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.

Editor-in-Chief
Saad Rashed Al-Azmi

Deputy Editor-in-Chief
Sami Al-Juhaim

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
or visit the KOC homepage at http://www.kockw.com
Letter from the Editor 2
Kuwait Oil & Gas Show & Conference 3
KOC & US EPA Work Together to Cut Methane Emissions 7
International HSSE & Loss Prevention Conference and Exhibition 8
KOC Aims to Increase Gas Production 12
Introducing KOC’s Center of Excellence 16
KOC to Deploy 5MWe Solar Plant 18
The Importance of DC-DC Power Converters 20
New Units Inaugurated at Ahmadi Hospital 22
Acid Matrix Stimulation in SE Kuwait 24
Frugal Engineering: Breaking Away From Tradition 28
Korean Delagation Visits Display Center, Kuwait Oasis 30
Transformation of Radiology Unit at Ahmadi Hospital 32
Just How Badly Are We Overfishing Our Oceans? 36
Hi-Tech 40
An Overview of Anxiety 42
Mayor of Rotterdam Visits KOC Display Center 44
KOC Launches “Clean Up Arabia” Campaign 46
KwIDF Project Wins Award at ADIPEC 48
As we begin a new year and prepare to make 2014 one of the most successful years on record, we can look back on 2013 and be proud of our many accomplishments. For one, our Company has succeeded in terms of laying the groundwork that is necessary to fulfill the objectives of the 2030 Strategy. From the signing of new agreements to the implementation of many new and exciting projects throughout KOC, our Company has made enormous strides in terms of accomplishing the requirements necessary for us to meet all our future goals and targets.

As we look back on 2013, I implore all KOC employees to reflect on and learn from their triumphs and successes. More importantly, however, I urge all employees to seek new and innovative ways to improve their work and create efficiency while upholding the standards of quality that our Company holds dear. In addition, we must be sure to never compromise our HSSE standards. This requires all employees to remain vigilant when engaging in any and all work that affects the health and safety of other employees and the community at large. Because part of the 2030 Strategy calls for KOC to be a safer, more efficient exploration and production company, I am happy to report that KOC continues to remain a national leader in terms of HSSE. In fact, the extensive participation of KOC at the recent HSSE and Loss Prevention Conference is testament to our efforts in this cause.

In addition to our continuous efforts in regard to HSSE, KOC has done much more than our fair share in terms of being our country’s most important asset. At the recent Kuwait Oil and Gas Show and Conference, our Company brought pride to Kuwait by showcasing our many accomplishments to an international body of visitors from within the region and abroad. I look forward to seeing KOC employees rise to the occasion at similar events in the future, which are extremely valuable in terms of solidifying our connections with players from around the world while also benefiting from the sharing of information and best practices.

KOC has many new initiatives and projects to look forward to this year, and many are covered in detail in the following pages of this magazine. From a new solar plant to a new initiative known as the Center of Excellence, KOC is working hard to ensure that we stay ahead of the times and remain Kuwait’s most important, and admired, company. On top of these projects, I am proud to say that work is on track for the completion of the New Ahmadi Hospital. However, in the meantime, the current Ahmadi Hospital continues to receive new equipment and upgrades, which you can learn about in this issue.

It is my hope that KOC continues to make strides this year in the realization of our 2030 Strategy. By all accounts, our success depends on each and every employee fulfilling his or her duties for the betterment of our Company and the State of Kuwait. May Almighty Allah assist us in our efforts.
The Kuwait Oil & Gas Show and Conference (KOOG 2013) recently took place at the Mishref International Fairgrounds, with the opening ceremony for the event being held at the Kuwait Regency Hotel. The Kuwait Oil & Gas Show and Conference, which was organized by the Society of Petroleum Engineers, was the largest gathering of individuals from the oil and gas industry in Kuwait. The event itself incorporated a broad program spectrum which featured both local and international speakers and specialists from the oil and gas industry.

The KOOG 2013 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 Kuwait Regency Hotel. The ceremony was also attended by His Excellency the Deputy Prime Minister and Minister of Foreign Affairs Sheikh Sabah Khalid Al-Hamad Al-Sabah, His Excellency the Deputy Prime Minister and Minister of Interior Sheikh Mohammed Khalid Al-Hamad Al-Sabah, and His Excellency the Deputy Prime Minister and Minister of Oil Mustafa Jassim Al-Shamali. A number of other ministers, governors, senior state officials and international experts, specialists and decision makers from the oil and gas sectors were also present.

Opening remarks were delivered by representatives from the Society of Petroleum Engineers, who welcomed all in attendance to the event. Egbert Imomoh, the Society of Petroleum Engineers President, was the first to address the audience and maintained that he was “very happy to be in Kuwait for the opening ceremony of this event,” adding that “although Kuwait is small, its size doesn’t reflect the importance it plays on the global stage. As the fifth largest producer and seventh largest exporter of crude oil, Kuwait’s importance on the global stage is very important indeed,” he said.

The floor was then given to His Excellency the Deputy Prime Minister and Minister of Oil, Mustafa Al-Shamali, who delivered his opening remarks to the audience. During his speech, the Minister of Oil maintained that “Today, the oil and gas industry seeks increasingly innovative
solutions to meet growing demand for energy in the face of evermore difficult challenges. This important event attempts to address some of these challenges, and it brings together an extraordinary and welcome level of expertise to one of the most prolific hydrocarbon regions in the world. KOGS 2013 provides an important forum and opportunity for participants to contribute, debate and provide solutions that will shape the future of the industry and our region.

The Minister of Oil went on to say that the exhibition portion of the event featured more than 160 exhibitors from 20 countries, and that it served as an important showcase for the latest technologies while acting as a conduit for the strategic collaborations and healthy competition that drives the industry forward. He added that Kuwait was honored to receive GCC national oil companies, international supermajors, service industry giants, national groups and numerous other specialists from across the globe at KOGS 2013.

“"The parallel high level technical conference and its theme: ‘The Power of Collaboration, People and Technology in the Oil and Gas Industry’ cites the importance of cooperation and challenges the oil and gas industry to move forward with adaptively intelligent technologies, out-of-the-box business models and exceptional human skills. This pace-setting agenda incorporates senior keynote speakers, four executive level panel discussions, and more than 100 paper and poster presentations delivered by our peers, whose professional insights and case studies will no doubt be of great benefit to all delegates,” he said.

Al-Shamali then thanked the KOGS 2013 conference committee which was chaired by Nizar Al-Adsani, Deputy Chairman and Chief Executive Officer of KPC. He also thanked the KOGS 2013 organizers and everyone associated with making the event a reality.

Following the Minister of Oil’s speech, KPC CEO and KOOG 2013 Conference Chairperson Nizar Al-Adsani took the stage and welcomed the audience to the event on behalf of the KOOG Executive and Program Committees. During his remarks, Al-Adsani said that the title of the conference’s theme was “The Power of Collaboration, People and Technology in the Oil and Gas Industry.” The conference, he said, will address key areas of upstream and downstream interests, including reservoir management, production operations, sustainable development and drilling and completion technologies.

The KPC CEO also added that the conference will bring together regional and international professionals from all sectors of the petroleum industry to share and discuss their views on current industry topics and trends, exchange expertise and experience, present state-of-the-art technology and innovation, and stimulate further research of technical and business activities.

Hashim Hashim, KOC CEO, also addressed the audience and discussed various aspects of Kuwait Oil Company’s plans for the future. He discussed the 2030 Strategy and maintained that the Company was on track...
to producing 4 million BOPD by 2020 and sustaining that figure to 2030. He also commended Company efforts to promote the care and development of its core business and employees while also engaging in demanding activities which included greatly reducing gas flaring throughout Company operations. This, he said, was a major success for KOC as flaring has been reduced to less than 1% in many cases.

The KOC CEO also said that he was looking forward to the sharing of information during the conference, adding that new innovations in the field of technology help oil producers create better efficiency while also doing much in the way of creating safer avenues of production which can help protect the environment that oil producers operate in. The CEO went on to say that the production of gas in Kuwait is a national need for the country’s growing power requirements. KOC, he said, will do much in the way of making efforts to produce more gas for domestic use. The CEO then concluded his speech by upholding KOC’s commitment to the safety of the people of Kuwait while also fulfilling its role as an international oil producer and provider of energy.

The Executive Plenary Session, which was titled “The Power of Collaboration, People and Technology in the Oil & Gas Industry, was moderated by Adnan Shihab-Eldin and featured the participation of a number of prominent speakers, including H.E. Abdullah Salem El Badri, Secretary General, OPEC, Khaled Al-Buraik, VP of Petroleum Engineering and Development at Saudi Aramco, Nizar Al-Adsani, CEO, KPC, and Patrick Pouyanne, President of Refining and Chemicals at Total.

During the session, the speakers discussed a number of issues, including how the traditional boundaries set by regular business competition practices in the industry have broken down and opened up to a new business framework where collaborative practices are implemented in new and innovative frameworks, contracts, and commercial agreements to ensure that commercial success is achieved through joint efforts of all partners involved. The speakers also discussed how technology solutions may be enabled by joint research efforts of different sectors and locations. They also discussed how people from different companies, regions and industries are encouraged by new work and contract frameworks to collaborate, creating and sharing more knowledge to be more efficient, to reduce costs and to operate in a safer and more sustainable manner. Examples in oil and gas where the power of collaboration, people and technology completely transformed business schemes are the oil sands and shale gas exploitation, the offshore operation of marginal fields, and the joint ventures established for non-conventional resources like tight gas or heavy oil.

The first panel session of the conference was titled “Growing Our Organizational Capabilities” and was moderated by Hosnia Hashim, former DMD at KOC and currently serving as VP of Operations at KUFPEC. During the session, the panelists discussed the challenges facing the industry today that deal with the expansion of production of...
oil and gas of conventional resources in faster cycles than ever before. An emphasis on integrity management, HSE, quality and risk management of old facilities and what was being done to meet new regulations and standards was discussed.

The second panel session of the conference was titled “Enhancing In-Country Value through Regional Cooperation” and was moderated in part by Adly Abu-Amarah, Manager Contracts, KOC. The panelists discussed how the GCC would like to maximize its in-country value in terms of oil and gas training, manufacturing, and research centers as well as the nationalization of its workforce. The panelists agreed that, collectively, the region has the opportunity to cooperate in terms of enhancing utilization, reducing costs, and sharing best practices and lessons learned in a way that will significantly benefit everyone in the oil and gas industry. However, the speakers indicated that the reality was that the region was actually a long way from this ideal co-existence. The speakers discussed the actual hurdles and challenges facing the region today and attempted to understand and explain why these hurdles and challenges existed. They also debated the pros and cons of easier movement of oil and gas personnel and equipment between GCC countries while identifying the actions required in order to turn this vision into a reality.

The third panel discussion was titled “NOC, IOC, Service Industry Collaboration” and was moderated by Ali Al-Shammari, CEO, KGOC. During the session, a panel of speakers from the industry discussed the issue of upstream investment and how this was primarily driven by expectations concerning spare capacity. They also discussed the challenges which include spare production capacity and market behavior, security and investments, and oil prices and sustainability.

Abdullah Al-Awadhi, Manager Operations Support, KOC, presided over a special session titled “Communication, Image and Corporate Social Responsibility.” During the session, Al-Awadhi discussed how to overcome the challenge of differentiating KOC CSR initiatives from corporate charity contributions. Part of overcoming this challenge, he said, was to invest in strategic programs which support, enhance, and enable KOC’s image and communication strategies to achieve their strategic business objectives while also fulfilling its responsibility as an active member of Kuwait’s society. The speakers went on to say that a responsible oil and gas operator is a protector of the environment, a keen preventer of industrial accidents and losses which applies robust management practices in HSE along with an effective communication strategy. Building real CSR practices and policies, he said, is key to the promotion of a corporation’s brand value and reputation, and in the building of a credible and reliable image as a business partner that contributes to the economy, people, enterprise and development of society.

During the technical program of the conference, a number of KOC employees delivered presentations on topics such as CO2 Emission Reduction through Power Savings and HSE Challenges While Testing and Completion of High Sour HPHT Exploratory Wells, in addition to a number of posters that were presented during the conference.
As part of its environmental protection efforts, KOC recently signed a Memorandum of Understanding with the US Environmental Protection Agency (EPA) that falls under the framework of the Global Methane Initiative which is aimed at reducing the hazardous impacts of methane on the environment. The memorandum was signed on behalf of KOC by CEO Hashem Hashem and on behalf of the EPA by the US Ambassador to the State of Kuwait, Matthew Tueller.

In a statement he made, the KOC CEO said that global warming was an extremely pressing issue for the whole world because of its long-term impact on sustained development and the environment.

“KOC has strived seriously during the last eight years to implement environmental programs and projects, based on its responsibility as a major oil producer in the country and in support of the continuous development of the State of Kuwait,” Hashem affirmed.

He maintained that the US governmental agency, the EPA, plays an important role worldwide in order to reduce the emissions of greenhouse gases in cooperation and coordination with a large number of countries and organizations.

Hashem added that the Global Methane Initiative was the way to increase the efficiency of recovering methane gas and using it as a clean energy to provide for the needs of the country. He reiterated that KOC was eager to cooperate with the Global Initiative and to coordinate with the EPA in order to improve its performance in the domain of environment and to efficiently implement this common project.

He thanked the members of the global initiative and KOC employees for the efforts they exerted to draw up the Memorandum of Understanding.

On his side, US Ambassador to the State of Kuwait Matthew Tueller hailed the role of KOC and its allocation of a part of its oil export revenues to the protection of the environment. He also underlined the importance of such a role within the framework of Kuwait’s strategy related to energy.
The Kuwait chapter of the American Society of Safety Engineers (ASSE) recently organized the 7th International Health, Safety, Security, Environment (HSSE) and Loss Prevention Conference & Exhibition at the Radisson Blu Hotel. The conference, which is one of the largest of its kind in Kuwait, was held under the theme of “Solutions to HSSE Challenges.” The conference was held under the patronage of H.E. Mustafa Al-Shamali, Kuwait’s Minister of Oil; however, the minister’s opening remarks were delivered by KPC CEO Nizar Al-Adsani.

Fadhel Al-Ali, Chairman of the American Society of Safety Engineers – Kuwait Chapter, and founding member of the Kuwait chapter of ASSE, welcomed the distinguished dignitaries and professionals from various industries and organizations from Kuwait and abroad. In particular, Al-Ali welcomed Kathy Seabrook, the ASSE President who made the journey to Kuwait specifically for this conference. Al-Ali went on to say that it was his hope that the 7th HSSE Conference would do much in the way of providing industry professionals with the necessary knowledge to decrease the rates of incidents that inevitably occur in the oil and gas sector.

Meanwhile, KOC CEO Hashem Hashem addressed the audience and said that he was proud to see HSE professionals from KOC take part in the organization of conferences.
the conference, which he said creates great value for all individuals who are involved with the promotion of health, safety, security and environmental aspects of work in the oil and gas industry.

“KOC is profoundly committed to providing a safe and healthy working environment for its employees and contractors and maintaining high industrial standards and performance in all its operations,” the KOC CEO said. “As a Company, we strive to become a role model for Kuwait and achieve the highest levels of operational excellence. Of course, we consider health, safety, security and the environment as key strategic objectives of our business strategy and number one priority in our endeavor towards sustainable development and the fulfillment of our corporate social responsibilities.”

The KOC CEO went on to say that he was pleased the Company was supporting the conference as a platinum sponsor and added that he was sure the conference itself would do much in the way of adding value to the State of Kuwait and all HSSE professionals through the technical paper sessions, workshops and symposiums that would be held over the three day event.

The floor was then given to Kathy Seabrook, President of ASSE-USA, who said she appreciated the Kuwait chapter of ASSE for organizing an event that would help all professionals present at the event in their learning journey. She added that she was especially proud of the Kuwait Chapter of ASSE, for it has been the major leader in the region in terms of organizing events related to the advancement of HSSE culture. She added that the quality of work the Kuwait Chapter has put forth has consistently been of a high standard which has set a very high bar for other chapters throughout the region to live up to. Following Seabrook’s address to the audience, Fred Fortman, former ASSE Director, took the stage to unveil the new ASSE global logo, which was unveiled for the first time at the conference in Kuwait.

Meanwhile, Mohammad Mohiudeen, Director of the Conference Organizing Committee, provided an overview of the conference and highlighted the untiring efforts put forth by dedicated members and the support extended by the sponsors and other affiliated organizations. He also thanked the Advisory Panel Members for their support and contributions.

“HSSE performance has taken a leading role in a various number of industries. Considering the challenges being faced by most of the industries in maintaining good HSSE performance, we have carefully selected qualitative technical papers that cover all aspects of HSSE and Loss Prevention. I believe all the plenary sessions, symposiums, workshops and technical papers which are going to be presented in this conference will certainly meet the expectations of the participants in line with the theme ‘Solutions to HSSE Challenges’,” he said. Mohiudeen then thanked all the dignitaries, HSSE professionals, exhibitors, session chairs, media, speakers and the endorsing organizations for their support and encouragement.

During the first plenary session, Abdullah Al-Awadhi, Manager of Operations Support at KOC, served as Session Chair for a discussion which focused on HSE, Safety and Security. During this session, the visiting ASSE President, Kathy Seabrook,
discussed Sustainability and Corporate Social Responsibility’s impact on the safety profession. During her presentation, Seabrook discussed ESG (Economic Social Governance) and the importance of sustainable development for all parties involved. As for the definition of sustainable development, Seabrook explained it as “development that meets the needs of the present without compromising the needs of future generations.” In that regard, Seabrook upheld the belief that sustainability today actually affects the prospect of future profits, as it protects available resources and ensures that the possibility of future exploitation is assured.

The visiting ASSE President also upheld the importance of aligning initiatives through better communication within businesses. “By aligning initiatives,” she said, “we can be ahead of the curve. And by understanding business risk, we can enable the development of better business initiatives, all while keeping in mind that at the end of the day, our common goal is the creation of safe workplaces and environmental protection.”

Following Seabrook’s presentation, Ahmad Abbas, HSE Manager from KOC, took the stage and spoke about Benchmarking HSE Performance, which he defined as the process of measuring an organization’s internal processes before identifying, understanding, and adopting outstanding practices from other organizations.

On the final day of the conference, the Executive Panel Discussion featured speakers such as Ismail Abdullah, KOC DCEO for Corporate Services, Mohammad Hussain, President and CEO, Equate, Kathy Seabrook, ASSE President and Rob Cooling, IOSH Middle East Branch Chair. During the discussion, KOC DCEO Ismail Abdullah reaffirmed KOC’s intention to strengthen its commitment to HSE. In order to do so, he said, the Company will require effective project management and cooperation between management and contractors. In addition, the DCEO maintained that effective supervision and innovative leadership do much in the way of achieving the Company’s HSE goals. The DCEO also upheld his belief that enhancing the skills of the national Kuwaiti workforce would play a very large part in promoting HSE initiatives.

During the conference, exhibitors showcased their health, safety, security and environmental products and services. Some of these products and services included personal protective equipment, consulting services, computer assisted recordkeeping and new and innovative ideas for the HSSE field.

On the second and third day of the conference, technical papers were presented by experts from Kuwait and abroad which focused on Fire Safety, HSE Management, Loss Prevention & Business Continuity, Occupational Health and Safety, Process Safety, Facility Security, the Environment and Sustainability.

In addition, four exclusive symposiums were organized which ran parallel to the conference. These symposiums focused on such topics as the role of security for emergency and disasters, HSE Regulations in Kuwait and Corporate Social Responsibility. Training workshops on HSSE issues were conducted as part of the pre-conference workshops and were attended by Health, Safety and Environment professionals for their personal growth and benefit.

In total, the conference hosted approximately 600 participants and provided a unique opportunity for participants to share and learn about various aspects of HSSE while promoting Health, Security and Environmental protection.
About ASSE

Founded in 1911, the American Society of Safety Engineers (ASSE) is the world’s oldest professional safety society. ASSE promotes the expertise, leadership and commitment of its members, while providing them with professional development, advocacy and standards development. It also sets the occupational safety, health and environmental community’s standards for excellence and ethics.

ASSE is a global association of occupational safety professionals representing more than 35,000 members worldwide. The Society is also a visible advocate for HSE professionals through proactive government affairs at the federal and state levels, and in member-led relationships with key federal safety and health agencies. ASSE members create safer work environments by preventing workplace fatalities, injuries and illnesses. Besides recording less lost time and lower workers’ compensation costs, organizations with strong safety performance enjoy increased productivity, a better reputation and higher employee satisfaction.

ASSE members have direct access to over 35,000 SH&E professionals through our 150 chapters, 8 regions, 40 sections and 70 student sections around the world. Members are also able to participate in ASSE’s 19 practice specialties, 6 branches and 4 common interest groups. Networking enables ASSE members to share their knowledge and exchange best practices with other industry experts.

The Kuwait Chapter of ASSE was founded in 2000 and is Kuwait’s premier voluntary, non-profit Health, Safety and Environmental organization that strives to provide professional guidance, training, consultancy and resources to the industrial and social sectors in the region. In pursuance of its lofty goals and objectives, the society has organized many conferences, technical meets, training programs and outreach activities and is on its way to becoming one of the most active professional bodies in the Middle East.
KOC Aims to Increase Gas Production to 1 Billion Cubic Feet

Kuwait Oil Company is currently in the process of developing the country’s Jurassic gas fields by carrying out a number of related projects to achieve the Company’s strategic goals, which aim to increase the production of non-associated gas from Jurassic deposits in North Kuwait to one billion cubic feet. In a recent interview with KPC World, a sister publication of The Kuwaiti Digest, Menahi Al-Enezi, Deputy CEO for Exploration & Gas discussed KOC’s plans to develop gas fields in the North in a way that is both economically feasible for Kuwait and environmentally sound.

Al-Enezi began by stating that the process of increasing the rate of oil and gas production is carried out as per a clear exploration and production strategy based on two main points: The first is aimed at developing the Jurassic reserves, which have been previously explored, in order to increase the non-associated gas productivity from these reserves to one billion cubic feet by 2019-2020. The second centers on conducting new explorations to find new gas reserves in order to take production to 1.5 billion cubic feet by 2030.
Regarding development of the Jurassic gas fields, Al-Enezi maintained that KOC is keen on achieving its short, middle and long term plans so as to provide the most appropriate solutions to develop those fields while updating the technology required to develop those wells. The Company also allot programs to manage the hazards of deep wells while enhancing their performance, he added, indicating that KOC is planning to drill 12 deep development wells each year as part of its plan to develop the Jurassic fields in North Kuwait. He stressed that these development operations require specialized technologies that require the Company to draw up detailed plans and conduct precise studies. One of these plans envisages reducing the drilling period of each well so as to reduce cost while improving performance.

In regard to the projects that the Company will implement in the near future, Al-Enezi said KOC is working on expanding pipelines to feed gas to Kuwait’s power stations, as well as another project to import liquefied gas in case the local market suffers from a shortage during the summer, a period when electricity consumption spikes. Meanwhile, the Company has implemented a number of gas projects such as BS-160 in South Kuwait, which recently entered into service, as well as BS-180 in the South and BS-171 in West Kuwait. The Company has also started to establish more installations to increase gas production from the Jurassic fields.

In regard to the Company’s current production of non-associated gas, the DCEO for Exploration and Gas clarified that KOC’s gross production has reached 1.35 billion cubic feet daily; of this, 145 million cubic feet is of non-associated gas and about 1.2 billion cubic feet is from associated gas. He added that KOC began producing non-associated gas after it conducted several tests from explored wells and the first phase of production from 20 wells, which began in 2008. This initial production also enabled the Company to identify several characteristics of the reservoirs. It was found that once the utilities were established and actual production commenced, there was a difference in the results from those that were expected earlier.
While speaking about the challenges KOC confronts while extracting gas, Al-Enezi emphasized that the project of developing the Jurassic gas fields in Kuwait is considered one of the most complicated and challenging projects, both technologically and environmentally, compared to other similar projects around the world due to the unique and hard nature of the Jurassic gas fields and the depth of the wells.

“The reservoirs of the Jurassic gas fields are non-traditional in terms of depth and geological formations because they are considered hard rocks that are cracked geologically. Moreover, in addition to the high temperatures and pressures, these reservoirs contain a high percentage of H2S which should be treated very cautiously. Consequently, the Company has developed special monitoring systems to achieve the highest levels of HSE to protect personnel, equipment and the environment. Also, the specification of liquids available in these deep reservoirs changes rapidly with temperature and pressure. Asked about the precautionary procedures which the Company has taken to avoid the leakage of poisonous gases, the DCEO said KOC regularly and periodically conducts protective maintenance activities at all its installations.

In case a gas leakage occurs, specialized teams evacuate the area and isolate the source of gas leakage and then signs are fixed in the area of the leakage. These signs contain information about the leakage, such as the percentage of its concentration and the safe way of treating it in order to avoid hazards that might result from any mistakes made in the area. Al-Enezi disclosed that the Company has set up systems to identify any gas leakage. These systems are connected with control rooms and alert signals that help to take quick and appropriate precautionary procedures to control the leakage automatically. KOC has also installed remote sensing technologies and inspection cameras and linked production stations with a unified operation center. Also, specialized respiratory systems have been installed permanently inside the stations, production centers and other centers.

The Company also provides first aid centers in various locations and it regularly conducts drills for its personnel to prepare them to confront any emergency, thereby protecting individuals, installations and the environment. He further added that the Company has fixed ventilation systems and central A/Cs inside the control rooms to ensure that the pressure inside is higher than outside to avoid any gas leakage to these control rooms to protect personnel. KOC constantly analyzes gas samples to identify the concentration of poisonous gases and, according to these concentrations, it allots plans to update future projects and renew existing ones. He added that the company is keen on developing its national workforce so as to prepare them to overcome any such difficulties and challenges in the field of gas and oil production.

In regard to the requirements which KOC allotted to achieve the 2030 Strategy, Al-Enezi stressed the need to develop production programs through seeking assistance from specialized international companies, so as to increase production of heavy oil and non-associated gas in North Kuwait and hike the production to 4 million bpd. It is also necessary to recruit highly qualified personnel to fulfill these goals, he said.

With regard to the process of importing gas until 2018, Al-Enzi said the importance of importing gas for the mid-term until 2018 lies in the fact that it is used as a clean source of fuel for generating electricity and its cost is less than that of crude oil. Moreover, the step of replacing oil with gas permits the Company to export larger quantities of oil, thereby optimizing the added value of a barrel of Kuwaiti crude oil. Concerning the clear expansion which has been fulfilled in Exploration and Gas Directorate at KOC, Al-Enezi pointed out that these expansion activities have been accomplished as per precise studies conducted.
by the Company within the past few years with the help of international consultants.

The results of these studies emphasized the fact that it is necessary to expand the activities of the Gas Sector. In addition, these expansion activities are aimed at achieving integration and creating an integrated unit for exploration and gas. On the Company’s strategic plan in the field of exploration, Al-Enezi said KOC’s 2030 Strategy is aimed at adding 750,000 bpd and 1.5 billion cubic feet daily through exploration operations. He clarified that the Company has allotted several current and future strategic projects to achieve this plan. These projects depend mainly on a number of exploration programs in the desert and marine areas of the country that include geophysical and seismic surveys. Moreover, the Exploration Group carried out several geological, geophysical and geochemical studies to identify the areas where it is probable to find large quantities of hydrocarbon materials. After that, the areas are classified as per their capabilities to identify which exploration program will be implemented.

With reference to the responsibility which Exploration and Gas Directorate shoulders to allot and carry out the plans in 2013, Al-Enezi made clear that this responsibility is epitomized in allotting development plans for the non-associated gas reserves. He indicated that the directorate accomplished the first phase of the program which has been allotted to develop the Jurassic non-associated gas depots in North Kuwait, as production reached 145 million cubic feet daily, along with 55,000 bpd of light oil. The second phase of the program is expected to be finalized by 2016, when daily production is expected to reach 600 million cubic feet of non-associated gas and 200,000 BPD of light oil.

Al-Enezi went on to say that the administration is currently studying the plans of the third phase which is aimed at increasing production of non-associated gas to one billion cubic feet per day and 350,000 BPD of light oil by 2020. He stressed that the administration spares no effort to achieve the strategic goals of the Exploration and Production sector through optimizing gas production to make it a safe resource for customers.

Regarding HSE criteria which are applied in operations, Al-Enezi confirmed KOC applies the latest criteria of health, safety and environment for the good of its personnel and environment, indicating the Company stopped using evaporation-pits that were used to get rid of surplus water. In addition, KOC achieved very low rates of oil spills by improving the performance and operational methods of controlling any oil spills.

“As for the percentage of flaring gas, we are proud that this percentage has been decreased to 1.45 percent compared to 17 percent in 2005. Moreover, we expect this percentage to decrease to 1 percent next year,” noted Al-Enezi. He added that the Company encourages its personnel and the contractor’s employees to adopt the HSE culture and criteria by allotting programs in this domain, including the HSE Annual Award and Appreciation awards presented to employees, as well as to the contractors whose performance was distinguished during their contracts. The Company also involves itself in programs designed to increase society’s awareness, especially those programs conducted for students. It also participates in exhibitions and seminars held in this regard and in projects and programs organized to protect Kuwait’s environment, he said.
Introducing the Upstream Center of Excellence

The Upstream Center of Excellence is a network of technical experts with similar expertise, responsibilities and interests through which an exchange and application of knowledge (information, tools and methods) is achieved and managed. The over-reaching goal of the center is to promote upstream integration and leverage critical competences and technology through collaborative activities across all upstream subsidiaries to achieve sector targets.

How the idea came about

The idea of establishing this center is not new, especially when considering the fact that the former Chief Executive Officer of KPC, Saad Al-Shuwaib, came up with the idea of the “Al-Ru’ya Project” which called for a standardized strategy for the upstream sector which eventually led to minor projects. At a later stage, the chairmen of Kuwait Oil Company (KOC), Kuwait Foreign Explorations Company (KUFPEC) and Kuwait Gulf Oil Company (KGOC) held a workshop in which the former Chairman and Managing Director of KUFPEC and current CEO of KPC, Nizar Al-Adsani, came up with the idea for the Center of Excellence with the aim of facilitating knowledge sharing and technology among upstream companies.

Several meetings involving the steering committee of upstream K-Companies led to a decision to establish a center of excellence to share expertise within the upstream companies and to build the capacities and skills needed to achieve the 2030 Strategy. Considering the fact that the project is part and parcel of the strategy, it was necessary to lay down specific mechanisms in order to take advantage of the resources available and deliver the best services.

The Center of Excellence team consists of:

• Project sponsor Ayad Al-Kandari (KOC-DCEO D&T)
• Project Lead Bader A. Al-Khayyat (KOC Manager R&D)
• Project Coordinator started with Manaa Al-Ajmi and was later delivered to Mohammed Al-Qenae (TL Planning & Support R&D)
• Project Facilitator Nadia Al-Zeabot (KOC Snr. Petroleum Engineer)
• KUFPEC Focal point of contact and a member Hisham Al-Shatti
• KGOC focal point of contact and a member Abdulaziz Al-Saleh & Sondos Kabli

More employees from KOC, KGOC and KUFPEC along with PriceWaterHouseCoopers consultants are also working members in the project.

Roadmap

In order to have focus on the project and to deliver best results due to the importance of the deliverables for the 2030 Strategy, professional help was sought from consultancy to coordinate the processes throughout the project and to set up a clear roadmap for the way forward. The project has outlined a clear-cut roadmap which includes three main stages: initiate, incubate and expand. In the first stage, which will run for eight months starting September 2013, it is planned that available technical skills in all aspects are assessed in line with the strategic objectives of the upstream sector. A database that captures information relating to Upstream Technical Experts as well as details of their respective specializations will also be developed with a tracking and deployment processes that depicts deployment of Technical Expert resources across projects. It will also identify the gap in terms of skills and identify the domains upon which the center will be based through KOC’s competency standards models. At least three sub-centers will be selected as pilot projects covering different disciplines starting from February 2014. Mechanisms and processes for bringing in external experts on a part-time/full-time basis including special contracts will be introduced. At the end of the stage, CoE design and structure that best fit each entity under the upstream sector will be developed and ready for implementation.

In the second stage, collaborative activities will be enforced and grow into more depth. It will be strengthened internally within each entity as well as across the upstream sector. Discipline-specific focused teams of technical experts engaged in advisory roles, and in supporting capability building across upstream will be
built. In addition, tapping technical skills will be facilitated and technical advisory provided for the strategic projects. This will approximately run from three to six years depending on the maturity of the center and the process in place.

In the last and final stage, a team of experts on upstream level will carry out advisory tasks, apply best practices and ensure the effectiveness of the center in the most desired manner. More discipline-specific focused teams of upstream technical experts will be developed and CoE experts will drive knowledge management and lead specific capability building initiatives across Upstream. The CoE will drive collaborative efforts internally as well as within KOC, KGOC and KUFPEC towards achievement of upstream strategy objectives.

Merits of the project

With the success of the project, several specific benefits and deliverables should be achieved in the following ways:

• Provide a mechanism for all upstream entities to build and effectively leverage on the diverse competencies and expertise of the technical talent pool that resides in different departments of each entity and across various entities.
• Facilitate the identification, sharing and deployment of technical experts on projects that are critical to the achievement of upstream strategic objectives.
• Serve as an expert body that provides critical and discipline-specific advisory support for critical upstream projects.
• Initiate and drive effective capture, sharing and leveraging of best practices and knowledge within and across upstream entities.
• Support learning and capability development initiatives within and across upstream entities.

In order to achieve the above achievements, a number of factors have been identified, which include:

• Focusing on the strategic objectives
• Defining leadership roles and responsibilities
• Establishing governance mechanisms
• Availability of necessary resources
• Building and leveraging on existing networks within and across the organization
• Optimization of modern technology to transfer knowledge and ensure effective communication amongst upstream sector employees and between each entity staff.

Challenges

The project team has identified several challenges that might intervene with achieving the stated goals. These challenges include the availability of the necessary technical expertise to perform the required tasks in the related CoE technical disciplines. Additionally, the number of experts in the required domains is limited. Time constraints are a big challenge as well since these experts have other commitments related to their normal duties.

People resistant to change is another huge obstacle. It is for this reason the team has deemed it necessary to introduce change management in order to prepare employees for the project through communication and training sessions. As a result, value proposition for subject matter experts, managers and top management have been developed and communicated to different stakeholders. The importance of an appropriate mechanism for decision-making with regard to the selection of projects and outlining priorities has not been overlooked.

The way forward

CoE project team is intensifying contacts with the top management of the concerned companies plus key stakeholders and facilitating ad-hoc CoE briefing workshops and presentations about the projects, their objectives and merits. In this context, a meeting has been held with KOC CEO Hashem Hashem, who listened to a detailed explanation of the current plans to implement the project. Senior Petroleum Engineer Nadia Al-Zeabot in the presence of R&D Manager delivered the presentation. The presentation itself touched on the merits of the project and the best means of implementing it in line with the roadmap outlined by the project team. It covered also the technical expert nomination processes and guidelines. Mr. Hashem had welcomed the project and emphasized its importance to the Upstream companies and KOC in particular. This is in line with the change management plan that has been conducted by the team to increase awareness about the project’s objectives and future plans. The team also met with the top officials of KGOC and KUFPEC on several occasions to introduce the project and to brief on the progress made so far. Those meetings included Shaikh Nawaf Al-Sabah, KUFPEC CEO, and Ali Al-Shammari, KGOC CEO.
Kuwait Oil Company (KOC) recently issued a request for a tender for a 5 MWe solar photovoltaic power plant. This proposed project echoes KPC’s initiative of utilizing solar energy as part of its contribution to the Corporation’s Green House Gas Management Strategy. Kuwait enjoys good solar resources, making utilization of solar energy a reasonable choice.

The project is championed by the Wells Surveillance Group (WSG) of KOC. Land has been allocated for the project in Umm Gudair, and will be synchronized with an existing substation. The electricity generated will be used to power electric submersible pumps (ESPs) and other auxiliary equipment. As the PV plant produces electricity only during daytime when the sun is up, connecting the plant to the substation ensures uninterrupted power delivery to the equipment.

In addition to the economic benefit of reducing fossil fuel consumption domestically, an additional benefit is reducing carbon emissions and CO2. To assess the impact on the environment, KOC has engaged Ernest & Young (EY) to provide advisory services for registering this proposed solar photovoltaic power plant project with the Clean Development Mechanism (CDM) of the United Nations Framework Convention on Climate Change (UNFCCC). The engagement with EY is spread across three phases, starting with preparation of a CDM feasibility study, which has been concluded. The next phase includes drafting a project definition document (PDD), and finally the third phase involves the development and assistance in project validation and registration with the appropriate monitoring agencies. The fact that this is a first project of its type in Kuwait, and that there are no regulations that
mandate a project of this type to be deployed enhances the opportunity for obtaining CDM.

The 5MWe project at KOC has received considerable attention from solar PV companies worldwide with over 38 international companies submitting applications for pre-qualification for the project. KOC has been in the process of qualifying leading solar PV companies and contractors for the project, which will consist of two phases: Phase 1 includes plant engineering and detailed design, equipment procurement, construction, and commissioning. Phase 2 is a 5-year operation and maintenance service contract, with guaranteed output from the plant. During the course of 5 years, the plant is expected to generate 55,000 MWh, which according to the Feasibility Report of EY, is equivalent to 42,900 tons of CO2.

In the proposed project, all proven types of photovoltaic technologies will be considered. This includes crystalline silicon modules, thin film panels, and concentrating photovoltaic (CPV) systems. The plant is required to operate at maximum capacity from 10AM till 2PM in the summer months of June through September, when peak electricity demand occurs. Panels could be mounted on fixed structures, or on single- or dual-axis tracking poles to maximize energy production. In a typical solar PV plant, the panels produce DC current, which is then converted to AC current using inverters. The electricity generated then goes to a step-up transformer before it is synchronized with a substation that is connected to the electric grid.

As this is a first solar PV project of that scale, key challenges include operation of the PV panels and trackers in the harsh desert environment of Kuwait. High temperatures approaching 50 degrees Celsius in the summer would degrade the solar panel’s performance, while high wind conditions would necessitate putting rigid structures to resist wind loads. Dusty and humid conditions require more cleaning and careful maintenance to maintain performance.

Solar panels similar to the ones pictured above will soon be installed at KOC.
With the innovation of technology that has led to an increase in the development of electronic devices and machinery, DC-DC power converters have become an essential component for any device or machine where electronics are utilized to operate/enhance the process of that device.

Power converters are employed in a variety of applications, such as DC motor drives and UPS systems, power supplies for personal computers, office equipment, laptop computers and as well as telecommunications equipment.

The input to the DC-DC converter is an unregulated DC voltage. The converter produces a regulated output voltage, which has a magnitude that differs from input voltage. For example, in a computer power supply, the 240 V AC utility (input) voltage is rectified, producing a DC voltage of approximately 340 V. A DC-DC converter then reduces the voltage to the regulated voltage (i.e. 5 V) required by the processor.

This article shall explain how and where power converters are used in Kuwait Oil Company and their benefits. It will conclude with a simulation to insure that parameters (i.e. inductance, capacitance) which have been selected are capable to maintain the stability of the output voltage as per the designed value, regardless of whether load current or input voltage is changing.

Usage & Implementation

Buck switching converters are integral to modern electronic devices. They can convert a voltage source into a lower regulated voltage. Step-down converters transfer energy using a switch, a diode, an inductor and a capacitor.

In Kuwait Oil Company, switching converters are employed in DC power supply units. DC power supply units are considered vital pieces of equipment because they supply power to critical loads which require power to permit the safe shutdown of the plant in emergency situations.

The DC power supply unit is a system that provides uninterruptible DC power to all the DC protection equipment in the substation such that these equipment would be able to send the required signals (On/Off or trip signals) during emergency conditions.

In some applications (i.e. electrical switchboard) which have more than one voltage level integrated into the same unit, switching converters are the ideal way to feed all these multi-voltage DC pieces of equipment from the same source.

In the past, converting from one DC level to a lower level was made by means of adding a combination of resistors. However, such an approach led to heat dissipation as well as power waste. As a result, the same has been replaced by switching converters which have proven their effectiveness in both power consumption and heat dissipation.

Description

![Buck Converter Diagram](image)

A large number of DC-DC converter circuits are known that can decrease the magnitude of the DC voltage. A basic DC-DC converter circuit known as the buck converter is illustrated in Figure 1.

In this circuit, turning on the transistor (switch in position 1) will put voltage (Vg) on one end of the inductor. This voltage will tend to cause the inductor current to rise. Inductors tend to keep the current constant. When the transistor (switch in position 2) is off, the current will continue flowing through the inductor. We initially assume that the current through the inductor does not reach zero, thus the voltage at Vg (t) will now be the only voltage during the full off time.
Modeling & Control

For optimum results and to ensure output voltage stabilization, many techniques were encountered in calculating converter parameters (i.e. inductor, capacitor & the diode) such that they would maintain a stable output voltage.

One of the most common techniques for designing converter component values is called the K-Factor method. This technique is a well-known technique because of its simplicity and accuracy.

The simulation results for a buck converter which was designed to reduce the input voltage from 24 V to 12 V is shown in the following:

From the above simulations, we notice that output voltage is kept stable at 12 V despite the load current changing at 1 sec & 1.5 sec.

From the above simulations, we notice that output voltage is kept stable at 12 V despite input voltage changing at 1 sec & 1.5 sec.
KOC CEO Hashem Hashem, accompanied by DCEO (A&F) Saad Al-Azmi, recently inaugurated a new heart and intensive care unit at Ahmadi Hospital which is comprised of 14 beds and the latest in medical equipment in order to better help Ahmadi Hospital doctors deal with difficult and emergency cases.

In a speech he delivered on the occasion, Hashem said that the Ahmadi Hospital’s Management was eager to provide the new unit with the highest medical standards applied worldwide and that this unit was very advanced in comparison to similar units in other hospitals.

“KOC is keen to ensure the best in high quality medical care to our patients, who are composed of oil sector employees and their families,” Hashem maintained.
He emphasized that the Company was pursuing its efforts to complete construction on the new Ahmadi Hospital which, once fully equipped, will be one of the largest and most advanced hospitals in the country. “However,” the CEO said, “this will not affect, under any circumstances, the efforts under way to improve and modernize the existing hospital, which is why we are not inaugurating the new Heart & Intensive Care Unit. This will be followed by the inauguration of new sections in the near future,” he added.

Hashem then thanked Dr. Emad Al-Awadh, Manager of the Medical Group, doctors and supporting staff from Ahmadi Hospital for their continuous efforts in providing the best possible care for their patients.

In related news, CEO Hashim Hashim recently inaugurated the first phase of the new Dental Care Services building at Ahmadi Hospital. The building comprises 18 clinics equipped with the latest cutting-edge tools in this field.

In a speech he delivered on the occasion, Hashim upheld the high standards of the available equipment and affirmed KOC’s eagerness to provide its staff and oil sector employees in general with the best health services, based on its belief that human resources are the most important investment to which priority is always accorded.

He urged the concerned parties to conclude the second phase of the project on the agreed-upon time of 18 months and asserted that KOC Management will spare no effort to provide every possible means in order to enhance the medical care services for the benefit of employees and their families.

DCEO for Administrative & Financial Affairs Saad Rashed Al-Azmi said that KOC Management strongly supports the improvement of Ahmadi Hospital services and will continue to provide it with the best medical and nursing staff, in addition to the most modern equipment.

Al-Azmi added that this comes within the framework of a health care package comprising an advanced health insurance system in addition to a close follow-up of the treatment.
Acid Matrix Stimulation is one of the common well intervention treatments that are performed at Kuwait Oil Company with the objective of overall production increase, or enhancement in injection rates in the case of water injection wells. Schlumberger’s ACTive portfolio of services were utilized to optimize and enhance stimulation treatments in Southeast Kuwait. The technology enables real-time down-hole telemetry, and provides the ability to monitor a treatment injection profile; selectively placing fluids based on real-time well behavior. Implementing ACTive Matrix Stimulation in southeast Kuwait resulted in successful coiled treatments which enabled production of wells that never produced in their history. The oil gains range from 430 to 900 BOPD on four cases in Magwa, Burgan and Ahmadi which contributed to a cumulative oil gain of 2,471 BOPD.

ACTive Matrix

The ACTive portfolio of services is part of the Coiled Tubing technologies provided by Schlumberger. The ACTive family of products is comprised of various tools and services with multiple applications of CT. For acid stimulation, two components of the ACTive* portfolio are extremely essential; ACTive Bottom Hole Assembly, and the Distributed Temperature System (DTS). Combining ACTive BHA and DTS for well stimulation is the ACTive Matrix method deployed in SEK.

The ACTive BHA can be fit with several monitoring tools, but the general components that were deployed in SEK are downhole temperature sensors, pressure sensors, and a pump through Casing Collar Locator (CCL). Telemetry or data transfer of the measurements from the BHA to the surface is transmitted through a fiber optic enabled coiled tubing (ACTive CT). The Distributed temperature system is a technology that employs the use of laser travel time inside the fiber optic to indirectly measure the temperature, obtaining a continuous temperature profile of the entire wellbore.

A temperature profile during fluid injection and warm-back or stabilization is of utmost value to identify where fluids are being injected. The simple method of heat transfer through conduction dictates that if cool fluids are injected into a certain zone, heat will transfer to the injected fluids leaving the area where the injection occurred to be cooler than its original state. So, in the case of stimulation, when inert fluids are injected into the wellbore, the fluids will go to the most intake zones where the temperature will drop in those zones.

DTS enables the identification of initial and developing thief zones during the treatment. The real-time measurements allow squeezing of the diverting fluid exactly at required depths and confirm its efficiency with additional DTS profiles obtained during the entire stimulation treatment. Through analysis and interpretation of the gathered downhole data, damaged zones are identified to be targeted by high pressure jetting tool (AbrasiJET) in order to cut slots into the open hole, bypass the filter-cake, and increase the acid to rock contact area by deeper penetration. Once the thief zones are temporarily isolated and the target intervals are ready to receive acid through the slots, the stimulation acid could be bullheaded to maximize the pumping rate into the reservoir, and optimize the generation of wormholes. The acid injection profile across the openhole is continuously monitored with DTS. Corrective steps, involving additional diverter or slot
cutting, are taken in real-time to ensure acid will be squeezed into the required interval.

**Introduction and Background**

Horizontal wells are drilled to maximize exposure to large reservoirs. Acid stimulation is one of the initial interventions to be performed on such wells to remove any formation damage and enhance production. Horizontal open-hole wells present a challenge when it comes to matrix stimulation as the reservoir heterogeneity and the long open-hole horizontal section make acid placement and diversion difficult. Particularly in South-East Kuwait (SEK) in Magwa, Burgan, and Ahmadi, the greatest part of oil producer wells are drilled and completed with an open-hole horizontal section in a carbonate reservoir; which is commonly stimulated with hydrochloric acid. Conventional matrix stimulation treatments traditionally consist of spotting stages of pre-flush, HCl, and chemical diverter.

These conventional treatments are commonly performed by either pumping the fluids from surface (bullheading), or by using Coiled Tubing (CT). Executing the treatment by bullheading will give the advantage of higher flow rates. Using CT gives the advantage of selectively spotting/squeezing the fluids while reciprocating the CT string across the entire open-hole, reducing the fluid contamination and displacement needed fluids. However, in both previous techniques, the fluids will always go to the easiest flow path, based on the reservoir damage and permeability characteristics; therefore, using CT might assist in pumping the fluids at the desired depth, but knowing where the stimulation fluids are actually injected is still very limited. Improper understanding of treatment fluid placement leads to ineffective matrix stimulation. Results from conventional stimulation treatments represent a limited success rate from the distribution of the treatment, especially when the stimulated section is long and containing different permeable
sections including fractured zones, resulting in limited production enhancement.

Application & Impact:

Case #1: ACTive DTS Stimulation

The first candidate in South East Kuwait was the Maudud Wells, where Schlumberger utilized the ACTive DTS technology for stimulation. It is a horizontal well completed as an 8.5 in open hole in 1994, and had never produced.

About 2,000 ft. of open hole were stimulated with the designed fluids, and using the ACTive DTS results and open hole logs, the treatment was effectively placed, resulting in reviving the well and contributing to production with a satisfactory rate.

Case#2: ACTive DTS Nitrified Acid Stimulation

For a well drilled and completed as a horizontal open hole in the tight Maudud formation in South East Kuwait, in September 2012, Schlumberger Well Intervention Services deployed ACTive in-well live performance with DTS on a stimulation operation.

A new approach was taken with this well. By using energized fluids (Nitrified), in order to have better injection into the formation to efficiently bypass the damage, and at the same time reduce the hydrostatic of the pumped fluids, allowing an easy flow back of the spent acid and put the well to production immediately after the stimulation.

Case#3: ACTive DTS Nitrified Acid Stimulation

The stimulation was performed using nitrified 20% HCl acid and diverter, in order to optimize the fluid placement and enhance the stimulation schedule, DTS profiling was also utilized. This was successfully stimulated using nitrified acid and diverter, placed in an optimized manner using the DTS analysis methods. The well drilled in 1994, had never contributed to production, and after the stimulation performed it had flowed with an acceptable flowing pressure and an unexpected rate, around 1,000 BOPD self-sustained, and no post stimulation lifting was required. The Nitrified fluids used during the stimulation helped to flow back the spent acid, and the production results had proved the efficiency of the fluid placement for this well.

Case#4: ACTive DTS Stimulation using Nitrified Acid and AbrasiJET Jetting Tool:

Another approach to stimulate Case#4 was combining the previous methods, ACTive Matrix Stimulation using DTS profiling with AbrasiJET high jetting nozzle for effective penetration of the treatment into the target zones. AH-99 is a horizontal open-hole producer in Maudud formation in the Ahmadi field of South East Kuwait (SEK), with a 3,015 ft. open hole section. The well was closed due to high GOR since 2000.
The job was successful from an operational standpoint as no QHSE incidents were experienced and the job went as planned during the design phase. From a technical point of view, the operation was performed with excellence as the injection profile of the well demonstrated a similar behavior when compared to the open-hole logs provided by KOC. Also, when comparing DTS injection warm-back profile of pre and post stimulation; an improvement can be seen that the well is taking fluids more uniformly.

**Conclusion**

Once again, the innovative methods used in stimulation has demonstrated the value added in terms of effectiveness, to act and react in real-time in order to enhance the fluid placement methods. DTS gave a clearer idea about the downhole situation and accordingly designed on the spot the treatment schedule. Using AbrasiJET combined with nitrified fluids allowed better stimulation in terms of jetting effect for an optimized fluid efficiency. The efficiency of the treatment was reflected directly in the production gain and unlocking of the well potentials.
The term ‘Engineering’ may be defined as the application of science and math to solve real world problems that improve the quality of life around us. In fact, it is an engineer’s ability to pick up a thought or an abstract idea and further translate it into a reality.

You must be thinking: “What is Frugal Engineering?” Is this a new branch of engineering like Mechanical, Electrical, Civil, etc.? No, Frugal Engineering is a simple engineering comparable to grass root innovation that uses ingenuity to solve a problem at a minimal cost without affecting the intended objective.

However, before we look into frugal engineering details and examples, let us try to understand the Bottom of the Pyramid (BOP) - A frame work by Prahalad and Hart1 which gave birth to a new approach to innovations. According to them, the bottom of the economic pyramid consists of the 4 billion people out of 6.7 billion people on earth (currently 7.19 billion), living on less than $2 per day. So, there are billions of consumers at the bottom of the pyramid who also want to enjoy the taste of modern prosperity as much as the consumers at the higher part of the pyramid. In order to maximize our reach to the BOP consumers, we require a radical thinking towards product/service development. Such radical or innovative solutions towards any product/service development are being termed “Frugal Engineering.”

A frugally engineered product will contain all the essential features required by the customers, but excludes any unnecessary extras and ultimately strikes a perfect balance on the price/performance envelope. Frugal innovation is one of many terms that resonates with innovative approaches. This has imposed challenges, particularly for the Design and Engineering (D&E) industry to rise above the curve and contribute to the overall competitiveness in their product/service offering.

The term “Frugal Engineering” was first coined in the year 2006 by Carlos Ghosn, who heads M/s Renault-Nissan to signify achieving more with fewer resources. Others have also described similar ideas like reverse innovation, inclusive innovation, etc. Whatever the terminology, frugal is a radically new product/service design philosophy and a new approach to innovation. Cost effective continuous improvement, not merely cost cutting, is the essence of frugal engineering. Frugal innovation is a whole new mind set, a flexible approach that perceives resource constraint not as a debilitating challenge but as a growth opportunity. Also, Peter Loscher, CEO of Siemens, affirms that scarcity of resources is not an impediment but an enabler of innovation.

Frugal innovations have spread across all walks of life ranging from education, health care, insurance, automobiles, digital world, aviation industry, space technology, air conditioning and refrigeration, LEED (Leadership in Energy and Environmental Design) or any other certification, construction, service sector and any other industry we can think of.

The emerging markets such as India, China, Africa and Brazil are already a breeding ground for frugal innovations. The following are some classic examples for frugal innovation:

• India’s Tata Nano, the ‘People’s Car’ with a price tag of $2,500 targets price conscious customers. When it was launched by Tata Motors in 2009, it made headlines across the globe. Tata Motors also
displayed the frugally engineered ‘Tata Pixel’ - a European version of the Tata Nano at the 2011 Geneva Motor Show.

- Siemens has developed a Fetal Heart Monitor that uses inexpensive microphone technology rather than costly ultrasound technology. This affordable ‘Fetal Heart Monitor’ is part of Siemens’ larger portfolio of frugal solutions labeled SMART (Simple, Maintenance-friendly, Affordable, Reliable, and Timely-to-market). SMART products are 40-60 percent cheaper than high end solutions. Further, Siemens estimates that there is a US $200 billion global market for their SMART products.

- SELCO provides solar energy at very low prices to over 125,000 households in remote Indian villages, debunking the myth that poor people cannot afford green technology. Similarly, the Nokia 1100 mobile phone is for calls and text messaging only but includes features like long battery life and built in flash light for frequent blackouts and power outages areas in India. This frugal mobile with a price tag of US $15 to US $20 is the best-selling phone ever.

- India’s Godrej Appliances produced a tiny refrigerator ‘ChotuKool’ of 6 liters capacity for about US $55. It has no compressor, instead uses a cooling chip and fan similar to those that keep desktop computers from overheating. ChotuKool is definitely a right product for India’s rural market. Similarly, GE developed a portable ECG machine for the Indian market.

- Frugally engineered air conditioners of medium capacity are being designed with multiple circuits which have tandem compressors, thereby optimizing its overall cost.

- No frills airlines have increased the accessibility of air travel to ensure that the service is available to those who previously may not have been able to afford it.

- Certification like LEED (Leadership in Energy and Environmental Design) which provides a framework for identifying and implementing practical and measurable green building design, construction, operations and maintenance solutions. Apparently, frugal engineering and LEED are not connected in any meaningful way currently but it is the need of the hour to have a frugally engineered LEED process too while going in for LEED implementation so that environmentally friendly green and frugal buildings can be the buzz word in the days to come.

In a nutshell, Frugal Innovation seeks design innovations which are simple and novel but affordable, particularly for BOP consumers. At the same time, market affordability does not necessarily translate into low quality but must endorse an acceptable quality. We, as technocrats, have a big challenge towards frugally engineered product/services and its solution lies only in moving away from traditional approaches as traditional models create stagnation and kill innovations.

Reference:
1. ‘The Fortune at the Bottom of the Pyramid’ by C. K. Prahalad
The Director General of the Global Economic Affairs Bureau of the Foreign Ministry of the Republic of Korea, Yun Kanghyeon, recently visited KOC as part of efforts between the two countries to further solidify their friendly relationship and expand on areas related to industry and commerce. For his part, the Korean Director General labeled his visit with his accompanying delegation as “successful and impressive.”

DCEO for Corporate Services Ismail Abdulla welcomed the Korean delegation and exchanged cordial talks with the visitors. The two parties discussed matters relating to current cooperation between the two countries, especially on environmental matters, which both Abdulla and the Korean delegation agreed were essential parts of their concern.

The visit by the Korean delegation was also comprised of a tour of Kuwait Oasis, which is an environmental project that the Company has completed. During his visit there, Yun Kanghyeon expressed his admiration with KOC’s efforts in completing a project that held the environment in such high esteem.

During his visit, Yun Kanghyeon led a delegation composed of about 30 individuals representing the
Korean Ministry of Environment, the Korean Institute for Industry & Technology and 12 companies of different specializations.

The Korean tour of the region was comprised a two-day official visit to the State of Kuwait, in addition to a visit to the State of Qatar.

South Korea at a Glance:

The Republic of Korea was proclaimed in August 1948 and received UN-backed support from the US after it was invaded by the North two years later. The Korean War ended in 1953 without a peace agreement, leaving South Korea technically at war for more than fifty years. The following four decades were marked by authoritarian rule. Government-sponsored schemes encouraged the growth of family-owned industrial conglomerates, known as “chaebol”. Foremost among them were the Hyundai and Samsung groups. They helped transform South Korea into one of the world’s major economies and a leading exporter of cars and electronic goods.

South Korea has a market economy which ranks 15th in the world by nominal GDP and 12th by purchasing power parity (PPP), identifying it as one of the G-20 major economies. It is a high-income developed country, with a developed market, and is a member of OECD. South Korea is one of the Asian Tigers, and is the only developed country so far to have been included in the group of Next Eleven countries. South Korea had one of the world’s fastest growing economies from the early 1960s to the late 1990s, and South Korea is still one of the fastest growing developed countries in the 2000s, along with Hong Kong, Singapore, and Taiwan, the other three Asian Tiger members. South Koreans refer to this growth as the Miracle on the Han River.

Having almost no natural resources and always suffering from overpopulation in its small territory, which deterred continued population growth and the formation of a large internal consumer market, South Korea adapted an export-oriented economic strategy to fuel its economy, and in 2010, South Korea was the seventh largest exporter and tenth largest importer in the world.
Ahmadi Hospital was built in 1960 to treat KOC employees and their families. Now, we cater to all employees and their families of KPC and its subsidiaries. The Radiology Department, which employs the use of imaging to both diagnose and treat disease within the human body, is an integral part of any hospital system and it plays a major role in the clinical diagnosis of a patient. Imaging has become the eyes of medicine.

In the past, the Radiology Unit at Ahmadi Hospital provided basic radiology services using analogue systems where the patients were given hardcopy films. The reports used to be typed, printed, physically signed and filed with the films in the X-Ray packet. There was a large physical filing room for these film packets. Radiology as part of the medical field was fast developing in technology and in order to catch up, we had to utilize the latest technology available in the market.
Identifying basic needs at the Radiology Unit

After studying the unit, five basic needs were identified:

1. We needed to upgrade the technology in all imaging modalities.

2. We needed to enhance the turnaround of patients in the unit and we needed to bring the image faster to the referral doctor.

3. Our goal was to become a film-less environment and make life easier for the patients and referring clinicians.

4. To provide new services that the unit did not have.

5. Finally, we needed to enhance the skills and responsibility of the staff.

The Radiology Unit is what it is today because of the teamwork within the unit and hospital. If it was not for the support of the Biomedical Division, Contracts Division and Hospital Senior Management, our goals wouldn’t have been achieved.

Radiology Unit goes digital

Our thrust to change things was based on four principles:

1. Upgrade all equipment to the latest digital technology across the unit.

2. Get rid of all analogue hard-copy films – to go fully digital with digital images, digital viewers and electronic reports (to be a semi-paperless unit).

3. To make all images move across the IT network and be digitally archived.

4. Enhance the patient workflow in the unit and hospital.

Upgrading the technology:

With the full support of the Biomedical Division under the leadership of Mohammed Al-Khamees, Head of Bio Medical Eng. & Medical Equipment, the changes were initiated. Over the last five years we have overhauled the entire unit. We have introduced full digital systems: Digital Ultrasonography, New Bone Mineral Densitometry Services, Digital Radiography, Digital Fluoroscopy, Digital Mammography, Digital C-Arms for Operation Theatre Screening, Digital Mobile Units, 16 Slice Digital Computed Tomography Scanner and New Advantage Window Workstation (ADW 4.6). A new digital X-Ray unit was installed in the PMS building to enhance the workflow for annual preventive screening. All our machines were the highest end, some of them being introduced for the first time in Kuwait, especially the fully automated Digital Radiography Room.
System and our latest addition in the first quarter (Q1) of 2013 – the Digital Mobile X-Ray system.

**Enhance the turnaround of patients and become filmless department:**

We introduced the Picture Archiving and Communication System (PACS) – where all digital images produced at the source were archived at the KOC-IT Data Center and then transmitted across the network for viewing in all clinics and wards in the hospital and in peripheral clinics (North Kuwait, Wafra, KPC Clinic, etc). The PACS is from Carestream Health – one of the pioneers in PACS technology and again the first in the State of Kuwait. Then we integrated the PACS with the existing Hospital Information System (HIS) where doctors can view radiology images through HIS while viewing the patient’s medical history. This integration
happened for the first time in Kuwait in Ahmadi Hospital. Also to be noted, in order to bring the images to the referral physicians in the wards/theatres, special mobile wireless digital monitors from S-Cape were brought in – again a first in the country. Here also, I would like to say the Hospital HIMS and KOC-IT played a very important role to make this project succeed.

**Enhancing the working atmosphere:**

This was achieved once we had all the equipment in place. Gradually we started to improve the complexion of the unit. We wanted our patients to have a relaxed atmosphere with us. We did not want them to feel they were in a hospital – so we paid a lot of attention to enhance the ambience of all exam rooms, corridors and our reception.

One drawback to the existing unit is that we don't have an in-house Magnetic Resonance Imaging (MRI) unit due to the lack of space. For any modern radiology unit, MR imaging is a mandatory need. Currently we are outsourcing our patients to two MR referral centers.

**The New Ahmadi Hospital**

In the proposed new Ahmadi Hospital, the Radiology Unit will be state of the art with all imaging modalities under one roof. We will be introducing a Cardiac CT Scanner and two dedicated in-house MR scanners. Also, we will have a full Interventional Lab with patient’s bay for post procedure care. This will be in addition to our regular state of the art digital machine to deliver the best image with the least radiation exposure to the patients.

**A few tips on how to enact change at KOC:**

1. Have a crystal clear vision to reach your goals. Your management needs to be convinced and your team should support you 100%.

2. In our field, budgeting, planning and procurement play an important role. Our Biomedical Division played an important role in drawing up specifications, sourcing funds, coordinating with contracts and helping us to finalize the deal.

3. Follow-up your papers/ issues meticulously. It is not easy – but small steps finally deliver the big picture.

4. Team work and staff interaction play an important role. Go down to your staff’s level, see their problems and always receive feedback constructively.

As Head of Unit, I would like to thank my direct supervisor Dr. Khalid Al-Suwalem (Chief Medical Support Services Officer) and all my team members who always stood by me 100%, believed in me and gave me their best!
Just How Badly Are We Overfishing The Oceans?
Humans now have the technology to find and catch every last fish on the planet. Trawl nets, drift nets, longlines, GPS and sonar are all used in today’s fishing industry. As a result, fishing operations have expanded to virtually all corners of the ocean over the past century.

That, in turn, has put a strain on fish populations. The world’s marine fisheries peaked in the 1990s, when the global catch was higher than it is today. And the populations of key commercial species like bluefin tuna and cod have dwindled, in some cases falling more than 90 percent.

So just how badly are we overfishing the oceans? Are fish populations going to keep shrinking each year — or could they recover? Those are surprisingly contentious questions, and there seem to be a couple of schools of thought here.

The pessimistic view, famously expressed by fisheries expert Daniel Pauly, is that we may be facing “The End of Fish.” One especially dire 2006 study in Science warned that many commercial ocean fish stocks were on pace to “collapse” by mid-century — at which point they would produce less than 10 percent of their peak catch.

Other experts have countered that this view is far too alarmist. A number of countries have worked hard to improve their fisheries management over the years, including Iceland, Australia, New Zealand, and the United States.

Both sides make valid points — but the gloomy view is hard to dismiss. That’s the argument of a new paper in Marine Pollution Bulletin by Tony Pitcher and William Cheung of the University of British Columbia that weighs in on this broader debate. They conclude that some fisheries around the world are indeed improving, though these appear to be a minority for now.

“Several deeper analyses of the status of the majority of world fisheries confirm the previous dismal picture,” they conclude. “Serious depletions are the norm world-wide, management quality is poor, catch per effort is still declining.”

The decline of fisheries

One reason the debate about overfishing is so contentious is that it’s hard to get a precise read on the state of the world’s marine fisheries. Ideally, we’d have in-depth stock assessments for the entire world, but those are difficult, expensive, and fairly rare.

So, in their paper, Pitcher and Cheung review a number of recent studies that use indirect measurements instead. For example, they note that recent analyses of fish catches suggest that about 58 percent of the world’s fish stocks have now collapsed or are overexploited:

History of the status of world fish stocks from the FAO catch database 1950–2008, using a catch-only algorithm revised to meet earlier objections.
Global changes in reported fisheries catch.

"Given the increase in global fishing effort, the lack of increase in global fisheries catch in the last decade and the fact that most productive areas have now been exploited by fisheries," Pitcher and Cheung note, it’s quite possible that “global exploited fish stocks are likely to be in a decreasing trend.”

Could fisheries recover?

That all said, there are also some reasons for optimism. In 2009, ecologist Boris Worm and his colleagues took a look at more than 350 detailed fish stock assessments and found that many fisheries in North America and Europe were actually recovering. In the United States, annual catch limits and market-based permit programs have helped some fish populations rebound.

The real question is whether these success stories are the exception rather than the rule. Pitcher and Cheung argue that the fish stocks analyzed in that 2009 paper make up just 16 percent of the global catch — and are mostly confined to well-managed fisheries in richer countries.

By contrast, more than 80 percent of the world’s fish are caught in the rest of the world, in places like Asia and Africa. While data here is patchier, many of the nations in these regions are far less likely to follow the U.N.’s Code of Conduct for Responsible Fisheries, and evidence suggests that “serious depletions are the norm” here:

Correlation of compliance with the FAO (UN) Code of Conduct for Responsible Fisheries (on a scale of zero to ten) with the UN Human Development Index for 53 countries, representing 95% of the world fish catch.
“It all depends where you look,” Pitcher said in an interview. “There are a few places where fisheries are doing better: The U.S., Australia, Canada, Norway. But those are relatively rare. In most places, the evidence suggests that things are getting worse.” Given that the United States imports 91 percent of its seafood, that’s an important caveat.

Yet many low-income countries still lack the resources to monitor their fisheries. And even richer nations struggle to enforce the laws they have: In Europe, regulators have consistently set lax fishing quotas — in part due to lobbying from the fishing industry. (“Europe is not one of the places that’s doing well,” says Pitcher, “with a few exceptions like Norway.”) Meanwhile, as climate change and ocean acidification disrupt ecosystems in unpredictable ways, regulating fisheries properly may become even more difficult.

“Attempts to remedy the situation need to be urgent, focused, innovative, and global,” the paper concludes. But that’s harder than it sounds.

This article first appeared in the Washington Post.
Researchers at Chalmers University of Technology in Sweden, together with researchers at the Polish Wroclaw University of Technology, have made a discovery that may lead to the curing of diseases such as Alzheimer’s, Parkinson’s and Creutzfeldt-Jakob disease (the so-called mad cow disease) through photo therapy. The researchers’ discovery, published in the journal Nature Photonics, is that it is possible to distinguish aggregations of the proteins, believed to cause the diseases, from the well-functioning proteins in the body by using a multi-photon laser technique. “Nobody has talked about using only light to treat these diseases until now. This is a totally new approach and we believe that this might become a breakthrough in the research of diseases such as Alzheimer’s, Parkinson’s and Creutzfeldt-Jakob disease. We have found a totally new way of discovering these structures using just laser light”, says Piotr Hanczyc at Chalmers University of Technology. If the protein aggregates are removed, the disease is in principle cured. The problem until now has been to detect and remove the aggregates. The researchers now harbor high hopes that photo acoustic therapy, which is already used for tomography, may be used to remove the malfunctioning proteins. Today amyloid protein aggregates are treated with highly toxic chemicals, both for detection as well as removal.

Stockholm-based architecture firm Belatchew is proposing to retrofit a tower on one of the city’s island neighborhoods with 14 new floors and millions of tiny piezo-electric ‘straws’. Calling the idea the Strawscraper, Belatchew said the retrofit of the landmark Söder Torn would result in the building being an urban power plant, with the millions of strands of piezo-electric straw collecting energy as they vibrated in the swirling wind. Is this even possible? Theoretically - Belatchew said research in what are called piezoelectric microcantilevers is ongoing. Belatchew said it introduced this concept design because it is looking for a better way for ‘static’ buildings to collect and generate power, but also for a way for those same monolithic structures to be more interactive with citizens. Belatchew said this form of electricity generation would be less harmful to birds, and pleasant to look at, especially if lit with changing colors. But now for the downsides of reality - how do you clean all those piezo-strands? How much noise might they make on a windy day? In addition, most piezo-electric generators are sheets or plates installed where people move about, and underneath the collectors is wiring to bring the generated energy to where it can be used. Last but not least, piezo-electricity isn’t very efficient. Not yet, at least.
Fruit flies are notoriously short-lived but scientists interested in the biology of aging in all animals have begun to understand why some fruit flies live longer than others. They have documented a direct association between insulin and life span, for example, and have observed a tradeoff between prolific reproduction and longevity. The central feature of the study is the newly discovered role of the fruit fly equivalent of the mammalian protein complex activin. They found that it blocks the natural mechanism in muscle cells for cleaning out misfolded proteins, leading to a decline in muscle performance.

In what scientists at Brown University think is no coincidence, blocking the activity of that activin equivalent, called dawdle, can lengthen a fly’s life span by as much as 20%, about 10 days. What excites the researchers is not that they can allow flies to stick around another week or two, but that the same fundamental proteins they have implicated in flies are “conserved” in evolution, meaning they also operate in mammals, including humans.

Elon Musk, CEO of electric car company Tesla Motors, believes that his company will be able to produce autonomous cars within three years. “We should be able to do 90 per cent of miles driven within three years,” he said. Musk didn’t reveal further details of Tesla’s autonomy project. Though he did say that it was “internal development”. “It’s not speculation,” he said. The driverless car project could see Musks Telsa Motors overtake Google to release the first auto-pilot cars for the public. Google has been struggling to find a partner for it’s own driverless technology since it’s project launched three years ago. “My opinion is it’s a bridge too far to go to fully autonomous cars,” Mr. Musk said to the Financial Times. “It’s incredibly hard to get the last few per cent.” However, he said, Tesla was working on a plan that would allow drivers to turn on “auto-pilot” in most situations that would allow the vehicle to take control. Long highway trips would be one way that Tesla’s autopilot system could take advantage of this new technology. If they are first to market with this it would change the automotive industry forever and put them in the leading position for years to come.

Fruit flies are notoriously short-lived but scientists interested in the biology of aging in all animals have begun to understand why some fruit flies live longer than others. They have documented a direct association between insulin and life span, for example, and have observed a tradeoff between prolific reproduction and longevity. The central feature of the study is the newly discovered role of the fruit fly equivalent of the mammalian protein complex activin. They found that it blocks the natural mechanism in muscle cells for cleaning out misfolded proteins, leading to a decline in muscle performance. In what scientists at Brown University think is no coincidence, blocking the activity of that activin equivalent, called dawdle, can lengthen a fly’s life span by as much as 20%, about 10 days. What excites the researchers is not that they can allow flies to stick around another week or two, but that the same fundamental proteins they have implicated in flies are “conserved” in evolution, meaning they also operate in mammals, including humans.
An Overview of Anxiety

Anxiety is a normal reaction to stress and can actually be beneficial in some situations. For some people, however, anxiety can become excessive. While the person suffering may realize their anxiety is too much, they may also have difficulty controlling it and it may negatively affect their day-to-day living. There are a wide variety of anxiety disorders, including post-traumatic stress disorder, obsessive-compulsive disorder, and panic disorder to name a few. Collectively, they are among the most common mental disorders.

Causes

Scientists are looking at what role genes play in the development of anxiety disorders and are also investigating the effects of environmental factors such as pollution, physical and psychological stress, and diet. In addition, studies are being conducted on the “natural history” (what course the illness takes without treatment) of a variety of individual anxiety disorders, combinations of anxiety disorders, and anxiety disorders that are accompanied by other mental illnesses such as depression.

Scientists currently think that, like heart disease and type 1 diabetes, mental illnesses are complex and probably result from a combination of genetic, environmental, psychological, and developmental factors. For instance, although studies of twins and families suggest that genetics play a role in the development of some anxiety disorders, problems such as PTSD are triggered by trauma. Genetic studies may help explain why some people exposed to trauma develop PTSD and others do not.

Several parts of the brain are key actors in the production of fear and anxiety. Using brain imaging technology and neurochemical techniques, scientists have discovered that the amygdala and the hippocampus play significant roles in most anxiety disorders.

Signs & Symptoms

Unlike the relatively mild, brief anxiety caused by a stressful event (such as speaking in public), anxiety disorders last at least six months and can get worse if they are not treated. Each anxiety disorder has different symptoms, but all the symptoms cluster around excessive, irrational fear and dread.

Anxiety disorders commonly occur along with other mental or physical illnesses, including alcohol or substance abuse, which may mask anxiety symptoms or make them worse. In some cases, these other illnesses need to be treated before a person will respond to treatment for the anxiety disorder.

Diagnosis

A doctor must conduct a careful diagnostic evaluation to determine whether a person’s symptoms are caused by an anxiety disorder or a physical problem. If an anxiety disorder is diagnosed, the type of disorder or the combination of disorders that are present must be identified, as well as any coexisting conditions, such as depression or substance abuse. Sometimes alcoholism, depression, or other coexisting conditions have such a strong effect on the individual that treating the anxiety disorder must wait until the coexisting conditions are brought under control.

Treatments

In general, anxiety disorders are treated with medication, specific types of psychotherapy, or both. Treatment choices depend on the problem and the person’s preference. People with anxiety disorders who have already received treatment should tell their current doctor about that treatment in detail. If they received medication, they should tell their doctor what medication was used, what the dosage was at the beginning of treatment, whether the dosage was increased or decreased while they were under treatment, what
side effects occurred, and whether the treatment helped them become less anxious. If they received psychotherapy, they should describe the type of therapy, how often they attended sessions, and whether the therapy was useful.

Often people believe that they have “failed” at treatment or that the treatment didn’t work for them when, in fact, it was not given for an adequate length of time or was administered incorrectly. Sometimes people must try several different treatments or combinations of treatment before they find the one that works for them.

**Medication**

Medication will not cure anxiety disorders, but it can keep them under control while the person receives psychotherapy. Medication must be prescribed by physicians, usually psychiatrists, who can either offer psychotherapy themselves or work as a team with psychologists, social workers, or counselors who provide psychotherapy. The principal medications used for anxiety disorders are antidepressants, anti-anxiety drugs, and beta-blockers to control some of the physical symptoms. With proper treatment, many people with anxiety disorders can lead normal, fulfilling lives.

**Taking Medications**

Before taking medication for an anxiety disorder:

- Ask your doctor to tell you about the effects and side effects of the drug.
- Tell your doctor about any alternative therapies or over-the-counter medications you are using.
- Ask your doctor when and how the medication should be stopped. Some drugs can’t be stopped abruptly but must be tapered off slowly under a doctor’s supervision.
- Work with your doctor to determine which medication is right for you and what dosage is best.
- Be aware that some medications are effective only if they are taken regularly and that symptoms may recur if the medication is stopped.

**Psychotherapy**

Psychotherapy involves talking with a trained mental health professional, such as a psychiatrist, psychologist, social worker, or counselor, to discover what caused an anxiety disorder and how to deal with its symptoms.

**Cognitive-Behavioral Therapy**

Cognitive-behavioral therapy (CBT) is very useful in treating anxiety disorders. The cognitive part helps people change the thinking patterns that support their fears, and the behavioral part helps people change the way they react to anxiety-provoking situations.

For example, CBT can help people with panic disorder learn that their panic attacks are not really heart attacks and help people with social phobia learn how to overcome the belief that others are always watching and judging them. When people are ready to confront their fears, they are shown how to use exposure techniques to desensitize themselves to situations that trigger their anxieties.

**Living With Anxiety**

If you think you have an anxiety disorder, the first person you should see is your family doctor. A physician can determine whether the symptoms that alarm you are due to an anxiety disorder, another medical condition, or both. If an anxiety disorder is diagnosed, the next step is usually seeing a mental health professional. The practitioners who are most helpful with anxiety disorders are those who have training in cognitive-behavioral therapy and/or behavioral therapy, and who are open to using medication if it is needed.

Remember that once you start on medication, it is important not to stop taking it abruptly. Certain drugs must be tapered off under the supervision of a doctor or bad reactions can occur. Make sure you talk to the doctor who prescribed your medication before you stop taking it. If you are having trouble with side effects, it’s possible that they can be eliminated by adjusting how much medication you take and when you take it.
The Mayor of the Dutch city of Rotterdam, Ahmad Abu Taleb, recently expressed delight over his visit to the State of Kuwait and hailed the current status of cooperation between both countries in all domains, especially in the economic field.

On the conclusion of his visit to the KOC Display Center in the attendance of Ahmadi Governor Sheikh Dr. Ibrahim Al-Duaij Al-Sabah, the accompanying delegation and a number of officials, Abu Taleb said that the State of Kuwait plays an important role in the business sector of Holland due to the activity of the Kuwaiti oil refinery in his city. He added that further efforts were under way to enhance this role.

In a statement he made, Abu Taleb said that the Kuwaiti refinery in Rotterdam, in spite of its importance, was of medium size and that his visit was intended to proceed with talks he began in Kuwait last year on the expansion and development of the refinery.

In response to a question about the possibility of twinning the cities of Kuwait and Rotterdam, he affirmed that the relations between both countries were strong and that both sides were looking forward to a more advanced form of cooperation while working together for their mutual benefit and interest.

Commenting on the future of such cooperation, Abu Taleb emphasized that numerous Kuwaiti students were enrolled in universities throughout Holland and that some of them were already back in Kuwait to share their expertise.

“Holland possesses extremely advanced possibilities in the HSE sector, which it will be ready to discuss, in addition to other important topics, during the expected visits by His Highness the Prime Minister Sheikh Jaber Al-Mubarak Al-Hamad Al-Sabah and Ahmadi Governor Sheikh Dr. Ibrahim Al-Duaij Al-Sabah to Holland next year,” Abu Taleb said.

Rotterdam Mayor Ahmad Abu Taleb is an Arab Muslim of Moroccan origin, born in Bani Cidal, Al-Nazour District, in 1961. He is a journalist and member of the Action Party of Holland. He assumed his current post on January 5, 2009.
About Rotterdam:

Rotterdam is the second-largest city in the Netherlands and one of the largest ports in the world. Starting as a dam constructed in 1270 on the Rotte River, Rotterdam has grown into a major international commercial center. Its strategic location on the North Sea and at the heart of a massive rail, road, air and inland waterway distribution system extending throughout Europe is the reason that Rotterdam is often called the “Gateway to Europe.”

The population of the city was 614,543 in 2013. The population of the greater Rotterdam area, called “Rotterdam-Rijnmond” or just “Rijnmond”, is approximately 1.3 million. Rotterdam is known for its university (Erasmus), cutting-edge architecture, lively cultural life, striking riverside setting and maritime heritage. The largest port in Europe and one of the busiest ports in the world, the port of Rotterdam was the world’s busiest port from 1962 to 2004, when it was surpassed by Shanghai. Rotterdam’s commercial and strategic importance is based on its location near the mouth of the Nieuwe Maas (New Meuse), a channel in the delta formed by the Rhine and Meuse on the North Sea.
KOC Launches “Clean Up Arabia” Campaign
As part of its efforts to make greater contributions that benefit the community it operates in, KOC recently took part in the “Clean Up Arabia” campaign. Now in its eighth consecutive year, the campaign focuses on utilizing help from volunteers to clear trash from Kuwait’s beaches while creating an atmosphere of awareness that focuses on the importance of keeping a healthy environment. The campaign itself is expected to run until February 25th. The campaign, which kicked off at the Green Island, also involved active participation from the Kuwait Motorcycle Riders Team.

In a statement he made during the event, Information Team Leader Mohammad Al-Basry explained that the campaign was held in coordination with a number of relevant bodies within the Gulf Cooperation Council (GCC) to clean up beaches in a number of Gulf countries.

Al-Basry asserted that the Company is very concerned with the health and safety of the general population within the community. He also added that preserving the environment is at the top of KOC’s priorities and that the Company is very eager to live up to its social responsibility obligations, part of which mandate that the Company should do everything in its power to preserve and protect Kuwait’s natural environment.

He added that the campaign represents a minor portion of the Company’s broader activities in this domain. KOC, of course, is a leading body in Kuwait in terms of the environmental initiatives it engages in. The TL further noted that the purpose of the campaign does not only lie in the clean-up exercise per se, but rather it is aimed at raising awareness among citizens and residents alike to preserve the environment. He also added that the beach clean-up is the medium through which this message can be conveyed to all.

Al-Basry also explained that many members of Kuwait’s society neglect the environment, while others do not pay attention to public hygiene, which negatively impacts wildlife and the marine environment. Part of this campaign’s efforts, he said, would do much in the way of personally changing the way individuals view the environment and the role they can play in helping to keep it protected.
KOC recently won a top-level world award during its participation in the 16th ADIPEC Show & Conference, which was hosted by the UAE in Abu Dhabi. The Company won 1st place in the category of “Best Technological Innovation in the Domain of Oil & Gas in the Middle East and North Africa.” More than 300 competitors were nominated for the prize.

The ADIPEC 2013 Award Committee selected the KwIDF Project which KOC commissioned last year. The project provides innovative solutions that contribute to the ideal exploitation of oil wells and reservoirs.

KOC CEO Hashem Hashem hailed the win and asserted that it reflects the Company’s continuous efforts to use the latest and most advanced tools and techniques to enhance its production capabilities. He emphasized that the winning project was one of the most recent technological solutions to analyze data in real time and that it would help employees make important decisions faster than ever before, thanks to the availability of instantaneous information.

Launched in 1984, the Abu Dhabi International Petroleum Show & Conference (ADIPEC) is considered one of the most important oil and gas activities in the region. Over the years, it has evolved into a major event that continues to attract leading oil-producing countries and major oil companies.

An Overview of KwIDF:

• KOC decided to undertake the KwIDF project so that engineers and geologists could be provided with a means to collect various information and data about wells and fields in real-time that would then be analyzed by specialists so that appropriate decisions could be made in a timely manner.

• The center allows collaboration between engineers, geologists and geophysicists who work under one roof in order to make decisions in a timely, efficient manner.

• The project is unique in the sense that it provides innovative technological solutions which save time and effort in comparison to traditional fields. KwIDF aims to increase productivity and provide optimal management of oil reservoirs, which in turn will lead to increased production for KOC.

• The Company has a clear vision in terms of training and qualifying the national workforce through this project, which will be managed by Kuwaiti engineers.

• KwIDF will be a great resource for the transfer of knowledge and sharing of information, which falls in line with the KPC 2030 Strategy.
1960s Employee Training