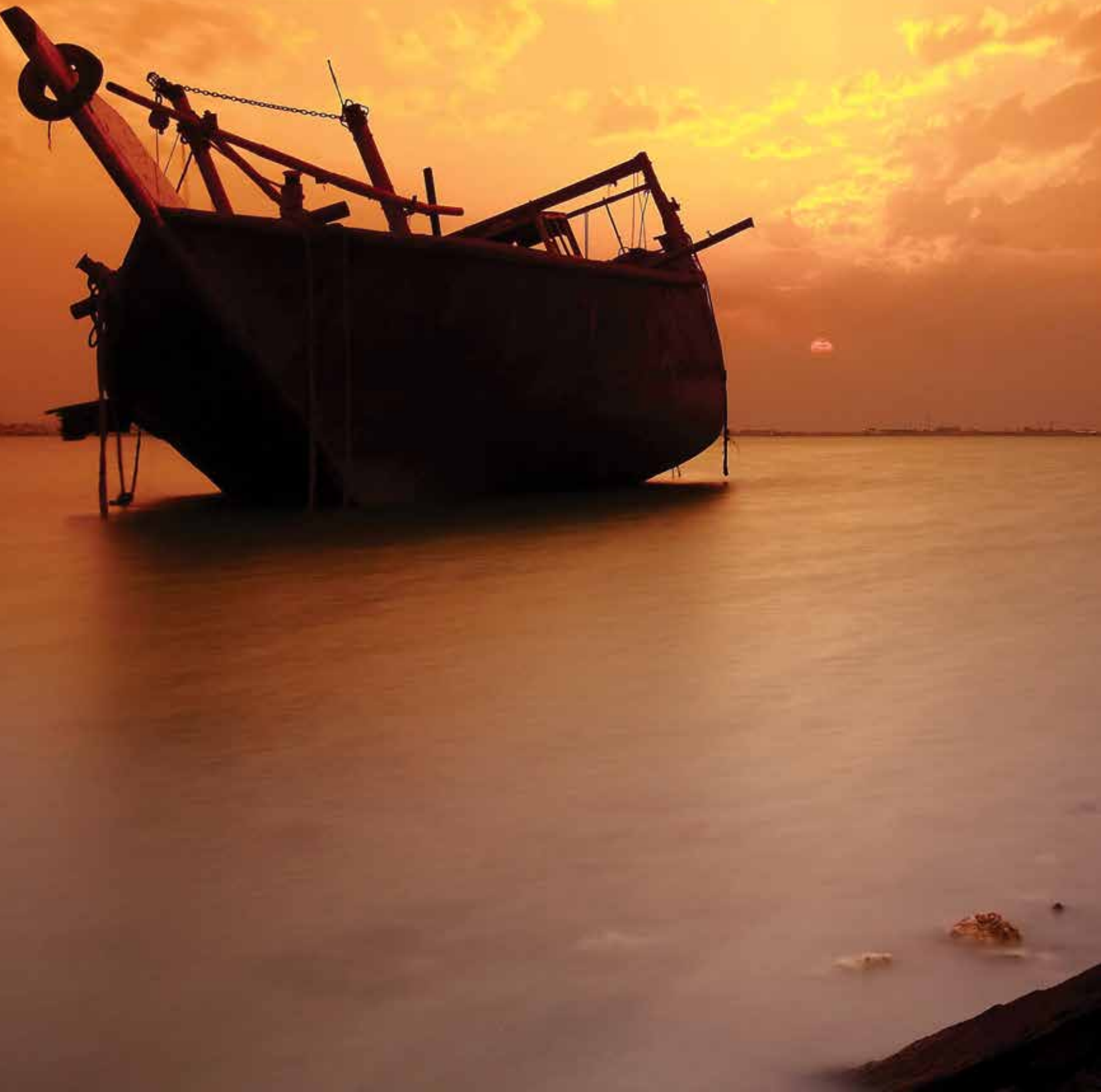


# The Kuwaiti Digest

January - March 2016



**Editor-in-Chief**  
Saad Rashed Al-Azmi

---

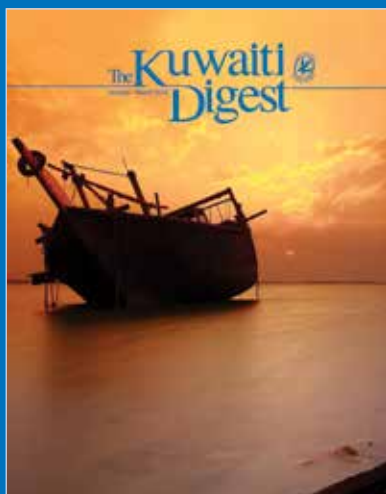
Correspondence concerning  
The Kuwaiti Digest should be addressed to:  
Editor-in-Chief, Kuwait Oil Company  
(K.S.C.)  
Information Team  
P.O. Box 9758  
Ahmadi 61008, Kuwait  
Telephone: 965-2398-2747  
Facsimile: 965-2398-1076  
E-mail: [kocinfo@kockw.com](mailto:kocinfo@kockw.com)  
or visit the KOC homepage at  
<http://www.kockw.com>

---

The Kuwaiti Digest invites newspaper,  
magazine and trade journal editors to  
reprint or otherwise make use of articles  
or illustrations appearing in this issue.  
Material should be credited and a copy  
mailed to the Kuwait Oil Company.



The 2<sup>nd</sup> Kuwait Oil & Gas Show and Conference



*The Kuwaiti Digest is a quarterly  
magazine published by the  
Kuwait Oil Company (K.S.C.)  
since 1973.*

# Contents



The Kuwait Sustainable Energy Conference and Exhibition



Environmental Day Celebration at Subaihiya Oasis

The 2 <sup>nd</sup> Kuwait Oil & Gas Show and Conference	3
An Interview with BP CEO Bob Dudley	8
KOC Receives International Delegations	11
The Kuwait Sustainable Energy Conference and Exhibition	12
Environmental Day Celebration at Subaihiya Oasis	16
KOC Receives Award for Gas Flaring Reduction Efforts	19
The 2 <sup>nd</sup> Kuwait Flow Measurement Technology Conference	22
ISO9001:2015 – Continual Improvement of the Standard	25
The North Kuwait Intelligent Solution Center	26
KOC Hosts ISPO Conference & Exhibition	29
Operational Technical Services Team Launches Online Database	31
Bill Gates Visits Kuwait	34
Hi-Tech	38
Travel: Visit Switzerland	40
Health: Understanding Allergies	42
KOC Health Campaigns	44
Pride & Service: One Family's History in Kuwait's Oil Sector	46
GCC to Significantly Increase Desalination Capacity by 2020	48



# Letter from the Editor



**Saad Rashed Al-Azmi**  
Deputy CEO  
(Administration & Finance)

By the time these words reach you, Kuwait will be in the midst of another fine winter. So far, we have been blessed with a fair balance of rain and clear, blue skies. Thanks to this, we can already see evidence of new life springing forth all around us and in the desert. Every year, Kuwait shows new signs of life during the colder months, and every year, KOC reflects these new beginnings through a renewed focus on all our objectives and strategies.

As KOC welcomes in 2016, I would like to encourage all employees to examine the many triumphs and successes our Company has registered over the past year. From new projects and production goals to a great number of environmental initiatives, KOC has accomplished a tremendous amount of work in 2015. While we are proud of our accomplishments, we must continue to learn from our experiences and work harder to fulfill all of the objectives of our 2030 Strategy.

Over the past few months, KOC has participated in a number of international conferences and events that will help us pave the way for an increase in production that is both more efficient and environmentally tenable. In the pages that follow, readers will be able to learn more about the exciting work our Company is involved in, particularly in the fields of energy efficiency and environmental sustainability. Our lead stories cover Kuwait's first Sustainable Energy Conference and Exhibition and the 2<sup>nd</sup> Kuwait Oil and Gas Show, where issues of efficiency, sustainability, and better production methods were discussed at length. I encourage all

employees to spend some time with those articles and learn more about how they can help in these very important Company efforts.

In addition to the major conferences that KOC has sponsored and participated in, the following pages contain stories about recently completed Company projects, such as the North Kuwait Intelligent Solution Center. Also featured is a story about a major accomplishment where KOC was once again the recipient of a very prestigious award that recognizes our gas flaring reduction efforts.

This issue of The Kuwaiti Digest will also be of particular interest to our readers because of two very important figures. One of those individuals, BP CEO Bob Dudley, took time out of his very busy schedule for an exclusive interview where he discussed his company's future outlook, as well as BP's history in Kuwait. The other individual, Bill Gates, needs no introduction. Mr. Gates was recently in Kuwait for a very special occasion that our readers can learn more about in the pages that follow.

KOC has a number of new initiatives and projects to look forward to this year. In addition to our production targets and environmental efforts, the New Ahmadi Hospital and Sheikh Ahmad Al-Jaber Al-Sabah Oil & Gas Display Center are scheduled to come online in 2016. Readers can look forward to more details about these projects in our next issue. In the meantime, I encourage all employees to refocus their efforts so that KOC may emerge stronger than ever over the coming year.

---



## Society of Petroleum Engineers 2015 **KOGS** 2<sup>nd</sup> Kuwait Oil & Gas Show and Conference

# The 2<sup>nd</sup> Kuwait Oil & Gas Show and Conference

The Second Kuwait Oil & Gas Show and Conference (KOGS 2015) was held recently at the Mishref International Fair. The opening ceremony for the event was held at the Dorra Ballroom of the Hilton Kuwait Resort in Mangaf. The Kuwait Oil & Gas Show and Conference, which was organized by the Society of Petroleum Engineers in cooperation with Kuwait Petroleum Corporation and its subsidiaries, is the largest gathering of individuals from the oil and gas industry in Kuwait. The event itself incorporated a broad program spectrum that featured both local and international speakers and specialists from the oil and gas industry. The event was held under the theme of "Future Hydrocarbon Resources: Innovations, Technology and Opportunities."

The KOGS 2015 opening ceremony, which was held under the patronage of the Prime Minister of the State of Kuwait, His Highness Sheikh Jaber Mubarak Al-Hamad Al-Sabah, took place at the Hilton Kuwait Resort. The ceremony was also attended by His Excellency the Minister of Oil & Minister of State for National Assembly Affairs Dr. Ali Al-Omair, OPEC Secretary General Abdullah Al-Badri, OAPEC Secretary General Abbas Al-Nagi, KPC CEO Nizar Al-Adsani (Conference Chairperson), KOC CEO Hashem Sayed Hashem (Executive Committee Chairperson), and many

Ministers, Ambassadors, and CEOs from local, regional and international oil companies.

Opening speeches were made by Minister of Oil Dr. Ali Al-Omair and KPC CEO Nizar Al-Adsani. Hosnia Hashem, Vice-President of Operations at KUFPEC and SPE President Janeen Judah also delivered opening remarks at the event.

In his opening remarks, His Excellency the Minister of Oil said, "We are proud to sponsor the second Kuwait Oil & Gas Show and Conference, which serves as an excellent example of the collaboration that exists in order to share technical knowledge about petroleum geosciences, exploration, production and refining, as well as petrochemical products and services."

In regard to the current situation that now faces the oil and gas sector, both domestically and abroad, Al-Omair said, "Despite the uncertainties and challenges facing the energy sector, we all agree that our main objective must focus on providing a stable and sustainable energy future for the next generation. Through innovation, new technologies and collaboration, we can move forward and overcome such challenges."

"OPEC's World Oil Outlook projection indicates that global energy demand will increase by almost



Minister of Oil Dr. Ali Al-Omair addresses the audience.

50% by 2040, with the mix continuing to be dominated by hydrocarbons. Much of this growth will continue to be concentrated in the developing world, and while wind and solar are expected to grow at the fastest rates, oil will continue to be the most prominent source of energy that will meet future demands," the Minister of Oil said. In regard to the recent slump in oil prices, Al-Omair maintained that the industry would now be obliged to reinforce business strategies and discover new and innovative methods to increase efficiency through technological advances, all while keeping operations safe and environmentally friendly.

In his closing remarks, Al-Omair assured the audience that development projects in Kuwait would not be slowed down due to the recent fall of oil prices. "We have already embarked on major capital projects of strategic importance encompassing upstream oil and gas production, and crude oil refining and distribution. Such projects will enhance the environmental and safety performance of operations,

provide new employment opportunities, and support the country's economic growth," he said, adding that the Clean Fuel Project (CFP) will transform the Mina Abdullah and Al-Ahmadi refineries into complexes that are capable of meeting oil market requirements while enhancing the competitiveness of Kuwait's petroleum products.

The floor was then given to KPC CEO Nizar Al-Adsani, who shared his thoughts on KPC's 2030 Strategy. In his address, Al-Adsani maintained that it is Kuwait's intention to remain a reliable supplier of energy

to the world. This is why, he said, "Kuwait will mobilize its resources to ensure that 2020 is an important year for major projects, which we have started to execute a few years ago. We at Kuwait Petroleum Corporation recognize that it is also a great risk if we do not make investments in this field."

"Kuwait is producing three million barrels of oil per day today. By 2020, we should be able to produce four million barrels per day," the CEO said. According to Al-Adsani, this increase will be made possible through the following:

- An increased number of rigs.
- The construction of four new gathering centers and two new booster stations.
- The development of Kuwait's heavy oil reserves.
- The development of Phase II and III free gas.
- Gas utilization projects in Wafra and Khafji Joint Operations.
- The drilling of more than 2,000 wells by 2020.



KPC CEO Nizar Al-Adsani delivers the keynote speech.



- The construction of new facilities that will assist Kuwait in its effort to develop its gas reserves.

In addition to the efforts being made to improve and expand Kuwait's upstream capabilities, Al-Adsani maintained that downstream facilities were all being focused on. This, he said, was being done in order to refine petrochemical integration and produce valuable, environmentally friendly products in Kuwait. Some of the downstream initiatives include the following:

- Construction of a new refinery capable of 615,000 BPD that will provide clean fuel (minimum sulfur content) for Kuwait's power stations.
- Upgrading existing refineries to produce cleaner petroleum products as part of the Clean Fuel Project.
- Al-Zour Refinery.
- Building a permanent LNG import facility.
- Building an integrated refining / petrochemical complex in Vietnam.
- Exploring other downstream opportunities in markets in Asia and North America.

"In our effort to diversify Kuwait's national income resources, we coordinate with various parties to ensure that renewables will contribute to generate 15% of the country's total energy demand, which is in line with the directions and guidance of His Highness the Amir Sheikh Sabah Al-Ahmad Al-Sabah. Kuwait oil sector's strategic directions for

2030, which cover a spectrum of various functional areas, provide an overview of the road map aimed at supporting the Kuwait Development Plan to enhance the role of the oil sector to support the Kuwaiti economy by creating adequate jobs for Kuwait's next generation," the CEO said, adding that KPC was also committed to reducing its carbon footprint through better efficiency and environmental initiatives.

Meanwhile, Hosnia Hashem, Vice-President of Operations at KUFPEC and KOGS Program Chairperson, addressed the audience. In her statement, Hashem maintained that KOGs was an excellent opportunity to share recent accomplishments, achievements and success stories.

"This year, KOGS is especially meaningful, as the successes in the oil and gas world are

taking place as our industry faces exceptional challenges, when prices are a great matter of concern." She went on to say, "The Conference will cover the latest technology and innovative solutions that address our industry's most pressing challenges. The technology experts in the Program Committee have designed the content to ensure that KOGS not only remains at the forefront of the industry, but also that it will be an event of prime interest for sharing the most recent knowledge and experience in our industry."

Chevron General Manager and 2017 SPE President Janeen Judah then took the stage and said that SPE's core mission was technology transfer. "Technology transfer," she said, "is needed now more than ever in order to cut costs, increase production, and optimize ingenuity. Those who

Senior officials during the inauguration of the event.





Senior officials during one of the panel discussions.

succeed will be those who reassess assets, create more efficient technology, are open to new and original ideas, and optimize what is available and augment where investment can bring higher returns. To do so, we must think in the long-term mindset instead of reacting," she said.

Following the opening statements, an Executive Plenary session was held under the title of "Future Hydrocarbon Resources: Innovations, Technology and Opportunities. Keynote speeches were delivered by His Excellency Abdullah Salem Al-Badri, OPEC's Secretary General, and Mohammad Al-Mutairi, CEO of Kuwait National Petroleum Company. Bob Dudley, BP's CEO, and Samir Brikho, CEO Amec Foster Wheel, also delivered speeches.

During the session, speakers discussed a number of issues, including how

technology, innovation and the identification of opportunities are instrumental to efficiently produce the hydrocarbon resources of the world. Speakers discussed how the known abundance of oil and gas is now multiplied by the addition of unconventional resources. This, they said, established new frontiers for the utilization of technologies that have the capacity to enable the future of the energy industry. Innovation and technology, they maintained, will lead the way to completely transform the oil and gas industry once more. Technology will also do much in the way of unlocking the complexities ahead. It will also help the industry reach new heights in relation to new phases of production for the conventional oil fields of the world.

Panelists maintained that part of the industry's main goal is to find opportunities to operate better with more efficiency

and to provide more safety in an enhanced environmental framework. The industry, they said, continues to be viewed as a leader in terms of innovative integration efforts among nations, companies, and people in their quest to reach new levels of efficiency.

In addition to the Executive Plenary Session, the KOGS 2015 agenda also included four industry panel sessions and five special sessions that were led by CEOs, managers, and presidents of national and international oil companies and the service industry. Discussion topics included industry strategies in the face of unstable oil prices, the role of gas in the region, innovation, overcoming scarcity of resources, refining industry drivers, women's networking, local content and the role of the banking sectors.

Over 1,300 individuals from more than 30 countries attended the exhibition that was held



at the Kuwait International Fair in Mishref. The exhibition space covered some 14,000 square meters and included 200 exhibitors from 24 countries.

The conference portion of the event consisted of 27 Technical Sessions, four panel discussions, five special sessions, 50 e-poster presentations, and three courses. In total, 261 papers were presented during KOGS.

Important events also took part on the sidelines of the main KOGS exhibition, including a teacher/student workshop organized by KOC and attended by approximately 50 science

teachers and 100 students from secondary schools. The workshop included an opening speech by Emad Sultan, DCEO North Kuwait. The two-day program included various presentations and activities for secondary school students that were delivered by renowned industry professionals, who shared their experiences, career endeavors and the motivations behind their decisions to pursue careers in the oil and gas industry. KOC officials who took part in the initiative included Nayef Al-Anezi, Manager Technical Services Group, Mohammad Al-Hammer, Senior Petroleum

Engineer Fields Development (NK) and Mohammad Al-Refaie, Electrical Engineer.

### About SPE

SPE is a non-profit professional association whose members are engaged in energy resources development and production. SPE serves more than 143,000 members in 147 countries worldwide. SPE is a key resource for technical knowledge related to the oil and gas exploration and production industry and provides services through its publications, conferences, workshops, forums, and membership programs.



The KPC booth welcomed guests and provided information about Kuwait's oil industry.



## An Interview with BP CEO Bob Dudley

The Kuwaiti Digest was recently presented with the rare opportunity of sitting down with one of the oil and gas industry's most influential figures. BP CEO Bob Dudley, who was recently in Kuwait to attend the Kuwait Oil & Gas Show and Conference, took time out of his busy schedule to speak with us. What follows is the unabridged version of the interview in its entirety.

**I would like to ask you a few questions about the work BP is conducting here in Kuwait. Historically, BP has had a long and rich history in Kuwait. Of course, KOC itself was founded by the Anglo-Persian Oil Company, which later became BP. Can you tell us a bit about that relationship and how BP was instrumental in developing the Burgan Oil Field?**

Thank you. First, it's great to be back in Kuwait, and the history of BP working in Kuwait is a very long and rich one that is full of all kinds of ups and downs in the industry. It's great to have a team now

working again with KOC here in Kuwait. There is a story that I find very interesting about something here in our offices in Kuwait, where we have a framed copy on the wall of the original minutes of the KOC meeting from 1938 noting that oil was found in Burgan. But, it shows the long and varied history now all the way through. Our involvement goes back 80 years, which is an amazingly long period of time. And, of course, it's great to have a team of professionals working with KOC on the Burgan field on the Wara Reservoir. And, I have seen graphs of what the team here is doing, and there's real results for increasing production from that.

**How would you characterize BP's relationship with KOC today?**

It's excellent. I had a chance along with Michael Townshend, Nouf Al Abdul Razzaq and our team to have lunch with KPC and KOC. All the executive leaders were there and we were talking



about lots of different sets of cooperation across our companies and our history, and I have a great amount of respect for the management of KOC and their teams. Our teams are working very well together. I had the real honor a year ago in September to go to Burgan and sign the Technical Services Agreement with KOC, and we had a lunch at the oasis there. Although it was 47 degrees out, it was absolutely great. We also had a chance to visit some of the facilities in the field, and I was very impressed with what I saw there.

**In your opinion, what are the most significant projects that exist between BP and Kuwait today?**

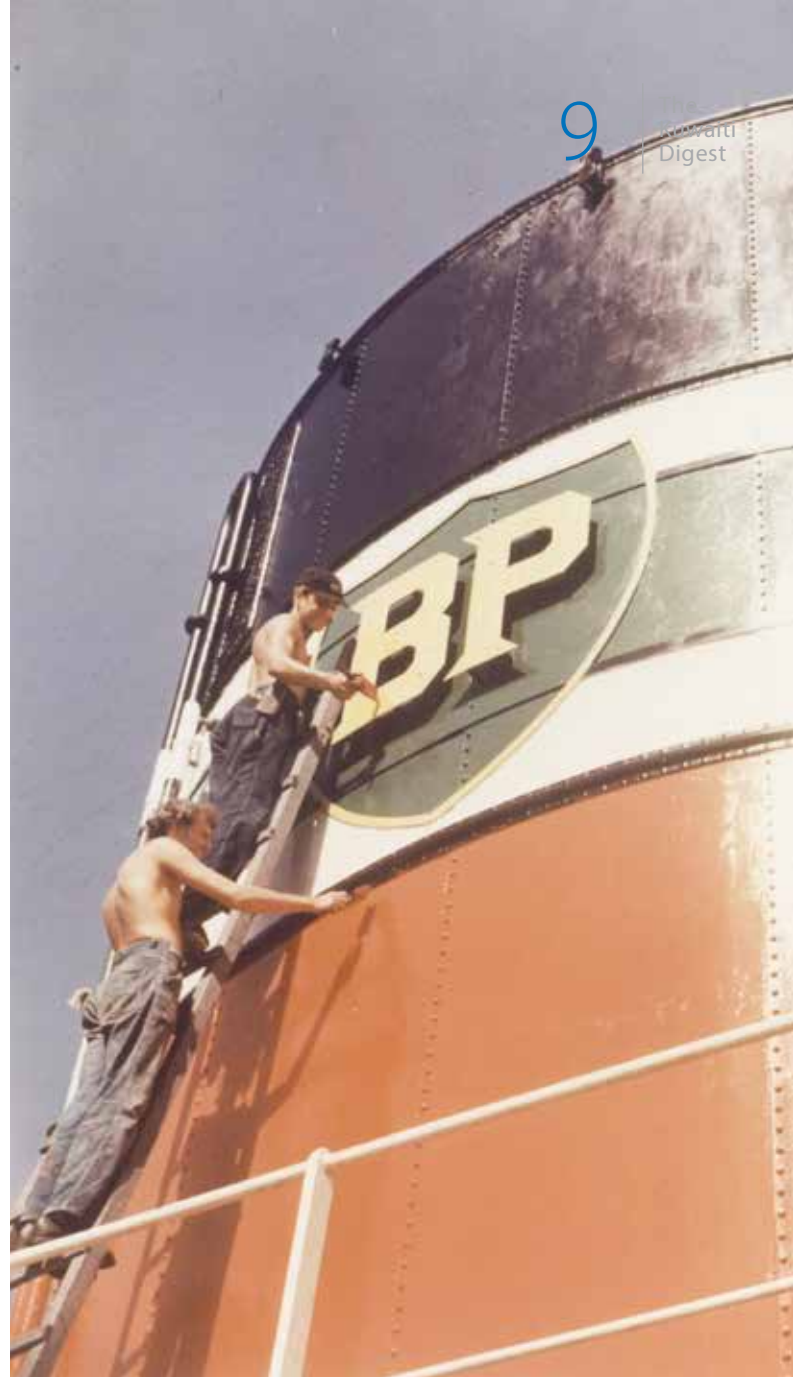
Well, I think the work with KOC on the Wara Reservoir is very significant. I think there are other areas of cooperation between the companies that do go back a long time. In the North, cooperation on technical services, for example, goes back to 1992. But, I think it's the work in Burgan today that is of particular significance. Another area of major importance is the supply of LNG into Kuwait. BP is one of the largest, long-term energy suppliers for the country.

**In a recent interview, you maintained that BP's portfolio would have a renewed focus on gas. How important is it that Kuwait should consider exploring and developing its gas resources?**

In fact, this year - for the first time - our portfolio is 50/50 gas and oil. And when you look at some of the fields we're developing in the Middle East, for example in Oman and a number of other fields, I think we'll probably be 60% by the end of the decade and heading toward 65% beyond that point. Gas is a clean burning fuel, and I think with the climate change talks coming up, that is encouraging news for the world, and we'll still remain a very large oil and gas company.

**KOC is very interested in environmental protection and conservation. Can you tell us a bit about why you think gas is an important bridge to a lower carbon future? How will a renewed focus on gas exploration on KOC's part help the country focus on environmental issues?**

Well, this is a big trend in the world, of course. There's a big meeting in Paris soon that will address these topics. I think if you look at emissions from coal, oil and gas, with coal the highest, then oil and then gas, I think there will most certainly be a move in the world to reduce emissions. So, energy efficiency is at the top of the agenda worldwide, and I'm sure that's the same for KOC and the country as well, so that's the easiest thing that



everybody needs to focus on. Beyond that, gas has half the CO<sub>2</sub> emission as coal, so using it as a clean burning fuel like Kuwait does, with LNG for the power stations, I think that's a natural trend. But, there will be a healthy market for KOC's oil for decades to come in the world markets, no question.

**How can BP help in this matter, as far as environmental issues are concerned?**

In the talks we had today with KOC, we shared some of the positions we have about energy efficiency and the need for the potential increase in gas in our portfolios, and we also discussed some of the world policies around this, because I think one of the things oil companies need to do is speak with a common voice, because it doesn't help if everyone says something different. So, we



have formed a group composed of about eight of the largest oil companies in the world to at least begin to talk about carbon emissions and carbon pricing and put emphasis on long term renewable energy, whether it's solar or wind or biofuels, and I think there's a real future in Kuwait for solar down the road.

**What current or future projects in BP's pipeline would you say are the most significant?**

I mentioned the shift more to gas. We have some very, very large projects in the pipeline. One is the gas project in Oman, and the second is off the West Nile Delta in Egypt. These are two very large gas projects that are very important. Another one is bringing gas out of the Caspian Sea into Europe, so those are three large projects we are working on.

**How is BP preparing for a new world with lower energy prices? Do you have any advice for NOCs like KOC as the world comes to terms with the low price of oil?**

Well, we do see the price of oil being lower for longer, so we're working very hard on what I would describe as our cost structure to fit with the lower oil price. The industry has done this many times before. We all began to think oil at \$100 was normal and going to stay that way, but I think reducing our capital costs and making the right decisions for investment and capital and not anticipating the price going back really changed the cost structure. I think we are all going to have to do that - I know KOC is doing something similar as well.

**In an interview two years ago with the Wall Street Journal, you encouraged young female graduates to pursue opportunities in the field of petroleum engineering. In Kuwait today, we see a very large number of female graduates pursuing careers in the oil and gas industry. What is your advice to them?**

It's great, there's a lot of young talent coming into the industry. I think, as always happens in the commodities cycle, some people come out of university just as the commodities price is down, so for that talent to hold onto that perseverance and patience is what I would advise. They have a great future. There's a lot of people who are going to retire, and someone is going to need to take their places. I think the other piece of advice is that at some point when people consider stepping away from their careers, I would tell them to stay with it because there will be lots of great opportunities. Not only here in Kuwait, but globally.

**Where do you see the oil and gas industry 10 or 20 years down the road? What kind of a position do you foresee NOCs like KOC to be in in that same timeframe?**

I think the oil and gas industry is going to remain vital to the world. In the next 20 years, the population of the world will be 9 billion, and there will be a drive for economic prosperity. This will be fuelled primarily by changes in Asia. So, China, India, Indonesia, for example, the products that come from KOC are going to be in great demand there, and I think that liquid transportation fuel 20 years from now will still be primarily oil-based. So, those predictions of the end of the oil and gas industry in the next 10 years are just not realistic. The vast scale of the energy industry globally is so large and KOC has a great set of products, and it also has a great set of relationships around the world to market; so, I remain very optimistic, but the price of oil will go up and down.

**What are your expectations for the conference?**

Well, this is the second conference. It's now a great gathering of the industry, with some 1,400 people taking part from 30 countries here. There are many exhibitors showcasing services, equipment, software and more. This is exactly what Kuwait should be doing in this world of the industry. Also, it's a privilege to be here, I'm glad to be here, and we've already had a number of meetings around since I arrived. One of the great benefits of a conference like this is that there is a formal program, but it is actually the informal interaction where a lot of the actual business gets done.



A BP employee provides instruction to KOC employees.

# KOC RECEIVES INTERNATIONAL DELEGATIONS



A group photo of the Canadian delegation.

KOC CEO Hashem Sayed Hashem recently received an official, high-level Canadian Trade Mission headed by Canada's Ambassador to Kuwait, H.E. Martine Moreau. The Trade Mission was comprised of representatives from Canada's oil, gas and technical service companies.

The meeting with the Canadian delegation, attended by Deputy CEO for Planning and Commercial Affairs Jamal Jaafar, Group Managers and Team Leaders, touched on the potential contribution of leading Canadian companies to help KOC achieve some of its strategic goals as they relate to upstream oil and gas initiatives.

In his welcoming speech, Hashem praised the long and distinguished relationship of cooperation that exists between KOC and Canadian companies. The CEO noted that all the concerned Departments and Groups from KOC were present at the meeting to help answer any questions the Canadian delegation had about the Company's areas of operation, future plans, and strategic goals.

In a speech she made on the occasion, the Canadian Ambassador said the visit comes within the framework of a GCC tour that also took the delegation to Saudi Arabia and Bahrain for talks with Bahrain's national oil company and Saudi Arabia's ARAMCO. The delegation then traveled to the UAE to attend the Abu Dhabi International Petroleum Exhibition and Conference (ADIPEC).

Moreau maintained that the visit had the support of the Canadian government, which was represented by the Alberta and Ontario Governments.

The Canadian delegation of 11 companies was then briefed on KOC's 2030 Strategy, its objectives, and the areas of opportunities that existed. The delegation was also briefed on the pre-qualification requirements for contractors and manufacturers.

In a statement made to Energy, Canada's Commercial Counsellor in Kuwait, Tammy Ames, said the goal of the tour was to explore areas of cooperation and familiarize the delegation with local business processes in order to exchange expertise and services with the best interest of all parties in mind.

## South Korean Delegation

A delegation from several South Korean companies and institutions recently paid a visit to KOC at the Company's Main Office in Ahmadi. Representatives from the South Korean companies and institutions, which specialize in the oil and environmental sectors, were received by Deputy CEO Corporate Services Ismail Abdullah and a number of other officials from the Company.

During the visit, both sides took part in a meeting that was chaired by the DCEO of Corporate Services. A number of KOC Group Managers and Team Leaders also took part in the discussions. During the meeting, two presentations were delivered by KOC that dealt with ITS projects and various achievements that have been made in several areas, with a particular emphasis on HSE and the Company's soil remediation efforts.

The South Korean delegation, which was on an official visit to Kuwait, showed great interest in working with KOC on current and future projects. During their time at the Main Office, representatives from the delegation fielded a number of questions that were answered in detail by the DCEO. Meanwhile, HSE Group Manager Ahmed Abbas and Team Leader Soil Remediation Support Dhari Al-Gharabally answered specific questions that fell under their respective areas of expertise.

The South Korean delegation with KOC officials.







# The Kuwait Sustainable Energy Conference and Exhibition

Kuwait Oil Company recently hosted Kuwait's international conference on sustainability entitled "Achieving Kuwait's Energy Vision by 2030." The conference and exhibition took place under the patronage of Nizar Al-Adsani, CEO of Kuwait Petroleum Corporation (KPC), with official support from the Ministry of Electricity and Water (MEW) and the Kuwait Institute for Scientific Research (KISR). The three-day event was held at the Jumeirah Messilah Beach Resort in Kuwait.

In a statement he made in the weeks leading up to the conference, KOC DCEO (Administration and Finance) Saad Al-Azmi said that KOC was cooperating with the MEW and KISR in order to take a leading role on the renewable energy front by promoting the importance of cleaner, more efficient energy practices to local consumers. By hosting the Kuwait Sustainable Energy Conference and Exhibition, he said, KOC hopes the event will play a large role in helping Kuwait realize its plan to increase renewable energy supply to 15% by 2030. More importantly, the conference – a first for Kuwait – aims to create awareness locally about the pressing need for sustainable development and reduced emissions. In this regard, one of the objectives of the conference was to bring together key figures from the region and around the world to help develop strategies, discuss the latest case studies and benchmark global best practices.

In his opening address to the audience, KPC CEO Nizar Al-Adsani welcomed the visiting delegations and upheld the importance of renewable energy for the State of Kuwait's future energy requirements. He maintained that renewable energy will play a vital role in Kuwait's energy mix, especially considering the fact that His Highness the Amir of Kuwait, Sheikh Sabah Al-Ahmad Al-Jaber Al-Sabah, recently called for 15% Kuwait's energy mix to be composed of renewables by 2030.

"The goal of this conference is to promote effective and fruitful discussions about renewable technology," the KPC CEO said, adding that such technologies and the accompanying technical information would do much in the way of assisting Kuwait develop future projects that are reliant on renewable energy technologies.

While Al-Adsani maintained that the low price of oil may not soon recover to its previous highs, he upheld his belief that this juncture was a good opportunity for reforms and expanded investment in renewable technologies.

"Renewable energy plays an important role in reducing air pollution and carbon emissions," the CEO said. In addition, Al-Adsani reminded the audience that renewable energy has the added benefit of allowing oil exporting countries like Kuwait to free up their primary export



product. Kuwait currently consumes more than 300,000 barrels of oil per day for domestic power requirements. Cutting back on this figure, Al-Adsani maintained, will greatly contribute to the State of Kuwait's economic and environmental goals.

In his address, the KPC CEO reminded the audience that Kuwait's energy demands were growing at a rate of 6-8% per year. According to Al-Adsani, renewable energy will not only help Kuwait meet its future energy requirements, but will also assist the country's business outlook by generating new jobs and diversifying the economy. Falling costs for renewable energy technologies, especially solar photovoltaic cells, have contributed greatly to the renewed interest in the important role renewables can play for Kuwait.

"His Highness the Amir has called for 15% of Kuwait's energy mix to be derived from renewable energy sources. While this, of course, represents a great challenge, we view it as a national commitment that can be made possible," the KPC CEO said. In order to transform this vision into reality, cooperation across the board will be required, he maintained. Today, the groundwork has been laid for larger initiatives to come to fruition. This includes energy saving campaigns and the utilization of solar power for various energy requirements, especially at KOC.

"Together with the Ministry of Electricity and Water and the Kuwait Institute for Scientific Research, Kuwait is on track to realizing the objectives of its 2030 strategic goals. This is especially true when considering the large role the



Senior officials inaugurate the event.

Shagaya Solar Project will play for the country," he said, adding that Kuwait was taking significant steps toward energy security and environmental protection and that the conference was a reflection of those efforts.

Following the KPC CEO's speech, KOC CEO Hashem Sayed Hashem delivered his keynote address. In his opening remarks, Hashem maintained that the Kuwait Sustainable Energy Conference and Exhibition was an event that holds great significance for the State of Kuwait, the region, and the entire world.

"This conference and exhibition represents a shift in how our region must approach the utilization of hydrocarbons as a source of energy," the KOC CEO said. "It is my hope that this event will play a large role in helping Kuwait realize its plan to increase its renewable energy supply to 15% by 2030."

KOC, in cooperation with Kuwait's Ministry of Electricity and the Kuwait Institute for Scientific Research, is increasingly seeking to take a leading role on the renewable energy front by promoting the importance of cleaner, more efficient energy practices to

local consumers. In this regard, the KOC CEO said that he was proud to say that Kuwait was making great progress on the renewable energy front. The Shagaya Renewable Energy Park, a solar power plant co-developed by the Ministry of Electricity and Water and Kuwait Institute for Scientific Research, will eventually deliver two gigawatts of clean power by 2030, he said.

The KOC CEO went on to say that KOC, and by extension, the State of Kuwait, designates great importance to issues dealing with conservation and the environment. Naturally, matters related to sustainability and energy efficiency also play an important role in the Company's outlook and strategic plans, he said.

"Over the next few days, this conference will touch on a number of themes that hold great importance for the environments and economies of Kuwait and the GCC. These themes include a range of considerations that the utilization of renewable energy brings. In addition, the role of energy providers will also be considered in terms of how energy is consumed and utilized, and how this can be improved," Hashem said.



Officials inspect a model of the Shagaya Solar Project.

In his address, the KOC CEO said that it was time for an increased focus on renewables in Kuwait's energy mix. "At KOC, we have long been aware of the fact that our responsibility is not simply limited to the development of our business or increasing production. That is why we strive to fulfill our obligations to the community we operate in. Naturally, this includes making every possible effort to protect and preserve our environment and create better efficiency wherever possible."

KOC's recent environmental and renewable energy initiatives have accomplished some truly remarkable goals, Hashem said. Some of the completed and ongoing achievements include the following:

- Successful efforts to lower gas flaring throughout KOC oil fields to less than 1%.
- Utilizing solar power for part of KOC's energy requirements, which is currently being done at the Subaihiya Oasis and other locations.
- A 10 MW PV project in Umm-Gudair, the first of its type in Kuwait, and the first in the world to power ESPs in the oilfield. The project has been registered with the UN to receive Clean Development Mechanism certificates.

- Ensuring that KOC offices and facilities are equipped with LED lights, which create better energy efficiency.
- An Integrated Concentrated Solar Thermal Plant (CSP) to produce fresh water, steam and power for enhanced oil recovery with an objective of generating an average of 800 BPD (127 Tons/Day) of steam and 1 MW of electric power for EOR of 15 thermal pilot wells in the South Ratqa Field.
- Solar power supply to instrumentation and control devices along the pipeline and P&MS for KOC Feed Pipelines for the New Refinery Project.
- Power supply to UPS and chemical injection skids through solar technology for 150 MBOPD EPF for North Kuwait Jurassic Production.

The KOC CEO went on to say that the importance of renewable energy for Kuwait cannot be understated and that the Company looked forward to learning more about how the country's current solar project could further assist the drive toward implementing more renewable energy sources.

Hashem also upheld KOC's interest in the protection and preservation of Kuwait's natural environment as one of

the Company's top priorities. Renewable energy and energy efficiency initiatives, he said, will greatly aid that effort.

### MEW Statement

On behalf of Mohammad Boushehri, Undersecretary from the Ministry of Electricity and Water, Assistant Undersecretary Jassem Al-Nouri delivered a speech to the audience that touched on the success of the "Tarsheed" (Energy Conservation) campaign. He also discussed some of Kuwait's future plans for renewable energy and commended KISR and the K-Companies for working toward greater efficiency and implementing renewable energy projects.

In particular, the Assistant Undersecretary singled out the Shagaya Project as having great potential for Kuwait's future energy needs. He also provided an overview of the assistance that the Ministry of Electricity and Water has provided to KISR for the project, particularly in regard to connecting the project to Kuwait's power grid.

Al-Nouri added that the MEW stood ready to assist KISR and the K-Companies in their efforts to implement renewable energy projects. He added that their cooperation would do much in the way of realizing His Highness the Amir's vision for 15% of Kuwait's energy to be derived from renewable energy sources. The Assistant Undersecretary also touched on other renewable energy plans. This included collaborative work with the Kuwait Municipality on future sites for solar energy projects in North and South Kuwait, in addition to plans to connect incinerators to the national power grid.



### KISR Statement

Dr. Salem Al-Hajraf, Executive Director from the Kuwait Institute for Scientific Research, addressed the audience during the exhibition and spoke about Kuwait's future energy requirements. In his address, Dr. Al-Hajraf maintained that the world's current energy system was unsustainable and that drastic measures would be needed in order to move it toward a cleaner, more sustainable system.

According to Dr. Al-Hajraf, the world's current energy system is dependent on limited fuel diversity that is subject to volatility. In addition, an aging energy infrastructure produces high CO<sub>2</sub> emissions that contribute to increasing amounts of pollution. A future energy system, he said, could have a focus on renewable energy sources such as solar, wind, or a diverse range of other alternatives.

It is imperative for Kuwait to take decisive action in terms of renewable energy production. Dr. Al-Hajraf shared the following statistics to prove this point:

- A growing population will mean that Kuwait will need to double its water and power capacities in the coming years.
- Kuwait consumes 60% of its energy capacity during the peak summer months.
- In 2014, Kuwait spent \$8.5 billion to burn fuel for energy.
- The Ministry of Electricity and Water runs its power plants primarily on oil that is produced by KOC. This figure stands at about 340,000 barrels per day and

produces about 50 million tons of CO<sub>2</sub> per year.

"Diversification of supply is required for sustainability," Dr. Al-Hajraf said. In addition, freeing up the amount of oil required for domestic power translates to more exports of Kuwaiti crude. Following Dr. Al-Hajraf's address, a documentary film about the Shagaya Solar Project was screened. According to the documentary, Shagaya will be implemented in phases, with the first phase of the project expected to come online soon. In addition to solar technologies, Shagaya will also make use of wind-powered renewable energy.

### The Kuwait Sustainable Energy Conference and Exhibition

As an important platform to discuss strategic and technical solutions for energy efficiency and power generation, the exhibition portion of the event facilitated excellent networking opportunities for attendees. In addition, local and international exhibitors will be demonstrating the very latest technologies for renewable energy, building management systems and insulation, and power quality improvement.

The Kuwait Sustainable Energy Conference and Exhibition touched on a number of themes that hold special significance for Kuwait and the

GCC. These themes included economical, technological and environmental considerations that the utilization of renewable energy brings. In addition, the role of energy providers was also considered in terms of how energy is consumed and utilized. Cultural, social and legislative roles in terms of energy optimization were also discussed.

Objectives of the conference included sharing knowledge to achieve energy efficiency in Kuwait, highlighting the latest in research and technology, enabling private and public sector collaboration to better achieve Kuwait's energy goals, and enhancing the role the media can play in promoting energy efficiency and awareness for domestic consumers.

The conference did much in the way of highlighting the importance of renewable energy potential for the GCC. The event incorporated a three-day conference and an interactive workshop day that featured strategic and technical discussions on energy efficiency and power generation in Kuwait.

The conference also featured an exhibition portion where IOCs, NOCs, technology providers, contractors and consultants showcased technological innovations, provided solutions to the region's energy sector and offered advice and updates on industry developments.

The KOC booth provided information to visiting delegations and guests.







## ENVIRONMENTAL DAY CELEBRATION AT SUBAIHIYA OASIS

KPC and KOC recently commemorated the 24<sup>th</sup> anniversary of the extinguishment of the last burning oil well from the 1990/91 invasion in a ceremony that was held at the Company's Subaihiya Oasis. The event, held under the official title of "KPC and Subsidiaries Environmental Day Celebration" began at the KOC Tent in Ahmadi, where senior oil industry officials and diplomatic delegations convened before journeying to the Subaihiya Oasis.

KPC CEO Nizar Al-Adsani and KOC CEO Hashem Sayed Hashem delivered opening remarks at the event. A range of Kuwait's senior oil officials attended, including KUFPEC CEO Nawaf Al-Sabah and KUFPEC Vice President of Operations, Hosnia Hashem. In addition to senior oil officials, official delegations from the U.S., British, Canadian, Iranian, Chinese, Russian and Hungarian embassies were present.

In his opening statement, KPC CEO Nizar Al-Adsani told the audience that it was his pleasure to be part of a celebration that marked a very important milestone in Kuwait's history. He then commended the work of the individuals and teams that contributed to the effort of extinguishing

the fires that were set to more than 700 oil wells during the 1990/91 invasion. He also reminded the audience that in addition to the burning well fires, pollution from the oil lakes covered an area of some 114 square kilometers. This, he said, was also in addition to the estimated 6-14 million barrels of oil that were deliberately dumped into the sea by the retreating forces.

"Today marks the 24<sup>th</sup> anniversary of extinguishing the last oil well fire," the KPC CEO said. "The job took less than eight months, which is much shorter than anyone at the time expected. Leading the effort were 27 teams from around the world that worked hard to put out the fires. We in Kuwait value this occasion to honor the cooperation and assistance that was offered to us at the time. On behalf of Kuwait, I would like to express my gratitude to everyone who made this possible, and I would especially like to honor the Kuwaiti fire team that showed remarkable will and perseverance in this cause."

The KPC CEO went on to discuss the important role that HSE plays for KPC and its subsidiaries. "We are actively working for a cleaner environment, and the investments we make, both

here at home and abroad, are carefully considered relative to their environmental impacts. In addition, we continue to focus on producing clean products through the utilization of clean and efficient technologies.”

Al-Adsani also discussed the world’s future energy demands and upheld his belief that hydrocarbons will continue to play a major role in the global energy mix. “Energy demand will increase as population expands, and hydrocarbons will retain their dominant role for the foreseeable future. While Kuwait will play a major role in meeting future energy demands, we will also play a large role in working toward a cleaner environment for all,” he said. In this regard, Al-Adsani said that KPC was examining greenhouse gas reduction opportunities based on flare reduction initiatives, gas utilization projects, carbon capture and storage, recycling projects, and various environmental initiatives.

Following his opening remarks, KOC CEO Hashem Hashem took the stage to deliver his speech. In his remarks, the KOC CEO provided an overview of the environmental disaster from 1991.

“Thick, black smoke surrounded Kuwait, turning day to night,” the CEO said. “Poisonous gas emissions threatened life all around, and smoke from the burning oil wells extended 2,000 kilometers away, reaching as far east as China and India. Ash from the burning wells was detected as far away as Japan and Hawaii,” he said. The CEO also noted that the environmental disaster led to a remarkable decrease in the local temperature, as the thick black smoke completely



KPC CEO Al-Adsani and KOC CEO Hashem delivered opening remarks.

blocked out the sun and brought temperatures down by up to 10 degrees.

The KOC then provided a brief overview of the tremendous work that was done to put out the oil fires before talking about measures that have been implemented recently to rehabilitate Kuwait’s damaged environment.

“The Government of Kuwait, in collaboration with the United Nations Compensation Commission (UNCC) was tasked with treating and restoring environmental features affected by the aftermath of the Iraqi invasion in line with UNCC Decision 258. This gave rise to the development of the Kuwait Environmental Remediation Program (KERP). The Kuwait National Focal Point was established by the Government of Kuwait to coordinate the various aspects of KERP with the various government entities and establishments, such as the Ministry of Defense, Kuwait Environmental Public Authority, Public Affairs for Agriculture & Fisheries, and Kuwait Oil Company, which is a major player in this undertaking.”

Hashem then told the audience that KOC has developed a comprehensive program known as the “Total Remediation Solution,” which

includes several remediation and rehabilitation projects that span across the affected areas of the Company’s operations and that they are expected to be completed in less than a decade. The CEO also said the Company was realizing its strategic objectives relating to environmental affairs by applying the following initiatives and measures:

- KOC has pioneered an Air Quality Management Program that monitors and manages air quality and emissions.
- Significant projects have been completed that successfully reduced gas flaring to less than 1%. KOC has received the Top Environmental Award from the Council of Arab Environmental Affairs Ministers for commitment towards preservation of the environment, improving air quality and reducing gas flaring.
- KOC has also started to implement specialized programs to manage effluent water and control emissions.
- In addition to restoring the environment, many initiatives have been implemented aimed at increasing awareness of social responsibility.



KOC employees that fought the well fires were honored.

The KOC CEO then told the audience that it was his pleasure to announce that the Company has achieved the first excavation and transportation of the first load of contaminated soil resulting from the oil fires to the North Kuwait Landfill. "This is only the beginning of our overall plan," Hashem said. "By the end of our program, we hope to have left an important legacy in environmental rehabilitation for the world to witness. A legacy that we hope will be remembered by future generations and taught to our children and used as a teaching tool worldwide."

Hashem then thanked the international teams who came to Kuwait's assistance in its greatest time of need. "Together, and in the spirit of goodwill and cooperation, the collective efforts of all involved were instrumental in helping Kuwait overcome the environmental disaster caused by the largest oil field fire in history," he said. "Words cannot adequately describe how thankful we are for every individual who put their lives at risk and fought the fires with courage and determination. The disaster of 1991 was a great tragedy. However, there is something that we have learned from it and that we should treasure forever - the understanding of how fragile our environment is, how easy it is to destroy it, and how passionate we are to protect it. Our vision is to build a new, greener environment and

to safeguard it for our future generations."

### KOC Remediation Efforts

During the event, Dhari Al-Gharabally, Team Leader Soil Remediation Support, delivered a presentation that outlined KOC's soil remediation efforts. Al-Gharabally maintained that the remediation effort KOC is now engaged in is one of the largest in the world. After the invasion, he said, the estimated total amount of contamination in Kuwait covered some 26 million cubic meters.

In his presentation, Al-Gharabally provided a background and overview of the remediation effort. The UN, he said, had awarded Kuwait a number of claims that will allow KOC to use the funds toward remediation efforts. The most significant of these claims are the ones that relate to dry and wet oil lakes that resulted from the contamination that resulted around the damaged wellheads.

In 2015, Al-Gharabally said that a new strategy had been approved. Initial plans called for all contaminated soil to be disposed of in pits. However, after much hard work, a new plan that was aimed at remediation was finalized. This new plan includes the treatment and cleaning of soil that has been contaminated. Following the conclusion of an important event at KOC where the world's top remediation specialists were gathered in one

place, the Company was able to develop new solutions and move forward with a tangible plan that saw remediation of contaminated soil as the primary and preferred solution.

### Honoring the Kuwaiti Fire Team

Following the opening remarks and short documentary screenings, KPC CEO Nizar Al-Adsani and KOC CEO Hashem Hashem recognized the efforts of the Kuwaiti fire team that was instrumental in putting out the oil well fires in 1991. Members of the fire team were called to the stage and presented with honorary firefighting helmets. The international delegations were also honored for their efforts and received plaques that commemorated the occasion and thanked them for their valuable contribution and assistance to Kuwait.

Following the opening remarks and honorary ceremony, a tour of the Subaihiya Oasis was provided to those in attendance.

### About Subaihiya Oasis

*KOC has established the Subaihiya Oasis in a historic location in South Kuwait, with the stated goal of preserving the environment and protecting wildlife in the area. As part of efforts to promote the historical significance of the site, KOC constructed an informative exhibition that details the importance of Subaihiya in Kuwait's history.*

*From an environmental standpoint, KOC teams were responsible for creating environmental conditions at the location that are suitable for the growth of desert plants and wildlife, with special focus on making the location an attractive area for migratory birds. In addition, an artificial lake was created that supports fish life.*





# KOC Receives Award for Gas Flaring Reduction Efforts

SUBMITTED BY THE OPERATIONS GROUP (WEST KUWAIT)

The World Bank, which leads the GGFR partnership (Global Gas Flaring Reduction), recently presented the "Gas Flaring Reduction Excellence Award 2015" to Kuwait Oil Company. At the Fourth GGFR Global Forum that was held in Khanty-Mansiysk in the Russian Federation, event organizers maintained that KOC received the award in recognition of the "very high level of associated gas utilization in West Kuwait" that the Company had registered.

At the event, Khalid Al-Azmi, Senior Engineer from West Kuwait Operations, received the award on behalf of Omar Ali Sadeq, Manager Operations

West Kuwait. The award recognized the reduction in gas flaring from 19.7% in 2008/09 to 0.62% in Q1 2015/16 through the commissioning of various West Kuwait surface facilities. The commissioning and successful utilization of these facilities have helped the Company achieve this important strategic objective.

The following list indicates the commissioning periods for various gas handling facilities in West Kuwait:

- Gas Sweetening Facility (GSF) - Commissioned in August 2010
- Tank Vapor Recovery

Compressor at GC-16 - Commissioned in October 2012

- Gas Compression Package (GCP) - Commissioned in February 2015
- Gas Reinjection Package (GRIP) - Commissioned in March 2015
- Commissioning of Multi-cyclone Separators
- Commissioning of GC-27/28 compressor and GMW-4 manifold, which helped sustain export quality to avoid downstream complication at AGRP's and consequent gas rejection, and flaring.



KOC officials have maintained that this international recognition holds great significance for the Company, as there were participants from many international oil companies in the running for this award. This included companies from the United States, Norway, Russia, Qatar, Iraq, Nigeria, Malaysia and many others.

The World Bank Group, an observer at the United Nations Development Group, leads the Global Gas Flaring Reduction Partnership (GGFR) in a public-private partnership that brings together representatives of governmental oil-producing companies, state-owned companies, and major international oil companies. It has the stated objective of overcoming challenges that inhibit the efficient utilization of associated gas across the world, and it also has a zero gas flaring strategy that is aimed to be achieved by 2030. It is without a doubt that KOC is a leading force in this effort after the

Company achieved 1% flaring targets a few years ago while major IOCs are targeting the same figure by 2030.

KOC, representing Kuwait, entered into partnership with GGFR in July of 2011 in an effort to support the GGFR's aim of reducing flaring and venting of gas associated with the extraction of crude oil, thereby curtailing a significant amount of Greenhouse Gas (GHG) emissions, thus creating positive impacts on the environment globally and in Kuwait in particular.

Receiving this award is another milestone for KOC in its gas flaring reduction timeline, despite an increase in oil production, which was possible only because of KOC management's consistent insistence on meeting gas flaring reduction objectives. This has been in alignment with its corporate strategic objectives, effective implementation of strategic and operational gas flaring reduction projects, relentless multi-team efforts

and synergized support of the workforce.

Implementation of these projects over the years has significantly contributed to the Company's strategic objectives and the country's energy security in the following ways:

- Flaring reduction and utilization of produced associated gas.
- Higher capacity utilization of crude production facilities.
- Higher utilization of the hydrocarbon value chain by extraction of value added products such as Ethane, Propane, Butane and Naphtha from rich gas at downstream facilities.
- Increased availability of lean gas for domestic power generation.
- Industry partnerships through the involvement of regional companies for various project implementations.



### Gas Sweetening Facility

The Gas Sweetening Facility (GSF) is a Build Own & Operate (BOO) project. The facility sweetens sour gas and is located in the upstream oil fields of West Kuwait. It is a supplementary facility to the Gas Treatment Plant inside the downstream refinery.

The GSF is designed to process 40 million standard cubic feet (MMSCFD) per day of sour gas produced from West Kuwait Gathering Centers. It also provides the production of sweet gas with 4 ppm  $H_2S$  and 1.5%  $CO_2$ . The downstream Acid Gas Removal Plant facilities at KNPC refineries have inherent design and capacity limitations, which is a major contributing factor to West Kuwait flaring figures.

Since its inception in 2010, the facility has processed around 50 billion standard cubic feet of sour gas, resulting in a net reduction in flaring that has helped in maintaining a higher throughput of crude production.

### Gas Compression Package

Facilities that utilize the Gas Compression Package (GCP) cater to the variable load of sour gas produced from West

Kuwait facilities. They are located strategically on the gas network to accommodate different compression demand scenarios.

These facilities comprise multiple trains of Tank Vapor (TV), Low Pressure (LP), and High Pressure (HP) gas compressors to avoid flaring due to capacity bottleneck during planned and unplanned shutdown of gas compressors at the Gathering Centers.

The installed capacity of the TV Compressor is 6 MMSCFD. The installed capacity of the GCP LP compressor is 18 MMSCFD (2 x 9 MMSCFD) and the capacity of the HP compressor is 40 MMSCFD (2 x 20 MMSCFD) respectively. Feed Gas for LP and HP gas is from upstream Gathering Centers (GC-16, GC-28 and EPF-18).

The TV and GCP has contributed to flaring reduction and augments West Kuwait's gas export capability by handling 40 MMSCFD of sour gas from existing and new Gathering Centers.

### Gas Reinjection Package (GRIP)

Like GSF, GRIP has also helped in tackling uncertain availabilities in downstream

refinery sour gas treatment units for gas sweetening. It has also helped in the achievement of minimum flaring targets by reinjecting sour gas into an isolated gas cap while sustaining West Kuwait's crude production targets.

GRIP is designed to compress 60 MMSCFD (4 x 15 MMSCFD) of West Kuwait export gas from sour gas from 700-750 PSIG to 4,500 PSIG and then re-inject it into Minagish reservoir through Well No.129 and Well No.140, which are dedicated for re-injection of gas to an isolated reservoir gas cap.

Feed from BS-171 can be received from the Gathering Center, Booster Stations export (future), and GCP export through the GRIP/GSF feed gas line.

GCP & GRIP were recently commissioned in the 4<sup>th</sup> quarter of the 2014/15 fiscal year. Since then, commissioning GCP, GRIP and TV units have compressed around 13 BSCF of sour gas, resulting in a net reduction in flaring that has helped maintain a higher throughput of crude production.

It is worth mentioning that this was not the first award KOC has received for its gas flaring reduction efforts. KOC received a similar award from the GGFR for excellence in gas flaring reduction in October of 2012 in London. The reward recognized KOC for its significant reduction in overall gas flaring.

KOC always strives hard and makes its best effort to accomplish the best gas flaring reduction targets in order to secure the country's future, protect the natural environment, and contribute to the wellbeing of the community it operates in.

The GCP Plant in West Kuwait.







## THE 2<sup>ND</sup> KUWAIT FLOW MEASUREMENT TECHNOLOGY CONFERENCE

The 2<sup>nd</sup> Kuwait Flow Measurement Technology for Oil and Gas Conference took place recently at the Radisson Blu in Salwa. The event, which was sponsored primarily by Kuwait Oil Company, focused on technology related to hydrocarbon flow measurements and featured the participation of a range of international representative from the oil and gas industry.

Event organizers behind the Kuwait Flow Measurement Conference maintained that the specialized conference would be the premier event for discussions and information related to measurement technology that is utilized by the oil and gas industry. Before the start of the conference, officials from KOC upheld the importance of hydrocarbon flow measurement technology, which they said has the

potential to have an impact on both the environment and economy. Staying ahead of flow measurement technology, they maintained, was therefore important for both KOC and the State of Kuwait.

The opening session of the event was inaugurated by CEO Hashem Sayed Hashem. In his speech, Hashem focused on the importance of acquiring the most current technology for the Company, which he said helps KOC stay abreast of the latest trends and remain a leader in its field.

"Part of KOC's pride and strength is our emphasis to remain an effective and efficient exploration and production company. Flow measurements of the different fluids involved in the process of hydrocarbon exploitation play a very important role due to the

economic, safety, environmental and legal impact associated with such processes," he said.

"In line with this, and as part of KOC's 2030 Strategy, we aim to share knowledge in order to reach excellence, mainly by staying ahead of developments related to technology, regulations and best practices, amongst others. Several initiatives have been conducted at the Company and overseas to empower this sharing of knowledge, and one of them is the convening of this event with the participation of other K-Companies and leaders and specialists from national and international oil companies," he said.

The KOC CEO went on to say that he was confident the conference would provide an ideal and unique environment for networking between key

personnel from operators, manufacturers, research institutions and more. He also said it was his hope that the conference could play a role in enhancing knowledge and finding possible solutions to many challenges encountered in the area of flow measurement in the oil and gas sector.

Chairman of the Conference Technical Committee, Senior Engineer Rashed Al-Marri, welcomed the audience and visiting delegations before introducing Hasan Bunain, DCEO West Kuwait, who delivered some of the conference's opening remarks. Other DCEOs in attendance included Ayad Al-Kandari DCEO (Drilling & Technology) and Abdulla Al-Sumaiti DCEO (S&EK).

"Following the resounding success of the first conference on the important topic of Flow Measurement last year, I am once again honored and delighted to welcome you all to the second Kuwait Flow Measurement Technology for Oil & Gas Conference," the DCEO said. "With the prevailing and forecasted global oil market trends, hydrocarbon flow measurements continue to play an increasingly significant role in the oil and gas industry and are of great significance to all stakeholders. Given the significant techno-commercial impacts measurement accuracy can have on the production process and on the hydrocarbon producer or buyer, it is incumbent on all stakeholders to assure that fiscal oil and gas measurements meet the most stringent industry standards," the DCEO added.

Bunain went on to say that individuals from the oil and gas world, including representatives



Hasan Bunain, DCEO (WK), addresses the audience.

from manufacturers, consultants and engineering companies would participate in the conference. In addition, the DCEO upheld his belief that the conference would do much in the way of providing an ideal platform to widen awareness about the latest trends, challenges and technical issues associated with oil and gas measurement.

The KOC DCEO also said the conference's focus would be on the practical application of measurement technology while also covering the latest developments and field experience within the industry. "The conference will also be concerned with the importance of the analytical quality of results, a topic of increasing awareness and investigation. Uncertainty of measurement, traceability and metrology of measurement processes needs to be considered in the context of global trade. Exchange of information needs to be trustworthy, recognizing that reliable international measurement standards often underlie legal and economic decisions," he said.

In addition to the speakers and panel discussions, Bunain reminded the audience that the conference also featured an

exhibition space where the latest technological innovations and services related to measurement technology would be showcased. Exhibitors included companies such as Krohne, Emerson, Cameron, and others.

Following Hasan Bunain's speech, the floor was given to Khaled Al-Saif, Deputy Chairman and CEO of National Petroleum Services Company. In his address, Al-Saif discussed the importance of accurate measurements and the need to strive toward the acquisition of knowledge and technology that assists this effort.

Following Al-Saif's keynote address, the floor was opened for the first panel discussion of the event, which was moderated by Rashed Al-Marri, who invited the panelists to the stage. The panelists included:

- Scott Tanner, Liquids Measurement Specialist, Flow-Cal.
- Henry Gomes, Metering Consultant, SGS Kuwait.
- Mark Hay, Operations Manager, Kelton.
- David Fisher, Flow Solutions Advisor, Emerson Process Management.





Officials during the exhibition portion of the event.

Before the panel discussion began, Al-Marri discussed the importance of flow measurement for the oil and gas industry in general and for KOC and the State of Kuwait specifically. He maintained that a good understanding of flow measurement was extremely important for the measurement of production and storage figures.

Over the course of the panel discussion, the speakers touched on topics related to aspects of flow control in flow metering, dynamic uncertainty models, managing measurement uncertainty, and a variety of other topics that deal with issues related to flow measurement technologies and how to improve them.

Safe and efficient flow of hydrocarbons moving downstream is responsible for the State of Kuwait's revenue, which means that the need for accurate measurement of this material at all stages is vital. In order to do this, and in the context of KOC's 2030 Strategy, significant investments have been made to purchase, install

and maintain new metering systems at downstream facilities. These new metering systems are extremely accurate and live up to the international standards that KOC's clients require. However, one of the challenges that needs to be addressed concerns the variance that exists in measurements of quantities reported between the ships that are being loaded and the quantity onshore. This challenge is not limited to KOC but is an international concern, and should therefore be a priority for discussion among all parties involved.

Over the course of the conference, other KOC employees participated in discussions and presentations, including Ali Quraini, whose topic was "NPP Export Metering Skid at KOC." Khaled Suwaidan discussed "RTD Drifting" and Vineet Singhal discussed "Purge-Gas Flow-Metering." In addition, G.N.V. Sridhar and Mohit Narain talked about gas flow metering systems while Peria Mohammad, Abbas Al-Shawwaf, Mahdi Al-Qazweeni and Nasser Bu-Arki discussed techniques that aim to improve

performance of variable area flowmeters in chemical injection systems.

In addition to the discussions and presentations, a number of workshops were held over the course of the conference. These workshops touched on a variety of topics, including an introduction to the principals and practices used when estimating uncertainty in measurement, how measurement systems can be managed using various technologies, and how best practices in flow measurement technology can provide insight into using better, more accurate methods in this field.

The Kuwait Flow Measurement Technology for Oil and Gas Conference took place over the course of three days and included a variety of speakers who shared their expertise in the field of flow measurement. From technical consultants and engineers to specialists and sales directors, the conference proved to be an excellent forum where industry figures could come together, network and learn from past experiences.

# ISO9001:2015

## CONTINUAL IMPROVEMENT OF THE STANDARD

SUBMITTED BY THE QUALITY ASSURANCE & BUSINESS IMPROVEMENT TEAM

THE ISO TECHNICAL COMMITTEE ISO/TC 176 IS RESPONSIBLE FOR QUALITY MANAGEMENT AND QUALITY ASSURANCE. THEY ARE TAKING THEIR OWN ADVICE REGARDING CONTINUAL IMPROVEMENT.

All ISO standards are reviewed every five to ten years to ensure they adapt to a changing world, reflect increasingly complex organisational environments and address the evolving needs of all relevant parties. The previous revision of the Quality Management standard was released in 2008. This is the version of the standard under which all KOC directorates are certified. KOC, together with all companies wishing to remain certified, must complete the transition to the October 2015 revision within the next three years.

In 2008 only a few pioneering teams and groups had achieved certification and managing quality through a system and process approach that would have seemed unintelligible, and a daunting and risky challenge to most. In 2015, with years of experience behind it, KOC is in much better shape and can plan with confidence the implementation of this new revision, considerable though the changes may seem at first.

The new revision moves organizations towards excellence in business performance, having established excellence in managing quality of established processes.

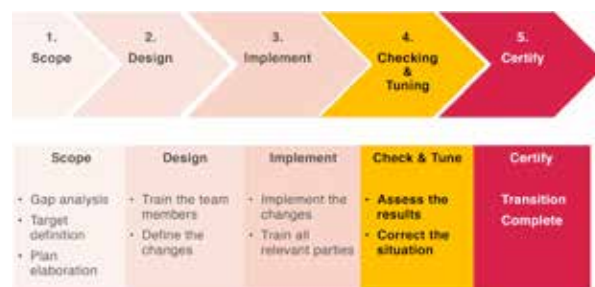
**In 2015, ISO 9001 was substantially revised in order to:**

- Ensure a real integration of the quality management system into the business processes.

- Better take into account the expectations of stakeholders.
- Introduce the “risk-based thinking” concept.
- Provide a more pragmatic and detailed approach to reach the objectives.
- Align the structures of the different standards that a company uses (ISO 9001, ISO 14001 and future ISO 45001 – former OHSAS 18001) to simplify the management of all aspects (quality, environment, security, etc.)

The members of ISO/TS 176 canvassed a significant number of business leaders to find the appropriate direction and level of guidance to be contained in the revision. Like other leading companies, KOC is no stranger to either strong leadership direction, risk quantification and management in decision making and knowledge creation and sharing, but, like other leading companies, desires a strong, process-based framework for the systematic implementation of these quality management tools to driver and sustain business growth. This is the objective of ISO 9001:2015.

Quality Assurance and Business Improvement will ensure that KOC staff and contractors have ample opportunity to gain the necessary knowledge and understanding, and skills and support to ensure a successful transition in the minimum time.



*Transition stages.*

*Setting the stage for long-term growth.*





# The North Kuwait Intelligent Solution Center

KOC CEO Hashem Sayed Hashem and a number of DCEOs recently visited the Intelligent Solution Center (ISC) in North Kuwait. During the visit, Manager Operations Support (NK) Abdullah Al-Harbi conducted a special interactive session for the Company's Senior Management in order to demonstrate the ISC's capabilities. The ISC is the first facility of its kind at KOC.

In a statement he made, Hashem said that he appreciated the efforts put forth by Manager Operations Support (NK) Abdullah Al-Harbi and all who were involved with building the facility. The ISC aims to facilitate production enhancements and significantly reduce well and facility downtime in North Kuwait.

During the visit, Al-Harbi conducted a special session for Managers and Team Leaders from the Operations, Operations Support and IT Groups in order to familiarize them with the new facility.

The Intelligent Solution Center is a state of the art Decision Center that collects real-time data related to wells and surface facilities through several information systems like SCADA, FINDER and V-Monitor. This is all conducted in one location, allowing for holistic decision-making to take place through the use of advanced information and computation technologies. At the center, data is pre-filtered and processed and alerts are generated through pre-defined, automated logical computations. Alerts and processed data are further monitored and analyzed by a team of experts in a collaborative manner in order to ascertain quick corrective actions and determine workflows by using in-built decision support systems.

KOC officials have maintained that the ISC in North Kuwait offers a paradigm shift in the decision-making process at Company oilfields. It has already facilitated production

enhancements and contributed to a significant reduction in response time in North Kuwait. It has enabled collaborative efforts that curtailed production loss of around 3,000-5,000 BOPD in a short time. Efforts continue to be made to incorporate wider coverage of oilfields at ISC in North Kuwait by digitizing more oilfields through new technologies. It is expected that the proven, successful utilization of ISC will serve as a leading example for other Directorates.

## About the Intelligent Solution Center

The ISC aims to increase production by creating a collaborative decision-making environment through real time validated data availability, automation, analysis and fast, efficient decisions that are made for field actions necessary for production optimization. It is the foremost type of system of its kind and is a strategically important initiative that interfaces the latest technology that collects and analyzes



A group photo of CEO Hashem Hashem and KOC officials at the event.

data from the field for quick remedial actions in order to enhance production. Through the Intelligent Solution Center, North Kuwait continues to centralize all wellhead and facilities data for usage and rapid trouble-shooting of oil field issues. This enables integrated operations in defining, modelling, measuring, analyzing and ultimately controlling oil field assets for greater improvements on investments.

#### **Background and Establishment of ISC**

The idea of constructing the Intelligent Solution Center in North Kuwait was first conceived in 2013 by Operations Group (NK) under the guidance of Abdullah Al-Harbi (who was then the Group Manager) in order to support attainment of strategic targets

for oil production. Particularly, it was envisaged that available field data might be utilized for loss prediction and timely corrective actions to apprehend the production loss. Initial assessment of available data for a few wells and the implemented corrective measures showed encouraging results. This further strengthened the idea of building the ISC in North Kuwait. The lessons learnt were then utilized as a tool and method to build upon and develop incrementally through integrated honing of technology, people and processes for improved innovation and collaboration to reap significant benefits for North Kuwait.

The Intelligent Solution Center in North Kuwait is a state of the art collaborative decision center with highly automated integrated systems and workflows embedded

as accurate decision support systems configured through robust instrumentation, IT/Automation applications and integration methods and protocols along with large wall-panel displays and workstations to deliver real-time validated data for analysis and issuing real-time corrective actions.

The ISC captures real-time well data by integrating several information systems like e-POIS, FINDER, V-monitor and other preset workflows in bringing the associated pre-filtered data and alerts that are further analyzed by a multi-disciplinary team of experts for quick analysis and decisive corrective actions. The ISC is supported with skilled and well-trained maintenance professionals to implement recommended corrective actions in the field at the earliest possible times.



ISC elements that have been implemented:

1. Enhanced SCADA systems to generate early ESP well trip data.
2. Automated e-mail alerts configured for diagnosis of ESP trips sent to the right person at the right time, to take action and reduce downtime.
3. Developed automated and executable rules using the latest technology in determining wellhead power losses, alerts, analysis and a quick action system.
4. Identified leading/lagging and reactive indicators on wells and constituted field teams for rapid action in arresting production losses to sustain production.
5. Through the DMAIC Six-Sigma approach, the well trip reduction, well downtime reduction, production losses due to power surges at substations and GC separator flow upset, etc. can be visualized and quantified.
6. Additional KPIs developed to establish production leading/lagging indicators and upsets; flaring performance indicators in different facilities and corrective measures applied before and after.

Way forward (plan) in making ISC more robust for improved operational performance:

1. Replacing rudimentary technology of early detection with more automated intelligence.
2. Tactically replacing wired transmitters with sturdy wireless transmitter technology for advanced diagnostics features and capabilities.
3. Replacing obsolete RTUs with third generation powerful Honeywell RTUs 2020.
4. Installing temperature transmitter to determine natural flow well status.
5. Enhancing e-POIS system with web-based HTML solutions to further enrich the diagnostic, analytical and mobility capabilities of the solution.
6. Modernizing radio transmission through Wi-Max infrastructure.

In brief, the Intelligent Solution Center utilizes the advanced digital technology tools to access data from North Kuwait oil fields in real time, analyze it promptly through automated workflow processes, and enable smart decisions that affect production to be made quickly, accurately and collaboratively.

Therefore, the Intelligent Solution Center is an instrumental element that contributes to the achievement of operational excellence at KOC through smart digital oil field solutions.



Fig: Areas of NK paradigm shift in digital advancements.

This paradigm shift has facilitated production enhancements and reduction in well downtime and it has also improved inputs into production optimization and reservoir management workflows. The collaborative efforts and actions through ISC between different Teams of NK (Maintenance, IT, Production, Artificial Lift) has successfully curtailed the considerable production loss of around 3000-4000 BBL/day, and this is only the start.



## KOC HOSTS ISPO CONFERENCE & EXHIBITION

The KOC Marine Operations Group recently hosted the International Standard for Maritime Pilot Organizations (ISPO) Conference & Exhibition at the Radisson Blu Hotel. The event featured presentations and exhibitions from some of the most key individuals and organizations from marine-related industries.

The two-day event was inaugurated by KOC DCEO (West Kuwait) Hasan Bunain, who welcomed the audience and briefly discussed the activities of KOC's Marine Operations Group. In his opening address, Bunain maintained that it was the responsibility of the oil industry to do all it can to achieve safety and excellence throughout its operations. This, he said, was especially true in manners related to operations in a marine environment, where accidents can present especially dangerous risks. Achieving ISPO certification is an excellent way toward increasing port safety and environmental protection, the DCEO said.

"The KOC Marine Operations Group has worked hard to upgrade its operations to a comparable level of some of the world's best operators," Bunain said. "As a result, the Port Operations Team, which

provides pilotage services at KOC, obtained ISPO certification in April of 2014."

The DCEO went on to say that the recent achievement by the Port Operations Team sends a very positive message to the Company's customers and stakeholders. In addition, it reinforces the fact that KOC is committed to world-class efficiency, health, safety, security and environmental standards throughout all sectors of its operations.

According to Hasan Bunain, KOC's Marine Operations Group hosted the ISPO 2015 conference to achieve the following three objectives:

1. To share information related to KOC's world class port operations and achievements.
2. To bring port organizations from the Middle East, Asia and Africa together in one location where information and best practices could be shared.
3. To provide a platform for networking and sharing experience and technical knowledge of other pilotage organizations toward collective excellence.





Hasan Bunain, DCEO (WK), addresses the audience.

Following the DCEO's speech, Captain Lafi Al-Murtaji, Team Leader Port Operations at KOC, addressed the audience and provided an overview of the event and KOC's marine activities. This was followed by a presentation that detailed the history of ISPO's development and organizational structure. This information was presented by Captain Eric van Dijk, ISPO IUG Chairman, Captain Henk van der Lugt, ISPO IUG Administrator, and Captain Willem Bentinck, Amsterdam Pilot and MD, Netherlands Loodswezen.

The opening statements were then followed by a presentation from Captain Pawan Chaudhry, Port Captain from Mina Al-Ahmadi, KOC. Captain Chaudhry provided an insightful presentation that detailed the history of the State of Kuwait's maritime sector, from the days of the dhows to the modern era, where supertankers are a common sight along Kuwait's coastline.

ISPO is driven by two primary objectives. The first concerns the continual improvement of the safety and quality of marine operations within the member organizations through experience and knowledge sharing. The second encourages other international pilotage operators to adopt ISPO Management Systems with the same focus of achieving a uniform, high standard of pilotage internationally.

The ISPO community represents more than 600 Pilots from 14 organizational members. ISPO holds an annual conference that is attended by all members and other organizations seeking to upgrade their pilotage services.

As a member of the International User Group (IUG), KOC is committed to supporting ISPO in spreading its message across the world while encouraging other pilotage organizations to achieve ISPO certifications.

#### About ISPO

ISPO is managed by the core International User Group of ISPO. Objectives of the annual conference are:

- Further improving their standard through sharing experiences and knowledge.
- Encourage other pilotage organizations to upgrade their pilotage services and achieve ISPO Certification.
- To provide a platform to exhibitors, who have products related to pilotage activities.

More than 100 delegates from the management level from various organizations attended the Conference & Exhibition. Initiated in 2009, today the ISPO community is comprised of more than 600 pilots from 14 member ports across the globe.

In related news, last year the Port Operations Team (Marine

Operations Group) from KOC became the first port pilotage organization in the Middle East to achieve the International Standard for Maritime Pilot Organizations (ISPO) Certification.

The management objectives of ISPO include ensuring safe practices in port operations, establishing safeguards against risks, improving safety practices, providing organizational structures and procedures needed to administer port operations, and implementing effective arrangements for communication with customers.

An in-house evaluation of existing operations and systems was conducted by a team of Port Captains, Harbor Masters and Pilots. Working procedures were then entirely revised over a period of more than one year and in many cases rewritten. Some new procedures were introduced while existing procedures were amended to meet ISPO Standards that customers demand.

The certification was achieved through an external third party audit, and in the case of the KOC Port Operations Team, it was conducted by Lloyds Register.



KOC officials during the event.





## Operational Technical Services Team Launches Online Database (S&EK IMP GIS)

The Kuwaiti Digest recently met with the IMP Unit from the Operational Technical Services Team (S&EK), who recently established a webpage that can be accessed from KOC Portal under Highlights/SEK IMP GIS). The webpage was created in coordination with the IT Group and features a geographic database for the S&EK Directorate where services and facilities are plotted on digitized maps that can be used by KOC users. In order to share information about the initiative and discuss the importance of the webpage for the Company, OTS recently hosted a number of awareness sessions for KOC employees in order to familiarize them with the webpage and the tools that have been created for it.

Since its inception in 2008/2009, the IMP Unit of OTS has been allocated with the responsibility of managing oil fields and land in the South and East Kuwait Directorate to ensure there are no conflicts within the Directorate's services, facilities and future/planned projects.

In essence, the OTS Team is responsible for the initiation and introduction of new facilities,

troubleshooting and recommendation of upgrades and modifications for existing facilities to enhance performance, productivity, integrity and HSSE aspects. Furthermore, the Team performs feasibility studies on new technologies that could be introduced into Production Operations. The work the Team conducts includes helping in the design of new facilities during the Front-End Engineering Design (FEED) Stage, testing, commissioning and the implementation stage.

In his interview with The Kuwaiti Digest, Mohammed Al-Otaibi, Team Leader of the Operations Technical Services Team (S&EK), provided an overview of how OTS was created and the important and evolving role it plays for the Company. Koreich Abdulrahman, Senior Engineer Electrical Maintenance, Operations Technical Services Team (S&EK), was also on hand to provide important details about the work the OTS Team does. This included providing The Kuwaiti Digest with a detailed discussion of the importance of the recently-developed OTS Geographic Database that is now available to KOC users.

“When OTS was created in the late 1990s, the main idea was to provide all support and technical advice to the main assets so that they could conduct routine work that requires our input, which deals with clearing for approval locations that work needs to be conducted on. For example, before allocating any project, we need to ensure that space is available, secure, and that the proper infrastructure is in place. In addition, the new facilities or work must not interfere with other equipment or assets that are in the field. It is our job to make sure the proper surveys have been conducted to create a full picture of what is actually there in the field,” Al-Otaibi said.

The OTS Team Leader added that in South and East Kuwait, the areas in and around Burgan Field are very congested. In the past, Groups and Teams laid down equipment, pipes and facilities with no strict oversight. This has led to the proliferation of a complex network of pipelines and equipment that do not follow an orderly placement. Therefore, to assist future work and create consistency and order, the OTS Team began an extensive survey of South and East Kuwait beginning in 2009. This survey, which is a continuous process, collects information about the location of every facility, piece of equipment, and pipeline in the area. This information is then meticulously categorized and stored in a geographic database that is now available to all KOC Teams that require information about the field and surrounding areas.

Al-Otaibi also discussed how the idea for the IMP Unit came to be. Introducing services and facilities into the field to help

in the process of Production Operations, along with building the needed infrastructure, requires tremendous effort in managing and organizing the field area in order to avoid any land conflicts. This necessitates the establishment of a geographically-based database where users can plot their needed facilities and infrastructure on a map to help them in the decision-making process.

The IMP Unit was specifically created for the aforementioned purpose. It uses the latest software technologies such as ArcGIS, an ESRI-based Geographic Information system, to achieve this target. (ESRI is an American company that has developed the technology in question. ESRI stands for Environmental Systems Research Institute.)

The process of creating the webpage required many different disciplines, including ones from the IT Group. This included input from the IT GIS Unit and their webpage design staff, GIS Specialists, and many more individuals who specialize in their respective fields of work. KOC User Teams involved in the execution and planning of projects needed, as part of the Stage Gate System used by the Company, to coordinate with the OTS (S&EK)/IMP Unit to reserve the needed land and space required for their projects.

The idea of connecting the OTS “Live” Database to a webpage accessible by all KOC User Teams came to light when the Team was discussing ways of improving services to users. The webpage was launched in October of 2014 to help users easily access the database to see the allocated services and facilities and search for the



OTS Team Leader  
Mohammed Al-Otaibi

“Free” and “Unreserved” areas. This will help them decide on the best possible selection before forwarding their official land requests to OTS. This, in effect, greatly shortens approval cycle and enhances the workflow process.

### **The Geographic Database**

The Geographic Database provides an excellent service by precisely indicating the location of any asset. This includes buildings, wells, Gathering Centers, crude or gas pipelines, or any other piece of equipment in the field. This allows the OTS Team to provide efficient management and use of the South and East Kuwait field area. Therefore, by providing KOC users with the exact location of the assets in the field, they will enhance their projects and future service planning and will ensure that their land reservation requests are always approved.

In addition, because the database is very dynamic and the related information is changing constantly, OTS provides this web facility to users to keep them updated with the changes happening within the database. The webpage, with its live connectivity to the database, is



the right answer to this problem, and OTS has even provided KOC users with tools on the webpage to help them search for any particular well, service or facility. Furthermore, there are tools to help them design or draw out a particular area or piece of land for the purpose of reserving it and sending it to OTS electronically to expedite the approval process.

In addition to the relevant KOC Groups and Teams that make use of the Geographic Information Service (GIS) tool, a number of other authorities have established their own GIS Tools to manage their activities more efficiently. According to Al-Otaibi, outside authorities such as Kuwait Municipality, Ministry of Electricity and Water, and KISR (Kuwait Institute for Scientific Research) routinely make use of the GIS tools in order to identify location conflicts and to help them in their decision making process.

One of the primary challenges the OTS Team has in terms of managing land reservations is getting all the different users to coordinate their planning activities with the Team in advance in order to allow for the provision of services in the field without any conflicts. For example, if the Field Development Team provided OTS with information about the introduction of new wells for one year only, the Team will have a problem aligning and reserving land for any future/unknown wells (i.e. wells coming the following year) because the Team needs to include and consider all the projects and facilities/services from other Teams that might interfere with the land reservation of the unknown



Senior Engineer Koreich Abdulrahman provides an overview of the Geographic Database.

wells. Therefore, providing a long-term plan (i.e. 5-7 years) and not making major changes to this plan will help in avoiding such land reservation problems.

Developing the database required specialized disciplines such as GIS Specialists, GIS Data Management Engineers/analysts, CAD/Draughtsman, surveyors and mechanical and electrical engineers. The project was a team effort, and the creation of the database began with the collection of needed information from the field by the surveyors, who used specialized equipment to indicate the exact location of the service or facility within centimeters. Also, engineers accompanied the surveyors to ensure all the related technical data was being collected. This data was then delivered to CAD staff for them to handle before delivering it to GIS Specialists, who converted the information with GIS Software to input it in the workstations and store the relevant information as a map document to be displayed and analyzed later.

The creation of the database also required the help of the IT Group, who provided OTS with the needed hardware and software that was used in executing much of the work and creating the webpage.

#### Future Plans

According to Al-Otaibi and Abdulrahman, the existing database that OTS has developed only covers the S&EK Directorate Field area and does not include West and North Kuwait Directorates. However, a new IMP contract will soon be signed that will allocate manpower and equipment to establish a database for those areas.

In the near future, KOC will have one database common for all areas that fall within the Company's jurisdiction where users can access, through the webpage, search tools for any service or facility so that they can reserve any land or area they need for their respective projects.





# BILL GATES VISITS KUWAIT

His Highness the Amir Sheikh Sabah Al-Ahmad Al-Jaber Al-Sabah recently received Bill Gates, the American business magnate, philanthropist, investor, computer programmer and founder of Microsoft,

during his visit to Kuwait. Gates was in the country to participate in a youth dialogue session and meet the Abdulrahman Al-Sumait Board of Trustees. He was also honored with the Informatics Medal by H.H. the Amir for his revolutionary contributions to science and technology.

Gates, who was personally invited to Kuwait by H.H. the Amir, participated in a dialogue session with Kuwaiti youth at Bayan Palace organized by the Amiri Diwan. The topic of the discussion was "Youth and International Development" and is part of H.H. the Amir's efforts to support the country's young population by developing their skills and opening new channels for them in the fields of education, health, science, technology and more.

## Informatics Medal

In a special ceremony at Bayan Palace, H.H. the Amir presented Gates with the Informatics Medal for his contributions to information technology over the past four decades, and for being primarily responsible for the innovations that led to the global information revolution. The Award's Board of Trustees selected Gates for his achievements that contributed to the mass use of computers and information systems that have greatly benefitted mankind.

The Informatics Medal is the highest prize offered by the Sheikh Salem Al-Ali Al-Sabah Informatics Award to a public figure or a juridical person that has played a prominent role in human development.



H.H. the Amir presents Bill Gates with the Informatics Medal.



Bill Gates with National Assembly Speaker Marzouq Al-Ghanem.

Meanwhile, National Assembly Speaker Marzouq Ali Al-Ghanem received Bill Gates at his office, where the two held a meeting that addressed some of the charitable efforts the Bill and Melinda Gates Foundation and the State of Kuwait are currently involved with. The charitable work from both entities seeks to offer humanitarian aid and assist relief efforts for the needy around the globe, regardless of geographical location, religion or ethnicity. During their meeting, both Al-Ghanem and Gates commended the respective humanitarian work that each party takes part in.

The National Assembly Speaker commended the exceptional efforts exerted by the Bill and Melinda Gates Foundation, especially its role in combating diseases and epidemics throughout the world's least developed areas. Al-Ghanem then congratulated Gates on the award presented to him by H.H. the Amir in appreciation for his tremendous contributions in the fields of humanitarian work and voluntary actions.

#### Al-Sumait Prize

Gates, who co-chairs the Bill and Melinda Gates Foundation, also took part in a meeting of the Board of Trustees for the Abdulrahman Al-Sumait Prize

for African Development, where members examined nominees for the 2015 prize, the first since its launch two years ago.

H.H. the Amir announced the prize during the November 2013 Africa-Arab Summit in Kuwait. It is named after the late Dr. Al-Sumait, a Kuwaiti doctor who dedicated his life to raising funds for humanitarian and charitable projects in the fields of health, education and food for the less fortunate in Africa.



The late Kuwaiti humanitarian, Dr. Abdulrahman Al-Sumait.

Dr. Al-Sumait dedicated his life to helping the poor and orphans in remote and destitute areas across the African continent. He spent over three decades of his life in his philanthropic work in Africa, where he helped provide care for thousands of orphans. In addition, he helped drill

9,500 artesian wells and helped establish 860 schools, four universities and 204 Islamic centers.

The Board of Trustees, chaired by First Deputy Prime Minister and Foreign Minister Sheikh Sabah Khaled Al-Hamad Al-Sabah, presided over a meeting at Bayan Palace to discuss how the \$1 million prize would be awarded. Board of Trustee members include Abdul Lateef Al-Hamad, Chairman and Director General of Kuwait-based Arab Fund for Economic and Social Development (AFESD), and Dr. Adnan Shihab-Eldin, Director General of Kuwait Foundation for the Advancement of Sciences (KFAS).

The subject for the 2015 prize is health, with submissions focusing on research about communicable diseases that are prevalent in Africa such as Ebola, Malaria and HIV. It also includes the provision of medical staff, medicine, pharmaceutical and medical equipment, as well as the provision of medical centers. The prize – a cash sum, a gold medal, shield and certificate of recognition is to be awarded to individuals or institutions whose research projects or initiatives made significant advancement within the field of health.

The prize has two other fields: food security and education, where the former aims at development of agriculture and provides solutions to environmental problems hindering agricultural production development. The second field aims at providing basic and applied education and the proliferation of schools and the provision of teachers and trainers.





#### **A Letter from Bill Gates about Dr. Al-Sumait**

I never had the chance to meet the late Kuwaiti Dr. Abdulrahman Al-Sumait, but in recent months I've come to appreciate the remarkable man that he was. A physician, Islamic scholar and philanthropist, Dr. Al-Sumait embodied Kuwait's tradition of generosity and concern for people in need, which UN Secretary General Ban Ki Moon underscored last year by recognizing His Highness the Amir Sabah Al-Ahmad Al-Jaber Al-Sabah as a "global humanitarian leader."

At age 35, Dr. Al-Sumait established a humanitarian organization known today as Direct Aid. In less than 30 years, Direct Aid built more than 800 schools, 200 medical clinics, and over 200 training centers for women. And it drilled thousands of wells, helped construct many agricultural and irrigation projects and distributed thousands of tons of food and medical supplies in famine-stricken areas.

I've had the opportunity to learn about Dr. Al-Sumait, who died in 2013, in connection with the launch of a new \$1 million prize for innovation in global health established by His Highness the Amir of Kuwait. I'll be helping review the work of the nominees for the first prize, which will be awarded in 2016 to an innovator who has made a significant and lasting impact in furthering economic and social development in Africa. The first year's prize will recognize a notable advancement related to communicable diseases or the delivery of healthcare.

More broadly, the prize will celebrate Dr. Al-Sumait's life – not just by looking back at his achievements, but also by looking forward to the breakthroughs needed to carry on his legacy in Africa and create a better world for the millions still living in poverty.

Al-Sumait understood that lifting the world's poorest out of poverty had to start with the building blocks of life – access to healthcare, education,



clean water, and the agricultural tools necessary to eliminate hunger and malnutrition. And, like our foundation, Dr. Al-Sumait's philanthropy was largely focused on the most impoverished people in Africa.

It's exciting to see how Dr. Al-Sumait's legacy is being carried forward in the Gulf. One of the most important developments is the creation of an innovative financing mechanism to fund programs that fight poverty. This is particularly vital for the estimated 400 million people living in extreme poverty in the Muslim world, many of them in Africa.

These countries want to provide better health services and agricultural systems for their people, but they don't have sufficient resources, even with the development aid provided by donor countries, philanthropic organizations and NGOs.

To fill this gap, our foundation is working with the Islamic Development Bank (IDB) on a global partnership called the Lives and Livelihoods Fund. This innovative approach will link up contributions from donors with financing from the IDB. For every \$20 donated by businesses, private individuals, and governments, the fund will generate \$100 of investment in projects that support the building blocks of life – fighting infectious

diseases, primary healthcare, agriculture, clean water, better sanitation, food security, and access to energy.

It's an incredible opportunity for anyone who cares about driving social change to contribute and a real breakthrough in how development is funded in poor countries.

The IDB has committed \$2 billion in financing, and to release it we would need to create a grant fund of \$500 million. Our foundation will provide 20 percent of that fund, up to \$100 million, and the Islamic Solidarity Fund for Development, an endowment, has committed another \$100 million. So we're already 40 percent of the way to creating what will become a \$2.5 billion initiative based in the GCC to tackle poverty and disease across the Muslim world.

I'm excited about the Gulf's leadership in helping transform Africa and improving the lives of people living in IDB member countries. We've learned a lot about what it takes to help people lift themselves out of poverty. But we need the resources to finish the job. With the support of Gulf leaders and governments, businesses, and individuals, I'm optimistic that within our lifetime we can give every child, regardless of where they were born, an equal chance to live a healthy, productive life.



Dr. Al-Sumait and Bill Gates have dedicated their efforts to improving the lives of many Africans.



## KUWAIT SIGNS MAJOR SOLAR CONTRACT

Kuwait recently signed a contract worth KD 116 million with the Spanish TSK Group for a 50-megawatt solar energy project as part of its renewable energy drive. Kuwait currently has a multi-billion dollar plan to meet 15% of power demand from renewables by 2030. Ahmad Al-Jassar, Minister of Electricity and Water, said the target is to produce 4,500 megawatts from solar and wind energy by 2030 when demand is expected to rise to 30,000 megawatts from the current 12,000 megawatts. The latest project is due to start production in December 2017, said Salem Al-Hajraf, Head of Energy Research at the Kuwait Institute for Scientific Research. Two smaller projects of 10 megawatts each, which were signed earlier, are expected to come on stream in May and July of next year, Hajraf said. The first three projects have been funded by the government but future ones will be awarded to the private sector as Build-Operate-Transfer schemes, he said. Production is expected to reach at least 2,000 megawatts by 2025, Hajraf said, adding that more projects will be offered rapidly afterwards to meet the target. The pioneer project will be built on a 100-square kilometer area in Shagaya, a desert zone 100 kilometers west of Kuwait City. When complete, the project will meet the electricity demand of 100,000 homes and save about 12.5 million barrels of oil equivalent per year.

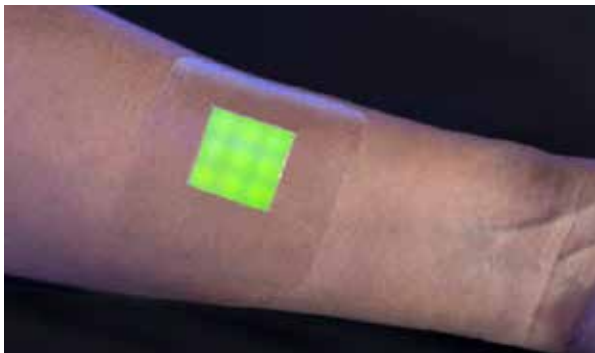
## PORSCHE MISSION E TO DEBUT BY 2020



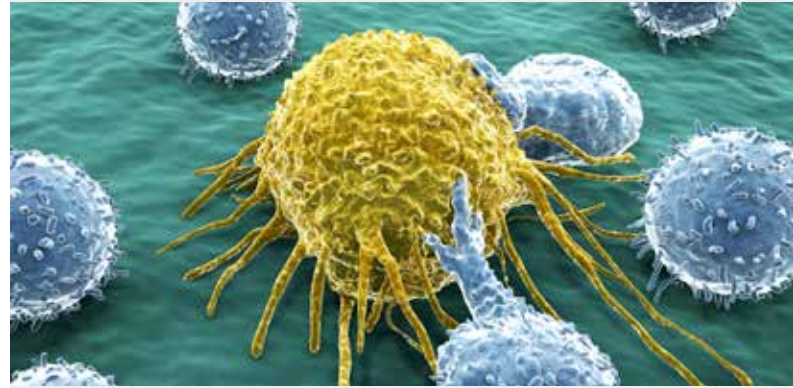
Porsche recently debuted its Mission E, a fully electric vehicle, at the Frankfurt Motor Show. At the time, officials from Porsche maintained the car was merely a concept design. Now, however, Porsche has said that the vehicle will go into production by the end of the decade. The motor will produce more than 600 horsepower, and the four-seater Mission E will go from 0 to 62 mph in under 3.5 seconds. Range will be approximately 310 miles on a single charge. Porsche, which faces increasingly strict fuel emission standards from US and European authorities, has been working with batteries for a few years now, with excellent results. It already offers a plug-in hybrid version of the Panamera and Cayenne. Compared to Tesla's current range-topper, the excellent Model S P90D, the Mission E will offer a bit less power and a slower acceleration time. However, Porsche wins on range. The Mission E also has an 800-volt charger that will power the car up to 80 percent in just 15 minutes, half the time it takes the Tesla. Porsche plans to build the battery into the floor of the car, which will result in a very low center of gravity and is good for performance. Much remains to be learned about the Porsche Mission E, however, it is yet another indication that the prestigious German brand continues to see all-electric cars as a necessary component of their future product lineups.



## SCIENTISTS DEVELOP SMART BANDAGES THAT DETECT INFECTIONS



Bacterial infection is a fairly common and potentially dangerous complication of wound healing, but a new “intelligent” dressing that turns fluorescent green to signal the onset of an infection could provide physicians with a valuable early-detection system. Researchers in the United Kingdom recently unveiled a prototype of the color-changing bandage, which contains a gel-like material infused with tiny capsules that release nontoxic fluorescent dye in response to contact with populations of bacteria that commonly cause wound infections. The invention could be used to alert health-care professionals to an infection early enough to prevent the patient from getting sick. In some cases, it may even be able help avoid the need for antibiotics. Clinicians tend to overprescribe antibiotics for burn wounds, particularly in children, because they are so concerned about infection. That can lead to antibiotic-resistant strains. An infection-detecting bandage could prevent this by reassuring parents and doctors when a wound is in fact not infected. They would also be useful for monitoring surgical wounds as well as those that result from traumatic injury. In tests, prototype bandages turned fluorescent shortly after coming into contact with biofilms of three separate species of pathogenic bacteria, but did not change color after contacting biofilms of non-pathogenic species. If all goes as planned, the technology could be ready for clinical testing by 2018.



## SCIENTISTS “TURN OFF” CANCER- CAUSING PROTEIN

It's the most common cancer-causing protein, directly responsible for 30% of all cancers and indirectly involved in virtually all cancers. For more 30 years, scientists have failed to target Ras, as the protein is known, but now researchers from the University of Toronto have turned this protein off with an experimental drug. Normally, Ras promotes cell growth, but it can also cause uncontrolled growth when mutated or deregulated. As a result, this protein is involved in many forms of cancer and is mutated in over 90% of pancreatic tumors – one of the deadliest forms of cancer. The researchers discovered that another protein, called SHP2, turns Ras off. Working with researchers from Indiana University and Toronto's University Health Network, the team tested a SHP2 inhibitor on mice with glioblastoma, the most common and aggressive type of brain cancer. Remarkably, the inhibitor reduced these tumors by over 80%. Next, the team will work with a cancer surgeon at the University of North Carolina to treat mice that have human pancreatic tumors. If the SHP2 inhibitor is effective, the researchers will use this evidence to support human clinical trials. While their research is still in its early stages, the scientists hope that their discovery will open up new perspectives in the field and potentially change cancer treatment.



# VISIT SWITZERLAND

Here at The Kuwaiti Digest, we truly believe Kuwait's winter months are the best time to stay in the country. Kuwait's mild winters call for more time being spent outdoors, and many of us do choose to enjoy camping in the desert or simply enjoy time outside with friends and family at this time of year. However, we do understand the urge to travel, no matter the season. So, if it's snow you want, why not consider visiting a winter wonderland such as Switzerland?

Whether you decide to stay on snow-capped mountains or in glitzy resort towns, you can experience the high life in Switzerland if you so choose. Visitors to this mountainous European country are elated by its soaring outdoor recreation, riding cable cars up peaks near the Matterhorn, sipping Swiss hot chocolate while cruising on a crystalline alpine lake, and skiing the immaculate slopes of St. Moritz. At the end of the day, lavish spas beckon, along with lively ski scenes and pots of fondue. Sophisticated cities like Zurich and Geneva take luxury to new heights, with posh boutiques and upscale restaurants lining their cobblestoned streets.

If you want to get a sense of contemporary Swiss culture and indulge in some of its pleasures, start by familiarizing yourself with the rituals of daily

life. These are a few highlights you can savor with relative ease:

**Swiss Cheese.** Cheese, and fondue in particular, is a way of life in Switzerland. Once the cheese is melted with a soupçon of garlic, a pinch of flour and other secret ingredients, guests armed with long forks spear squares of bread and dip them into a bubbling pot. Eating fondue is also a fine art and experience that any visitor to Switzerland should not miss out on.

**Clocks.** It lies on the beveled-glass countertop of Vacheron Constantin's Geneva store: centuries of technology compressed into a miniature of gold and glass. Vacheron is the world's oldest manufacturer of watches (it sold its first design in 1755) and these mechanical gems are a part of Swiss history. During the Reformation, Calvin banned gilded crucifixes and chalices, leaving scores of brilliantly skilled goldsmiths with idle hands. Before long, an industry was launched, which, to this day, makes you believe in national stereotypes: the Swiss are precise and persevering. Visit Geneva's Patek Philippe Museum of watches to be wowed by fantastical creations, brilliant colors, and awe-inspiring detail. Clearly, Swiss watchmaking is about much more than time.





**Chocolate.** The Aztecs may have invented chocolate, but the Swiss perfected it. From sugar-dusted white-chocolate champagne truffles to plain old bars of solid milk chocolate, Switzerland magically transforms cacao to please every palate. However, chocolate wouldn't be the same without the Swiss chocolatier Daniel Peter, who invented milk chocolate in 1887 using condensed Alpine milk. The Swiss lead the world in chocolate consumption, devouring more than 25 pounds per person every year. Boutique chocolate shops are found in every town, where you can sample the freshest chocolates and truffles made in small, careful batches. Even chain grocery stores contain aisle upon aisle of well-known brands like Lindt, Cailler, and Suchard.

### Staying in Switzerland

Switzerland is almost as famous for its hotels as it is for its mountains, watches, and chocolates; its standards in hospitality are extremely high. Rooms are impeccably clean and well maintained, but prices are accordingly steep. Visitors from Kuwait who are accustomed to very spacious rooms with every amenity imaginable should understand that rooms and facilities in many Swiss hotels may be a bit smaller than what they are used to.

Where no address is provided in the hotel listings, none is necessary: in smaller towns and villages, a postal code is all you need. To find the hotel on arrival, watch for the official street signs pointing the way to every hotel that belongs to the local tourist association. Most hotels in Switzerland allow children under a certain age to stay in their parents' room at no extra charge, but others charge for them as extra adults, so be sure to find out the cutoff age for children's discounts. The Swiss Hotel Association has listings of family-friendly hotels throughout the country. Supervised playrooms are available in some of the better hotels, and many winter resorts provide lists of reliable babysitters. For recommended local sitters, check with your hotel.

Particularly in ski resorts or in hotels where you'll be staying for three days or more, you

may be quoted a room price per person including demi-pension (half-board). This means you've opted to have breakfast included and to eat either lunch or usually dinner in the hotel, selecting from a limited, fixed menu. Unless you plan to spend time eating most of your meals at restaurants away from the hotel, half-board is an excellent option. Most hotels will be flexible if you come in from the slopes craving a steaming pot of fondue, and they will then subtract the day's pension supplement from your room price, charging you à la carte instead.

When selecting a place to stay, an important resource can be the *hotelleriesuisse*, the Swiss Hotel Association (SHA), a rigorous and demanding organization that maintains a specific rating system for lodging standards. Four out of five Swiss hotels belong to this group and take their stars seriously. Several hotels in the SHA are given the designation of *Landgasthof* or *relais de campagne* ("country inn"). These generally are rustic-style lodgings typical of the region. Not all are off the beaten path; some are in the middle of small market towns or resorts. The SHA distinguishes them as offering especially high-quality service, personal attention, and parking.







## UNDERSTANDING ALLERGIES

When the weather in Kuwait begins to change, everyone is affected. It is common to see more cases of the common cold and flu going around, especially in schools and places of work, where viruses and infections can spread easily. However, another health issue that many people suffer from during the changing seasons is not a virus at all, but rather, an allergic reaction to an increased amount of pollen and other allergens in the air.

### What are allergies?

Allergies are the body's response to a substance called an allergen. Allergens themselves may not be harmful. However, in some people, things that are usually harmless can provoke a reaction. Allergic reactions vary and include many different symptoms. Some reactions can be severe and life-threatening – these types of reactions are called anaphylaxis.

Some people have a condition called atopy that makes them prone to allergies. Testing for allergies can be complicated, and is not always needed. Medication, including antihistamines, can work well for many types of allergy.

Allergies are very common. Many people in Kuwait are bound to be affected by an allergy at

some point in their lives. Most of these reactions will be mild and not life-threatening. Common causes for severe reactions, however, include bee stings and allergies to nuts.

Anyone can have an allergy, and about half of people with an allergy are children. Some people are more prone to allergic problems due to a condition called atopy, which can be passed on hereditarily. Food is a common trigger in children. In older people, medicines are common culprits.

Things that people are commonly allergic to include tree and grass pollens, house dust mites, animals (especially domestic pets such as cats and dogs), insect venom (wasp and bee stings), medicines (for example, penicillin), foods (such as nuts and eggs), and chemicals (such as latex).

### What are the symptoms of allergies?

Allergic reactions can vary and may include a number of different symptoms. With an allergy, you may develop one or more of the following:

- **Nose Inflammation** (rhinitis): Causes a runny nose or nasal congestion and sneezing.
- **Eye Inflammation** (conjunctivitis): Leads to watering, itching and a hot feeling in the eyes.

- **Skin Rashes:** The typical allergic rash is an urticarial rash, which is also known as hives or nettle rash. It is very itchy. Flushing of the skin is also common.
- **Tissue Swelling (angio-oedema):** This can include the lips, tongue, throat and eyelids. It can start with a tingling feeling. Angio-oedema is potentially very serious, as airway obstruction can occur (and so breathing might stop). People might have difficulty talking or swallowing.
- **Breathing Difficulties:** these include wheezing, chest tightness and breathlessness, and can occur in severe allergic reactions and anaphylaxis. This can be life-threatening.
- **Cardiovascular collapse:** this can cause death. It is the end stage of anaphylaxis. The chemicals released by the body in an extreme allergic reaction can make blood pressure drop dramatically. This can lead to loss of consciousness and to the heart stopping (cardiac arrest). Resuscitation is required.

During an allergic reaction, a complex series of events occurs within the body. These events are coordinated by the immune system. Sometimes the immune system goes into overdrive, and if this happens, the body can lose control of its vital functions, with catastrophic results. Such a severe reaction can cause death.

An allergen is regarded by the immune system as a foreign substance. When the immune system detects an allergen, it produces an immune system protein called an antibody. Antibodies are also called immunoglobulin E (IgE). The immune system stores this in its memory (this is called sensitization). This means that you do not have an allergic reaction the first time you come into contact with a specific allergen. If it meets this substance again, the immune system remembers the previous exposure. Antibodies help to attack the invading allergen the immune system believes to be dangerous. A chain reaction is set up whereby other chemicals are released by different blood cells. These chemicals cause the symptoms of an allergic reaction. Histamine is one such chemical, and antihistamines are medications often used to counter the effects of an allergic reaction.

### Allergy Testing

Most physicians believe it is more useful to prove a suspected allergy than to screen randomly for any allergy. This is because virtually anything can

potentially cause an allergic reaction. There are an infinite number of allergens - certainly too many to test for. Most allergy tests involve testing for a few common allergies. If you suspect you have a specific and significant allergy, you should discuss this with your GP.

Skin prick allergy tests can be used to identify the cause of allergy in some circumstances. Suspected allergies to animal dander and pollen is particularly appropriate. Testing for some food allergies can be performed this way as well.

Blood tests can be done in some circumstances for some suspected allergies. They are sometimes called radioallergosorbent testing (RAST). The tests measure the amount of IgE antibody (the immunoglobulin protein made by the immune system) in the blood that has been produced against a suspected allergen. RAST is scored from 0 to 6, depending on the amount of allergen-specific IgE. A 6 means that there is an extremely high level of IgE for that allergen, so the person is very sensitive/allergic to that allergen.

Blood tests are safer in cases where a person has had a very extreme allergic reaction, such as anaphylaxis. Skin prick testing in these people would be potentially dangerous. Blood tests for allergies can be carried out whilst people remain on antihistamine medication (skin prick testing cannot). So it is useful if people have such severe symptoms that they cannot stop their medication.

### Allergy Treatment

Treatment with medication often works so well that you may not have much motivation or need to avoid the cause of the allergy. However, some people may wish to try to avoid the cause of the allergy, particularly if medication is not fully effective.

Treatment with nasal sprays, eye drops and/or antihistamine tablets will often ease or clear the symptoms. The treatment is the same as for any cause of allergic rhinitis or allergic conjunctivitis.

Desensitization treatment, or immunotherapy, is sometimes used in allergy cases that are most severe (such as reactions causing anaphylaxis) and where symptoms are not helped much by other treatments. People with life-threatening reactions to wasp or bee stings, those with severe hay fever and some people with some animal allergies are suitable for immunotherapy. Immunotherapy is usually unhelpful if you have multiple allergies, food allergies or allergic rashes.





# KOC Health Campaigns

As part of its commitment to contribute to the dissemination of health education and its belief in community partnership, KOC recently took part in a number of health campaigns that were aimed at creating awareness in the local community. The Company frequently sponsors various health initiatives throughout the year. Some of the more prominent campaigns the Company has engaged in over the past few months included events that focused on diabetes, breast cancer, and the importance of blood donation on World Heart Day.

## World Diabetes Day

KOC, represented by Ahmadi Hospital, recently participated in a series of awareness campaigns about diabetes. The campaigns coincided with the global events that take place on the occasion of World Diabetes Day.

The first campaign, which was organized by the Information Office at the Ministry of Health and the Office of the Speaker of Parliament Marzouq Al-Ghanim, witnessed a distinctive, clear and notable participation from KOC, through the provision of comprehensive medical tests for all participants.

The KOC Medical Group also participated in the campaign set up by the Faculty of Medicine at Kuwait University, which was held at the Faculty's building in Jabriya. The Khalidiya Health Center also assisted in organizing another campaign to mark the occasion.

## Breast Cancer Awareness

Ahmadi Hospital recently launched a series of breast cancer awareness campaigns that called for the need for early detection of the disease. The campaigns were conducted in collaboration with the Ministry of Health and coincided with similar events that take place around the world to raise awareness about breast cancer.

The first campaign, which was held in the hospital lobby, included several lectures presented by Head of the Health Promotion Unit, Dr. Intisar Al-Hindal, and Senior Radiology Technician, Fatima Farhan. Ministry of Health Radiologist Dr. Rifaat Abdullah and Chairman of the Breast Cancer Awareness Committee Dr. Hana Al-Khuari also delivered



A group photo of some of the organizers and participants.



presentations. All spoke about the nature of the disease and the importance of early detection. They also answered questions from the audience.

The campaign also included seminars and awareness sessions. Presentations were delivered at Umm Al-Alaa Ansariyah Secondary School for Girls, Ahmadi Kindergarten for Girls, Ibn Al-Jouri School for Girls, and a number of other public and private institutions. To mark the occasion, Ahmadi Hospital was lit from the outside in pink to symbolize solidarity with the breast cancer awareness initiatives taking place internationally.

Ahmadi Hospital also took part in a final event held at Marina Mall and organized by the Ministry of Health under the auspices of the Minister of Health Ali Al-Obeidi. During the event, the audience set a record by forming the largest human pink ribbon.



The campaigns had the support of senior KOC officials.

### World Heart Day

On the occasion of World Heart Day, the Human Resources Team from the Security Group, headed by Ali Al-Turki, organized a health day under the theme: "My Health is My Life" to spread awareness on the importance of health and heart disease prevention. The event was held in collaboration with Ahmadi Hospital.

DCEO Corporate Services Ismail Abdulla, DCEO (WK) Hasan Bunain, DCEO Planning & Commercial Jamal Jaafar and

a number of Group Managers and Team Leaders from the Corporate Services Directorate attended the event.

During the event, Al-Turki presented opening remarks that touched on the importance of caring for our health in order to prevent sudden heart attacks. In addition, Head of the Health Promotion Unit at Ahmadi Hospital, Dr. Entisar Al-Hendal, discussed the importance of heart disease prevention. Meanwhile, Psychiatric Consultant and Professor from the Faculty of Medicine at Kuwait University, Dr. Sulaiman Al-Khadhari, delivered a presentation that discussed the connection between heart disease and one's psychological status.

During the event, Security Group Manager Sami Al-Yaqout thanked Dr. Al-Khadhari for his efforts in presenting the information that dealt with psychological aspects and the impact they can have on one's heart.

A group of medical service companies, laboratories and nutrition companies also participated at the event. In addition, those in attendance had the opportunity to have their sugar, cholesterol and blood pressure levels checked.



Participants at the Breast Cancer Awareness Campaign.



# PRIDE & SERVICE: ONE FAMILY'S HISTORY IN KUWAIT'S OIL SECTOR



SUBMITTED BY REJO  
MATHEWS, SYSTEMS  
ENGINEER, RESEARCH  
& TECHNOLOGY  
SUBSURFACE TEAM

As a fourth generation K-Company employee, it gives me great pride to say that members of my family have served various K-Companies since 1947. I was born and brought up in Kuwait for the majority of my life, and as a child, it was confusing to be considered a foreigner in Kuwait and India, where people also viewed me as a foreign-born person. It was like I belonged to two different worlds. Despite the identity confusion I faced in the initial years of my life, I am

proud to say I am a Kuwait-born Indian citizen. This has helped me see the world as a global village, and I feel at home with people of various nationalities and cultures.

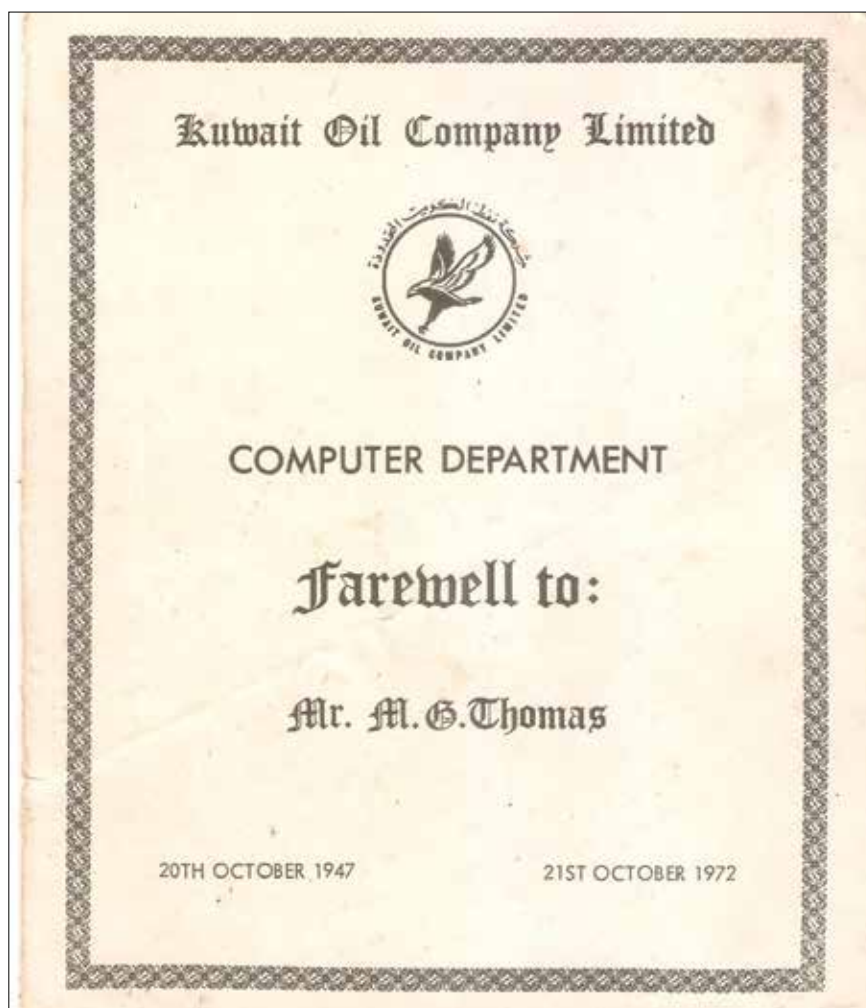
The first member of my family to arrive in Kuwait was my great-great uncle, M.G. Thomas. He began work at KOC in 1947 and retired as a Supervisor/Senior Computer Operator in 1972. My grandparents arrived in Kuwait in the 1970s and my grandfather, P.C. Mathew, joined KNPC in 1976 and worked as a Senior Storekeeper until he passed away in 1989. My father, Raji B. Mathews, has been an employee of KNPC since 1985, where he works with the Procurement Division at the KNPC Head Office as a Purchasing Supervisor. My mother, Mariamma Mathew, worked as a Technical Assistant with KNPC, KUFPEC and later with KOC from 1995 to 2011. In addition to these family members, many of my great-uncles, uncles and aunts have worked at various K-Companies over the decades.

After the invasion, my father returned to work in Kuwait in 1992 and we returned to Kuwait as a family in 1995. We had to re-build our lives from scratch, and despite the struggles, our parents strived to get my siblings and I the best education possible. Growing up in Kuwait, I have seen how the country has developed rapidly, especially in the past 15 years.

*"My family  
has served the  
K-Companies  
and Kuwait  
faithfully for four  
generations, and  
I intend to follow  
in their footsteps  
in standing for  
what is right  
and excelling  
at my work and  
responsibilities."*



Rejo comes from a long line of  
K-Company employees.



I joined KOC in November 2010, after having worked in Malaysia and India for a year after completing my degree in engineering. At KOC, I was able to blossom in my career as a part of the team that implemented eBEAMS/Maximo 7.1 for the Company. I enjoyed being a Change Management Consultant and trainer for KOC employees for almost four years. I have had the privilege of training/certifying and advising thousands of employees from across all Groups at KOC. The Company has taught me many valuable lessons and I realized from the beginning that KOC is a place where good relationships are built and success is a possibility.

I joined the KOC Research and Technology Group as a Systems Engineer in July 2014. I enjoy the work that I am involved in and the interaction I have with my colleagues who are experts from around the world. Most of all, I am grateful to have an excellent Manager, Jamal Al-Humoud, and exceptional Team Leaders, Bader Al-Matar and Jassim Al-Kandari at the KOC Research &

Technology Group, who encourage innovation and lead us by example. Good leaders are rare gems and are the secret behind any organization's success. I was honored and touched when I was nominated as a representative from KOC for the Upstream 2030 Communication group, which has representatives from KOC, KUFPEC and KGOC. We were entrusted with the task of sharing the corporate values within our Company.

My family has served the K-Companies and Kuwait faithfully for four generations, and I intend to follow in their footsteps in standing for what is right and excelling at my work and responsibilities. I pray for God's blessings upon the employees of the K-Companies and the people of Kuwait. May God bless His Highness the Amir, His Highness the Crown Prince, the Government of Kuwait and the leadership of the K-Companies, in treating all the various nationalities within the K-Companies in particular and Kuwait at large, with kindness and dignity.





## GCC TO SIGNIFICANTLY INCREASE DESALINATION CAPACITY BY 2020

Officials from a number of Gulf countries have maintained that the GCC will increase its total seawater desalination capacity by nearly 40% by 2020 in an effort to meet the rapidly increasing demand for potable water in the region. The statements have been made ahead of the 2016 International Water Summit, which will be held in Abu Dhabi and attended by world leaders, field experts, and business innovators with the purpose of accelerating the development of new sustainable strategies and technologies.

Currently, the GCC's seawater desalination capacity stands at approximately 4,000 million imperial gallons a day (MIGD). This is set to increase to more than 5,500 MIGD – nearly 40% – over the next five years as the GCC invests heavily in increasing potable water supply.

Demand for potable water in the region stands at about 3,300 MIGD and is expected to grow to about 5,200 MIGD by 2020. During the summer months, countries such as Kuwait face significant challenges in meeting demand. Furthermore, aging plants do not always operate at full design capacity. This often leads to outputs that are lower than the original figures.

In the past decade, the GCC as a whole has invested close to \$80 billion in various water projects. In the next few years, some of the largest new investments will be made by Saudi Arabia, Kuwait and Oman, where the need for greater capacity is at its highest.

In the past, the dominant forms of thermal distillation included multi-stage flash (MSF) and multiple-effect distillation (MED), which require very large amounts of energy. As the price of crude falls and the GCC seeks to create better efficiency in

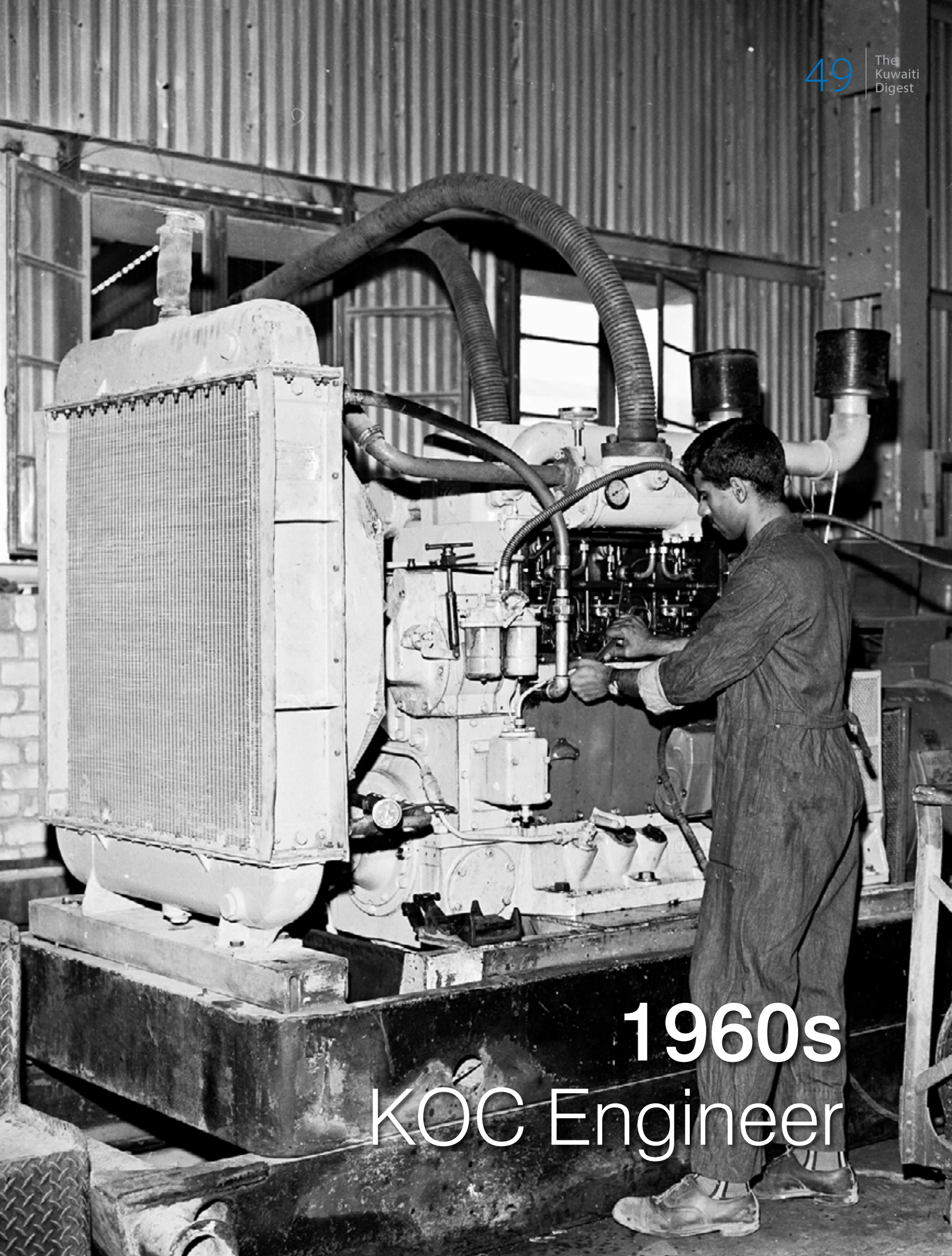
all areas, these forms of distillation are increasingly less attractive. Instead, more countries in the region are looking toward reverse osmosis technologies, which are becoming more widespread because of their reliance on chemical processes as opposed to energy-intensive thermal processes.

### Desalination in Kuwait

Kuwait's first desalination plant was established at Ahmadi Port in 1951 with a very modest production capacity. Over the years, Kuwait's production capacity greatly increased as new technologies developed and new plants were built. Desalination of water in Kuwait will continue indefinitely because Kuwait's desert environment leaves no other alternative than to desalinate water because of the country's lack of fresh water resources.

While the Ministry of Electricity and Water does provide an excellent service in its ability to continuously supply Kuwait with fresh water, there are concerns surrounding the feasibility of the economic costs associated with providing an abundance of desalinated water to the general population. One of the major concerns deals with the cost of the government subsidizing water in Kuwait, which by comparison to the rest of the world, is exceptionally discounted. Water subsidies in Kuwait account for about 2.5% of gross domestic product, or 6% of the nation's oil revenue. Naturally, these figures will increase in the future.

Recently, Kuwait has opted to use reverse-osmosis technology at the Al-Zour desalination plant. Al-Zour currently accounts for approximately 20% of Kuwait's installed capacity.



1960s  
KOC Engineer





إحدى شركات مؤسسة البترول الكويتية  
A Subsidiary of Kuwait Petroleum Corporation