

### Lessons Learned During Visits...

### A Forum for Exchanging Experiences



Al-Awadhi: There is still a long way to go, many challenges remain, and the operation stage is not the end

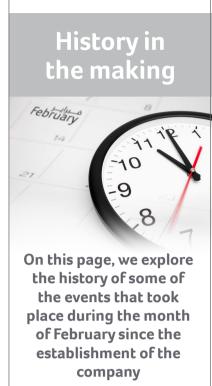
Al-Ajmi: "Cyber security" is one of the most critical economic and technological issues in the world today.





One of the most prominent strategic files prioritized by KIPIC is the one pertaining to work development, continuous excellence in performance, and the ongoing search for new developments in both science and practice to maintain production and further the company's objectives, as well as those of the oil industry and the nation's economy.

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### During a distinguished participation in the Gulf Downstream conference

## KIPIC delegation discusses many important files in Bahrain

Participation in external conferences and seminars is considered one of the foundations on which KIPIC is based, given the significant benefit of these participations in improving worker performance by introducing them to the latest means and methods of work as well as becoming acquainted with the various ideas that would lead to business development and performance improvement.

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Making more Possible

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### Lessons Learned During Visits...

### A Forum for Exchanging Experiences

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Al-Awadhi: There is still a long way to go, many challenges remain, and the operation stage is not the end





Scan to see the video



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One of the most prominent strategic files prioritized by KIPIC is the one pertaining to work development, continuous excellence performance, and the ongoing search for new developments in both science and practice to maintain production and further the company's objectives, as well as those of the oil industry and the nation's economy.

Seeing as cooperation between oil sector companies is one of the most crucial stages in the development of work through the sharing of experiences and knowledge among sister companies, KIPIC organized a forum for 'Reviewing Knowledge Sharing and Best Practices. The forum featured numerous lectures delivered by company officials as well as colleagues from other companies like the Kuwait Oil Company (KOC) and the National Petroleum Company (KNPC), along with the distinguished participation of the Kuwait Petroleum Corporation (KPC).

and Finance at KIPIC, during his speech at the forum, where he reinforced the need to increase knowledge sharing between various sectors, whether they are sectors inside or outside the company, and how doing so would help to improve work performance. stated Al-Awadhi that establishment of KIPIC, which began in 2016, came with the intention of managing large-scale strategic projects, and after the company faced a variety of obstacles and difficulties, we were able to wrap up

the establishment and construction

This idea was supported by Mr. Khalid

Al-Awadhi, Deputy CEO for Planning

phases and get started on the operation phases. However, there will still be difficulties in the coming years, with operability being the most crucial one.

The challenges are anticipated to persist indefinitely as long as we strive for continuity, expansion, and distinction in order to conform our directions with those of the oil sector, which continues to expand through large oil projects, he added. The operation stage is not the end, and there is still a long way to go, especially as we are on the cusp of expanding projects.

Al-Awadhi continued, "There are challenges related to the environment through which we aim to reach zero environmental pollution; contrary to the usual positive indicators that economic activity always seeks to approximate, we find that our task here is to approximate negative indicators, in addition to the challenges of expanding work and excellence in performance."

He further emphasized the importanceof field visits to sister company facilities, citing KIPIC's visit to one of the Kuwait Oil Company's projects, the

heavy oil production project, because of this project's special importance, given that receiving heavy oil is one of the important roles concerned with Al-Zour Refinery, so the visit to this project came to get to know closely its nature, the challenges it faces, and how to deal with them.

According to Al-Awadhi, this forum was organized in collaboration with oil associates, and during it, a few lectures on economic performance awareness and development were chosen to understand the worth of each dinar spent and the value of each dinar collected, as well as improving operational performance and energy transition.



Mr. Abdullah Fahad Al-Ajmi Deputy for Administrative Commercial Affairs, spoke on his part and said that this forum also aimed to focus on one of the most crucial economic and technological files, namely the cybersecurity file, which has turned into a "dangerous threat" for many significant economic entities around the world.

He clarified that passwords are one of the file's most crucial focal

points because they pose a serious threat to user accounts, constitute account infringement, and allow for the unlawful appropriation of funds. Al-Ajmi continued: "This theft, if it does not pose a serious problem for the owners of small amounts, is considered fateful for the owners of huge financial accounts, so their responsibility in protecting it is doubled, and this is what necessarily calls for following up everything new in the world of cybersecurity and constantly evolving in taking the precautions necessary to prevent such network intrusions."

He also addressed the other issue, which is related to the safety of children on the Internet, given that all children today, as young as five years old. use various electronic devices and access the Web. The wide world that the Internet presents is unconstrained by any prohibitive or deterrent borders, so the monitoring duty on the part of the parents becomes more cautious, and it is necessary to identify technological tools that assist them in carrying out this monitoring task successfully.

At the end of his speech, Al-Ajmi discussed one of the company's most notable outings, namely the trip to the gas filling plant in Umm Al-Aish. He emphasized that it was a "valuable visit," during which we came to know "a very important strategic stock in dealing with various future crises," and pointed out that the factory was constructed using the most recent technologies and is regarded as one of the key initiatives in the Kuwaiti oil sector.







### During a distinguished participation in the Gulf Downstream conference

## KIPIC delegation discusses many important files in Bahrain







Participation in external conferences and seminars is considered one of the foundations on which KIPIC is based, given the significant benefit of these participations in improving worker performance by introducing them to the latest means and methods of work as well as becoming acquainted with the various ideas that would lead to business development and performance improvement.

In this regard, KIPIC's participation in the Second Gulf Downstream Conference and Exhibition, which was recently held in the Bahraini capital, Manama, at the Bahrain International Exhibition Center, came under the slogan "Turning points of the refining sector and the extent of benefit of transformation."

More than 5,000 officials, technicians, and academics specializing in oil refining and petrochemicals took part in the events.

The conference aims to strengthen collaborative relationships, contribute to the growth of this industry, find appropriate and creative solutions to overcome challenges, exchange experiences and learn about the latest technologies in this critical field, as well as methods to develop the skills and capabilities of the workforce, gain experience, and improve productivity.

### Safety & Technology

Senior Eng. HSE Technical Support Heba Asad, spoke about KIPIC's notable attendance at the conference and how the workshop of specialized experts had contributed to a working paper titled "The Positive Impact of Technology on Improving the Performance and Culture of Health, Safety, and the Environment." The workshop was interactive and focused on knowledge enrichment; during it, "we presented many important reports and discussed the significance of the electronic screens that we implemented in KIPIC." "Our proud participation was greatly admired by the audience."

Eng. Fawaz Al-Omair, a HSE technical

support, confirmed that attending the conference had been both very beneficial and insightful. He added

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Heba Asad: The workshop was conducted in a very informative and engaging way

Fawaz Al-Omair:
We focused mainly
on the top digital
transformation
techniques in the areas
of environment, safety,
and health.

Bader Al-Jazzaf and Ahmed Al-Basri discuss the challenges of digital transformation in the field of asset efficiency management

Team Leader Major projects present his own experience in dealing with the challenges of the Al-Zour refinery project

that during the workshop, the impact of digital transformation and how to use it as one of the most useful tools to enhance the culture and performance of health, safety, and the environment were discussed. The workshop's main focus was on the best practices for digital transformation in the areas of health, safety, and the environment and how they can help with the development and application of novel ideas and techniques to solve problems related to a variety of crisis management-related issues, raise awareness of these issues, and enhance business efficiency, Al-Omair noted.

### Digital transformation and asset efficiency

On the other hand, the Team Leader Reliability, Eng. Bader Al-Jazzaf, and the Senior Reliability Engineer, Eng. Ahmed Al-Basri, moderated a discussion session at the level of reliability and safety experts in the associate companies of the Gulf Refining Association. The session focused on the challenges facing the digital transformation process carried out by companies. in the field of efficient asset management.

The session witnessed a presentation of the most prominent challenges in this field and discussed some of the solutions used and the mechanisms adopted to deal with them.

Failure of projects and strategic objectives



### Projects failures and strategic objectives

Engineer Nawaf Al-Ahmad, Team Leader Major Projects, made a notable and valuable contribution to the conference by taking part in a panel discussion about the primary causes of project failure during the experts' workshop.

The session covered a wide range of crucial issues for targeting the typical and fundamental causes that negatively impact oil and gas project executive, operational, and productive performance, particularly with regard to refining, processing, and marketing. This leads to lower-than-expected results that have an impact on the set strategic objectives and disrupt the pace of work and development interests, as well as those of shareholders.

Eng. Al-Ahmad offered his personal perspective on the contentious subject during the panel discussion, outlining his prior involvement in the Al-Zour Refinery project, the difficulties, and challenges he encountered during the project's implementation phase, and the factors that contributed to the project's completion taking longer than anticipated compared to the schedule set forth by the company. Al-Ahmad also touched on the issue of some difficulties reappearing even after being dealt with and overcome previously, providing advice on how to handle their recurrence.

More than 150 speakers from around the world participated in 18 technical discussion sessions and short courses at the conference, which also featured specialized academic and youth activities, best practice exchanges, and the launching of current and future opportunities through collaboration and strategic partnerships.

An accompanying exhibition with pavilions for various regional and international oil companies was held on a space of 9,000 square meters on the side-lines of the conference.

Helps deliver information in a simple and safe method

Abdul Rahman Al-Dabous: "Catalyst Reactors"

Model A Quantum Leap in Training Courses



I played a major role in the operation of the residual oil desulphurization unit (unit-02) and the heavy oil cooling unit (unit-06)

Almost two years were spent on the planning and implementation of the model, but it was a fascinating process

The company's business approach is "inspiring" to all employees and is a model to be followed globally

KIPIC's strategy is based not just on consistency and achievement but also on continuous development and improvement, which is one of the fundamentals of the rules of success in any field. The company's emphasis on encouraging employees to innovate and think creatively adds to the ongoing presentation of fresh ideas. On these pages, we play our role as media producers by recognizing and presenting inspirational KIPIC employees.

• Let us start by getting to know you

My name is Abdulrahman Al-Dabbous, Sr. Engineer – Mech. Maintenance, Al-Zour Refinery. In 2008 I graduated from Kuwait University with a Degree in Mechanical Engineering. I was fortunate enough to join KNPC in the year 2009 where I was part of KNPC Mina Abdullah (MAB) Mechanical Maintenance Team till 2018. Later, I joined KIPIC Particularly in the Maintenance Group at Al-Zour Refinery.

What is the nature of your work at KIPIC?

As a Mechanical Maintenance Senior Engineer my role is not limited towards Commissioning & Maintenance of Equipment/Units, but it also requires considering wider aspects of Refinery such as Mitigation of Risks, Mechanical availability of equipment and readiness of Spare Parts related, which will enhance equipment lifecycle and integrity in order to ensure maximum plant efficiency.

At this critical stage of Refinery Commissioning and start-up phases, I am responsible for all Mechanical Maintenance activities pertaining to ARDS (Atmospheric Residue Desulphurisation) Units (U-02) & HOC (Heavy Oil Cooling Units) (U-06) respectively which are currently commissioned safely as part of mini-

Refinery-1 Phase.

In addition to this we have also conducted a customised Training



program on Catalyst Change Out activities for ARDS Reactors.

 What is the true role of KIPIC's Training and Career Development Group?

With the Kuwait Integrated Petroleum Industries Company's vision to unleash the potential of the human element and achieve operational excellence, the concept of training has now become an ongoing process and a strategic choice in the human resource development system.



A central feature in any company's success is the training concept, which is a strategic choice in the human resources development system.

The development of high technical competencies specialized in operating the firm's facilities and achieving operational excellence are essential building blocks for any company's success, which is why KIPIC made the decision to build an integrated training centre in the Al-Zour region to meet the needs of employee training and development.

The Training and Career Development Group, represented by the Training Centers Section, aspires to be a partner in establishing a high-performance training culture.

 What types of training programs does the Training Center (KIPIC Academy) offer?

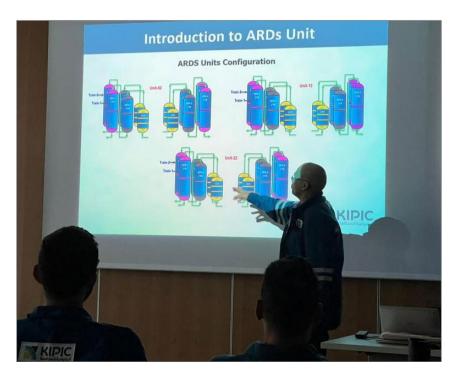
The training center offers training programs for all KIPIC groups, which include intensive programs for refinery operators in the operations group, awareness courses on the use of the process safety management programs, training courses in the field of health safety and environment for all company's employees and contractors. In addition to that, introductory courses for Kuwaitization contract employees, and technical courses for employee development in the company.

 Are there joint training contributions with other oil companies?

The Training and Career Development Group arranges forums to evaluate success stories in various fields of work with partner companies and work on applying the lessons learned, which contributes to developing the system and making more possible.

What about the Maintenance Group?

The Maintenance Group comprises of



several Teams playing an active role which ensures that all Maintenance activities are being executed safely with the Highest Quality/Standards. Refinery Specialized Contracts are lined up to cater all the Refinery Commissioning and Maintenance requirements.

Mechanical Maintenance Team plays a vital role within Maintenance Group, to maintain and ensure the integrity of Stationery equipment's such as Furnace, Reactors, Pipelines and Heat Exchanger...etc.

We as Mechanical Maintenance are committed to provide al-Zour refinery with services of highest quality and reliability to meet or exceed customers' expectations. This will strive through:

- Ensure 100% availability of Stationery Equipment and piping to operate the refinery at its Capacity.
- Implementation of the latest Technology.
- Ensuring Annual PM Plan is achieved 100%.
- Encouraging our employees and contractors to work as one Team and by building mutual trust amongst each other to enhance their productivity.
- Developing skillset of our Employees and Contractors by enrolling them to extensive Training programs which includes onsite Training.

### Can you tell us more about the new training program and the innovative model?

The ARD's Catalyst Changeout Management Course is Customised training program developed by Mechanical Maintenance Team which has been divided into Two Sessions as following.

- Theoretical Session: This session gives you insights of the overall and a detailed description of the Atmospheric Residue desulfurization unit (ARD).

It summarises the Roles & Responsibilities of the Mechanical Maintenance crew during loading and unloading of catalyst from the reactor. This also covers the different types of loading and unloading methodologies being used in ARD's unit.

The lessons learnt from the Maintenance of ARD's units are shared during the session which gives idea on set of anticipated Risks/Maintenance activities.

- **Practical Session:** This session includes a complete site visit to ARD unit which gives trainees an Onsite Experience by closely observing and understanding the process of Catalyst loading and unloading activities.

To add a more realistic approach in the training program, a prototype model of the ARD's Reactors is being used for attendees, it projects

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# The Training Center Team played a significant role in the success of the program



a complete setup which includes skilled manpower/heavy equipment's providing invaluable knowledge of the different stages that are planned for a safe execution of change out catalyst.

#### How does such a program contribute to the development of the work environment?

The ARD's unit at Al-Zour Refinery is one of the biggest across the K-Companies, this itself makes it stand out from the other Units. Bearing in mind that this can be only implemented in a State of Art Refinery like Al-Zour which applies best practices for the skillset development of employees. This includes providing customized training program for the employees which fulfils these needs.

In a broader aspect, it's an integrated program offering a range of theoretical and practical material which helps trainees to have a better understanding of the process of loading and unloading catalysts.

It is worth mentioning that the training

model is displayed in a specialized exhibit hall that displays all training models inside the training center which is well equipped to suit this type of training.

#### Tell us about the role of the Training Center Team in facilitating and succeeding the program?

In fact, the Training Center Team had a prominent role and contribution to the success of the program, as they have organized all the necessary arrangements for the training and the exhibition hall, as well as the field site visit and their main role in encouraging and motivating employees from within the company to participate, all the program organization had a major role in having a distinctive return through the presence of large numbers of company employees interested in this type of training programs.

 How did the model's concept come to you, and how was the implementation process?

Development of Technology, we as

to express our thought process. A best example of this is creation of 3D Models throughout world over the past 3–5 years. This is one of the factors which gave me an idea in the initial stages while I was designing the Reactors prototype,

As an Engineer to achieve and attain a level of expertise it will take years of time to understand Process of Catalyst Loading & Unloading, its pre-requisite and scenario during the actual on-site activity. But with a prototype model it becomes very easy to understand. For example, practically the internal parts of the reactors can only be seen during a Catalyst Change Out (CCO), while with a prototype model it becomes easy to have a holistic transparent approach of the overall set-up. It is worth mentioning that CCO is considered as a Critical Activity that takes place upon Commissioning of the ARD's units and this was the actual Inception of this idea.

It took me approximately 2 years to design and prepare ARD's Reactor Model, this journey was exciting as it was filled with new challenges and gave me opportunity in being able to make more possible.

#### Do you believe KIPIC's work environment fosters innovation, and if so, how?

Yes, I do believe, KIPIC's one of the Core Value is Innovation which nurtures and give exact environment for fruition of Ideas that will adds value to KIPIC. We witnessed so many of the Latest Technology being implemented, and methods being applied. Our KIPIC's Training Center is one such example wherein a Center is created to Train employee by giving the 100% focus to develop them for the Challenges of Tomorrow.

All the above came true and through due to Innovation Campaign which gives chances to present your idea. Thus, KIPIC in my opinion follows one-of-a-kind models which has become a benchmark for other Oil & Gas Companies across the Globe.

#### Are any new concepts being developed at the moment?

Yes, of course, there are new ideas which are at initial stages and in due time we anticipate implementing some of them soon.



Emphasizing that it is the Way to achieve sustainability

## Hanan Al-Khalfan: "I encourage everyone to retain faith in renewable energy"

Work is built on the foundation of science, the advancement of knowledge and the excellence of utilizing skills. These things are what allow it to grow and succeed. At KIPIC, we value and care about the scientific side of the company just as much as the vocational side, and we are proud of our employees distinguished academic credentials. In this section, we will explore the academic journey of a KIPIC family member.



### • First, we would like to get to knowyou

Hanan Mohammed Al-Khalfan, a graduate of Bachelor of Science in Civil Engineering from California State University, Long Beach.

### Tell us more about your scientific background

After completing my undergraduate studies in civil engineering at California State University, I continued my academic journey by earning a Master's Degree in Business Administration Emphasis in project management, from the Maastricht School of Management in 2009.

### • What topic inspired your thesis? "Causes of Delay in Engineering Projects"

### Why did you select this particular topic?

Starting my career as a field Engineer, I have noticed some delay in several engineering projects. This delay can be related to many causes before and during the project commencement. Therefore, I was interested to look and test the real causes of delay of such phenomena.

#### And how did your scientific thesis fare in practice?

While preparing my thesis, I was working as a section head of the Engineering Projects and I applied some of the thesis findings on real cases/projects that was active to verifyits feasibility in terms of dealing with the existing and other obstacles that might occur the theoretical hypothesis on the ground, which made my thesis findings a scientific

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Graduated from
Maastricht School of
Management in 2009
with a master's degree in
business administration

## Continuing an academic attainment while working in the oil industry is tough, but not impossible



and practical reference that I rely on in my practical career.

### Do you think that practical life hinders the continuation of the scientific process?

During my career in the oil sector, I have discovered a lack of professionals in MENA region in renewable energy field. Therefore, I have decided to pursue my learning and career path and be an accredited professional. So, I became the first female Accredited Professional from the USGB (US Green Building

Counsel) in GCC in 2013 in Design, Build and Construction (BD+C).

On the other hand, workers in the oil industry, for whom time is a valuable resource and during which their physical and mental efforts are multiplied. The oil industry is also the sector that has the greatest influence on the economy as a whole and is most dependent on it, which has an impact on the overall budget of the nation. As a result, we discover that time is extremely limited due to the numerous commitments and ongoing focus on work, making it difficult to pursue scientific studies. Therefore, balancing between the academic and career may be a little challenging for period.

By saying this, I do not mean that continuing on an academic path while managing a career in the oil industry is not possible; rather, I mean that it is somewhat challenging because, at KIPIC, we don't believe in the impossibility of anything, and our mission statement is "making more possible."

### Does your academic path have any upcoming plans?

Of course, There is no limit to my academic aspirations, and I'm always aiming higher. I have started preparing for my doctorate degree and shall continue preparing my thesis soon

### • What is your final message to the society as a whole?

"Done limit your ambitious "as employees we might face some frustrations that across our career path. My message to all my colleagues don't limit your options and always look for self and career developments on personal and career level. By accepting the change and being aspirant you can reach new destinations.

My core belief, and motto is to "not lose trust in sustainability". Sadly, people have lost faith in many renewable energy initiatives. Some believe that renewable energy solutions are an expensive solution to be used with low feasibility and economic returns. These views are undoubtedly the result of a lack of awareness of the benefits of using environmentally friendly alternative instead of conventional materials.

Renewable energy is the foundation of sustainability, and without it, we would not be able to reach our ultimate objective of achieving sustainability by enhancing the quality of the environment and maintaining our natural resources.

Alas, many people limit renewable energy to the recycling, usage of PV panels, etc. There are only few examples of the renewable energy and sustainability strategy. It is in fact a much developed topic because it relies on a wide range of solutions, such as wind energy, water, solar, construction materials, design, buildings direction, etc. and other vast solutions that can be harnessed in a more positive way that can benefit us far more than we are currently attaining, which naturally leads us to sustainability.

### Horses, the noblest and most brave creatures

### Fawaz Al-Mutairi: "My passion for horseback riding began at the age of seventeen"

In the midst of a working life that dominates the majority of the day, there is no better way to create a better kind of daily balance than to engage in various hobbies during free time. These activities revitalize mental, physical, and psychological activity and allow us to continue living despite our burdens, as well as work and produce in the best way possible.

KIPIC has always been interested in the human element and prioritizes it in its strategic priorities; as such, it was necessary to identify the employees' hobbies, as well as the extent to which they are committed to practicing them, and adopt the appropriate behaviours to enhance their psychological, mental, and physical capabilities.

During this meeting, we will break out of the office and discover more about the hobby of a KIPIC family member:



Fawaz Al-Mutairi.

A member of the KIPIC Fire Team for about 3 years.

### • What kinds of activities do you

I am definitely drawn to athletics since it reflects my personality, contains my abilities, and allows me to explore more about myself.

### And what sport do you do?

Actually, I participate in a variety of sports, and each one satisfies a different aspect of my sporting interest, but horseback riding is my absolute favourite.

### What is the significance of this particular sport?

Frankly, this activity has several benefits that any person would benefit from, since it teaches strength, alertness, and attention. It also helps realign the spirit by instilling a great



### Through sport, I can express my personality, showcase my skills, and discover who I am

deal of compassion between the rider and the horse. It goes without saying that horses are one of the most magnificent and noble creatures, and these traits are communicated to you through your connection with them. Horseback riding, along with swimming and shooting, is one of the three major sports that everyone should learn, as it provides the individual with substantial value and capabilities.

#### How did you first become interested in this sport?

When I was seventeen years old, a friend of mine had a number of horses, and when I visited him, I was guite inclined to spend my time with them. I decided to practice the sport because I loved horses, so I bought a group of horses and trained and cared for them, and it definitely provided me with a lot of energy and desire and motivated me to continue pursuing this exciting sport.

#### • To what extent do you see the danger of such a sport?

To be honest, dealing with horses is not a simple task, and you must have a great deal of expertise in order to deal with them and connect with them. You must also maintain training so that

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### One of the three crucial sports that everyone should learn is horseback riding

Dealing with horses, a challenging activity that requires a lot of practice



you can handle the horses without suffering serious harm.

#### • Are there specific conditions for practicing horseback riding?

There are several prerequisites, but the most crucial is that the rider has the ability and expertise to appropriately control the horse in order to avoid any problems or difficulties that may arise

#### Have you ever competed in local or international tournaments?

Four of my horses competed in local contests such as horse marathons and horse sprints.

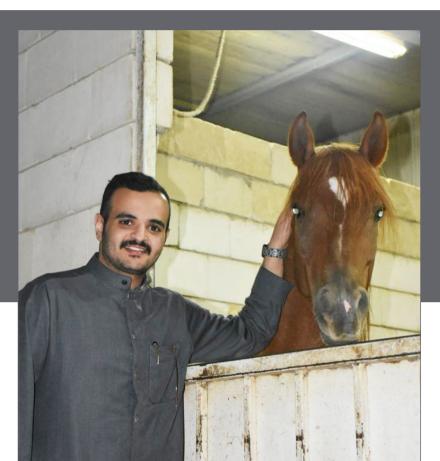
### • Do you believe that job and sports are incompatible?

In my opinion, there should be no conflict between working and engaging in your interests, whether they be sports, the arts, or anything else. Every individual has a fundamental responsibility to manage their time effectively. Work and leisure time must be kept separate, and everything should be given due consideration. Even if work time takes priority, having leisure time and engaging in hobbies is also crucial.

#### Your advice to your fellow employees at KIPIC?

I want to encourage them to work honestly, to embrace a spirit of collaboration, to have fear of God, and to act in accordance with His commandments: "God loves when one of you does a deed that he does









### 2019

Great strides in the completion of Al-Zour refinery project

- Observation Tower Installed at Sea Island
- Providing Al-Zour Refinery with fresh and desalinated water from the Ministry of Electricity and Water



### 2020





36 firefighters from KIPIC who successfully completed the firefighting program at the National Academy for Specialized Training (NAPET) receiving seven certifications from the two most prestigious fire organizations in the world, both based in the United States of America.

### 2022

- KIPIC announces the full operation of the LNG import facilities in Al-Zour oil complex
- The project is part of KPC's long-term strategic directions until 2040, which aim to meet the country's current and future energy needs by delivering the most cost-effective and environmentally friendly fuel.
- It also meets the needs of power plants to provide clean energy, particularly during the summer peak periods, as well as the needs of other natural gas customers, such as oil refineries and petrochemical industry projects. The project can supply natural gas to the local network at a maximum capacity of 3000 billion British thermal units per day.



### 2021



- The first fire trucks for the Al-Zour refinery fire station arrive at KIPIC.
  - KIPIC announces the formation of a youth advisory board led by the CEO to act as a conduit between Top Management and younger employees.

The board comprises 10 of KIPIC's youth members who agree to share with Top Management the youth's viewpoint regarding the primary plans and objectives of the company as well as to help plan various activities and events that will draw the interest of this significant demographic.

### **Historical information**



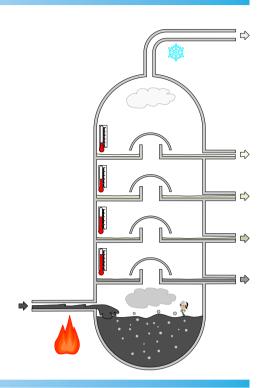
His Highness The late Prince Sheikh Ahmed Al-Jaber Al-Sabah, managed the spinning of the silver wheel on June 30, 1946, signalling the beginning of the export of the first shipment of Kuwaiti crude oil and the uninterrupted flow of oil through a pipeline to the historic first cargo aboard a tanker named "British soldier."

### **Information about Refining**

 "Distillation" refers to the basic technique of processing crude oil in refineries to create oil derivatives. Due to technical innovation, environmental restrictions, and HSSE standards, refining activities are now highly complicated and expensive compared to how they were previously.

The principle of distillation relies on the separation of various hydrocarbons by heating them in a special tower in the form of a large cylindrical tube. Here, they are separated based on each hydrocarbon's boiling point, evaporating the lighter derivatives like ethane and propane first, followed by naphtha, which is used to produce gasoline.

As temperatures rise, heavier derivatives, like diesel, evaporate first, then even heavier derivatives, and so on, until only asphalt and associated elements, such as petroleum coke, are left at the base of the refining tower. Each derivative cools and is collected in specific tanks as it evaporates in line with its boiling point.



### Information about petrochemicals



Petrochemicals, which are chemicals or hydrocarbons produced through the multi-stage processing of oil and gas, can be employed in a variety of commercial industries, including the manufacturing of materials required for oil refining.

The petrochemical industry is regarded as the industry of the age due to its significant impact on the economy and society. This industry has made a qualitative leap in producing thousands of essential products that people use on a daily basis, including medicines, furniture, cosmetics, home appliances, electronics, solar panels, wind turbines, and many others. Most nations have given this sector a lot of attention due to its significance for achieving self-sufficiency in the future.

### Information about gas



Natural gas is a gaseous hydrocarbon substance that contains a variety of gases, the most significant of which are methane and ethane. It also contains a variety of materials and impurities, including both dry and wet ones, dry when the gas is entirely composed of methane and wet when other hydrocarbon chains heavily mix with it to form what is known as condensate.

Due to its lower greenhouse gas emissions when burned compared to its siblings, coal and oil, natural gas is separated from these fuels as being more environmentally benign.

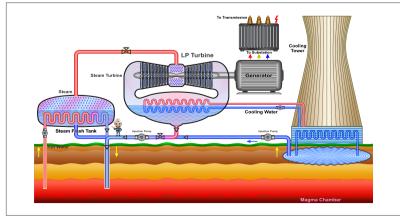
### **General Information**

### What part do gas and oil play in the generation of electricity?

In order to power an electric generator or a device that transforms mechanical or chemical energy into electricity, an electric power plant utilizes a turbine, motor, water wheel, or other similar mechanism.

Some of the most popular methods for producing energy are steam turbines, internal combustion engines, gas turbines, water turbines, and wind turbines.

- The kinetic energy of a moving fluid (liquid or gas) is transformed into mechanical energy by a steam turbine. In a steam turbine, a shaft that is connected to a generator is installed with a number of blades that are powered by pressured steam. Large furnaces use the combustion of coal, oil, and natural gas to heat water and create steam, which powers turbine blades.
- Additionally, the burning of natural gas can be used by heating water to



produce steam, generate combustion gases that flow directly through turbines, and spin turbine blades to produce electricity.

• Turbine steam can also be produced using petroleum. The petroleum product used in electrical facilities that produce steam is called fuel oil, which is frequently refined from crude oil.

### In a distinctive creative atmosphere



Quote of the Month



Even if We all don't have crowns we sparkle in our own ways!

passion for constantly progressing with the aim

of always (making more possible).

Kiran Jagtiani

Sr. Supervisor Coordination & Follow up