



**KPO TECHNICAL WEBINAR ON ELECTRICAL EQUIPMENT  
WITH THE PARTICIPATION OF THE IMB CENTER**

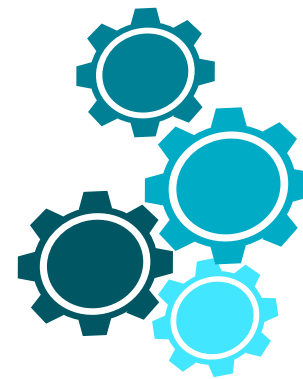
19/11/2024

KARACHAGANAK PETROLEUM OPERATING B.V.

# DISCLAIMER

The information contained in these slides is made available for consideration. It represents KPO's preliminary description of the company's demands as presently envisaged, but KPO reserves the right to change this information in the course of planning and implementing the projects, and KPO cannot be held responsible for any loss, damage or expense arising from reliance on this information. The information will not form part of any agreement between KPO and contractors participating in the workshop.

Today's engagement is one of many steps which KPO and its stakeholders are taking to develop local content.



# Electrical Commodities Localization Prospects

# Electrical commodities

## Electrical cables

- ✓ Power cables (multicore & single core)
- ✓ Earthing cables (single core)

## Heat Tracing

- ✓ Heating Tapes
- ✓ JBs & Tee boxes
- ✓ Thermostats

## Lighting

- ✓ Luminaires & Floodlights
- ✓ Lamps (LED, HPS)
- ✓ Accessories

## Distribution Units

- ✓ Distribution Boards
- ✓ Switchboards

## Defined Electrical Goods

## Power Transformers

- ✓ Distribution Transformers
- ✓ Packaged Transformer Substations
- ✓ Accessories (bushings, etc.)

## Raceway system

- ✓ Cable ladders / trays
- ✓ Accessories (elbows, couplers, bolts, nuts, etc.)

## Cable fittings

- ✓ Cable glands
- ✓ Cable stuffing glands
- ✓ Multi Transit blocks

## Low Voltage Devices

- ✓ Commutation devices MCBs & Fuses
- ✓ Terminals and accessories
- ✓ Ex JB's & Industrial JB's



# Power and Control Cables



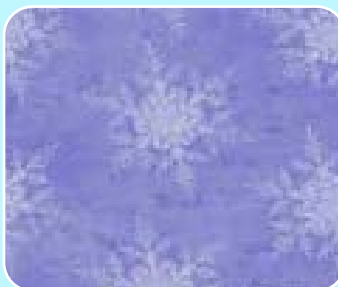
## Cable Design:

- Cross-linked polyethylene core insulation, PVC sheath, galvanized round steel wire armour.
- Abbreviation – Cu/XLPE/PVC/SWA/PVC.



## Conductors:

- Strands of annealed copper, round and profiled in cross-section.
- The gaps between the wires must be filled with a non-hygroscopic filler.



## Service condition:

- Installation temperature up to  $-15^{\circ}\text{C}$ .
- Operating temperature up to  $-40^{\circ}\text{C}$ .

# Requirements for the supply of power cables

## Cable Drum:



- The drums should be wound with the largest possible continuous lengths of cables.
- The purchase order number, purchase order item number, drum number and stock code must be clearly marked.
- The ends of the cable must be sealed and preserved to the drum in such a way that both ends of the cable are accessible.

## Accompanying documentation



- Certificate of Origin.
- Cable Data Sheet.
- Cable test protocol.
- Cable drums schedule in case of large order.

# Cable tray / Cable ladders



## Material:

- Low-temperature steel grade S355J2G3, mild steel with silicon filler is also allowed upon approval.
- The minimum thickness of steel must be at least 1.5 mm.
- Hot dip galvanized steel with a minimum galvanization thickness of 40 microns.



## Service Condition

- Cable trays and ladders, as well as their accessories, must be designed for outdoor use at temperatures from -40°C to +45°C.
- Estimated service life of at least 20 years.
- The material must be resistant to the following atmospheres::
  - sulphur oxide SO<sub>2</sub> content – 0.5 mg/m<sup>3</sup>
  - hydrogen sulfide content H<sub>2</sub>S – 0.008 mg/m<sup>3</sup>

# Cable glands



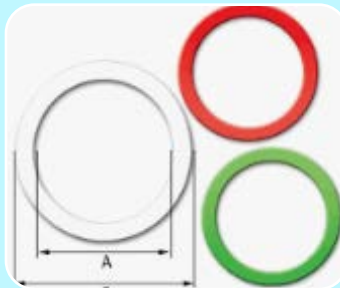
## Material:

- Nickel plated brass, optional stainless steel.



## Cable Gland Design

- Explosion-proof design Ex-e, Ex-d, IP66 complete with lock nut, earth ring, IP washer and serrated washer.
- The design shall be suitable for clamping cable armour made of round steel wire.



## Installation and operation:

- All accessories, especially IP washers (nylon gaskets) must be suitable for minimum temperature up to -40°C.



# Junction Boxes



## Material:

- The material must be resistant to aggressive environments, for example fiberglass or stainless steel.
- The material must have antistatic properties.
- The material must be durable and withstand impact loads of up to 20 Nm.



## Junction box design:

- The box shall be explosion-proof Ex-e, IP 66.
- A continuous grounding plate shall be installed inside the box and the grounding bolt shall be located outside.
- The terminal block must be securely fixed to the DIN rail.



- Paired terminals shall have a factory jumper.
- The box shall be suitable for installation of Ex cable glands, all cable outlets shall have Ex certified plugs when supplied.

# Self-regulating heating cables



## Cable Design:

- Outer insulating sheath made of modified polyethylene or fluoropolymer. Tinned copper braid.
- Grounding conductors, self-regulating conductor core and nickel-plated copper conductors.



## Main characteristics:

- Voltage 230V AC 50 Hz.
- Explosion-proof design Ex-e.
- Type of heated surface – carbon steel, stainless steel, painted and unpainted metal.



## Accessories:

- Ex Line and Ambient Thermostats.
- Ex boxes for heating cables splicing.
- Ex End seals.
- Ex power boxes for power supply.

# Outdoor distribution boards



## Material:

- Glass reinforced plastic (GRP), even if the Board is of industrial design, due to its high resistance to aggressive environments.
- It is permissible to make the Incomer circuit breaker compartment from aluminium alloy (in case of Ex-d enclosure).



## Design:

- Industrial or explosion-proof design. Ex-e housing is preferred, Ex-d only in the case specified above.
- It must be possible to control the outgoing circuit breakers without opening the housing cover.
- Rain protection in the form of a canopy shall be provided.



- Operation at temperatures down to -40°C.
- A gland plate for cable entry shall be provided in accordance with the Data Sheets.
- Internal heating of the panel shall be provided to maintain the operating temperature of the Circuit Breakers (-20°C).

# Package Transformer Substations



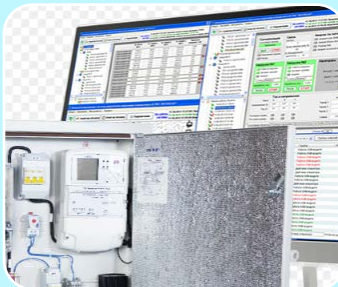
## Technical parameters:

- Voltage 6/0.4 kV;
- Range of applied nominal loads: 25, 63, 100, 160, 250 kVA.
- High side connection via 6 kV overhead line.



## Design:

- The housing is IP55, the 6 kV side is equipped with a protective fuse and a surge arrester.
- The LV side shall be equipped with an incoming CB and outgoing CBs according to typical Data sheets.



## Special requirements:

- A power meter for technical accounting of electricity with the possibility of connection to the automated system for commercial accounting of power consumption shall be installed.

# Lighting



## Lighting types:

- Floodlight lighting on 12m Lighting Poles is used at new wells, RMSs and BVS;
- Local lighting designed to illuminate work areas, small passages when designing new facilities at brown field.



## Design:

- Explosion-proof design for zone 2, housing IP 55 minimum.
- The enclosure of lamps and lighting poles must be resistant to aggressive environments.
- The use of industrial type lighting fixtures is permitted if specified in the design data sheets.



## Special Requirements:

- Since KPO adheres to the principles of energy saving, all supplied lamps shall be with LED lamps.
- Operating temperature for outdoor luminaires from -40°C to +40°C.



# Company and RoK Technical requirements

## СПЕЦИФИКАЦИИ КОМПАНИИ

- ✓ **KPO-00-ENG-SPC-00033** – Power, Control, Instrument and Telecom cables.
- ✓ **KPO-00-ELT-SPC—00010** – Outdoor Type Power Transformer with Distribution Panel.
- ✓ **KPO-00-ELT-SPC-00019** – Distribution Boards.
- ✓ **KPO-00-ELT-SPC-00028** – Heat Tracing Cables.
- ✓ **KPO-00-ELT-SPC-00036** – Cable Trays, cable ladders and accessories.
- ✓ **KPO-00-ELT-SPC-00038** – Electrical Bulk Materials
- ✓ **KPO-00-ELT-SPC-00044** – Lighting and small power philosophy.

## ТРЕБОВАНИЯ РК

- ✓ ГОСТ 31996-2012 – Кабели силовые с пластмассовой изоляцией на номинальное напряжение 0,66; 1 и 3 кВ.
- ✓ ГОСТ 60332-3-24 – Испытания электрических и оптических кабелей в условиях воздействия пламени.
- ✓ СТ РК 60502-1-2022 Кабели силовые с экструдированной изоляцией и кабельная арматура на номинальное напряжение от 1 до 30 кВ.
- ✓ ГОСТ 11677-85 Трансформаторы силовые общие технические условия.
- ✓ ГОСТ 20783-81 Кабельные лотки.
- ✓ СН РК 4.04-07-2019 Электротехнические устройства.

## Documentation and Certificates

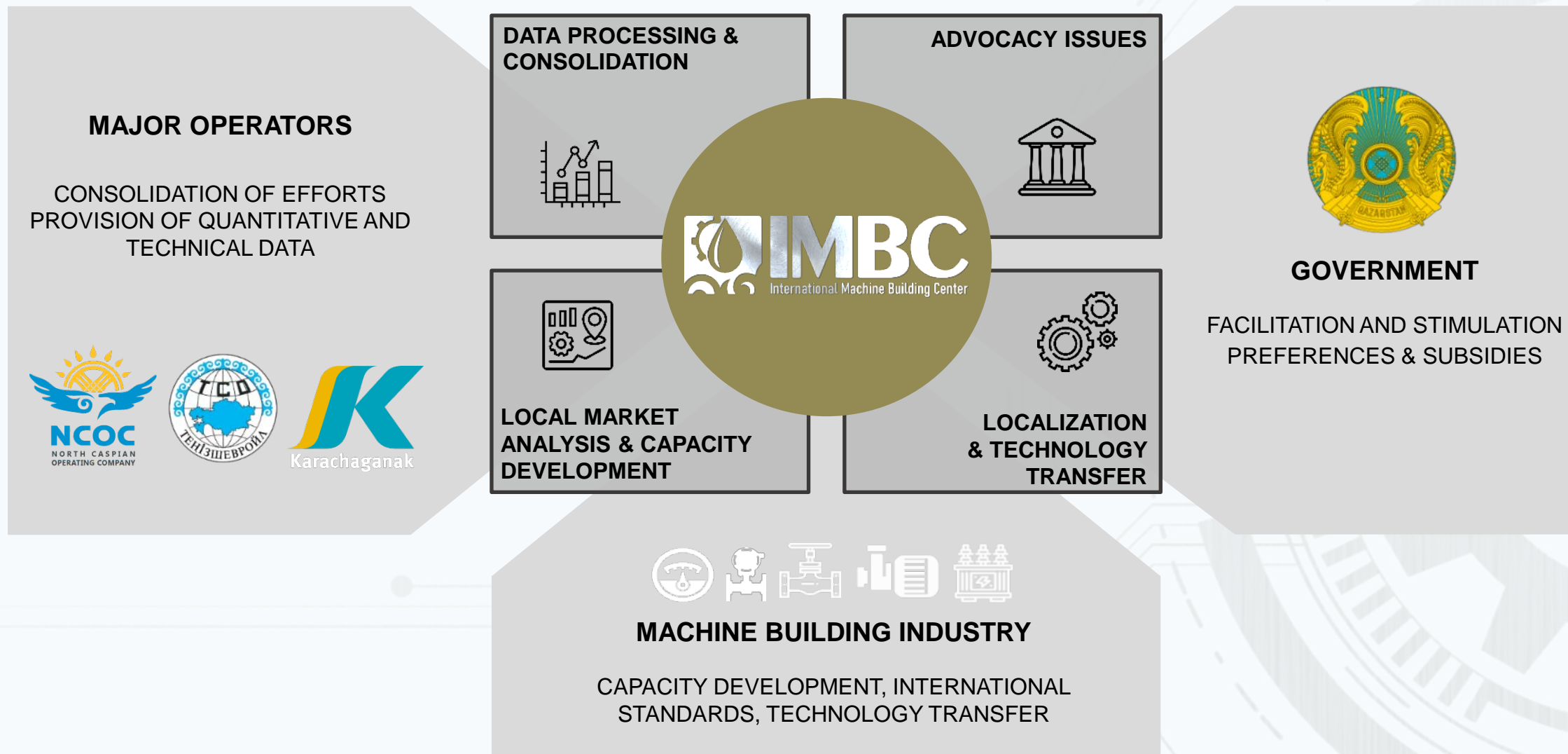
1. Data sheets
2. Certificate of Origin
3. Electrical Test certificate for cables and DBs.
4. General Arrangement for JB and DBs
5. CT KZ certificate.
6. Equipment passport for DB.



# OVERVIEW OF IMB CENTER'S ACTIVITIES

KPO TECHNICAL WEBINAR ELECTRICAL EQUIPMENT AND MATERIALS





In our analyses of demands and identifying localization priorities, we utilize the FPAL coding system

## FPAL Commodity Codes

**1.01**  
Drilling Equipment

**1.02**  
Material and Product Handling Equipment

**2.99**  
Other Products / Equipment and Materials

### Commodity Group A

**1.09**  
Electrical Equipment and Materials

**1.10**  
Instrumentation / Process Control Equipment / Materials

**2.02**  
Valves and Accessories

### Commodity Group B

**1.04**  
Pumps and Seals

**1.11**  
Process Filters

**1.12**  
HVAC

**2.01**  
Line pipe

### Commodity Group C

**1.02**  
Material and Product Handling Equipment

**1.07**  
Heat Exchangers / Heat Transfer Equipment

**1.16**  
Firefighting Equipment

**2.07**  
Chemical / Oils / Paints

**2.08**  
Insulation / Refractory Materials

### Commodity Group D

**1.03**  
Compressors / Expanders / Blowers and Accessories

**1.05**  
Drivers and Accessories

**2.03**  
Steel / Metal Materials

**2.11**  
Workshop and Handtools

Procurement in above commodity groups accounts for **over 75% of all procurement of goods** by three Operators \*\*



## Commodity Group A



## Commodity Group B



## Commodity Group C



## Commodity Group D

Demands analysis	35,000 items analysed	55,000 items analysed	7,000 items analysed	12,000 items analysed
High demand goods identified	19 types of goods	18 types of goods	27 types of goods	39 types of goods
Market analysis, longlist from available resources	more than 90 manufacturers identified	more than 100 manufacturers identified	more than 80 manufacturers identified	more than 120 manufacturers identified
Site surveys, manufacturers who expressed interest	72 site surveys conducted	61 site surveys conducted	41 site surveys conducted	TBC
Shortlisting, manufacturers producing types of goods with high demands	23 manufacturers shortlisted	16 manufacturers shortlisted	In process	TBC
Capacity development	8 CDPs developed	3 CDPs developed	TBC	TBC
Implementation of capacity development	3 recommended manufacturers	2 recommended manufacturers	TBC	TBC

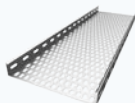
**Recommendations to Operators**



## ELECTRICAL



Cables, Cords,  
Wires and  
Accessories  
**1,004,436**  
m,pk,drum



Cable Racks  
and Trays  
**38,395 ea,m,pk**



Transits and  
Glands  
**64,390 ea,pk**



Transformers  
and  
accessories  
**53/502 ea/asy**



Lamps,  
Lighting fixtures,  
Lighting  
Equipment  
**20,714 ea**



Switch / Control  
equipment  
**99 ea,pk,box**



Distribution  
Equipment and  
Materials  
**27,015 ea, pk**



[technicalsupport@imbc.kz](mailto:technicalsupport@imbc.kz)



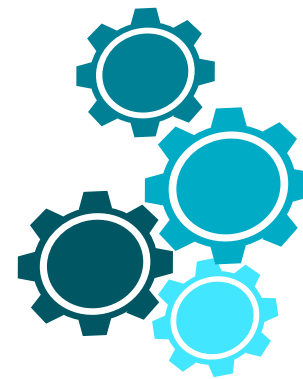
+ 7 (7172) 39-99-66



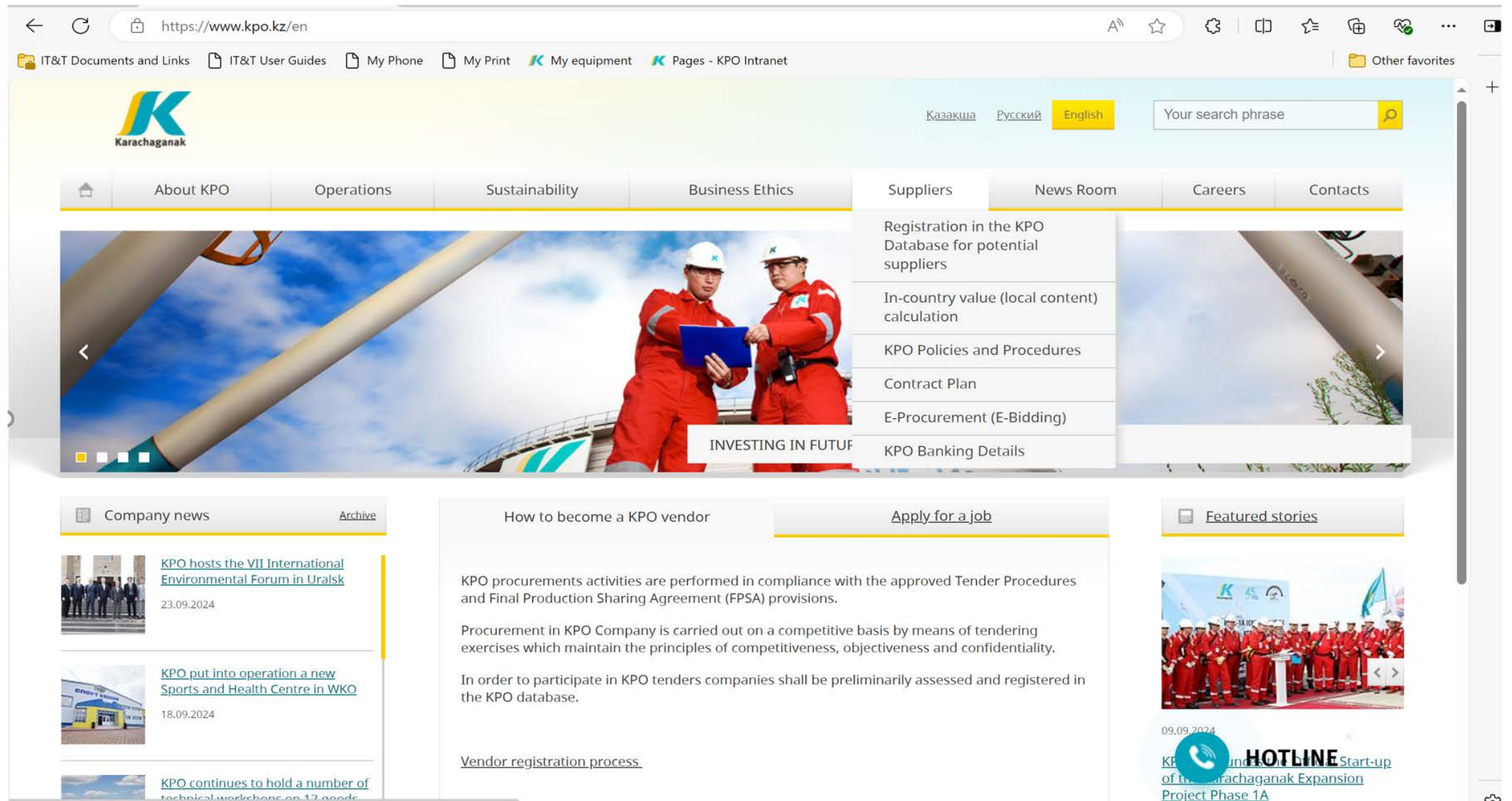
[www.imbc.kz](http://www.imbc.kz)

*The range and specificity of services for assistance in the development of the potential of manufacturers, offered by IMBC, are limited and are subject to provision on an individual basis, depending on the readiness of the manufacturer to supply their manufactured goods in line with the requirements of the Operators.*

*Assistance from IMBC does not oblige any retaliatory action from the potential manufacturer. The services of IMBC do not represent a guarantee of the successful participation and / or successful award of Contracts to the manufacturer in the procurement processes of the Operators.*



**KPO Supplier  
Database**



The screenshot displays the KPO Suppliers Database website interface. At the top, the Karachaganak logo is visible on the left, and navigation links for 'IT&T Documents and Links', 'IT&T User Guides', 'My Phone', 'My Print', 'My equipment', and 'Pages - KPO Intranet' are on the right. The main header features the Karachaganak logo, language options (Kazakh, Russian, English), and a search bar. Below the header is a navigation menu with links to 'About KPO', 'Operations', 'Sustainability', 'Business Ethics', 'Suppliers', 'News Room', 'Careers', and 'Contacts'. The 'Suppliers' menu is expanded, showing options like 'Registration in the KPO Database for potential suppliers', 'In-country value (local content) calculation', 'KPO Policies and Procedures', 'Contract Plan', 'E-Procurement (E-Bidding)', and 'KPO Banking Details'. The main content area features a large banner image of two workers in red uniforms and hard hats, with the text 'INVESTING IN FUTUR'. Below the banner, there are three main sections: 'Company news' with a list of recent news items, 'How to become a KPO vendor' with detailed information about the procurement process, and 'Featured stories' with a large image of a group of workers. At the bottom right, there is a 'HOTLINE' section with a phone icon and text about the start-up of the Karachaganak Expansion Project Phase 1A.

Navigation links: IT&T Documents and Links, IT&T User Guides, My Phone, My Print, My equipment, Pages - KPO Intranet, Other favorites

Language options: Қазақша, Русский, English

Search bar: Your search phrase

Navigation menu: About KPO, Operations, Sustainability, Business Ethics, Suppliers, News Room, Careers, Contacts

Suppliers menu items: Registration in the KPO Database for potential suppliers, In-country value (local content) calculation, KPO Policies and Procedures, Contract Plan, E-Procurement (E-Bidding), KPO Banking Details

Main banner: INVESTING IN FUTUR

Company news: KPO hosts the VII International Environmental Forum in Uralsk (23.09.2024), KPO put into operation a new Sports and Health Centre in WKO (18.09.2024), KPO continues to hold a number of technical workshops on 12 goods

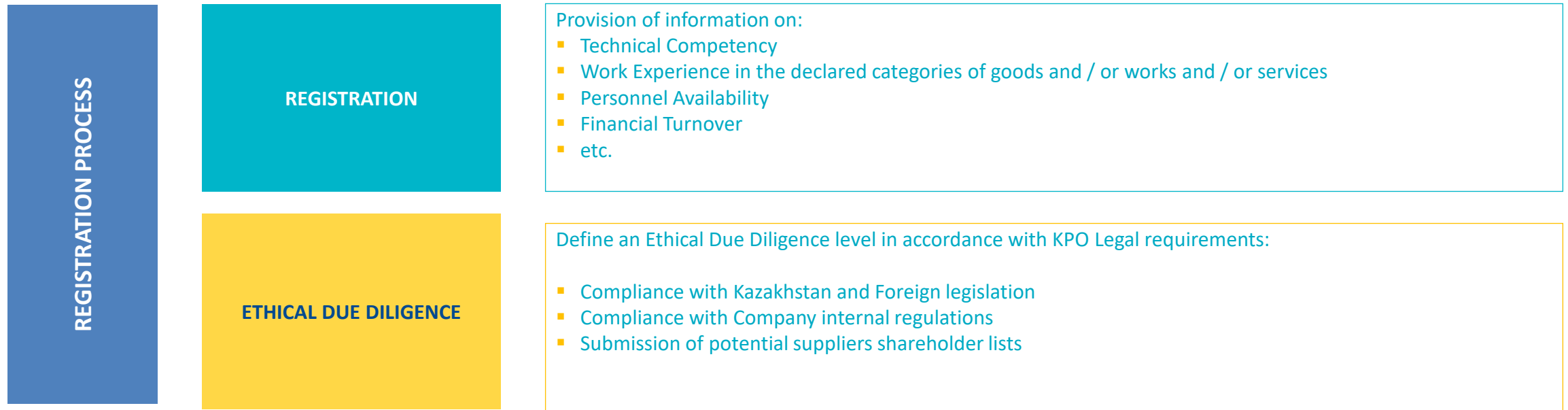
How to become a KPO vendor: KPO procurements activities are performed in compliance with the approved Tender Procedures and Final Production Sharing Agreement (FPSA) provisions. Procurement in KPO Company is carried out on a competitive basis by means of tendering exercises which maintain the principles of competitiveness, objectiveness and confidentiality. In order to participate in KPO tenders companies shall be preliminarily assessed and registered in the KPO database. Vendor registration process

Featured stories: KPO Foundation Start-up of the Karachaganak Expansion Project Phase 1A

HOTLINE: 09.09.2024

# VENDOR REGISTRATION

All potential suppliers shall be registered in KPO Database



Vendor registration in KPO Vendor Database does not guarantee the participation in a tender or contract award, but suggests that a registered company may be considered as a market research participant for provision of goods, works and services for further pre-qualification process or tender as the need arises.



# VENDOR REGISTRATION

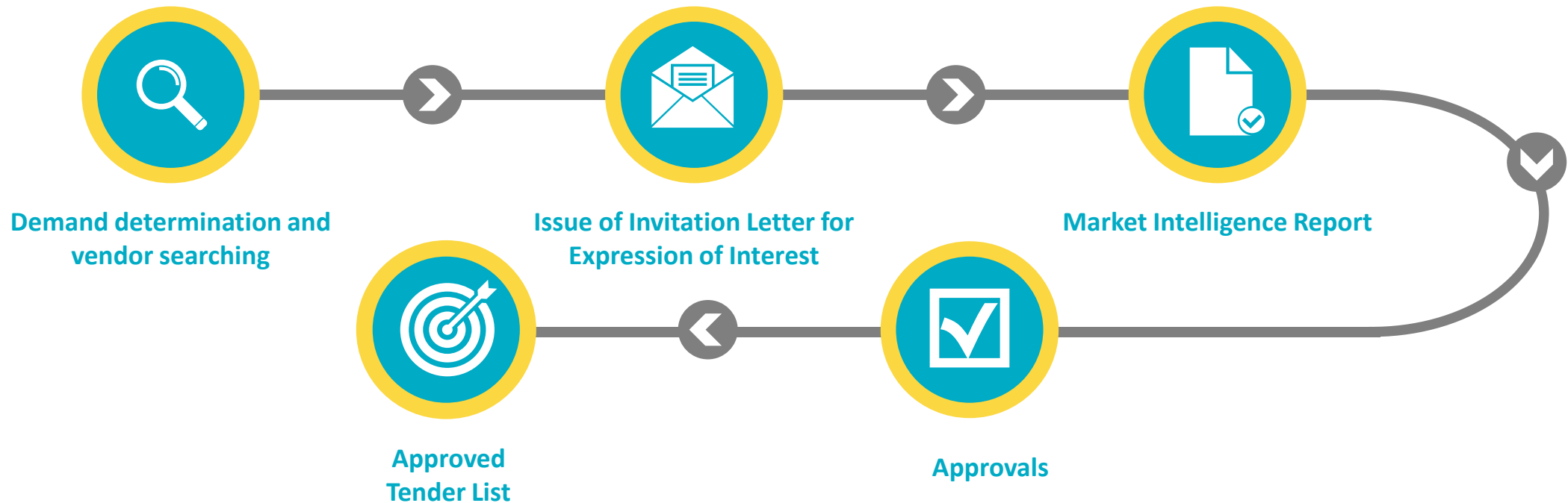
- To register in KPO Vendor Database, potential suppliers shall:
  - Download a questionnaire on KPO website – <https://kpo.kz/ru/postavshchikam/registracija-v-baze-dannykh-postavshchikov-kpo>
  - Fill in the questionnaire for the preliminary vendor assessment and indicate activity codes
  - Attach copies of required documents
  - Submit the completed pack of documents for vendor assessment and registration by e-mail at [MIVQ@kpo.kz](mailto:MIVQ@kpo.kz)
  - Contact phone: +7 (711336) ext. 4943, 4946, 2192
- KPO encourages Suppliers to update registration data on an ongoing basis, related to:
  - Work Experience in the declared categories of goods, works, services
  - Certification, accreditation
  - Reorganization
  - Contact persons

# MARKET RESEARCH

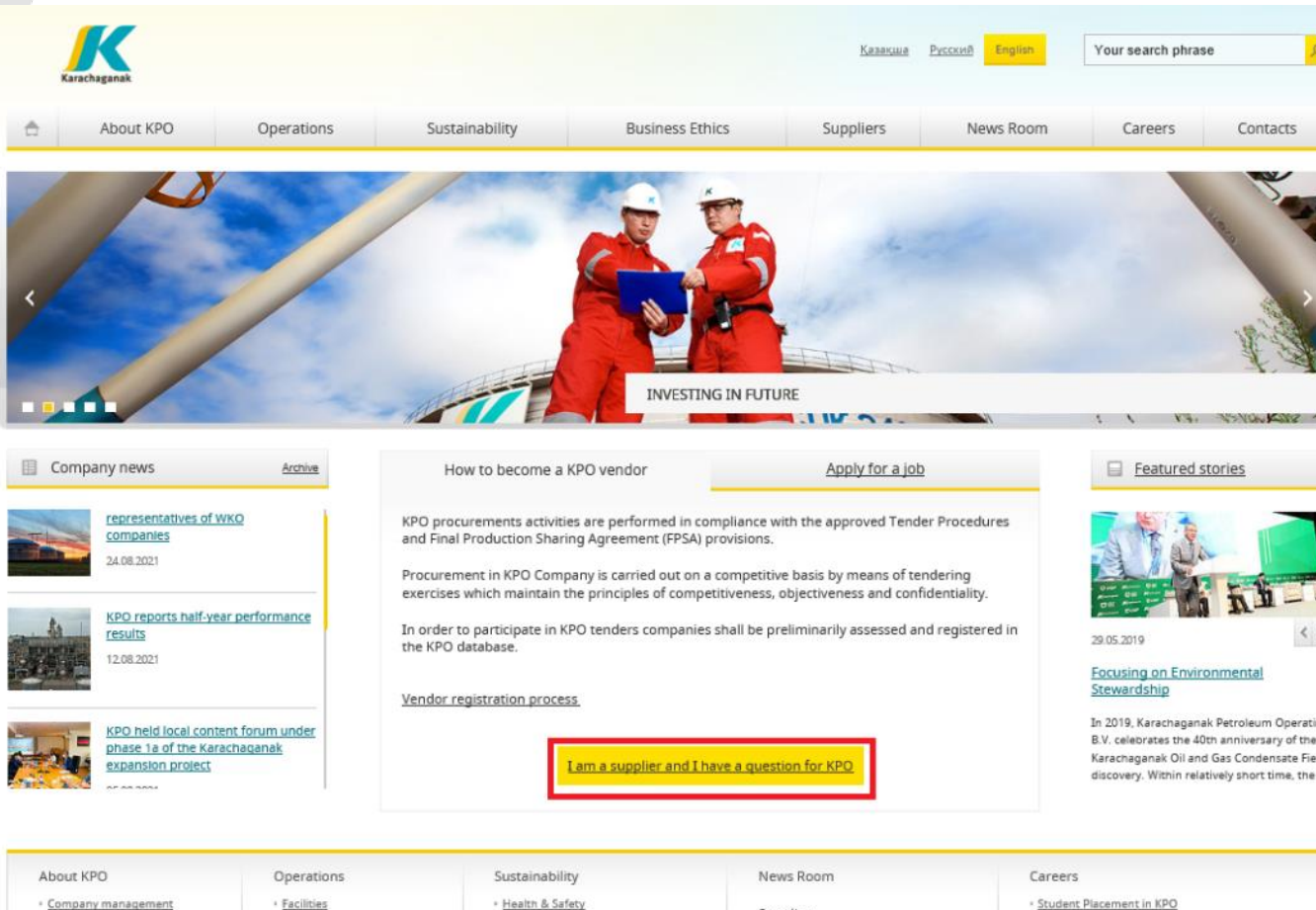
## Purpose

- Define potential suppliers of goods, works, services who can perform as per KPO requirements
- Ensure free competition for KPO tenders

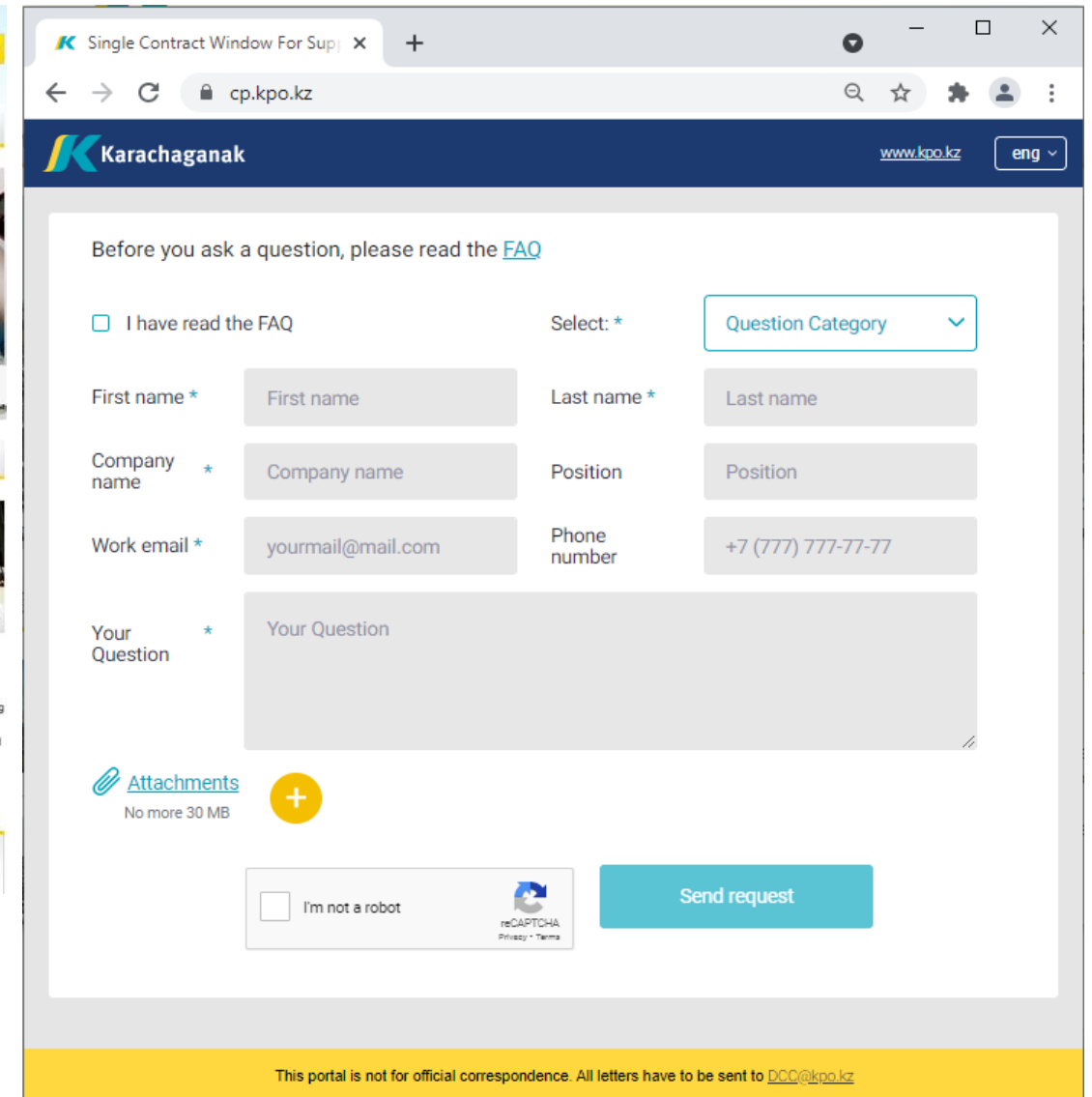
## PROCESS



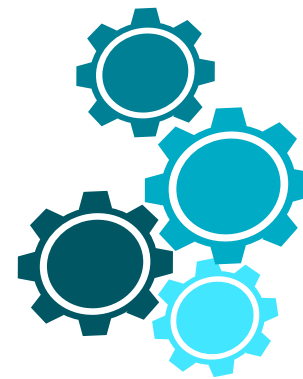
# "SINGLE WINDOW" SYSTEM



The screenshot shows the Karachaganak website homepage. At the top, there is a navigation bar with the Karachaganak logo, language options (Kazakh, Russian, English), and a search bar. Below the navigation bar is a large banner image of two workers in red uniforms looking at a tablet, with the text "INVESTING IN FUTURE". Under the banner, there are sections for "Company news" (with links to "representatives of WKO companies" and "KPO reports half-year performance results"), "How to become a KPO vendor" (with a link to "Apply for a job"), and "Featured stories" (with a link to "Focusing on Environmental Stewardship"). A red box highlights the text "I am a supplier and I have a question for KPO" in the "How to become a KPO vendor" section.



The screenshot shows the "Single Contract Window For Suppliers" form on the Karachaganak website. The form is titled "Before you ask a question, please read the [FAQ](#)". It includes a checkbox for "I have read the FAQ", a "Select:" dropdown menu for "Question Category", and input fields for "First name", "Last name", "Company name", "Position", "Work email", and "Phone number". There is a large text area for "Your Question". Below the form, there is an "Attachments" section with a plus sign and the text "No more 30 MB". At the bottom, there is a checkbox for "I'm not a robot" and a "Send request" button. The footer of the form states: "This portal is not for official correspondence. All letters have to be sent to [DCC@kpo.kz](mailto:DCC@kpo.kz)".

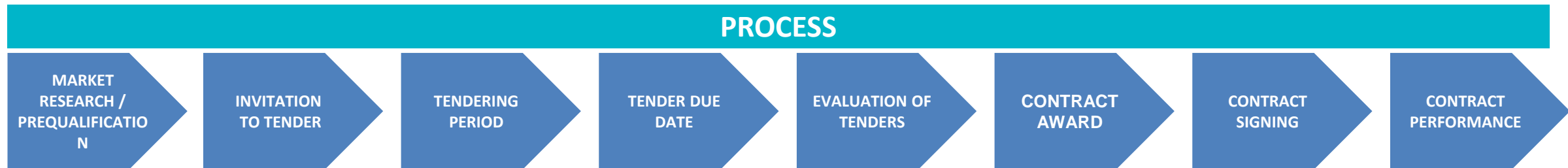


# Procurement Process

# PROCUREMENT PROCESS

KPO shall perform the procurement activities in accordance with:

- the Final Production Sharing Agreement (confidential and intended only for the use of KPO, its Shareholders and the Republic) and the Joint Operating Committee's Tender Procedures (JOC)
- current legislation
- approved budget and work program





# MAXIMUM ATTENTION SHALL BE PAID TO



**TENDER PACKAGES  
SUBMISSION  
REQUIREMENTS**

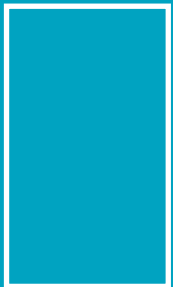
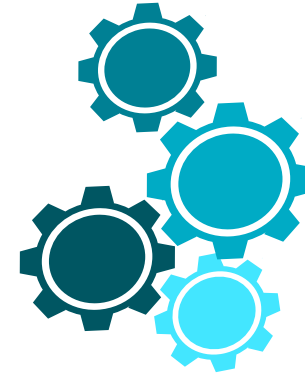
**TENDER PACKAGES  
SUBMISSION  
REQUIREMENTS THROUGH E-  
BIDDING SYSTEM**  
([Link to the instructions](#))

**INSTRUCTIONS  
TO TENDERERS**

**TENDER DUE DATE / TIME**

# TENDER DOCUMENTATION CONTENTS

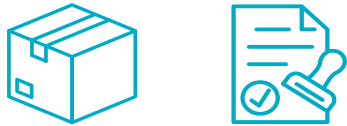
1. Cover letter
2. Forms, that shall be mandatorily signed, stamped and provided within timeframe specified:
  - Tender Acknowledgement and Confidentiality Agreement
  - Form of Tender
  - Certificate of Corporate Ownership and Declaration of Compliance
3. A package of documents related directly to the tender subject itself
4. Instructions to Tenderers
  - Form of Contract includes:
    - Form of Agreement
    - Schedule A – General Terms and Conditions
    - Schedule B – Scope of Goods/Services to be Supplied and Specifications
    - Schedule C – Compensation and Payment
    - Schedule D – Health, Safety and Environment (HSE) requirements
    - Schedule E – Special Conditions
    - Schedule F – Statement of Local Content
    - Schedule H – Industrial Relations
  - Questionnaire for Tender Participants
  - List of goods and technical delivery conditions (if applicable)
5. Instructions for preparing a tender proposal:
  - Instructions to Tender Participants
  - Bid marking template



## Local Content Mechanisms

# SUPPORTING MECHANISMS FOR LOCAL COMPANIES

## TRIAL ORDER



Tenders for testing a trial batch of GOODS from Kazakhstani suppliers

## EARLY TENDER



Contract is concluded for the supply of GOODS with a suspensive condition or with a long-term delivery schedule

## KAZAKH TENDER



Tenders exclusively among Kazakhstani Suppliers. The goal is to award contracts to Kazakhstani suppliers of GWS

## CONTRACT IN **EXCHANGE** FOR INVESTMENTS (UNDER REVISION)



A contract in exchange for investment is a long-term contract concluded on a Single source basis, under which the supplier undertakes to produce goods of local origin that are the subject of a procurement contract in the territory of the Republic of Kazakhstan





**Thank you!**