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.....
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GPIC



جمعية المهندسين البحرينية
BAHRAIN SOCIETY OF ENGINEERS

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From Editor 's Desk



Eng. Mahmood Yaqoob
Editor's in-Chief

Dear Engineers
Greetings to you,

"In essence, engineering is the use of science to find creative and practical solutions." This statement to Queen Elizabeth II defines the basis of the engineering profession: finding solutions to the problems facing the society and its members in a practical and an economical way (to save time and money). The world is witnessing a deteriorating economic certainty and a well-defined abstinence situation that calls for costs reduction, in order to maintain a stable economic situation or to push for its improvement. The role of an engineer in this matter is important and vital. The astrophysicist Neil Digras Tyson says, "We as a society we can solve problems better, easier and smarter, since there are various scientific engineering solutions to solve these problems and protect generations that are not yet born, are you thinking about yourself or the future of the Earth as well? ". We, as engineers, must find solutions to the problems we are facing or may face in order to obliterate it altogether rather than solving the problems temporarily, or for a specified period. In this issue of Al Mohandis magazine, we will address the instigations of one of these solutions, the Ureaformaldehyde-85 plant project, planned by the Gulf Petrochemical Industries Company (GPIC) and is expected to operate in the last third of year 2018. In the engineering pen section of this release, it will include several articles about engineering solutions that can develop multiple sectors in the country.

I would also like to take this opportunity to congratulate all Bahraini female engineers on designating the year (2017) in their name by the Supreme Council for Women in recognition and appreciation for their efforts to serve the country and its citizens. In relation to this, the editorial family has chosen a conspicuous female engineering figure and a former board member of the society, Eng. Seema Lanjawi.

In conclusion, I urge all engineers to participate in the different sections of the coming releases of Almohandis magazine, and to join the engineering society so that the benefit is prevalent to all. I also call upon the members of the society to participate actively in all the activities and events of the society. After all, you are the society and we are here to serve you.

We wish you a pleasant reading in the branches of this issue. Awaiting your comments and observations.

Wish you all the best...

A Journey with an Engineer

Seema Al Langawi



- When I first graduated, surveying engineer was exclusive to men only. Astonishment and surprise is the impression I got from those around me.

- In 1984, I was the only female Bahraini in a department of expat males !!

- A nice advice from my kind manager got me involved in the world of maps, geographic information systems, thus, I specialized in it and loved it with passion.

- The Bahrain Society of Engineers to me is the school where I learnt the work principles, basics and work ethics.

- My daughters: Lulwa, Noorah, Aysha, the greatest gift in my life.

Our character for this issue of the Engineer magazine is featured by persistency and perseverance, her favourite number is No. (1). This figure has a distinctive presence in her life since its beginnings. She was the first woman on Bahrain and the Gulf level to break the men's monopoly of "surveying engineering". She also entered the elections of the Bahrain Society of Engineers and was elected as a board member after 17 years of the absence of a woman on the Board of Directors. Those who see her from a distance can touch the solidity in her appearance like a granite, but as soon as you approach it, you can find her poetic softness. She is a woman who combines power and tenderness; hardness and poeticism; engineering and public work; and between a business-woman and the housewife. She headed the Department of Mapping at the Ministry of Housing at the age of 26, and has trained a large number of Bahraini's and the Gulf countries citizens in various disciplines, especially in the field of surveying engineering and its various disciplines.

Our character for this issue is Eng. Seema Al Langawi ..

Seema Al Langawi studied the primary school at Khawla School in Manama city. In the secondary education level, she graduated from Al-Hooraa School for Girls. The passing of the secondary level was the turning point in the life of Eng. Seema. She was among the first group to pass the science/ mathematics track, a new track in the secondary education back then, where only two classes were allocated to test the curriculum as a new curriculum within the Ministry of Education. The intension was to send these two classes to pursue a university education abroad, specifically in the United States of America.

On this aspect, she says: "I was among the first batch to graduate from the science/ mathematics track in the secondary level. The Ministry of Education first intended to provide scholarships to study abroad in the United States of America, but the circumstances prevented this, so it was decided to send us to Cairo. The political circumstances after the signing of the Camp David Agreement in 1979 prevented this too.

Simultaneously, the door was opened for scholarships to the University of Baghdad. We were the first batch to be sent by the Ministry of Education in Bahrain to the University of Baghdad.

It was the dream of my life to study architecture, and my scientific interests at the time were concentrated on architectural creations. But, my desire for a challenge shifted me from architecture to surveying engineering.

This is how the engineer Seema Al Langawi tells the story of her life dream transition from the architectural elegance to the fields of tiring and sun burning surveying engineering.



Origin and Education



Switching from architecture to surveying engineering

She added: In Baghdad, I joined the Department of Architecture. But, as I was walking in the university, I saw a group of students surrounding a device that was later known to me as the theodolite device used by surveying engineering students. I liked the scene and felt that this work calls me and provokes the desire to challenge in me, especially when I knew that the proportion of female students enrolled in this field are very few, and almost non-existent. Then, I decided to take up this challenge, especially that the specialization of surveying engineering was new and rare at that time. The thesis was "Preserving the historic buildings, their features and specifications using surveying systems" .

"It was a bold decision, perhaps it was hasty. The spirit of challenge and adventure won the moment", Eng. Seema Al Langawi admits. She recalls this stage of her life with all the enthusiasm, passion, dreams and ambitions she had back then. But, she confirms with ease, simplicity and confidence that she never regretted choosing this specialization and this distinct field.

Job and professional life



"When I graduated from university, I was informed that the Housing Ministry had a " Directorate of Surveying" she said. "I applied to work in the administration and back then, was headed by Mr. Ibrahim al-Jowder, who could not conceal his surprise from this young girl who chose with her full will to invade this closed world until that time in front of women. Men monopolized the surveying engineering completely in that period. Thus, Mr. Jowder tried to object to the appointment of this kind girl in this directorate, where the workers spend most of their time and work in the field under the sun, rain and dust.

"Where to hire you when you are a girl ?!", this is how Mr. Ibrahim Al-Jowder asked me when I heard his opposition to my employment in the Directorate of Surveying. I went to meet him. My meeting with him was simple and spontaneous:

- "Hire me in the administration, which I studied in order to join. I want to work in the surveying, and you will not regret it if God's will", she said.

Finally, I was employed in the field of surveying/ topographic / geodetic surveying. I became the first female surveying engineer in Bahrain and in the gulf countries as well.

In the surveying department, Seema Al Langawi completed the two-year training course through working in various sections; Land, air and sea surveying followed by the mapping department where she became head of that department in 1988.

Seema remembers that during the beginning of her days in the department, the method of work in this section was 8 hours, seven of which were spent on external work sites. This style of work made her lose contact and engaging with the people and the society, unlike the people who work in the real estate surveying.

In 1984, the Directorate of Surveying was still new as it was established in 1979. The crew was mostly males. Most of them were expatriates, especially in the field of topographic and geodetic surveying, as there were not specialized Bahrainis back then. I was the only Bahraini among them, which formed a new challenge to me where I had to take bold decisions in a unique field, and so I did.

"Now that I recall the memories of that stage of my life, I am surprised and perhaps impressed by the spirit of the girl who was looking for uniqueness and chose to face difficulties and to withstand the masculine resistance instead of looking for work in an air-conditioned office, away from sweat, humidity and scorching sun.



She adds: As a single girl in a world of men, I must have been the focus of attention. This situation has its pros and cons. Today, I thank God so much that I did not face as many disadvantages as I faces the various advantages of this field. In the forefront of these positive things are the Bahraini pioneers, whom I worked with in the early period of my working life. I learned from them the spirit of giving and the meaning of work when it is directed to serve the nation. The first of these was His Excellency Sheikh Khalid bin Abdullah Al Khalifa, who was the Minister of Housing at the time. He left beautiful fingerprints and noble situations of support, encouragement and removed obstacles away from those with initiatives within the engineering department of the ministry. He is still the most important supporter of creative and national initiatives at various levels. There are also Dr. Abdullatif Kanoo, the Undersecretary back then, Director Ibrahim Al-Jowder, Sheikh Hussam Al-Khalifa and many others that I may not be able to recall their names, but they are engraved in my conscience.

Al Langawi continued her speech: "From those engraved images and names in the depths of my conscience is a British person, a director of the sector at the time. From a beautiful advice this kind director gave to me, I knew the world of maps and was impressed by it until it became a source of passion and place of interest for myself.

One day, this manager summoned me to his office and asked me, "For how long will you continue like this, going out to work sites and spending your time between files and papers? It is time to come forward and look for something that attracts your attention and excites your passion."





"After a conversation that was not short, I left the director's office carrying a paper titled ITC [International Institute for Earth and Space Science] in the Netherlands. I began to write this prestigious institute in cartography, and that was the beginning of my career in the science of maps."

"I went to the Netherlands to study in 1987 for a year and a half, and it is known about this college that it focuses on both the theoretical and the practical side. Everything we learn is applied to reality in terms of taking aerial photographs, satellites, surveys and putting them on maps of all kinds. This is why we visited a number of countries to work and apply what we studied. This gave me very wide practise very wide and experiences that is still engraved in my memory".

In 1988, she returned from the Netherlands after completing her studies. As a year of achievements from the scientific and personal aspect, it gave her greater confidence and belief in her ability to achieve and overcome dif-

iculties. During this year, she studied, moved and travelled to about 11 countries to complete fieldwork in the same field. She also attended courses, conferences and presented papers in the field of her specialization.

In the meantime, Seema Al Langawi did not stop her career and work in the field that she loved with all her heart. Before she completed her twenty-seventh year, she became the first female engineer to head the mapping department in the Ministry of Housing in 1988 to achieve the number (1) again.

In 1990, she was sent to receive a Business Administration Diploma in Surveying Science and Maps from the University of East London. In 1993, she was assigned to work at Intergraph in Britain for a year. After that in 1994, she moved to London University to return with a Master's degree in Geographic Information Systems (GIS). She also worked on several major projects in the surveying sector and map production.

Bahrain Society of Engineers

Engineer Seema Al Langawi has a story with the Bahrain Society of Engineers, just as every engineer and female engineer has a story with this Society, homeland, identity, source of motivation and reunion among all of its members. When she first joined the society, she says: when I first started my work at the Ministry of Housing in 1984, I knew other engineers who are members of the society and encouraged me aware of it and to attend its activities. Once I knew it, we caught a spark of love, and passion. Since then, there was a mutual love relation with a sense of pride and appreciation where I contributed actively with society activities. The society to me is still symbol of home, country and identity; a symbol for passion and devotion to the profession.

Regarding the idea of the establishment of a female engineer committee in the society "I think it's a story worth telling, too," says engineer Seema Al Langawi.





"When the then president of the society, Eng Dhea Tawfiqi, returned from Germany where he was attending the World Federation of Engineering Organizations conference, he returned with a great admiration for the Female Engineers Committee at that conference, where there was a full day of work papers dedicated to discuss the challenges they face. Because he is a person who takes initiatives and always research for what is best and new, he worked directly on transferring this beautiful experience to the Bahrain Society of Engineers where I was a participant in these efforts. I talked to a number of the female engineers and formed the committee.

In 2000, the Society began to increase the pace of its activities. It started working on establishing the Female Engineers Committee and introducing new committees. It worked on forming the Female Engineers Committee in a deeper approach with the help of a number of colleagues.

In 2000, Mrs. Seema Al Langawi returned to the election experience in the Society and won a membership in the Society's Board of Directors for two consecutive sessions. During the two cycles, she was the Director of the Membership Committee, the Chair of the Engineers Affairs Committee, and a member in the Grants and Training Committee for the recent graduate engineers. The training committee was formed in collaboration between the Society and the Ministry of Labour that was headed by Eng. Dhea Tawfiqi. I was also a member of the engineer's staff committee, established in 2003 under Engineer Khalil al-Sayyed, who was heading the Society at the time. I was fortunate to be in two consecutive sessions and work with three presidents during this period.

"Bahrain Society of Engineers was a school to me where I learnt from it the principles, the basics and the work ethics". This is how Engineer Seema describes her strategic and substantive relationship with the society. She also added, "In this society, many personalities the

most noticeable activists in the public, national and community work have been formed". The Society was the incubator of our ideas, aspirations and dreams, both professional and national. From the Society of Engineers, I started personally to participate and contribute in the foundation paths of several national societies and organizations. I became a member of the founding committee for the Women's Union during the Bahraini women's boom and activism in the Kingdom. In that era, a number of effective female unions surfaced. I was part of the Supreme Council for Women's team in writing the official report for the Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW). I was a member of the National Committee for Anti-discrimination against women at the time in the women's Union, and participated in one of the committees of the strategic plan initiative for the advancement of the Bahraini women by the Supreme Council for women.

Eng. Seema Al Langawi follows the path of joining and participating in the establishment of associations to extend to places out of Bahrain, where she contributed to the establishment of several professional associations in the Arab world - including the Arab Union for Real Estate Development and the Arab Union for Investment and Real Estate Development. In addition to participating in the development of a series of strategic initiatives and plans, including guidelines for land ownership and governance with the team of Arab and international property consultants in the United Nations.

"The Society of Engineers as a specialized society has succeeded as a professional association. During its career, it puts all disciplines under one umbrella, which is one of the fundamentals of engineering work, and I believe that today we have jumped many steps especially that the society has representatives in various governmental committees for instance but not limited to the Council for Organizing the engineering professions.

Accomplishments, Honours and Awards



This was a major challenge for the society to have a representative in any organisation where a decision is taken or a law is drafted concerning the engineering sector. This made the society a very well established society that stands still and has its fingerprints in society. This also enables it to prove its role and status as a national institution that sponsors of the rights of the engineers”.

Eng. Seema Al Langawi begins her talk about the awards and honours in a very emotional and romantic way: "The most precious and beautiful award I have ever received is my daughters Lulwa, Noura and Aysha, and my husband Abdullah. My family is small, in the size of a heart that took the role of providing me with the confidence and determination that I required in my work life.

After this long career path, there is no doubt that the owner of this path was the focus of attention of the officials and the decision-makers in many areas in particular, and in this regard, Al-Lenjawi mentions that she has won several

awards, whether in the workplace or volunteer work. These awards include the award of the Academic Excellence Award from the late prince HE Sheikh Isa bin Salman Al Khalifa in 1996. Another one is the 2001 Employee of the Year award from the Ministry of Housing for the preparation of the international borders maps of Hawar Islands in coordination with the Ministry of Foreign Affairs to present it to the International Court of Justice. . In addition to several other honouring's from the Society of Engineers, the Minister of Housing Silver Jubilee, 25 years after the establishment of the ministry. The 2009 excellence award by the Gulf Engineering Union, the excellence award from the Bahraini Society of Engineers in 2016 and the excellence awards from the Directorate of Project Management in Abu Dhabi. Some of these projects are related to real estate law system, the project of information system and registration of property and real estate, the spatial information system and municipal infrastructure, and municipal governance, and the building coding.

From Bahrain to UAE and vice versa

In her professional and vocational career line, she highlights the transition point from Bahrain to the UAE as a distinct point in the life of an engineer, a mother of three daughters, a wife and a housewife. She describes this transition as "a quantum leap in the way of work, in the field of her specialization and in the nature of things related to the professional work itself". At the same time, she describes the transition from the Bahraini business community to the UAE business community as "a great challenge, a major experience filled with great practices.

The challenging spirit did not leave me throughout the period I spent in the UAE. Instead, I found several incentives to sharpen and enhance myself.

The UAE's business community is the most dynamic in the Arab business community. It is a very diverse society with great values and very high standards. When I joined this community, I saw in it a potential and promising environment for more work, diversity, and creativity.



This is exactly what I found there. I worked as a consultant in the property and real estate sector, in the Department of Municipal Affairs in the Emirate of Abu Dhabi and as an arbitrator and an engineering expert in the UAE.

One of the most prominent stations in the life of Eng. Seema Al Langawi , and probably one of the most apparent experiences in her career and life experience is her nomination in the parliamentary elections for the 2011 electoral cycle. “I accidentally entered the political empowerment course for women with the Supreme Council for Women where they suggested that I nominate myself to the parliamentary elections. I initially was very hesitant, especially that it is a new stage, completely different from what I experienced in my life as an engineer, but I liked the idea and found myself capable of that. This required me to familiarize myself with the Constitution, laws of the parliament, international treaties and laws with Bahrain. “

“I ran for the northern governorate in Hamad Town. It was a very nice experience filled with new practices that opened up areas of knowledge I did not know before,” she said. “Although I did not win, I found it very positive.”

“In 2014, I was addressed by the National Unity Gathering to run again and I had the honour to join them,” she said. “I looked at this experience from a different perspective than the engineering one. She stressed that the term failure does not exist in the dictionary of her life. Challenges are opportunities for self-development in order to start again; and the past is always a part of the person’s formation. It gives him the strength to continue anywhere and anytime.

In conclusion, Eng. Seema Al Langawi ended the interview with three oriented messages.

The first message is presented to Her Royal Highness Princess Sa-beeka bint Ibrahim Al Khalifa, may Allah protect her, the President of the Supreme Council, the woman. It is a message of thanks and appreciation to the Bahraini Princess. The Bahraini Princess who formulated Bahrain’s revitalisation process with sentimental passion, an operative body, creative thoughts and care that lifted this procession towards excellence, great achievements and pioneering initiatives, the latest of which was to specify a celebration theme for the Bahraini Women’s Day 2017 to be for the Bahraini female engineers.

A noble honouring from a noble princess, a pioneering initiative from a pioneers council, and a message of empowerment of national dimensions and a wonderful humanity.

The second and third letters are addressed to the Bahraini female engineers and to the Bahrain Society of Engineers. Bahraini women has always been distinguished in their achievements and their participation in development and national work in various fields either in public or private work. As Bahraini female engineers, we have multiple roles that extend to areas beyond engineering only. We must be aware that what brings us together as Bahraini female engineers is our common and established ground from which we can embark on other horizons, whether in public or private work. We must have our own entity within our collective entity with our male brothers in the Society of Engineers so that we can advance from these two entities to accomplish achievements at all levels and in other fields. This society shall remain our first and foremost umbrella, while our peculiarity as female Bahraini engineers become our second umbrella that makes us unique.

Parliamentary elections



Three letters



In Focus

جيبك
GPIC

Urea Formaldehyde
85

UF85, also referred as UFC (Urea Formaldehyde Concentrate) is a liquid composed of 60% formaldehyde and 25% urea. It is used mainly as anticaking agent and as a spray coating agent in fertilizer industry. Indeed, when prepared with low free urea contents, UFC products contain large amounts high molecular weight polymer which release slowly their nitrogen content to feed growing plants efficiently.

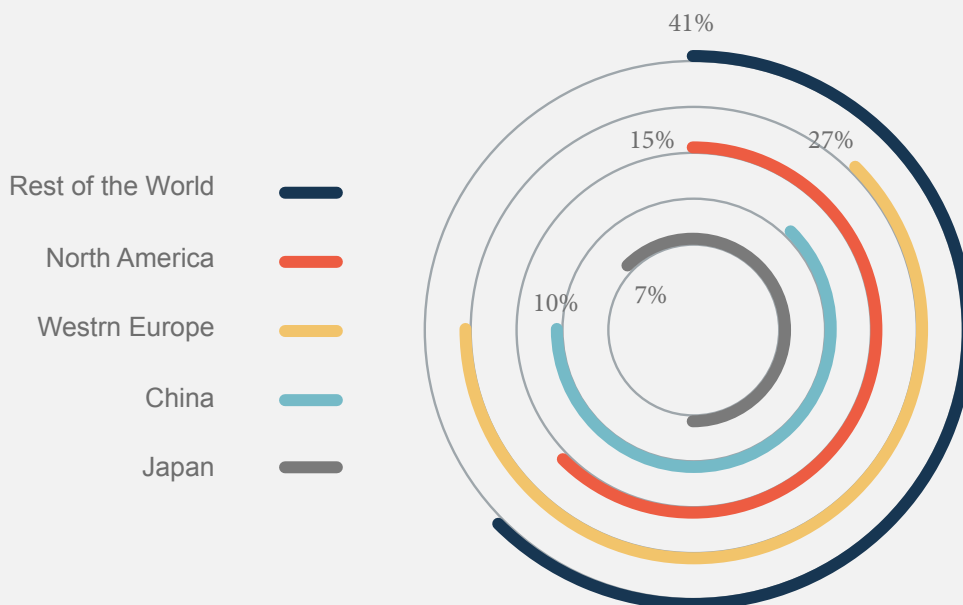
Other applications include the production of urea formaldehyde resins, melamine urea formaldehyde resins, glues and adhesives.



Global Demand

The current consumption of UF85 is estimated to be around 3.3 million tons per year and future growth is linked closely to growth in urea production and is forecast to average 2.3% over the forecast period.

New ammonia/urea investments are mostly located in regions where access to low cost gas including the GCC region.



Global Supply

Following the building of new formaldehyde plants in countries where relatively attractively priced methanol is available, new amino resins plants included UF85 are expected to be built in the countries included “rest of the world”, especially in the Middle East and Asia.

GCC producers of UF85 include:

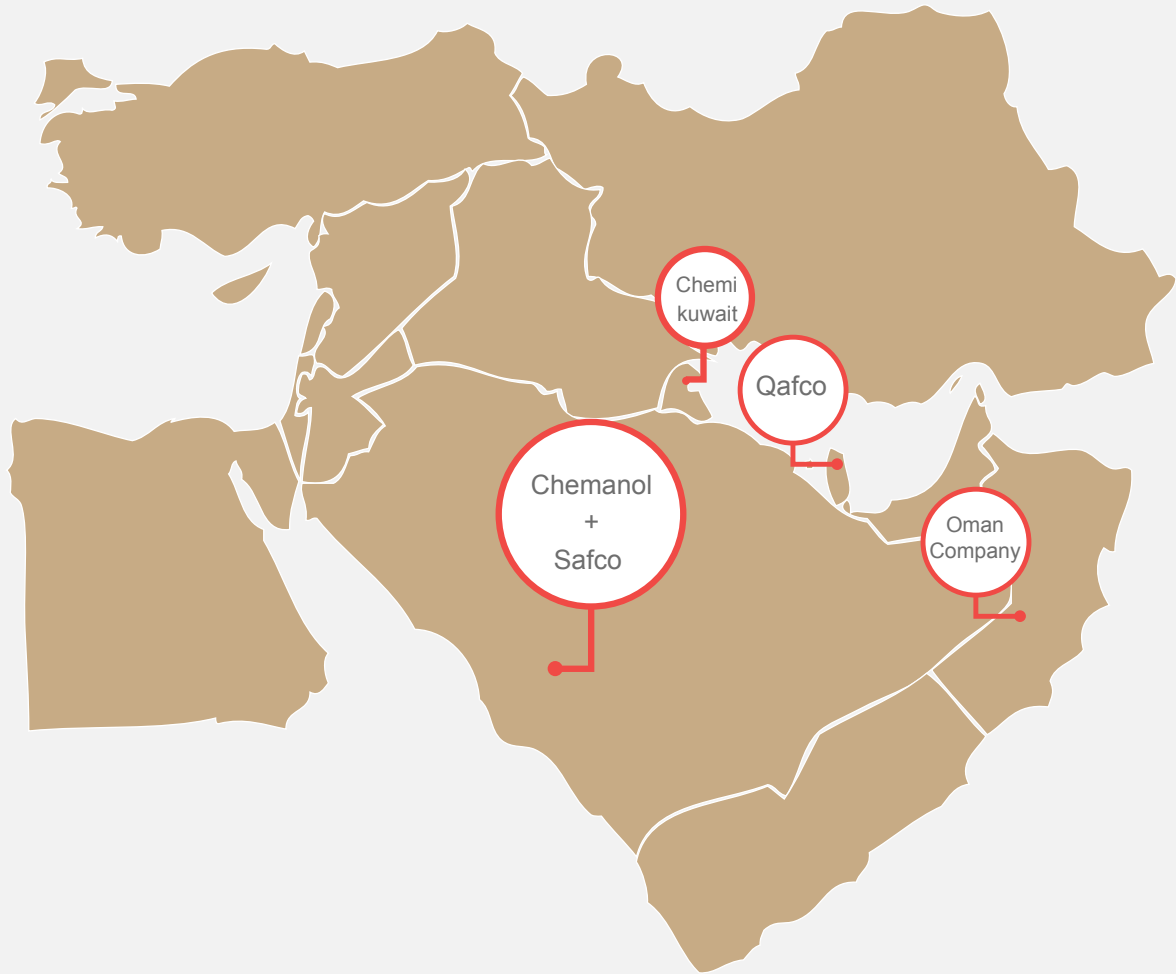
- Qafco in Qatar
- Chemanol, Safco, in Saudi Arabia
- Oman Formaldehyde Chemical Company in Oman
- Chemikuwait in Kuwait

In Bahrain, GPIC is planning to commission its new UF-85 plant in 2018.

Trade

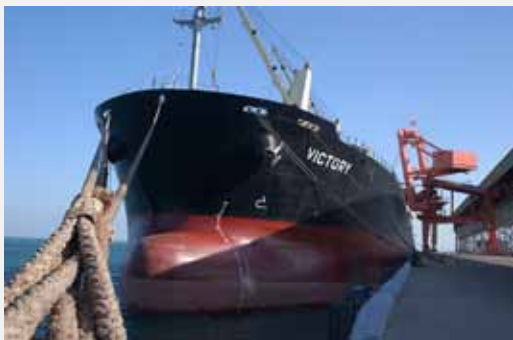
Despite substantial capacity additions, China will remain a net importer. The main end use sector in China is the agriculture where UF85 is used as a precursor in the manufacture of nitrogen-based lawn and shrub fertilizers.

The Middle East has been emerging as an even stronger exporter.



To start with, Gulf Petrochemical Industries Co. was established in 1979. It is a joint venture between the government of Bahrain (the oil and gas holding company), Kingdom of Saudi Arabia (SABIC) and Kuwait (PIC).

GPIC utilizes natural gas as a feed stock which is processed to produce Methanol, Ammonia and Urea with a total production rate of 1.6 million tonnes annually. The complex has seen a lot of modifications and expansions since commissioning till date. Debottlenecking project was the first to be executed in 1989 which has led to enhance the production capacity of Methanol and Ammonia plants by 20%.



Furthermore, Urea plant was commissioned in 1998 which utilizes Ammonia and the earlier vented Carbon Dioxide as feed stock, with 2000 MTPD production capacity as of today.

11 years later, another environmental project was launched, 450 MTPD Carbon Dioxide Recover Plant was commissioned in December 2009 as the first of its kind in the Middle East. The idea behind this project was to reduce the carbon dioxide emissions from Methanol reformer vent stack by almost 50%, which in turn being absorbed and utilized to enhance the Urea plant production.

GPIC has never stopped exploring ways to reduce emissions and preserve raw materials, and being a “Responsible Care” certified organization which takes into consideration the whole supply chain aspects and impacts, GPIC’s Board have allocated \$ 8.8 million to build a Urea Formaldehyde (UF-85) plant that fulfills the company’s requirement of 22 MTPD. UF-85 is being imported from GCC suppliers and transported via King Fahad Causeway which possesses potential risk on human and environment in case of accidental release. Moreover, some delays were experienced and were vital to the sustainability of Urea process in case of UF-85 non-availability.

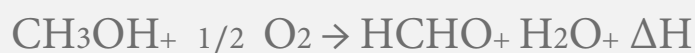


A detailed feasibility study was conducted by GPIC and an external consultant prior to floating the inquiries. After receiving the offers from all well-known and trustworthy vendors, technical and commercial evaluation were carried out to ensure the most economic and energy efficient technology is chosen. The bid was finally awarded to Japan Gas Corporation Gulf “JGC Gulf” as the engineering and procurement contractor whom was bonded with “Haldor Topsoe” as the technology licensor. The location of the project will be in the vicinity of the existing Urea plant with a footprint of 41×20 m², as close as possible to the UF-85 storage tanks.

To promote a sustainable on-spec Urea production, self-reliance and to increase the productivity; building our own UF-85 plant was the optimum solution. Hence, UF-85 project reflects the GPIC’s vision and commitment towards society, environment and bio-diversity.

In line with GPIC’s policy of Bahrainization, this project is expected to be commissioned and operated by a Bahraini crew and will create job opportunities for Bahrainis.

The UF-85 process is based on the “catalytic oxidation of methanol” according to the following reaction:



The catalyst used for this process is metal oxide type, however, some by-products are also formed such as formic acid and dimethylether (DME). This reaction is highly exothermic and generates a significant amount of heat, hence, to have the maximum rate of reaction along the tubular reactor,

an oil bath is being maintained within the reactor. Formaldehyde and by-products vapor stream is cooled and sent to the formaldehyde absorber where cool urea solution is utilized to absorb formaldehyde and form the required quality of Urea Formaldehyde product.

Consequently, unreacted gases are recycled back to the formaldehyde reactor in order to increase the overall conversion of methanol to formal-

dehyde. The product is finally cooled down and stored in UF-85 storage tanks. Effluents are being treated as much as possible and the combustible gasses are being converted to carbon dioxide and water via a catalytic incinerator to comply with the domestic as well as the international legislation of water and gas emissions. The UF-85 plant has an integrated heat exchange system which minimizes the use of external supplies of cooling water and steam.

Project's Info

Lunch Date: UF-85 project was launched on 14 February 2017 after signing the contract between GPIC, the EPC company JGC Gulf and the process licensor Haldor Topsoe. The contract was signed by H.E. Dr. Abdulrahman Jawahery, GPIC's President



Vendor: Japan Gas Corporation Gulf "JGC Gulf"



Project Cost: \$ 8.8 million



Production Capacity: 22 MTPD



Plant Area: 820 m2



Plant Location: In the vicinity of the existing Urea plant



Completion Date: The project's mechanical completion is expected to be in August 2018.



Commissioning Date: The UF-85 plant is expected to start production by September 2018 after clearing the mechanical completion of the project, in which the readiness of safe start up of the plant is declared. It has also been agreed with the process licensor Haldor Topsoe to be present at the time of the start up, performance test and sustained load test, in order to provide their technical support and to ensure the product is on-spec. The process licensor will be also present to train Bahraini employees from all aspects during the commissioning phase.



Engineering Pen



Mr. Hasan Al Sheikh

GCC's Domestic Market of LPG

Industry Structure, Market Analysis and Subsidy Issue Discussion

Introduction

Liquefied Petroleum Gas (LPG), also referred to as simply propane, butane or a mixture of propane and butane, is used on a global basis as fuel in heating appliances, cooking equipment, and vehicles as well as for the production of petrochemicals as feedstocks and in refined products blending such as gasoline.

The demand of LPG in the form of butane in the GCC is almost exclusively used as cooking fuel. However, there is a tiny market for non-cooking purposes in the workshops or industry for cutting or brazing purposes.

In this article, the GCC's domestic market of LPG in the form butane is discussed from industry structure and market analysis perspectives. This will help us understand the issues related to the LPG subsidies granted by the governments in the region. The use of butane in gasoline blending at oil refineries as well as in petrochemical industries are not covered in this article.

Bahrain

Presently, the refinery in Sitra is the sole supplier of LPG in the Kingdom of Bahrain. The LPG is stored at the refinery's Horton spheres, which supply three LPG bottling/distribution plants. These three main distributors are Nader Gas, Bahrain Gas and Awali Gas.

The three main distributors in Bahrain that fill and distribute LPG cylinders as well as bulk LPG. There are many sub-distributors (around 23) with most of them having their working stock of cylinders stored and filled by a specific main distributor.

Sub-distributors operate a fleet of cylinder delivery trucks and provide an additional channel of distribution for the market. Cylinders are colour-branded for each distributor and sub-distributor so that customers that initially purchase a cylinder from one distributor or sub-distributor will have to exchange their empty cylinder with the original supplier.

According to the data published by OAPEC databank, the demand of LPG in Bahrain was estimated at 60 thousand tons in 2014 while the production reached 56 thousand tons in 2013.

In Bahrain, cylinder distribution includes delivery of the cylinders to the customer's premises, connecting the cylinders to the piping installation, and removal of the empty cylinders. The availability of cheap labour and the limited size of the kingdom have enabled the practice of delivering cylinders to the customer's premises by the distributor or sub-distributor. Customers call their supplier and will normally have a replacement cylinder delivered within 24 hours of their request.

There are three standard LPG cylinder sizes distributed in Bahrain. The preferred residential cylinder, and most prevalent on a number of cylinders basis, is the 40

lb (18.1 kg) cylinder. A limited number of households opt for the smaller 20 lb (9.1 kg) cylinder, but they represent an almost negligible portion of the total LPG market. The third and largest size is the 100 lb (45.4 kg) cylinder which is comparable to the 40 lb cylinder in terms of LPG sales on a mass basis. These large cylinders are primarily used for commercial applications with an insignificant volume also used in some households and palaces. Bulk LPG is also used to meet commercial demand when the LPG demand is large and the space is available for a bulk storage tank.

In addition to the three cylinder sizes supplied by distributors, there are also independent retail locations that sell smaller, portable cylinders that connect to a small stove cook-top. These "portable stove" cylinders are sold in 2 kg (4.4 lb), 3 kg (6.6 lb), and 5 kg (11.0 lb) sizes and are filled by the retailer from 100 lb cylinders. At present, there are approximately 38 of these retail locations in Bahrain.

BAPCO, which is wholly owned by the Government of Bahrain, supplies LPG at subsidized pricing to the local market. The price at the distributor plant gate supplied by refinery pipeline: 0.057 BD/kg, whereas the price to consumer for LPG in 20 lb, 40 lb, 100 lb cylinders or bulk: 0.10 BD/kg.

The delivered cylinder prices have also remained unchanged since 1983 and are as follows:

Cylinder size (lb)	Cylinder price (BD)
20	1.125
40	2.050
100	4.770

Table 1 Delivered Cylinder Prices in Bahrain

Saudi Arabia

National Gas & Industrialization Company (GASCO) is the only LPG bottler and wholesaler in Saudi Arabia. GASCO distributes LPG to consumers through authorized agents and to those who deal directly with the filling plants which are owned by GASCO throughout Saudi Arabia. GASCO announced that it sold over two million cubic meters of LPG in 2012.

GASCO operates seven filling plants, one-cylinder maintenance workshop, a fleet of 400 semi-trailers and 100 bobtails for LPG tanks refilling. There are around 131 LPG sub-distributors in Saudi Arabia. Most cylinders are delivered. However, some customers pick up cylinders from LPG distribution points.

According to the data published by OAPEC databank, the demand of LPG in Saudi Arabia was estimated at 1.4 million tons in 2014 while the production reached 1.2 million tons in 2013.

In Saudi Arabia, almost all of the cylinders now are of the size of 11-kg cylinders as 22-kg cylinders are not available anymore. In 2009, Saudi Arabia introduced composite cylinders of the size of 10-kg. The empty cylinder price was SAR 350 and the gas price was SAR 15. These cylinders were available in supermarkets, petrol stations and shopping malls. However, in May 2012 the Ministry of Municipalities banned selling composite cylinders. Generally, cylinders are owned by the sub-distributors. When a customer returns a cylinder in good condition, the security deposit is partially refunded.

The LPG price is regulated by the government and the LPG retail price has been the same since 2001. GASCO buys LPG from Aramco at SAR 800 per ton. The retail price of refilling 11-kg cylinder is SAR 15. GAS-

CO supplies bulk LPG to customers at SAR 0.72 per Litre with no delivery charge.

GASCO supplies cylinders only to the sub-distributors who, in their turn, supply to the customers. Although LPG prices are regulated, sub-distributors are willing to give discounts when buying large quantities. Moreover, in the past there were some instances when sub-distributors increased prices due to a shortage of LPG stock in some areas in Saudi Arabia.

United Arab Emirates

According to the data published by OAPEC databank, the demand of LPG in the UAE was estimated at 467 thousand tons in 2014 while the production reached 906 thousand tons in 2013.

There are different market structures for LPG in the UAE depending on the emirate. In this article, Abu Dhabi, Dubai and Sharjah markets are discussed.

Abu Dhabi

ADNOC owns and manages the LPG cylinder filling station of which the capacity is 13 thousand cylinders a day to supply Abu Dhabi and the northern emirates as well. ADNOC distributes the majority of cylinders by its fleet and sells at subsidised prices.

The new LPG cylinder filling station in Al Musaffaha Area is fed with around 300 tons a day of LPG via pipeline from Abu Dhabi Refinery. In addition, the station is fed with around 150 tons a day of LPG via tankers from Ruwais Refinery. The station has a storage capacity of four thousand tons and work is in progress to expand it to ten thousand tons. ADNOC estimates that the total number of cylinders is five million.

There are policy directions towards making it compulsory for the new buildings to be capable of receiving SNG.

ADNOC put composite cylinders under trial period prior to effectively using them for the local market. So far, only two suppliers of composite LPG cylinders have been approved. However, ADNOC has not taken further steps to actually use composite cylinders in UAE.

Cylinders are sold to citizens and expats at the subsidised prices in Abu Dhabi. However, the cylinders are sold to citizens at

the subsidised prices and to expats at unsubsidised prices in the northern emirates. Bulk LPG supplied to restaurants and other entities are sold at the international price plus margin and delivery charge. Adnoc Distribution currently provides more than 3,000 subsidised 25lb gas cylinders daily at its service stations in Sharjah, Ajman, Umm Al Quwain, Ras Al Khaimah and Fujairah.

Size of Cylinder	Price (AED)	Average unsubsidised price (AED)
11 kg	20	42
22 kg	30	83
44 kg	60	127 (not in use now)

Table 2 Retail LPG Prices in Abu Dhabi

Dubai

Emirates Gas (EMGAS), a wholly owned subsidiary of ENOC, the Dubai government-owned diversified energy group, is a main LPG bottler and distributor in UAE and the only LPG bottler in Dubai. The company operates throughout the UAE and has main operating locations in Jebel Ali, Dubai, Al Qusais Distribution Centre, Dubai (also hosts the administrative office), Ajman, Fujairah and Umm Al Quwain.

The bottling plant in Jebel Ali has a capacity of 40 tons per shift per day. Furthermore, 25 lbs, 50 lbs and 100 lbs cylinders can be filled with a capacity of 2,000 cylinders in each shift. The capacity of the storage tanks is 300 tons. There are around 126 sub-distributors for EMGAS that supply

Dubai and other emirates

Often, the cylinders are delivered by the sub-distributors. However, customers can go and pick up their cylinders as well. In Dubai there are three main sizes which are 11-kg, 22-kg and 44-kg cylinders. Cylinders are owned by the customers, so when the cylinder is returned back, its cost is not refunded.

LPG is not subsidised in Dubai and there have been frequent price changes in the retail LPG. Retail prices of gas cylinders in Dubai and the northern emirates have been increased by between 13 and 17 per cent, with effect from 8th August 2015, in line with escalating international gas prices. Sub-distributors are observed to be willing to negotiate prices with customers.

Size of Cylinder	Recommended consumer sale prices (AED)
11-kg	65
22-kg	100
44-kg	215

Table 4.2 Retail LPG Prices in Dubai. August 2015

Sharjah

Sharjah uses natural gas network. No or little use of cylinders are believed to exist in Sharjah. Sharjah Electricity & Water Authority (SEWA) manages the natural gas network in Sharjah and other areas under its control, in addition to managing water and electricity sector in the emirate. SEWA built gas network infrastructure in 1997. Currently, SEWA distributes gas to over 220 thousand customers in addition to industrial entities, 50 hotels, 14 shopping malls, 10 schools and 2000 restaurants.

SEWA has approved 15 contractors for piping and installations in houses. Moreover, SEWA indicated that no single accident has happened since the establishment of the gas network, whereas there were some accidents when they were using LPG cylinders

The monthly gas consumption of the network is estimated at 4.5 million m³ and is sold to all consumers at a fixed price of AED 1.25 per m³. Average household bill is 30 to 50 AED per month.

Kuwait

Kuwait Oil Tanker Company (KOTC), which

is owned by the government, is the only LPG gas bottler and wholesale distributor in Kuwait. In 1960, KOTC was licensed to fill and distribute LPG cylinders in the Kuwaiti local market and in 1962, an LPG filling plant was built with an annual capacity of 1 million cylinders (12 kg) at the Mina Al-Ahmadi Refinery, but the plant was shut down many years ago. In 1986, an LPG filling plant in Mina Abdullah Industrial Area was built with an annual capacity of 15 million cylinders (12 kg). The operations of the plant are fully automated.

In September 2010, KOTC signed contract with South Korea's Hanwha Engineering and Construction Company to establish a liquefied gas plant in the Umm Al-Aish area. Now the plant is able to fill 15 million cylinders of gas every year.

Currently, there are around 75 distribution points in Kuwait, including some gas depots and supermarkets that have separate areas approved by the civil defence authority. The great majority of customers go to the supermarkets and pick up cylinders. However, some supermarkets deliver these cylinders to customers.

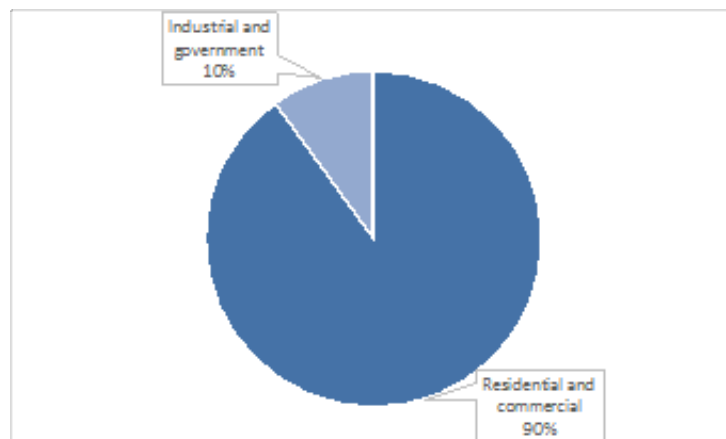


Figure 1 LPG Consumption in Kuwait by Sector

Current annual consumption of LPG in Kuwait is around 140,000 tons of which the residential and commercial sales account for about 90%, with industrial and government sales account for the balance.

In March 2013, KOTC announced that it distributed 40,000 cylinders per day. Almost all residential requirements are 12-kg cylinders while 25-kg cylinders are widely used by restaurants and for commercial purposes which also use 12-kg cylinders but on a small scale.

According to the data published by OAPEC databank, the demand of LPG in Kuwait was estimated at 140 thousand tons in 2014 while the production reached 4.6 million tons in 2013.

The main cylinder sizes are 5, 12 and 25 kg. It is believed that more than 70% of the cylinders are of the 12-kg cylinders, which are primarily used by the residential market.

KOTC announced approval of two sizes of lighter weight, steel cylinders (5 & 12 kg) in April 2011. In early 2013, gas stations in some parts of Kuwait started distributing new gas cylinders made of a lighter weight stainless steel. The price of with the cylinder with gas is KD 11.750. Although the price of an empty light-steel cylinder is higher, demand for light-steel cylinders is said to grow.

Composite cylinders have not yet been approved in Kuwait and it seems that for the time being there is no intention to introduce composite cylinders.

Cylinders are owned by KOTC and the customer pays a security deposit. A few parties, like supermarkets, own their own cylinders. The customer pays KD 7.500 for an empty typical steel cylinder as a security deposit which is refunded when the cylinder is returned back in good condition.

KOTC refurbishes damaged cylinders. The large maintenance area for both 12 and 25 kg cylinders includes equipment for pad printing, tare weight marking, painting, washing, valve changing, shroud straightening, foot ring straightening, valve screwing, valve greasing, testing date marking, thread cleaning, pressure testing, tagging, check weighing, and valve seal detection.

LPG in cylinders are subsidized by the government while LPG in bulk (tanks) is based on international prices and set by the Kuwait Oil Corporation in coordination with Aramco.

For 12-kg cylinders, the gas price for sub-distributors (supermarkets and gas stations) is KD 0.700 (KD 0.0583 per kg) and KD 0.750 (KD 0.0625 per kg) for individual customers. The initial outlay for the first cylinder of gas and a regulator is KD 7.500.

KOTC gives discounts for sub-distributors. However, in 2011, KOTC reduced the discounts. The retail LPG price is regulated by the government and has been the same for more than 15 years. The table below shows the available sizes of cylinders and corresponding refilling prices.

Cylinder Size	Price (KD)
5-kg	0.550
12-kg	0.750
25 kg	1.600

Table 4 Retail LPG Prices in Kuwait

Qatar

WOQOD is the only producer and overall distributor of LPG in Qatar. Cylinders can be bought at supermarkets which, at the time of writing this report, are around 99 supermarkets as well as at WOQOD petrol stations which are around 15 stations.

In 2009, WOQOD started the operation of an LPG bottling and distribution station at the Industrial Area in Doha, as the old station which was constructed more than 33 years ago was unable to meet the growing domestic needs. The new LPG plant has two bottling lanes to fill the 12-kg cylinders and each lane can bottle more than 1,200 cylinders per hour, whereby the bottling capacity exceeds seven million of 12-kg cylinders a year if the station is run in two shifts daily. This exceeds by far the needs of the local Qatari market.

WOQOD estimates the production capacity of the station to be sufficient to meet the needs of the local Qatari market for the next 25 years. The station is capable of filling the metal and plastic reinforced cylinders.

There were joint efforts that started in 2008 with Muwasalat (Karwa) to spread the use of LPG in Karwa taxis and buses. In 2008, the first station to supply LPG for vehicles was opened and Karwa used LPG for the first time on some buses and some small taxis. However, LPG for vehicles sales was modest and did not exceed 126 metric tons

in 2009. The project was stopped and no LPG for vehicles is used now.

According to the data published by OAPEEC databank, the demand of LPG in Qatar was estimated at 123 thousand tons in 2014 while the production reached 3.1 million tons in 2013.

Two sizes of cylinders are available, Shafaf and metal of 12-kg and Shafaf of 6kg. The 48-kg cylinders were stopped in 2010. WOQOD introduced a new transparent gas cylinder called Shafaf, which is a fiberglass and plastic cylinder late 2009. The Norway-based Ragasco is the manufacturer of Shafaf cylinders.

Bulk tanks can be used for villa customers where bottle changes are frequent and LPG is transferred and filled by road tankers. WOQOD installs telemetry system for remotely monitoring the levels of tanks and anticipatory delivery. Therefore, customers need not order the quantity as WOQOD will manage the LPG stock. So far, WOQOD has approved five contractors for LPG bulk installations.

Qatar Targets compete phase out of metal cylinders by 2018. The cylinders are owned by the customers. The cylinder cost is not refunded when it is returned back to the distributor. WOQOD refurbishes cylinders.

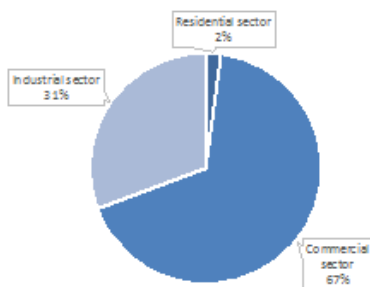


Figure 9 LPG Bulk Demand in Qatar by Sector

LPG is subsidized in Qatar. The following table shows the prices of retails LPG.

Cylinder Type & Size	Price (QR)
Shafaf (12 kg) new cylinder outlay	350
Shafaf (6 kg) new cylinder outlay	275
Refilling 12-kg cylinder	15
Refilling 6-kg cylinder	8

Table 5 Retail LPG Prices in Qatar

For bulk LPG, the price is shown in the following table. WOQOD makes bulk deliveries and doesn't charge anything extra for delivering

Monthly Usage of LPG (Litre)	Price (Dirhams per Litre)
more than 26250	54
from 10500 to 26250	57
less than 10500	60

Table 6 Bulk LPG Prices in Qatar

Oman

Petroleum Development Oman (PDO) and Oman Refineries and Petrochemicals Co. (ORPC) supply LPG to bottlers. The LPG bottlers who perform whole and retail distribution functions include National Gas Company (NGC) which announced that it has 50% share of the Omani LPG market. NGC is active outside Oman as well, specifically in the northern emirates of UAE.

The LPG bottlers include also Muscat Gas which operates four LPG bottling plants in Rusayl, Sur, Mussana and Izki and several distribution centres.

There are more than 14 active sub-distributors in Oman. The great majority of cylinders are delivered to customers and the amount of the delivery charge depends on the location of the customer. Customers can pick up their cylinders from distributors. Cylinders are available mainly in 22-kg and 44-kg sizes and to a lesser extent in 11 kg.

The great majority of cylinders are owned by the distributors (bottlers). However, some sub-distributors own their cylinders too. Distributors (bottlers) refurbish the cylinders and cylinders conform to Omani Standards No 90/201 & GSO standards for general requirements.

According to the data published by OAPEC databank, the demand of LPG in Oman was estimated at 109 thousand tons in 2014 while the production reached 342 thousand tons in 2013.

Prices of the main cylinders' sizes are as follows:

- Refilling 44-kg which is used mainly for restaurants is OMR 5.6
- Refilling 22-kg which is used mainly for residential purposes is OMR 2.8

Pricing review was done in 1994, when the Ministry of Oil & Gas issued Ministerial Order No 11 which regulates the LPG prices of all areas of Oman, except Dhufar area.

. The price regulation is as follows:

Refilling 22-kg cylinder	Before Ministerial Order No 11, (before 1994)	Ministerial Order No 11 (now)
Price to distributors	OMR 1.7	OMR 1.9
Price to customers	OMR 2.7	OMR 2.8

Table 7 LPG Prices in Oman

It seems that sub-distributors are willing to negotiate the prices of LPG. Early 2012, bottlers decided to increase the prices of 22-kg cylinders to distributors from OMR 1.9 to OMR 2.2 but the governmental authorities intervened and stopped the price increases and promised to study the pricing mechanism.

Conclusions and Summary of the GCC's Market and Industry Structure

LPG domestic demand, in the form of butane, in the GCC is almost exclusively used as a cooking fuel. There are no large-volume industrial users currently in the GCC and the overall industrial usage, with the exception of its use as chemical feedstocks and in gasoline blending, is considered insignificant, mainly in the workshops or industry for cutting or brazing purposes.

With exception of Sharjah in the UAE which uses natural gas network, all other GCC countries use LPG in cylinders or in small tanks. The prices of LPG in cylinders are heavily subsidized in all GCC locations other than Dubai.

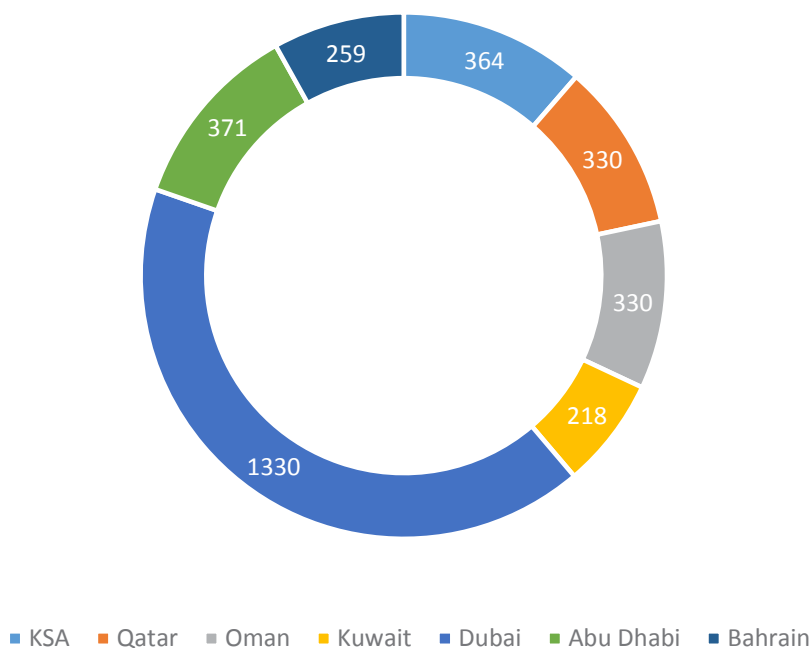


Figure 1 GCC Prices of LPG in Cylinders. Early 2016

(US dollars per ton)

The table below shows the variations in LPG market among GCC areas. It is worth mentioning that bulk LPG is not subsidized in Kuwait, Dubai & Abu Dhabi.

Country	Cylinder Sizes Available	Bulk Price	Major Household Supply Mode
Bahrain	20, 40 & 100 lb	Subsidized	Delivered to residence
KSA	11 kg	Subsidized	Delivered to residence
Abu Dhabi, UAE	11, 22 & 44 kg; 44 kg being phased out	Not subsidized	Delivered to residence
Dubai, UAE	11, 22 & 44 kg	Not subsidized	Delivered to residence
Kuwait	5, 12 & 25 kg	Not subsidized	Pick up at supermarkets
Qatar	6 & 12 kg	Subsidized	Pick up at petrol stations and supermarkets
Oman	22 & 44 kg, and a few 11 kg	Subsidized	Delivered to residence

Table Summary of LPG Market in GCC Areas

According to the data published by OAPEC databank, the demand of LPG in the GCC was estimated at 2.3 million tons in 2014 while the production reached 7.4 million tons in 2013.

While LPG is a basic commodity for the GCC population, the pressing and difficult question for the GCC governments amid the current economic downturn and the low oil price environment is “should LPG subsidies be removed or reduced?” It is a paradoxical question as the LPG prices generally fall when oil prices fall. However, the GCC is a major oil producing region which has been relying to a great extent on the revenues generated by the sales of crude oil and natural gas. This situation has re-

sulted in budget deficits or constraints in the governments which had enjoyed surpluses over the many past years.

The author reckons that, sooner or later, subsidies will be removed or reduced in response to the dynamics of the market. However, the key issue from the author’s point of view is that the governments’ support for people in need should continue regardless of the health of the economy, and pricing schemes should be devised accordingly. A balanced formula that takes into consideration the dynamics of the free market while protecting and supporting the people in need is wise directions of the concerned authorities.

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3. Sussex Consulting’s database.
4. Annual reports of GASCO, ADNOC, KOTC and WOQOD



Seena Dashty – Raed Almaskati
AlchemiTec Consultancy

Insight into catalysis and the GCC consumption of catalyst

The process “catalysis” is the backbone of many industrial “chemical” processes. Through catalysis process the rate of a chemical reaction increases without modifying the overall energy change but with participation of an additional substance “catalyst” to turn raw materials into valuable products.

In Chemistry, a substance that causes or accelerates a chemical reaction without itself being affected is catalyst. In other words, catalysts speed up a chemical reaction by lowering the amount of energy needed to occur. Furthermore, catalysts are essential for industry because they improve yields which makes production more profitable.

Types of Catalysts

There are various types of catalyst but the main are heterogeneous and homogeneous catalyst types.

Heterogeneous catalysts Function in a different phase than the reactants. Most

heterogeneous catalysts are solid that act in liquid or gaseous phase of a reaction mixture. They have diverse mechanisms for chemical reactions to occur on their pore surfaces, in particular active sites, where reactant molecules are adsorbed and carry out a reaction. As a result the chemical reaction actually takes place on the active sites of a catalyst.

The total surface area of heterogeneous catalysts have an important effect on the reaction rate. The smaller the catalyst particle size, the larger the surface area for a given mass of particles.

Homogeneous catalysts is another type of catalysts and perform in the same matter phase as the reactants. The mechanistic principles applied in heterogeneous catalysis are generally applicable here as well. Typically homogeneous catalysts are dissolved in a solvent together with the reactants.

Effects on catalyst performance:

A catalyst can participate in multiple chemical reactions. The impact of using catalyst may vary due to the presence of other substances known as inhibitors or poisons or promoters.

Substances that reduce the activity of catalysts are called catalyst inhibitors if reversible, and called catalyst poisons if irreversible. Promoters are substances that increase the catalytic activity, even though they are not catalysts by themselves.

Inhibitors reduce the reaction rate since it would continue to occur by the non-catalyzed reaction path, they act either by deactivating catalysts, or by removing reaction intermediates.

Catalyst mechanism:

Kinetically, catalytic reactions are typical chemical reactions, where catalyst participates in the slowest reaction step and the rates are limited by amount of catalyst and its "activity". In heterogeneous catalysis, the diffusion of reagents to the active sites and diffusion of products from the active

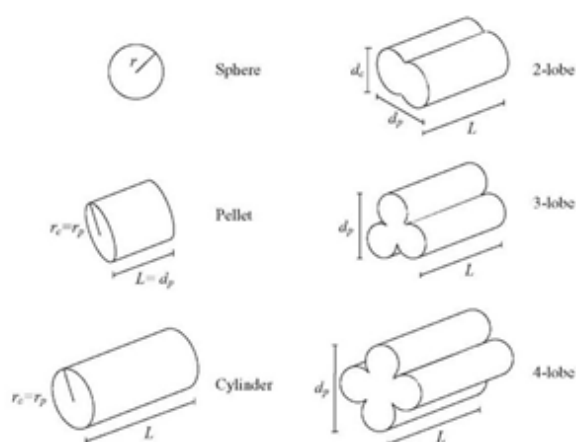
sites can be rate determining.

Catalyzed reactions have a lower activation energy than the corresponding uncatalyzed reaction, resulting in a higher reaction rate at the same temperature and for the same reactant concentrations.

Although catalysts are not consumed by the reaction itself, they may be inhibited, deactivated, or destroyed throughout its entire life cycle.

Catalyst shapes:

Catalyst comes in variety of shapes (ex: spheres, cylindrical rings, pellets, cylinders, trilobe, quadralobe as in picture) and sizes, depending on the operating conditions such as temperature and pressure beside feed composition which will be in contact with the catalyst. Moreover, catalyst shape and size are also significant factors to avoid some mechanical issues such as plugging and pressure drop (dP) build up over catalyst bed caused by catalyst breakage/crushing and impurities deposits. Therefore the selection of the right catalyst type is a very important task.



Picture 1: Different catalyst shapes. Reactor Modelling 1 (internet source)

Catalyst selection:

Choosing catalyst for any chemical process in industry require a detailed selection procedure of the specifications and process requirements. Typically features such as catalyst activity, amount and shape, life cycle, regeneration and pressure drop buildup in addition to catalyst batch delivery and price all are included in the selection procedure.

GCC catalyst consumption:

In general, large amounts of catalysts are consumed in refineries, petrochemical and chemical plants. In refineries, catalytic conversion processes i.e. alkylation, hydrotreating, hydrocracking, reforming, fluid catalytic cracking in addition to sulfur production are among the main units consuming catalysts. Fertilizer plants use diverse types of catalysts to manufacture fertilizers. Almost all chemical plants utilizes catalyst to produce end products for the market.

The GCC refining industry which drives the catalyst market has seen major growth in the last years by commissioning large-size refineries with complex refinery configurations. This leads to larger catalyst consumption for conversion units with higher processing flexibility. At present, the GCC refining capacity is totaled 4.9 million bpd and is expected to double by 2020().

All the new refineries in the GCC will con-

tribute to increased consumption rates of refinery catalyst mainly in hydrotreating and hydrocracking units. The demand for GCC refinery catalyst is expected to increase in average by 8% annually to 2020().

The petrochemical production capacity of the GCC region reached 142.1 million TPA in 2015(). A 4.1% increase from 2014. The GPCA estimates that petrochemical producers in GCC will increase their capacity roughly by 45% over the next five years, reaching over 200 million TPA by 2020.

As a conclusion, the GCC is expected to have a moderate increase in ammonia production and therefore, ammonia catalyst demand is expected to increase around 4% in the next few years.

Plastics also referred to as polymers, account currently for over 17% of the GCC's total petrochemical capacity. Over the last years, the plastic production capacity in the region has almost doubled, rising from 13 million TPA in 2008, to around 25.5 million TPA in 2014. GPCA estimates that overall plastic production capacity will increase to 33.3 million TPA of polymer products by 2020, which is a growth of around 25% from the current capacity. Leading to increased catalyst consumption for an emerging trend and diversification of products portfolio, for wide ranging applications in the aviation, transport and food packaging sectors.

GCC	2014
Bahrain	260
Kuwait	936
Oman	222
Qatar	283
Saudi Arabia	2,507
United Arab Emirates	702

Table 1 GCC Refinery Capacities in thousand barrels per day (2)

1. OAPEC Databank
2. OAPEC Databank
3. The Middle East Market Study, 2016
4. Gulf Petrochemicals and Chemicals Association (GPCA).



BSE Takes Part in the Meetings of Federation of Arab Engineers

BSE participated at the meetings of the Supreme Council of the Federation of Arab Engineers, 73th session, held on 24 and 25 February 2017. In at the Algerian capital "Algiers".

The delegation was headed by BSE president Masoud Al Hermi accompanied by Mr. Jawad Al Jabal. The meeting discussed the items on the agenda which covered the activities of the Executive committee, Permanent Office, specialized entities committees in addition to conferences. The meeting took note of the preparatory processes with regards to seminars as part of 28th Arab Engineers Conference to be hosted by on Society of Engineers in 2018.



"Gulf Engineering Union" celebrates the first Khaleeji Engineer Day

On Saturday, April 29th 2017, Bahrain Society of Engineers hosted the meetings of the Gulf Engineering Union alongside with a workshop to celebrate the Khaleeji Engineer Day for the first time in the Kingdom of Bahrain. This occasion recurs on April 30 of each year.

On this occasion, the Secretary General of the Gulf Engineering Union, Engineer Dr. Kamal Al Hamad said: "This comes within the framework of adopting the strategic transformation in the programs of the Gulf Engineering Union. This is represented in the true initiation to activate the communication, knowledge and expertise exchange among the Gulf engineering bodies, which also reflects the vision of the GCC leaders. Al-Hamad noted that the selection of the Gulf Engineer's Day to be on April 30th was not a recent decision. Nonetheless, the decision was approved by the Supreme Council of the Gulf Engineering Union to coincide with the establishment of the Union back in 1997.

Regarding the selection of the kingdom of Bahrain as a host for these meetings, Al Hamad pointed out that the Kingdom of Bahrain is a pioneer in hosting such specialized events. He also considers the Kingdom as an "incubator" for the gulf countries especially that Bahrain will host the next Gulf

Engineering Forum in January 2018. Bahrain is one of the first countries to support the union and the vocational work in all of the GCC countries. From this point, Dr. Al-Hamad took the opportunity to extend his sincere gratitude and appreciation to His Excellency Sheikh Khalid bin Abdullah Al Khalifa, Deputy Prime Minister for his continuous support to the activities of the Gulf Engineering Union.

The union held a number of meetings in order to form teams for various purposes. A database and information technology team, a team to activate the communication and the membership benefits, and a team to activate registration, accreditation and vocational examination among the Gulf engineering bodies. In addition, a workshop took place “The Vocational Accreditation, Engineers Classification and Vocational Engineering Examinations”. The Saudi body has made strides in this area, while the Sultanate of Oman and Kuwait are in their beginnings; hence, the union is working to attract other countries to adopt the process of engineers’ classification and to develop examinations for the GCC countries to benefit from.

“The Bahrain Society of Engineers was honored to have a brotherly meeting at the Bahrain Engineers House, where the society hosted the gulf meetings and activities that also coincided with the celebration of the Khaleeji Engineer, the 30th of April. The purpose of these meet-

ings is to have continuous gatherings and reunions among the gulf engineering bodies that serves the engineering sector and profession in the GCC countries and serves the engineers as well” said Masoud Ibrahim Al-Harami, Chairman of the Bahrain Society of Engineers.

He also added that the gulf engineers have contributed to building the current urban and industrial renaissance we are living in. He also shed light on the importance of the meetings stems from the importance of the communication between the bodies and the engineers on the Arabian Gulf level in order to activate the joint projects between Gulf engineers so that the GCC countries benefit as a whole”.

“As for the concurrence of the endorsement of the Khaleeji Engineer Day and The Year of The Bahraini Female Engineer that was announced in February, the two events is a nice coincidence. This is especially while Bahrain is hosting the celebration of the Gulf Engineer Day for the first time, and the meetings of the Union Committees who are responsible for the teams working on the projects. Namely, the database and IT teams among the bodies, the team to activate the communication and the membership benefits, and a team to activate registration, accreditation and vocational examination among the Gulf engineering bodies”, said Mr. Al Harami.



BSE Participates in the “20th Forum of Gulf Engineering Union” IN the UAE

The BSE participated in the activities of the 20th Gulf Engineering Union and the meeting of the Supreme Council of Gulf Engineering Union which was held during the period 21-22 February 2017 in Dubai, United Arab Emirates.

The delegation was headed by BSE Masoud Al Hermi, accompanied by Mr. Jameel Khalaf Al Alawi, Director of Conferences, Ayman Mohammed Nasser, Director of Training, Reem Khalfan, Director of Media and Public Relations and Mahdi Taher Al Jalawi Director of Membership and Profession Affairs.

During the meeting, the amendments to the Union's constitution and the Award by laus were approved. Furthermore, the subject, hillex sub-jilles of the Forum of the 21st Gulf Engineering Forum were approved.

Also, during the forum two of Bahraini pioneers

in the engineering field were honored, namely Dr. Abdul Imam Al Samak, and Faiq Juma Mandeel.

Sayed Bader Al Alawi from Ministry of Works also accompanied the delegation, and submitted a paper entitled "An Overview on Bahrain Experience in Construction of Tunnels".

The main topics for the 21st Gulf Engineering Forum, which will be hopefully hosted by the BSE in January 2018, were approved. The BSE has in the past hosted three forums i.e. the 3rd, 9th and 15th.

Under the Auspices of the Minister of Education BSE Organizes "Engineering Professions Exhibition 2017"



His Excellency Dr. Majed bin Ali Al-Noami, Minister of Education inaugurated the Engineering Professions Exhibition 2017. This 2-days event, was organized by the Bahrain Society of Engineers on 27-28 February 2017 at the headquarters of the BSE. Shine the light on different Engineering specializations, perform its CSR as well as.

This specialized exhibition, that attracted around 1000 students from 27 private and public schools, is part of the initiatives to enhance engineering profession. During the exhibition students of public and private schools were introduced to the different branches of engineering in general, and the role of engineer to improve and develop.

During the exhibition, the role played by the BSE was highlighted in supporting and helping students and the facilities it offers for engineering studying.

It should be noted that the Bahrain Society of Engineers is the authorized body that represents engineer in the Kingdom of Bahrain.

BSE inaugurates a program to celebrate Bahraini Female Engineer



The Engineering Society organized the inauguration ceremony to celebrate the Bahraini Engineer Women's Day on Thursday, 18 May 2017 at the Society's headquarters. This organization was in line with the announcement by the Supreme Council for Women to consider the year 2017 for the Bahraini woman engineer.

The president of the Bahrain Society of Engineers, Eng. Masoud Alhermi, praised the continuous support of the leadership to the Society, stressing that this support contributed to the aspiration of the Society's employees to achieve and accomplish more in the engineering field.

During the ceremony speech, Alhermi shed light on the leadership support to the workers in the engineering sector represented in the announcement of President of the Supreme Council for Women, HRH Princess Sabeeka Bint Ibrahim Al-Khalifa, to dedicate the 1st of December 2017 to the Bahraini Woman's Day and to celebrate the Bahraini Engineer woman.

He stressed that the Bahrain Society of Engineers decided to launch an integrated program that includes activities highlighting the efforts and achievements of Bahraini women engineers throughout the year, in line with the announcement of the Supreme Council for Women.

He pointed out that the Bahraini woman was and is still surrounded by the full care of the leadership, stressing that the Supreme Council for Women is keen to provide women with justice in various aspects. He also shed light on the fact that both female workers and housewives have taken their share of empowerment, advancement to achieve their ambition in society. He also praised the achievements of the Supreme Council for Women in empowering Bahraini women at various levels.

On the other hand, a number of Bahraini female engineers praised this honor, by Her Royal Highness Princess Sabeeka Bint Ibrahim Al Khalifa, the Queen consort of Bahrain, and the President of the Supreme Council for Women. They stated that the council contributed to granting the Bahraini women a lot on various levels and in many fields. It also assisted women in attaining economic gains, which contributed to the advancement of the Bahraini family.

Tamkeen Receives BSE Delegation



Dr. Ibrahim Mohammed Janahi, Chief Executive Officer of Labor Fund (Tamkeen) received the BSE delegation, headed by Masoud Al-Hermi accompanied by Ayman Naser, Director of Training, and Engineer Jameel Khalaf Al Alawi, Director of Conferences as members on Sunday evening 26 February 2017.

During the meeting, various issues of mutual concern were discussed by the two parties. It was agreed to organize a number of common future events which will be held with the support of Tamkeen. The meeting was attended by a number of officials from Tamkeen.

BSE Signs a Memorandum of Understanding with Federation of GCC Chambers



The Bahrain Society of Engineers signed a Memorandum of Understanding with Federation of GCC Chambers on Wednesday 18 January 2017. The MOU was signed by Masoud Al Hermi president BSE, Chairman, and Mr. Abdul Raheem Naqi, Secretary General of the Federation, at Bahrain Chamber of Commerce and Industry “Bait AlTijjar”, in the presence of number of Board members.

Commenting on this occasion, Mr. Abdul Raheem Naqi said: “Through this MOU, the two parties will cooperate in organizing conferences, workshops, exhibitions, forums, studies, as well as exchanging visits and media releases.

In his response, publications Mr. Masoud Al Hermi said: “This MOU aims at enhancing the relations of the BSE with all professional organizations in the Kingdom. The Federation of GCC Chambers is an establishment which is vastly extended through the GCC countries and deals with a significant stratum, which is considered the backbone of the local and Gulf economy. It is of paramount importance and in additional maintains strong ties with the engineering sector.

The launching announcement of the Bahrain International Property Exhibition – BIPEX - October 2017



Bahrain International Property Exhibition (BIPEX) announced the launch of its 10th edition in a press conference held at “Downtown Rotana” Hotel on Wednesday, March 29, 2017. BIPEX is considered as the most prominent property exhibition in the Kingdom of Bahrain where its activities extend to 3 days starting from the 26th to the 28th of October 2017 at the Bahrain International Exhibition and Convention Centre, held under the patronage of H.E Sheikh Khalid bin Abdullah Al Khalifa, Deputy Prime Minister of Bahrain.

Engineer Masoud Al-Hermi, Chairman of the Bahrain Society of Engineers, said: “BIPEX witnessed a remarkable development over the last decade and has succeeded in establishing its presence as one of the region’s leading property exhibitions. This contributed in enhancing Bahrain’s position and making it a preferred regional destination for real estate investment.

By launching the 10th edition, we are aiming to make a drastic shift to the exhibition to be in line with the unprecedented transformation of the real estate market. Based on the success of the exhibition last year, we aim to bring

together the largest gathering of Bahraini real estate projects in order to give them the opportunity to connect with investors, buyers, financiers and the public from across the region to display their success stories. “

“This year’s BIPEX exhibition is expected to witness one of the strongest and best amongst its editions in terms of attracting the most important local exhibitors and showcasing the most important projects that were recently launched by the leading regional and international players in the field,” said Mohamed Khalil Al Sayed – BIPEX organising committee head. Our aim from organizing this exhibition is to provide investors with a deeper understanding of the massive potential of Bahrain’s property market, and to highlight the strategic position of the country as a world-class business and tourism hub for investors. “Given the success of the Bahraini real estate sector in continuing to adapt and grow, BIPEX will present this development to the public to elevate their confidence levels in the strength of our economy.”

BIPEX is back in 2017 in its 10th edition to reassure the pivotal role of the economic diversification in the Kingdom by highlighting the

achievements in the areas of infrastructure, real estate and leisure projects, as well as the wide range of competitive offers of high value that are available in the market. The exhibition in its 10th edition will seek to highlight the importance of economic development and the increase of the investment opportunities that are available in the Kingdom.

During the press conference, an innovative marketing campaign was revealed to advertise BIPEX 2017 with an approximate cost of one million US dollars. The campaign includes print and outdoor advertising, social media advertising via various social media platforms, online advertising. Adding to that will be the television ads that will be utilised for the first time. A partnership between BIPEX and Orbit Showtime was announced to highlight the exhibitions' 10th edition, 2017 to attract investors and buyers in the real estate sector from the Gulf and the Middle East region.



Masoud Al-Hermi Takes Part in “ASHRAE” Meeting

BSE, president Masoud Al Hermi attended the Winter Conference of the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) holding Las Vegas United States – during period Jan 27th till Feb 3rd.

During the conference, the Chairman met with the senior management of the ASHRAE'S where they discussed the relations between the two societies. The request of the BSE to host the regional center for training, that “ASHRAE” intends to establish for the first time outside the United States of America, was also addressed.

In 2015 BSE joined ASHRAE as an “associate society member” and as such BSE benefits from the training workshops that are organized by “ASHRAE” in addition to receiving the latest publishing related to the specifications and guides.

Sheikha Mai receives the Secretary General of The Supreme Council for Women in preparation for Bahrain Women's Day



On June 6, 2017, Her Excellency Sheikha Mai Bint Mohammed Al Khalifa, Chairman of the Bahrain Authority for Culture and Antiquities received a delegation from the Higher Council for Women at Bahrain National Museum. The delegation was headed by the Secretary General of the Council, Ms. Hala Al Ansari, and in the presence of the President of the University of Bahrain, Dr. Riyadh Hamza and the president of the Bahraini Society of Engineers, Engineer Masoud Al Harami. The purpose was to hold a preparatory meeting for the celebration of Bahraini Women's Day in December.

"We are delighted that the Culture Authority is an active partner in Bahrain's celebration regarding Bahrain Women's Day, 2017. This is because we believe in the role that women take in building societies and their prosperity. This also reflects on the work of the Supreme Council for Women under the supervision of Her Royal Highness Princess Sabika Bint Ibrahim Al- Khalifa, the wife of the king of the country, may God bless her.", said the Chairman of the Bahrain Authority for Culture and Antiquities during the meeting.

Her Excellency also stressed on the importance of cooperation between the various official and private bodies in order to improve the community work and to celebrate the events that enhance the status of Bahraini's for instance, Bahraini women's day that is based on appreciating women and her contributions in the Kingdom of Bahrain.

The meeting was followed by a visit to the Pearl Road Exhibition at the Bahrain National Museum. This features the Pearl Road project, which will be completed next year as part of the activities of 'Muharrag, Capital of Islamic Culture 2018. This project is one of the projects on the UNESCO World Heritage List since 2012.

"The Bahraini Female Engineer – A Future Vision" is the very first event of the Bahraini women's day in the field of engineering in 2017



The Society held a discussion evening entitled "The Bahraini Female Engineer - A Future Vision" on Tuesday, 13 June 2017 at the Society's headquarters in Juffair. The discussion evening was the first of the activities launched by the society through a program to commemorate the Bahraini women in the engineering field, in conjunction with the celebration of the Bahraini Women's Day by The Supreme Council for Women and the declaration of 2017 as the year of Bahraini women in the engineering field. The evening included several key areas; the most notable one is the achievements of the Bah-

raini female engineers. Another key area was their aspirations, the future vision and how to achieve those visions. In addition, one of the areas mentioned the means of empowering the female engineers in various fields and the lessons learned from the success stories of these engineers. The evening included a number of engineers who had their fingerprints in the engineering field. They were; Engineer Mariam Al Yahya, Engineer Shatha Al-Waswasi and Farah Al-Halwaji, each of them represents a different era.

Launch of "Engineers Forums" for the Members and Interested People



The Bahrain Society of Engineers recently launched the "Engineers Forums" which aims to discuss issues of public interest. The first theme program of the forum was Participants "Local Engineering Offices and Globalization Challenges" which was held on Tuesday 17 January 2017. Were Dr. Wafa Al Mansori, Deputy Chairman of the Council for Regulating the Practice of Engineering Professions, who illustrated different articles of the Mr Tariq Ahmed Kamal from the Society of Engineering Offices, and Engineer Dheya Abdul Aziz Tawfiqi, Chairman of the Federation of Arab Engineers.

Dr. Wafa Al Mansori discussed in her paper the clauses of Law No. 51 of 2014 in respect with regulating the practice of engineering professions at the Kingdom of Bahrain, especially those related to the activities of the engineering offices. spoke about the obstacles of engineering work and discussed some of the concerns of the Bahraini engineering offices. Which discussed issues related to globalization and explained its advantages and resulting outcomes in term of openness to foreign experiences under the framework of engineering. He focused on coalition between the local and foreign offices and the introduction of laws in this regard to keep up with globalization and benefit from it, in addition to encouraging the local offices for further development.

BSE Held its ordinary AGM



This was decided after the regular meeting of the general assembly that took place on the 20th of March, 2017 in the society's headquarter in Juffair. In this meeting, the literature and the financial reports were discussed and approved, the recommendations raised by the board members were also adopted.

The elections supervising committee consisting of five members was also elected to manage the election process. Four out of six members competed to run for 4 supplementary seats in the society board. The voting resulted in the following wins; Engineer Jawad Al Jabal; Engineer Abdulnabi Al Subah; Engineer Abdulhadi Al Attar; and Engineer Huda Sultan. Another winners in the elections were Engineer Marjan Madara and Engineer Majid Sharaf as backup members.

It is worth mentioning that 87 of the members who are eligible to vote attended the general assembly meeting.

Engineer Masaud Al Harami expressed his gratitude towards all of the society members for the trust they have in him and the support they show which he considered as a factor that motivates the board to achieve and accomplish the society's plans and programs. He also urged the society members to continue in supporting the working committees by their active participation in the society activities. He also thanked the board members, Engineer Ayman Nasser and Engineer Jameel Khalaf Al Alawi for their efforts during the period of time where they served as board members.

Engineers Discuss Future of Transportation Systems in the Kingdom of Bahrain

The 2nd Forum of Engineers was held on Tuesday, 7 February 2017 on “Future of Transportation Systems in the Kingdom of Bahrain”.

The forum began by discussing the paper of Mrs. Mariam Jumaan Undersecretary for Land Transportation and Post at the Ministry of Transportation and Telecommunications, which focused on the projects of public transport, its strategies, how to develop the patterns of public transport, and increase the rate of utilization by the citizens and residents. Followed paper presented by Mr Kadhem Abdul Latif , Director of Planning and Designing Roads at

the Ministry of Works addressed the systems of strategic roads and how to face challenges in the Kingdom through the increasing residential growth and increase in the number of vehicles for individuals which reached up to 650 thousand vehicles in 2016.

Finally Captain Hisham Al Mudhaky, representative of the General Directorate of Traffic discussed the role of smart traffic systems in regulating the traffic movement and its use in the roads of the Kingdom of Bahrain through preparing a smart system in the form of chambers for smart systems.



The BSE honors the Organizing Committee of the Engineering Careers Expo 2017



BSE celebrated a successful Engineering careers expo 2017, during which it honored the participating teams and the organizing committee of Eng. Career expo 2017 held on February the 27th and 28th under the patronage of Dr. Majid bin Ali Al- Nuaimi, Minister of Education. The president of the society, Masaud Ebrahim Al Hermi, confirmed that this ceremony was to express the appreciation and gratitude for all the

efforts put in place by the participating teams and organizing committee, headed by Engineer Huda Sultan Faraj to successfully accomplish the objectives of this exceptional exhibition. This specialized exhibition is considered to be one of initiatives of the BSE to promote engineering profession. In addition, the exhibition aims at raising awareness and to inspire students to enroll in one of the various engineering disciplines. It is worth mentioning that more than 60 members of the organizing committee were awarded during the ceremony. The exhibition witnessed the attendance of a wide number of students and parents from both, public and private schools. Attendees of the exhibition also expressed their appreciation and benefit from the guidance provided by the professional engineers in various engineering disciplines who were available at the exhibition.

In the atmosphere of affinity and love.. The society celebrates its Ramadan Ghabga

The annual ghabga, organized by the society for its members on Tuesday 13 June 2017, took place at Eng. Hisham Al Shehabi Hall at the Bahrain Society of Engineers. The celebration comes within the framework of the Board's interest in enhancing the bonds and the social ties between the members of the society in various environments away from the pressures of work.

The ghabga program included several competitions and entertainment games that witnessed the engagement of the attendees, in addition to the drawing of prizes.



BSE hosts a symposium "Improving Power Factor and Reactive Power Compensation"



The Bahrain Society of Engineers hosted Mr. Mahesh Prasad Dash, Managing Director, Kano Energy Solutions, in a seminar entitled "Improving Power Factor and Reactive Power Compensation", on Tuesday 23rd May 2017, organized by the Society's Activities Committee.

The seminar focused on the creation awareness of the electric power, the reduction of electrical network losses, the development of the life cycle of the devices, the avoidance of excess reactive energy fees, the improvement of the life span of electrical installations, and the saving of electricity total cost.

It is worth mentioning that Mr. Mahesh has been a Director of Kano Energy Solutions since 2010, and holds a Master's Degree in Electrical Engineering from the National Institute of Technology, India. He has a Global Business Management degree from Bangalore.

The Training Centre organizes courses in "Practical Use of FIDIC Contracts"



The Society of Engineering Training Centre organizes training courses on "Practical use of FIDIC contracts". The first session was from the 23rd to the 27th of April, while the second session is from the 12th of May until May the 17th 2017.

In order to organize all aspects of projects implementation, there has to be contracts where all procedures, limitations, contributions, rights and obligations are regulated.

This ensures that all parties receive their rights without any discrimination or bias.

The FIDIC contract forms are one of the most important legal documents governing the engineering and construction work procedures. The FIDIC contract is a construction contract that organizes the construction work series from the ground up. The FIDIC contracts belongs to the International Federation of Consulting Engineers, headquartered in Switzerland- Geneva.

FIDIC is a contract that defines the project outline, the partial details of the construction work, the employer's relationship with the contractor and with the supervising engineer as well.

On the other hand, the course aims to ensure that each participant is aware of the various models of the FIDIC contracts, and the essential basis to follow in order to choose the right contract from the pool of the FIDIC contracts. Every article in each of the FIDIC contracts is explained and discussed.

During the course, models of construction contracts are presented and discussed. The focus is on the problems that may occur during the construction implementation, the design contract and the legal directions to manage these obstacles. The course is based on various elements of the FIDIC Group contracts for the year 1999.

"Development of technical and judicial Reports writing" Course

The Training and Information Technology Centre of the Engineering Society presented a training program on "The Development of Technical and Judicial Reports Writing" for four days at the Ambassador Hotel in Juffair - Manama.

The aim of the course was to qualify experts and specialists in the courts. It also aims to develop the abilities and skills of the engineers and participants in this course with the rules and procedures of the engineering expertise before courts and arbitral tribunals. This course also enables its participants to acquire the essential and advanced skills related to the engineering expertise. The qualifying participants are then accredited and enlisted as experts in the Ministry of Justice and Islamic Affairs.

The course was prepared and presented by Dr. Manaf Yousef Hamza, an expert and an accredited arbitrator for over twenty years.

The program included several aspects, however, the most important topics are; The definition of an expert, the expertise in legislation and application, the preparation and report writing, the experts' meeting and the common topics between the conflicting parties, the areas of disagreement and reconciliation. It also included the examination, the appearance before the judge, the confrontation and the attendance in courts and arbitral tribunals.

The course witnessed the participation of engineers from Bahrain in addition to participants from The Kingdom of Saudi Arabia and The State of Qatar.





A Triumph in Gold and Silver!

BSE Toastmasters Club Takes All the Trophies at Area Contest

BSE Toastmasters Club members participated in the annual Area 48 speech contest. Under the theme “Pearl Hunters”, the contest was held on Friday 24th February 2017 at Bahrain Society of Engineers as a part of the Toastmasters International Championship of Public Speaking.

The contest featured four different tracks: International, Humorous, Evaluation, and Table Topics speech contests. Participants of each track were the top two winners from Area 48’s four clubs. Competing with 32 participants, BSE Toastmasters Club members slashed Gold and Silver trophies in all the tracks. Zahraa Dagher brought home a Gold Trophy for the International Speech Contest. Hussain Al Najjar and

Zahraa Dagher won the Gold and Silver Trophies respectively for Humorous speech contest. Hussain Al Najjar and Zahraa Dagher also won the Gold and Silver Trophies respectively for Evaluation speech contest. In addition, Jezrel Cacayan won the Table Topics Silver trophy marking a total of three Gold trophies and three Silver ones.

Winners were awarded by Toastmasters Area 48 Director Ahmed Alfardan and Contest Chairperson Ramla AlAnsari with the presence of Division A Director S. Abbas AlAlawi. It is noteworthy that BSE Toastmasters Club has a decade of history in building Champion speakers who represented the club at different contests locally and regionally.



Laughter Wins BSE Toastmasters Victory at Division Contest

BSE Toastmasters Club qualified to the Division contest which took place on March 17th, 2017 at Bahrain Society of Engineers. BSE Toastmasters Club is a part of Division A, one of Bahrain's four divisions.

Out of over 100 participants, 30 successfully qualified to the Division Contest.

Members who represented BSE Toastmasters Club at the contest were Hussain Al Najjar, Jezrel Cacayan and Zahraa Dagher competing at the various tracks of the competition: International, Humorous, Evaluation, and Table Topics speeches.

With a speech about the Bahraini culture and unique traditions Dagher won the Third Place at the Humorous speech contest.





World Champions Share the Secrets of Powerful Speeches

BSE Toastmasters Members attended “The Champion and Champion Maker” Workshop delivered by the Second Runner up of World Championship of Public Speaking 2016 Toastmaster Josephine Lee and her coach Professional TEDx Speaker Toastmaster Munjen Ng. In the workshop that happened on 11th March 2017 from the Bahrain Conference Centre in Crowne Plaza Hotel, Toastmasters Josephine and Munjen shared insightful tips to winning the championship of public speaking. Josephine also shared her experience as a contestant and the journey she took to rise above 35,000 contestants to win 3rd place in the World Championship of Public Speaking.

Shaping the Toastmasters Journey

Toastmasters Club Officers from Area 48 joined together for a workshop about the future of the area. The meeting took place on Friday 7th April 2017 at Bahrain Society of Engineers where officers from the four area clubs executive committees shared their learning experiences.

The Club Officers discussed the current state of their clubs and brainstormed future plans to ensure the clubs and members’ growth and development. The meeting also included training sessions where officers learned through various activities and reflection sessions.

The meeting is delivered in efforts to shape better educational experiences for the club members in their journey to cultivate communication and leadership skills.