

December 2016

Monthly Magazine Published By Kuwait Oil Tanker Company's - Public Relations & Admin Services Group



International Day of Persons with Disabilities

The Company Has Identified Its Priorities of Projects in Accordance with Rationalization Policy



New Administration Building Project for LPG Filling Branch "Shuaiba"



New Administration Building Project for Marine Agency Branch



& Administrative Services Group

Editor In Chief Khaled Abdul Aziz Al Doub Manager of the Public Relation



Editorial Public Relation Department



P.O.Box 810 - Safat, 13009 - Kuwait E-mail:nakilat@kotc.com.kw

EDITORIAL





Talal Al-khaled Al-Ahmad Al-Sabah Chief Executive Officer

Promoting Company's Status and Leadership

Despite the drop of the oil prices and marine transport revenues, during the last period, KOTC continued to move ahead in implementing strategic projects to serve development plans in the country. As we defined our priorities in line with the exceptional world economic crisis as well as expenditure rationalization policy which aims to reduce the expenses and increase revenues, pursued by the country and applied by KPC and its subsidiaries.

The company has accomplished several projects which have contributed to promoting company's status and leadership in the field of marine transport, filling & distributing LPG also, serving the vessels fleet all over Kuwait ports. As a proactive approach for our company we implemented the renewable energy project to generate electricity through Solar Panels with a capacity of 5 MW of energy, in line with the directions of H.H the Amir of the State of Kuwait. to secure 15% of Kuwait's consumption of electric power from renewable and clean sources by 2030. As part of the fleet modernization plan, work on the company for the completion of phase 4 is progressing well, which includes building of a Very Large Crude Carrier VLCC and three Very Large LPG Carriers and four Medium Range Vessels (MR). Thanks to Almighty Allah and worker's efforts, the final phase of the company five-year plan will be completed by 2020 as the company will own 33 vessels in different types and capacities.

We are moving ahead in the promotion of the prestigious status which KOTC occupied in the field of marine transport, filling & distributing LPG and achievement of mega projects that serve KPC strategic & marketing objectives and flying the Kuwaiti flag in regional and international forums. We pray that Almighty Allah guides our steps on the way to success in serving the interests of our beloved country Kuwait.

Organized by Maritime Standard in Abu Dhabi KOTC Contributed to the Maritime Standard Ship Finance and Trade Conference

Under the patronage of KOTC, Shaikh. Talal Al- Khaled, C.E.O, Mr. Ali Shehab, Deputy C.E.O. Fleet Operations, and a number of Group Managers, participated in the 2nd Maritime Standard Ship Finance and Trade Conference in Abu Dhabi.

The conference featured a number of a series of presentations and panel discussions, signposting the way forward, discussed and debated the key issues and trends facing the shipping and maritime sectors and identified the key challenges as well as the significant opportunities related to financial and marine sectors in the region.

Mr. Ali Shehab, participated in" world economic development" session, and identified the key challenges as well as the significant opportunities, as he reviewed KOTC fleet modernization plans. A high level list of keynote speakers is being lined up, including experts from the

fields of ports, shipping, Ship management, maritime law banking, finance and trade. Discussed the development of the strategies and financial appropriate plans to meet the market needs.



Mr. Ali Shehab in a group photo with conference participants



Mr. Ali Shehab participating in panel discussions

Al-Ali Presented a Lecture on ECO-Design Vessels The Company Participated in Seatrade Maritime Middle East

KOTC participated in Seatrade Maritime Middle East for maritime and shipping industries. Eng. Jamil Al-Ali, Manager Fleet New Building Projects Group, presented a lecture on ECO-design vessels. For his part, Eng. Jamil Al-Ali, debated the key challenges, facing the maritime and shipping industries, slumped ship lease prices, the application of the new laws, methods of profits increasing and the importance of modern technology in facing challenges and risks. Eng. Jamil Al-Ali, discussed saving



Eng. Jamil Al-Ali, during his speech in the conference session

fuel and energy consumption in general, using clean fuel for vessels in order to expand the global trading, reviewed International Maritime Organization law regards Ballast Water, pointing out that KOTC is one of the pioneer companies which implemented Ballast Water System on 9 vessels and seek to apply it to the rest of the fleet tankers.



Visited & Inspected Carrier (VLCC)"AI Kout" and Sailed with the Crew from Fujairah to Kuwait Al-Asousi: The Company's Management Renders a Special Importance for All Employees Onboard KOTC Fleet Vessels



Mr. Khaled Al-Asousi, listening to an explanation about cargo control room by Capt. Anwar Buftain

Inside the cargo control room

Mr. Khaled Al-Asousi, Deputy C.E.O. Financial Affairs & Administration, continues his verification management onboard with company Groups and Branches, as he visited the Very Large Crude Carrier VLCC "AI Kout", and sailed with the crew from Fujairah to Kuwait. Mr. Khaled Al-Asousi, was briefed by Capt. Anwar Buftain. Team Leader - Fleet Personnel and the tanker crew about Navigation Bridge, control rooms, engine control room, cargo control room, charging and discharging systems, communication devices, and anti-piracy systems.

Mr. Khaled Al-Asousi stressed that the company's management pays a special priority for crew onboard and provide them with all requirements that ensures a safe sailing around the world and praised the great efforts exerted by tankers crew to maintain the company's prestigious position in the field of maritime transport. For their part, the tanker's crew praised the significant support by the company's management to the crew onboard, as they provide them with all required capabilities and needs that will help in achieving their duties and assigned tasks

perfectly.

It is worth mentioning that the Very Large Crude Carrier VLCC "AI Kout", was the best conclusion of the third phase of the fleet modernization plan and delivered to the company on October 2014, with capacity 2.2 million barrels, length overall (LOA) 333 m, extreme breadth (Beam) 60m, draft up to 22.5m and speed is 16.2 knots as it was registered by the Leading **Classification Society Class** NK on October 2014 to comply with the performance standard for design and operating efficiency and environmental preservation.



Onboard "Al Kout" vessel



In the engine control room

Ngkilat NEWS

The Company Praised Their Supportive Role in Emergency Situations to Achieve the Interest of the Country

"Shuaiba" Factory Honored Officers of the National Guard Participants in "LPG Operator" Course



■ Officials of LPG Filling Branch" Shuaiba"& National Guard Affiliated in the honoring ceremony

As part of the cooperation protocol between KOTC and Kuwait National Guard, the company organized a training course for a number of Kuwait National Guard Officers, from backup units in LPG Filling Plant "Shuaiba" Branch. With attendance of Eng. Salem Al-Bader, Manager, LPG Filling Branch "Shuaiba" representing KOTC and Col. Talal Issa Al-Saidi. Head of Technical Emergency Department from Kuwait National Guard. Eng. Salem Al-Bader stated that LPG operator course

contained two aspects, the first was theoretical which included the definition of safety methods and emergency situations, evictions (COHRE), assembly points, levels of risk and gas contents. The second aspect was about practical terms included a human safety drills and rescue operations, charge and discharge centers and how to maintain cylinder, praising the cooperation of the National Guard and keenness of the High Command to extend the required support

in emergency cases in accordance with the public interest for the state. For his part, Col. Talal Issa emphasized that the objective of training National Guard Officers is to achieve the level that gualifies them to deal with emergency situations in LPG Filling Plant and provide support and assistance in emergencies, according to the instructions of the High Command of the National Guard and of strategic objectives plan for 2020 which emphasizes on activating the role of the National Guard in support State agencies, and he expressed his congratulations to the graduates on their upscale performance and assimilated to all phases of the training session and extended his thanks to KOTC for the significant cooperation and keenness to enhance the expertise National Guard Officers through intensive training.



Eng. Nawaf Al-Shatti & Eng. Ahmed Al-Mazeedi



Honoring Mr. Sultan Faisal Mofleh



Al-Rasheedi: Better Reporting Culture, Reduce Risk and Prevent Harmful Incidents HSE Training on Near Miss & Incident Reporting for LPG Filling Branch (Umm Al-Aish)



■ A group of training participants

QAHSSE Division in Quality Management, Health, Safety, Security, Environment and Enterprise Risk Management Group through QHSSE in association with LPG Filling Branch (Umm Al-Aish) organized HSE training including awareness sessions on near miss & incident reporting, unsecure conditions, and actions, presented by Mr. Yousef Al-Rasheedi, Head of QAHSSE Division. During the session, Mr. Yousef Al-Rasheedi, highlighted the near miss & incident reporting, unsecure conditions, and actions, stressed that better reporting culture will reduce risk and prevent harmful incidents

for employees.

Mr. Yousef Al-Rasheedi. presented some studies that have addressed the near miss & incident reporting. unsecure conditions, and actions, explaining some of the reasons related to employee's reluctance on incident reporting, including the worries and anxiety to create a negative impact about themselves or not reviewing the previous incident reporting or to avoid the reporting troubles due to consecutive calls and emails. It was addressed during the session to explain the benefits and interests of near miss & incident reporting, such as root causes, potential risks and

methods to deal with these incidents, therefore employees could focus on the reform, prevention and avoid the future risks.

Mr. Yousef Al-Rasheedi mentioned some examples of near miss incidents which may occur, explained to the participants how to fill in the format of the near miss & incident reporting, and stressed on the employee's responsibility on reporting them, confirmed that the main purpose of reporting is not to monitor employee's mistakes but mainly to reduce risk and prevent harmful incidents and lose of proprieties. During two days of sessions, HSE training was conducted on near miss & incident reporting and the methods of dealing with unsecure conditions, and actions, through filling in the reporting formats, participants expressed their considerable understanding and accommodating on this regard, as they interacted positively with the lecturer through their inquiries and questions which led to a fruitful session that



■ Mr. Yousef Al-Rasheedi during his speech about Near Miss & Incident Reporting



will serve the interests of

employees and work.

Another group of training participants

KPC Best Practices in Facing Challenges Discussed by Planning Manager Presentation on Geopolitical Factor Effects of Maritime Transport and Export Activities

International marketing sector in KPC held a presentation regarding geopolitical factors and their impact on KPC and activities of marketing, exporting, maritime transport of crude oil and hydrocarbon products in Kuwait by Mr. Qahtan Al-Abdulkareem - Manager Planning Affairs Group in Kuwait Oil Tanker Company, who served in several positions previously in international marketing sector in KPC. Mr. Qahtan Al-Abdulkareem has reviewed the most important events faced by KPC as well as the challenges with significant impact on logistics, transport, export to global markets related to KPC, discussing collaboration and success of KPC and subsidiaries in dealing with different circumstances, recording and updating results of such practices,



Mr. Qahtan Al-Abdulkareem in a group photo with lecture participants

emphasized on teamwork, dedication to work, considering the best for Kuwait development and wonderful togetherness in facing challenges.

Numerous historical information and previous experiments was reviewed by Mr. Qahtan Al-Abdulkareem who was answering all questions and inquiries posed by attendees, with outstanding attendance for KPC, International Marketing Sector employees. Finally, Mrs. Nada Al-Sumait –Manager Value Chain Optimization Dept., International Marketing Sector, KPC, expressed her thanks to the company and to Mr. Qahtan Al-Abdulkareem for his effective cooperation while reviewing his personal experience during that period which will have a good effect on KPC employees in their practical life.

Ship Inspection and Hull Integrity Management Software – "ShipManager-Hull" Fleet Engineering implemented, Software for Hull Strategy, Planning, Hull Surveys and Inspections, Assessment and Documentation, Onboard Tankers

Fleet Engineering Group in KOTC, started to conduct and implement "ShipManager-Hull", prepared by DNV GL (The World's leading Classification Society and a Recognized Advisor for the Maritime Industry), to be implemented on the latest nine fleet tankers, which classified as "4 x VLCC's, 4 X MR's, 1 X Aframax". ShipManager Hull Vessel-specific 3D models, is the most advanced hull integrity management software available, for maintenance strategy, planning, inspections, hull surveys, assessments and documentation. Enable visualization and assessment of hull structural



Side of the lecture and in the frame the representative of DNV GL

condition in order to reduce probability of structural failures.

"ShipManager-Hull" implemented and activated onboard "AL KOUT" to be the first tanker of KOTC fleet conducting, "Ship Manager – Hull" onboard, as well as providing the necessary training and comprehensive presentation for the crew through internet conference call between head office and tanker.



Expressed their Thanks and Praised the Fruitful and Constructive Cooperation KOTC Received a Delegation from JW Marriott International

A delegation from JW Marriott International hotels visited KOTC, where they met with Mr. Abdulwahab Al Qatami, Team Leader Public Relations and Mrs. Dalal Al Asfour. Senior Analyst. Public Relations Division, along with a group of Public Relations employees. The delegation expressed their thanks for the company and praised the fruitful and constructive cooperation, wishing for continuous relations between the two parties and more progress during the next period.

For his part, Mr. Abdulwahab Al-Qatami welcomed the visiting delegation and thanked



Mr. Abdulwahab Al-Qatami, Mrs. Dalal Al-Asfour and group of Public Relations employees with JW Marriott Officials

JW Marriott International hotels on their cooperation with KOTC as they provided the company with special offers as well as a high standard services for the interest of employees. It is worth mentioning that JW Marriott International, is one of the leading companies in the field of hospitality as it owns more than 4,200 hotels and 19 brands and a team of staff working on more than 4,200 managed hotels which is honored and rewarded all over the world.

The Company Participated on Kuwait's 41st International Book Fair, Under the Patronage of KPC

KOTC Reviewed Responsibilities and Achievements

In the framework of Social Outreach, KOTC was keen to participate in Kuwait's 41st International Book Fair, under the patronage of KPC, contributed with a distinct corner in line the cultural, literary and artistic prosperity witnessed in Kuwait every year, in order to allow the visitors to closely discover the responsibilities and achievements of the company through distributing some booklet and brochures as well as display scale model of tankers and a documentary film about crude oil in Kuwait starting from drilling stage till exportation. It is worth mentioning that Kuwait International Book Fair is organized by National Council for Culture, Arts & Letters and considered one of the largest local cultural festivals due to keenness of major companies and libraries to participate in it and the large number of visitors as it is witnessed to have one million visitors every year who are dedicated to acquire books and participate in literary and cultural seminars which held on the sidelines of the fair.



Mrs. Moudhi Al-Marzook and Ms. Mona Al-Sabah in a memorial photo with K-Companies employees



Mrs. Sandus Dashti distributing gifts to visitors of the book fair

NEWS

Expressed his Satisfaction with Preventive Equipment and Praised Factory Management's Efficiency

a Team of "Fire Service Directorate" Inspects Firefighting Systems in LPG Filling Branch "Umm Al-Aish"



A memorial photo of LPG Filling Branch "Umm Al-Aish" and Kuwait Fire Service Directorate Officials

A team of Fire Prevention Sector from Kuwait Fire Service Directorate visited LPG Filling Factory "Umm Al-Aish" to inspect preventive requirements and firefighting systems, Umm Al-Aish liquefied petroleum gas (LPG) project is the first plant in the Middle East that uses the technology of 'Flex Speed' which products approximately 50.000 gas cylinder of 12 kg capacity per day. Mr. Khaled Al-Asousi, Deputy C.E.O. Financial Affairs & Administration, Eng. Ahmad Al-badah, Manager LPG Filling Branch "Umm Al-Aish" and a group of officials received the visitor's team from Fire Service Directorate. The Fire Service team reviewed, fire prevention and protection equipment, operating monitors automatically and manually, inspected sprinklers system, pumps room, control safety equipment and workflow system during their visit. Hence, the fire prevention's team expressed their satisfaction with preventive equipment and praised factory management's efficiency.

The team of Kuwait Fire Service Directorate was headed by Brigadier General. Khaled Abdullah Fahad-Deputy General Manager-Fire Prevention Sector, accompanied by Col. Engineer. Mohsen Al- Qudaihi- Al-Jahra Fire Prevention Sector, Col. Hassan al-Shammari-Inspector- Researches, Technical Studies& Follow-Up Dept., lieutenant col. Riad Al-Failkawi-Inspector-Auditing and Inspection Office, First Lt. Abdullah Al-Mezn-Liaison **Officer-Public Relations &** Media Dept., and a group of Officers from Fire Prevention Sector.



■ Eng. Ahmad AI –Bdah talking to officials of Kuwait Fire Service Directorate



Visitors attending a presentation about HSSE systems on the plant

NEWS



Retired After Twenty Years of Service and Devotion Fleet Engineering Employees Bid Farewell Party to Mr. Javed Petafi



Mr. Javed Petafi in a memorial photo with a group of company employees

Fleet Engineering Group bid farewell to Mr. Javed Petafi Team Leader 'B'- Fleet Engineering Group, after completing twenty years of service at KOTC. Fleet Engineering employees were keen to honor his valuable, faithful and devoted services and his contribution to promoting and developing Kuwait Oil Tanker Company over two decades. The farewell was attended by Eng. Bader Bader Al-Otaibi Manager F.E.G and various groups Manager's & Team leaders and Superintendents (FOG & FPG) who expressed their appreciation and gratitude to Mr. Javed Petafi wishing him further progress and success.

For his part, Mr. Javed Petafi sincerely thanked Mr. Bader Al Otaibi and all the FEG Team for all their cooperation rendered during his time in Fleet Engineering Group. After exchanging speeches of thanks and praise, Mr. Javed was presented with a souvenir. All wished him Good luck in his future endeavor. It has been mentioned that Mr. Javed Petafi joined Fleet Engineering Group on 31st August 1996 and ended on 10th October 2016, 20 years of service with full dedication and achievements at KOTC Head office.



A memorial photo of the honoring ceremony



A group of participant's employees on the honoring ceremony

We are Working on The Preparation of a Distinctive Design to Establish a Multi Storey Car Parking for Employees

Salah Al-Ghurair: The Company has Identified Its Priorities of Projects in Accordance with Rationalization Policy

Eng. Salah Al-Ghurair, Team Leader Civil Engineering Projects, said that the company has accomplished several strategic projects during the last period and working on other under construction projects currently, pointing to adhere to the country's rationalizing policy, where the company has identified its priorities of vital projects.

Eng. Salah Al-Ghurair, confirmed during his interview with Nakilat magazine that KOTC faces a delay in handing over the projects due to certain reasons beyond our will, where the company exerts great efforts to surmount the obstacles which faces the projects especially the required approvals and licenses issuance from concerned authorities.

For his part, Eng. Salah Al-Ghurair, praised the Kuwaiti technical cadres working for LPG and civil projects, where they almost contribute to the completion of projects by 100%, clarifying that the company prefers to deal with a local contractor for many reasons, though there are some projects may need a global suppliers or contractors, as per mentioned in his below interview.



Eng. Salah Al-Ghurair

The company's Kuwaiti employment cadres contributes the achievement of its projects by 100%

There are some delays in handing over the projects for reasons beyond our control

- Explain briefly about the accomplished projects lately and the under construction projects?

First of all, I would like to explain the nature of works that carried out by LPG and Civil Engineering Projects Group, which is responsible for the establishment and completion of civil and LPG projects, carry out maintenance of all company utilities. As for the projects that have been accomplished lately include the rehabilitation of Marine Agency Branch buildings, establishment and completion of the new administrative building of LPG Filing Branch "Shuaiba", preparing designs for the company's stores in Shuwaikh Industrial area, preparing designs for security and guard building in LPG Filling Branch "Umm Al-Aish," as for the current projects include the preparation of a design to establish a multi storey car parking for KOTC employees. The administrative building of the new location of Marine Agency Branch in Fahaheel District, in addition to the renewable energy project, or clean energy, which is related to generating electricity through solar panels in order to produce 5 megawatts of energy. In line with guidance of H.H Sheikh Sabah Al-Ahmad the Amir of the State. as well as the development LPG Filing Branch "Shuaiba". - What are the plans of the company strategy for current and future projects? The company focuses on the yielding positive projects which consistent with the





New administration building for LPG Filling Branch "Shuaiba"

company's operations and strategic plan in order to assist in work development and strengthen the prestigious position that company occupied regionally and globally.

- Explain briefly about your project designs and how far it matches with the latest international developments?

In the case of designing any project first we should determine the actual needs of the beneficiary party and these needs are depicted to designs and engineering systems to ensure the determination of the optimal use of the project.

- How the drop of oil prices and the rationalization of

We exert great efforts to surmount the obstacles which faces the projects especially licenses issuance

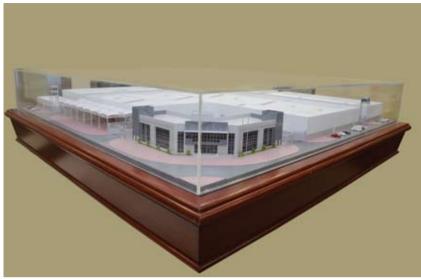
expenditure policy affected the projects you are working on?

Of course it is affecting our projects, due to the fall in oil prices and its impact on the country's economy in line with the government's guidelines regarding rationalization of expenditure policy, therefore, the company has committed to determine the prioritize projects and implementing the most important first and then the projects with the less importance.

- What are the delays in handing over projects and the actions taken by the company in such cases? Yes, there are some delays in handing over the projects for reasons beyond our will, but the company continuously and actively are dealing with these obstacles as soon as possible in order to reduce these delays and achieving the benefit of the projects.

- Explain briefly about the company lowest price tendering policy and if it negatively affects the quality and punctuality of the project?

The company adopts lowest price tendering or practicing policy through its long history for 60 years according to the lowest conforming Vakila



Company stores project in Shuwaikh industrial area

We prefer the local contractor although some projects requires international suppliers

The design of company building assists in the application of occupational safety and health standards

prices to the conditions and specifications, as It is also supposed not to affect the quality and punctuality of work based on work of pre-qualification of invited companies to provide their financial bids.

- What are the challenges that you faced during the implementation of projects, particularly in license issuance from concerned agencies and contractors?

In fact, there are some obstacles facing the most important projects such as the issuance of necessary approvals and licenses from the official authorities, where it could take a long time.

- Which contractors do you prefer to deal with local or foreign?

Regarding civil projects, we

prefer the local contractor for many reasons, including, the nature of the project that should be in consistent local company's ability and capacity, also the price as the local company provides lower prices comparing with international companies and provide administrative and technical staff, after sales services "maintenance" is easier with a local company comparing with international companies especially those who does not have a permanent office in Kuwait, adding that the local contractor is aware of the required procedures for official authorities and how far the delay of issuance of such licenses will affect the project negatively, though there are some projects required global

suppliers or contractors due to the shortage of specialized companies in certain fields such as LPG cylinders filling compressors and other devices.

- Explain briefly about the contribution of the Kuwaiti cadres in the completion of projects in your group and whether their numbers achieved the desired objectives?

The Kuwaiti technical cadres in Civil Engineering Projects Group almost contribute to the completion of projects by 100% and we are proud of recruiting Kuwaiti employees at the highest gualification levels with the necessary skills and expertise. What are your expectations after few years of handing over the company's building and whether the design assists in the application of occupational health and safety standards?

Yes, with the obligation to conduct regular maintenance for all health and safety systems to preserve them. - What are the plans for follow-up and maintenance of buildings and project after handing over?

The company contracted with a specialized company in the field of operating and maintenance for all electrical and mechanical systems, from the first day of handing over the building, in order to maintain the readiness of the building in case of emergency as well as to maintain the application of health standards.





For His Effective Contribution in Economic Diversification via Innovation Course Qahtan Al-Abdulkareem Received Platinum Star Performance Awards from South Korea

Mr. Qahtan Al-Abdulkareem, Manager Planning Affairs Group participated in Economic Diversification via Innovation Course, held in Seoul, Korea and organized by Daewon Advisory which considered one of the largest advisory and training centers in the Republic of South Korea in the field of leadership, enhancing creativity & innovation and development.

Mr. Alabdulkareem participation in Economic Diversification via Innovation Course with a presentation has had a profound impact and he was awarded Platinum Star Performance Awards for this effectiveness participation This course focuses on diversifying economies of industrialized and emerging countries through innovation, scientific research and development (R&D) emphasized the rapid growth of the coming fourth industrial revolution related to Internet Communication Technology.

Participants of the course are several representatives of government authorities and agencies of GCC countries, representatives of the Executive Office of the Vice President and Prime Minister of the UAE and Ruler of Dubai H.H. Sheikh Mohammed bin Rashid Al-Maktoum, Department of Economic Development in Abu Dhabi government and from Abu Dhabi E-Government Mr. Qahtan Al-Abdulkareem has expressed his gratitude with this recognition and didn't consider this award only for himself but for all employees of the Kuwaiti Oil Sector, and dedicated the Platinum



Mr. Qahtan Al-Abdulkareem in a memorial photo with session's participants



Mr. Qahtan Alabdulkareem receiving Platinum Star Performance Awards

Star to Mr. Bader Al-Fidhalah. Manager of KPC Regional Office in Seoul, Korea, as a symbolic sign of effective contribution, success and superiority in all aspects for Kuwait Oil Sector employees as well as the external contributions, clarified that this recognition was welcomed and appreciated. It is worth mentioning that KPC established and inaugurated a regional office in Seoul, South Korean at 2012, due to the importance of South Korea as one of the largest and most important global growing energy markets of various sources and in the world as well as the connection

of many Korean companies which works in the field of energy, refining, petrochemical industries, building tankers and other many different industries with significant relations and commercial partnerships with the State of Kuwait and KPC and its subsidiaries in addition to being one of the most important scientific development centers and innovations in the world and one of the capitals of the technology revolution in the world and a member of The Trillion dollar club as a reference to the major economy and commercial balance of South Korea.