to the order/contract, and all obligations under the contract have been fulfilled, with payment for the goods/work made.
10. Unless otherwise specified, KEGCO will not accept any bids submitted after the designated date and time.
11. **Khanom Electricity Generation Co., Ltd. (KEGCO)** prioritizes conducting business with ethics, transparency, free from corruption, respecting human rights, and promoting occupational health and safety and environmental management in compliance with applicable laws, regulations, and standards. KEGCO will select business partners fairly, transparently, and support partners who align with these principles, encouraging partners to join the network in combating corruption and fraud.



RFQ No. 3000142955

บริษัท ผลิตไฟฟ้าขนอม จำกัด
112 หมู่ 8 ตำบลทองเนียน
อำเภอขนอม นครศรีธรรมราช 80210
โทรศัพท์ : 075-528884
โทรสาร :

Khanom Electricity Generating Company Limited
112 Moo 8 Tambol Thongnian
Ampher Khanom Nakhon Si Thammarat 80210
Tel : 075-528884
Fax :

Request For Quotation

Vendor No. 2215	RFQ Number / Date
SALES MANAGER / MARKETING MANAGER	3000142955 / 26.12.2024
COMPANY : 00000	Contact person / Tel.
TEL	Widchapon J. / +66 75 52 8884
FAX	

Please deliver to:	Quotation deadline	: 28.01.2025
KN4 Plant	Delivery date	: 01.12.2025
112 Moo 8, Tambon Thongnien Amphoe Khanom, Nakhon Sri Thammarat		
80210 Thailand		

Item	Material	Description	Qty	Unit	Unit Price
001		Sodium hypochlorite generator unit	1	UNI	
Used for Sodium hypochlorite generator Unit A Detail and Conditions as attachments					

เอ็กโก กรุ๊ป มีความสำคัญกับการดำเนินธุรกิจอย่างมีจริยธรรม โปร่งใส ปราศจากการทุจริตคอร์รัปชัน ให้ความสำคัญพลวัตภูมิคุ้มกันและการบริหารจัดการสิ่งแวดล้อม อันสอดคล้องกับหลักการกำกับดูแลกิจการที่ดี กฎหมายข้อกำหนด และกฎระเบียบที่เกี่ยวข้อง เอ็กโก กรุ๊ป จะดำเนินการคัดเลือกผู้ค้าอย่างเป็นธรรม โปร่งใส โดยจะไม่ให้และไม่รับผลประโยชน์ตอบแทนใดๆ เพื่อให้ผู้ค้ากระทำหรือละเว้นการปฏิบัติหน้าที่ เพื่อให้ได้มาหรือรักษาไว้ซึ่งผลประโยชน์ที่ไม่ชอบธรรม รวมถึงจะไม่เปิดเผยข้อมูลของผู้เสนอราคา เพื่อหลีกเลี่ยงการกระทำที่อาจนำไปสู่การเลือกปฏิบัติ เอ็กโก กรุ๊ป สนับสนุนผู้ค้าที่ดำเนินธุรกิจที่สอดคล้องกับหลักการดังกล่าวข้างต้น รวมถึงสนับสนุนให้ผู้ค้าพิจารณาเข้าเป็นแนวร่วมภาคีเครือข่ายในการต่อต้านทุจริตและคอร์รัปชัน

เพื่อให้สอดคล้องกับนโยบายการกำกับดูแลกิจการที่ดี และต่อต้านทุจริตคอร์รัปชัน เอ็กโก กรุ๊ป จะไม่เสนอ และไม่รับผลประโยชน์ที่อาจทำให้เกิดความไม่โปร่งใสเป็นธรรมเพื่อโน้มน้าว ชักจูง การดำเนินงานของเจ้าหน้าที่ในการคัดเลือก รวมไปถึงการเปิดเผยข้อมูลใดๆ ของผู้เสนอราคาอื่น เพื่อหลีกเลี่ยงการกระทำที่อาจนำไปสู่การเลือกปฏิบัติและเพื่อรักษามาตรฐานการปฏิบัติงานอย่างโปร่งใส มีประสิทธิภาพอย่างยั่งยืนต่อไป

การเสนอราคาต้องให้ครบถ้วนเวลาที่กำหนดไว้และราคาที่เสนอต้องไม่รวมภาษีมูลค่าเพิ่ม โดยมีเงื่อนไขการสอบราคาตามเอกสารแนบ

กำหนดยื่นราคา	กำหนดส่งมอบพัสดุ
Purchaser Widchapon J. / +66 75 52 8884	Bidder / ผู้เสนอราคา



Khanom Power Generation Company Limited

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112 Moo 8, T.Thong Nian, A. Khanom, Nakhon Si Thammarat 80210 Tel. (075) 529173,529179 Fax (075) 528358

TOR FOR PROCUREMENT OF PLATE TYPE SODIUM HYPOCHLORITE GENERATOR UNIT

PR NO : 1000148748

Objective

The Mechanical Maintenance Section, Maintenance Division, Khanom Electricity Generating Company (KEGCO) would like to replace a new sodium hypochlorite generator unit instead of the existing one as follow life cycle period based on instruction manual and planned to replace with new one in 2025. The procurement will be carried out according to the specifications and conditions mentioned in the scope of supply and conditions.

Scope of Supply

The vendor is required to procure 1 set of sodium hypochlorite generator unit according to the specified scope and conditions as following below;

1) Specification of Electrolyzer

1.1 **Type:** Plate type Electrolyzer with cylindrical shape shell body

: 2 sets of Electrolyzer / unit

1.2 **Total seawater flow:** 40 m³/hr

1.3 **Design temperature:** 50.0°C

1.4 **Minimum operating pressure:** 1.5 – 2.5 Barg

1.5 **Seawater properties**

- **Temperature: Design** 32 °C

- **Operating temperature range:** Min. 25 – Max. 40°C

- **pH:** 7.76 – 8.2

- **Salinity design:** 17,000 mg/l

1.6 **Capacity:** 60 Kg/hr at Salinity 17,000 mg/l and required power 2900 ADC

1.7 **Accessories part material specification:**

- **Fastener:** Titanium ASTM B348 Gr.1

- **Seal & Gasket:** EPDM or better

- **Shell body:** Fiberglass body with Epoxy coating outside & PVC liner inside

- **Cell:** Cathode Titanium ASTM B265 Gr.1, Anode Titanium ASTM B265 Gr.1 with protective coating

- **Spacer:** PVDF

- **Connectors:** 99% electrolytic copper

- **External hardware:** Stainless steel

1.8 **All Related Instruments & Valves**

2) Specification of Chemical Cleaning System

The chemical cleaning systems must be supplied with a complete set of acid cleaning equipment designed to match the capacity of the electrolyzer and integrated with the generator. The system must be self-cleaning type which can be cleaned with chemicals without any parts to be disassembled.

3) Specification of Transformer & Rectifier

- **Input rating:** 415VAC \pm 10%, 3 phase, 50 Hz
- **Output rating:** 2900 amperes, 100 volts
- **Ripple:** 3% at full rated output at low AC input line
- **Efficiency:** Greater or equal to 96.7% at full output (rectifier only)
- **Power Factor:** Approx. 0.91 at full output voltage
- The maximum ambient temperature is 50.0°C

4) Scope of material supply

Phase 1: Supply after the vendor receives the PO

- Consumable Spare parts: Flange gaskets, Bolting sets, Spacer
- Maintenance manual and Operation manual of Main & Auxiliary equipment
- Logic control diagram
- Construction PID for Mechanical, Electrical, C&I and Chemical section
- Recommend spare parts for Mechanical, Electrical, C&I and Chemical equipment
- Chemical cleaning procedure , Chemical specification for cleaning
- Performance test procedure
- Residual chlorine analysis procedure accorded with 4500-C1 AWWA 24th-ed

Phase 2: Supply after Commissioning

- As-built Mechanical drawing, Electrical drawing and C&I drawing of main equipment & auxiliary equipment
- As-built PID for Mechanical, Electrical, C&I and Chemical section
- On-site performance test report including residual chlorine test
- On-site training for KEGCO employees in operation and maintenance

Conditions related to the procurement and delivery of work.

- 1) In the case that the installation and testing of the sodium hypochlorite generator according to the performance test procedure does not meet the specified results, the vendor shall conduct to solve the testing result reach to comply with the requirements at no additional expense.
- 2) The vendor is responsible for dismantling the existing sodium hypochlorite generator and installing the new sodium hypochlorite generator and all as follow schedule.
- 3) The products shall be delivered to KEGCO within October 30, 2025, and also the installation phase , commissioning phase shall be completed within November 2025.
- 4) The vendor shall guarantee the quality of the products & installation under the following conditions:



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- 5.1) Electrolyzer cells shall be guaranteed for at least 5 years from the acceptance date. In the case that the electrolyzer cells are damaged or malfunction during the warranty period, the vendor shall rectify and arrive at KEGCO Site within 3 days of being notified by KEGCO.
- 5.2) All parts(not the electrolyzer cells) shall be guaranteed for at least 1 year. In the case that these parts are damaged or malfunctioning, the vendor shall rectify this issue to complete within 7 days.
- 5.3) The vendor is responsible for all operational costs and spare parts."
- 5) The vendor shall provide on-site training on operation, maintenance, troubleshooting, and other important aspects related to the usage and maintenance of the equipment to ensure that all relevant personnel are understood and can properly operate the aforesaid equipment.

Bidding Conditions

- 1) Before providing the new sodium hypochlorite generator specification and quotation , The vendor shall inspect & survey at the site within 15 January 2025 in order to inspect working area for dismantling and installing new equipment, collect the actual data and statistical information of the equipment related to the sodium hypochlorite generator in the mechanical, electrical, instrumental, and chemical fields to ensure the new set is practical for KEGCO and can be completely served together with the existing related equipment.
- 2) The vendor shall submit the proposal(Specification & Price) for KEGCO's consideration
 - 2.1) Technical proposal of sodium hypochlorite generator units, including information on plant design and technical data of all key equipment, such as the electrolyzer, transformer/rectifier & controller, acid cleaning system, and instruments.
 - 2.2) Sodium hypochlorite generator replacement schedule.
 - 2.3) Preliminary PID of Sodium hypochlorite generator system.
 - 2.4) General arrangement drawing & Assembly drawing of Sodium hypochlorite generator unit.
 - 2.5) Technical data of control & instruments equipment including pressure indicator, flow meter, pressure control valve.
 - 2.6) Customer reference list for the plate-type sodium hypochlorite generator unit.
 - 2.7) Warranty conditions proposed by the vendor.

Conditions for testing Acceptance

- 1) The vendor shall conduct the performance test and the test results shall meet the following criterion:

- 1.1) **The production capacity of the System** : 60 kg/h available chlorine
- 1.2) **The specific power consumption for electrolysis at the D.C. terminals of the generator unit:**
3.87 kWh/kg +/- 5% available chlorine with 32°C seawater inlet temperature.

The value is referred to the guaranteed production capacity of active chlorine and is based on seawater at 32°C temperature and salinity as TDS (dried at 180°C) of 17,000 mg/l.



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- 2) If the test results do not meet the specified criteria, the vendor shall conduct to solve the testing result reach to comply with the requirements. The vendor shall respond for all costs incurred in making these solves.

Work duration

- 1) The products shall be delivered to KEGCO by October 30, 2025.
- 2) The installation phase , commissioning phase shall be completed within November 2025.
- 3) On-site work: Monday – Sunday 08.00 a.m. – 17.00 p.m., lunch break 12.00 p.m. – 13.00 p.m.

General conditions and safety regulations

- 1) Before commencing work, the vendor team shall be trained by KEGCO's safety officers. The vendor coordinator will contact KEGCO supervisor at least one day earlier to arrange the list of trainees, prepare the training request documents, and attend the training with KEGCO officers. This training requirement is waived for those who have completed KEGCO training within the past three months.
- 2) All vendor personnels must self-screen for COVID-19 using Antigen Self Testing Kits (ATK) before commencing work. They must take a photo of the test result alongside their ID card and submit it to the Safety control section before attending the safety training.
- 3) The vendor shall coordinate the supervisor at least 5 days earlier before the start of the work to prepare, survey the area and plan the operation together.
- 4) The vendor must perform the work with caution and comply with the specified conditions and safety regulations to prevent damage to the property of Khanom Electricity Generating Company (KEGCO). If the vendor or their workers are negligent and cause damage, the Vendor must repair the property to its original condition or compensate for the damage as deemed appropriate by KEGCO.
- 5) The vendor must wear personal protective equipment (PPE) and ensure that all workers always wear appropriate PPE all the time during work.
- 6) If the KEGCO supervisor finds that the vendor is not complying with the terms of the contract, either before or during the work period, the supervisor will notify the Vendor to make corrections. The Vendor must immediately correct any non-compliance with the contract terms. If the Vendor cannot make the corrections, or if the KEGCO supervisor deems that the Vendor is not capable of completing the corrections within a timeframe that does not affect the work plan, KEGCO has the right to cancel the PO
- 7) The vendor must always keep the working area and related areas clean and tidy during the work period and after the work is completed. The vendor must collect and dispose of any waste and/or materials that are no longer needed in the designated area as determined by the KEGCO supervisor.
- 8) The KEGCO supervisor has the right to inspect the progress and quality of the work at any time by KEGCO employees involved in the contract.



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- 9) If the KEGCO finds any unsafe conditions/actions and notifies the contractor to make corrections, the contractor must immediately correct the unsafe conditions or actions without any conditions. The contractor cannot use the correction of unsafe conditions or actions as a reason for delays to request an extension of the delivery date specified in the PO.
- 10) During the work, the Vendor must be cautious to prevent fires and damage to people and KEGCO property. Any actions by the vendor that cause damage to adjacent property or equipment, whether intentional or unintentional, must be compensated by the Vendor to KEGCO.

Facility supports by KEGCO

- 1) Service water for cleaning
- 2) Service air for blow cleaning and connecting to equipment.
- 3) 220V and 380V currents for connecting tools, equipment and lighting systems

Other things besides. All arrangements are provided by the vendor.

Payment Terms

It shall be complied with the terms and conditions of the procurement section