

# the arabian sun

March 4, 2020 | Vol. LXXV, No. 10

a weekly Saudi Aramco publication for employees

“ We need to work together and collaborate to find a solution to reduce our emissions.

— Amin Nasser



## CCUS: integrating the climate change challenge with the circular carbon economy

see pages 2 and 3

*There was strong interest at the first International Carbon Capture Utilization and Storage Conference in Saudi Aramco's capture and reinjection project, which the company commenced in 2015 to annually inject about 800,000 tons of carbon dioxide (CO<sub>2</sub>) into the world's largest oil field, Ghawar. In Saudi Arabia's Eastern Region, CO<sub>2</sub> is compressed at the Hawiyah natural gas liquids recovery plant and sent 85 kilometers underground for reinjection at the 'Uthmaniyah gas-oil separation plant No. 7. Every four hours during his work shift, Hawiyah control system operator Ali A. Muyidi checks the pressure and tests the functionality of the CO<sub>2</sub> unit. "It is a great privilege to work at an environmentally friendly plant," said Muyidi. "My work is giving back to people and planet, and knowing this motivates me to be diligent about keeping the system running." (Photo: Abdulaziz Al-Moiweed/MPPD)*

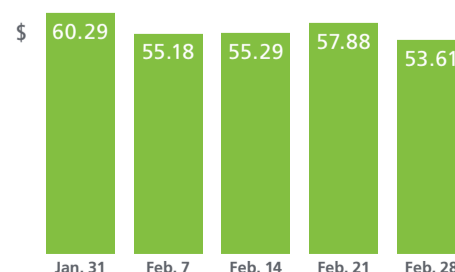
### rebuilding the center of 'Udhailiyah

A fire that burned down the Jebel Complex in 'Udhailiyah in 2015 wasn't enough to keep the community down. Now, with a rebuilt and revamped center — the House of Jasmine — the community has a new place to call its center.

see page 6



### OPEC basket five-week price trend 2020



### Saudi Aramco by the numbers

# 800,000

tons of carbon dioxide is injected annually into the Ghawar oil field as part of our carbon capture and reinjection efforts.

# global thought leaders, energy officials discuss CCUS and hydrogen integrating the climate change challenge with the circular carbon economy

by Janet Pinheiro

**Riyadh** — At a gathering of energy leaders last week, Saudi Arabia called on global cooperation for the rapid scale up of carbon capture utilization and storage (CCUS) to address climate change, and urged the adoption of the “circular carbon economy” concept as an inclusive path for addressing the dual challenge of meeting the world’s growing energy needs while delivering on climate commitments.

Ahead of a ministerial panel, which included ministers from Bahrain, the UAE, Singapore, and the secretary general of OPEC, Saudi Arabia Minister of Energy HRH Prince Abdulaziz bin Salman bin Abdulaziz Al-Saud, reaffirmed the need to move faster on greenhouse gas emission reduction efforts globally.

He said it was vital for the world to undertake CCUS, and appealed for the removal of investment barriers, describing CCUS as a “tried and tested technology,” which can have a positive impact on emissions reduction, and ripe for large-scale deployment.

Saudi Aramco president and CEO Amin Nasser participated in a “Thought Leaders Views on the Climate” panel discussion moderated by CNN, which included the CEOs of ADNOC and Schlumberger, and the deputy secretary general of the United Nations Framework Convention on Climate Change.

Nasser echoed the call for global cooperation saying, “We need to work together and collaborate to find solutions to reduce emissions.”

## Numbers speak for Saudi Aramco

Referring to Saudi Aramco’s emissions

## What is carbon capture utilization and storage?

stopping excessive CO<sub>2</sub> becoming a greenhouse gas

Carbon capture utilization and storage (CCUS) is a collection of processes and technologies that separate CO<sub>2</sub> from other gases, then convert it into useful products such as chemicals, polymers, and materials or store it safely under ground.

The basis of the technology has been in the refining industry for decades — when you use natural gas for energy, the CO<sub>2</sub> has been removed from the gas.

CCUS can be used to de-carbonize large parts of the world, and is widely regarded as a primary way to achieve long-term mitigation of greenhouse gases, as well as being a key enabler of the circular carbon economy.



Ahmad O. Al-Khowaiter  
at ICCUS: working  
together for solutions

Ahmad O. Al-Khowaiter said carbon capture utilization and storage was essential toward closing the loop in a circular carbon economy, where waste is eliminated by continually using resources, rather than disposing of them. (Photos: Abdullah Alshammari/MPD)

mitigation efforts, Nasser explained that years of implementing best-in-class technology and reservoir management practices was behind the company’s leadership in low carbon intensity, pointing to efficient management of produced water through inflow control devices as an example.

“You have to look at it from a full cycle basis, otherwise you cannot achieve the results that we have in terms of low methane and CO<sub>2</sub> emissions,” he said.

## hydrocarbon research support

Nasser said that currently most government support globally was directed toward renewables, whereas hydrocarbons will remain a part of the energy mix for a long time, therefore, regulators should incentivize investments into CCUS technologies to help reduce emissions from hydrocarbon sources.

Adding that Saudi Aramco has been working with the auto industry to design more efficient engines, and to enable carbon capture on trucks, he said: “We have the responsibility to provide cost-effective energy in a world where nearly 3 billion people do not have access to clean cooking, a third of vaccines in Africa are wasted due to a lack of cooling, and half the people have never traveled on an airplane.”

## circular carbon economy

In a world needing to decrease its greenhouse gases, there is a dual challenge globally to deliver more energy with fewer emissions.

More energy is needed for the nearly 1 billion people with no electricity access, plus growing energy demand from the world’s increasing population.

The conference emphasized the concept of the circular carbon economy, an approach designed to reduce, reuse, recycle, and remove carbon.

Conference chairman and Saudi Aramco chief technology officer Ahmad O. Al-Khowaiter explained a circular carbon economy model was a sustainable,

pragmatic and cost-effective approach to achieve ambitious climate goals.

“We must adopt the principles of a circular carbon economy, emulating the balance of nature in its production, use and reuse of energy and materials,” said Al-Khowaiter. “This is in contrast to the linear economy concept, which results in a lot of waste and requires significantly greater resources.”

Technology is a key enabler to all four elements — reduce, reuse, recycle, and remove — of the circular carbon economy, with CCUS being the most mature and impactful technology.

## CCUS \$2.5 billion market

The United Nations Intergovernmental Panel on Climate Change has advised that the global climate goals will not be achieved without CCUS playing a

central role.

Great strides have been made with the cost and efficiency of CCUS, and the technology can also be applied to industries other than oil and gas.

CCUS is a proven technology with a \$2.5 billion market, resulting in the capture of 32 million tons of CO<sub>2</sub> per year.

More than 2,000 carbon capture plants are needed by 2040 to meet global emission reduction targets.

“The concept of the circular economy offers a new way of approaching climate goals that implicitly values all options and encourages all efforts to mitigate carbon accumulation in the atmosphere,” said Al-Khowaiter, adding that truly closing the emissions loop requires CCUS in addition to other technologies.

“To achieve the desired impact CCUS will need a 40% to 50% annual growth



Included in Saudi Aramco’s display of its many activities in energy efficiency, greenhouse gas emissions management programs, was a model of the region’s most advanced carbon dioxide (CO<sub>2</sub>) capturing project, of amounts of CO<sub>2</sub> in the ground.



Amin Nasser at ICCUS: 'Numbers speak for themselves'

Energy leaders, gathered in the Kingdom's capital last week, were urged by Amin Nasser to rapidly deploy carbon capture use and storage as a high-impact solution toward meeting the goals of the Paris Agreement on climate change, and progressing toward a circular carbon economy.

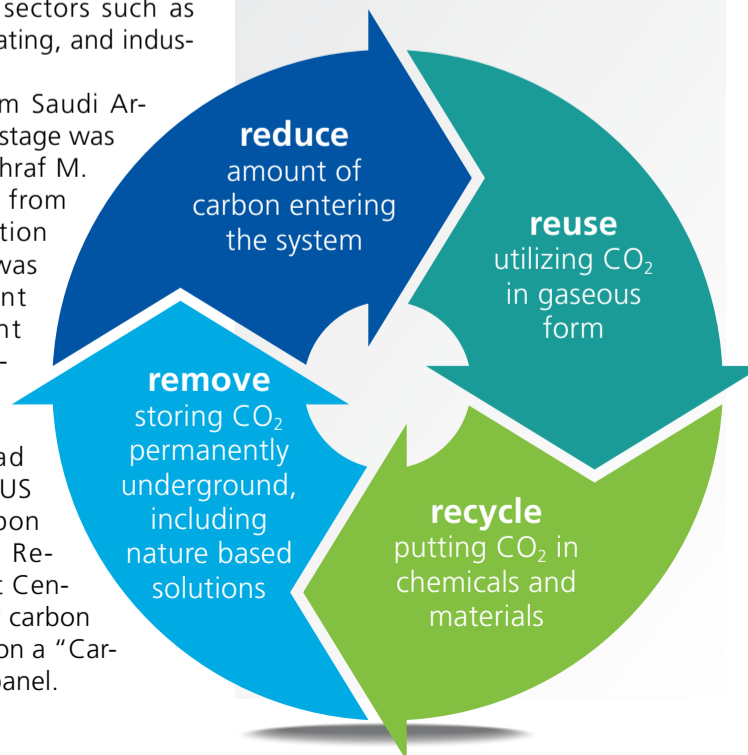


Saudi Aramco's display booth presented the company's concrete research, which Amin Nasser noted involved injecting carbon dioxide into ready-mix bricks and precast structures to strengthen the products — and was about to be piloted with a Saudi Arabian cement product manufacturer.

### circular carbon economy continual use of resources rather than disposal

The "Circular Carbon Economy" model is a key enabler for achieving deep greenhouse gas emissions reductions in hard to decarbonize sectors such as heavy-duty transport, aviation, and industry.

Inspired by how our planet's circle of life works — nature's balanced and ongoing system of taking and giving back to the Earth — the circular carbon economy approach moves away from a linear economic model where materials are used then disposed, to a more circular model through the reduction, reuse, recycling, and removal of carbon dioxide, and other greenhouse gas emissions.



#### Greenhouse gases

The primary greenhouse gases in the Earth's atmosphere are water vapor (H<sub>2</sub>O), carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), and ozone (O<sub>3</sub>).

#### What is CO<sub>2</sub>?

CO<sub>2</sub> is a colorless gas essential for life, occurring naturally, or produced through combustion processes. All humans and animals exhale CO<sub>2</sub> when they breathe, and plants absorb it during a process called photosynthesis.

#### Why is CO<sub>2</sub> a problem?

Since the start of industrialization, CO<sub>2</sub>, along with CH<sub>4</sub> and N<sub>2</sub>O, have increasingly entered the planet's atmosphere from human activities, including industry, electricity production, transportation, and agriculture.

#### CO and CO<sub>2</sub> difference

CO<sub>2</sub> has one carbon atom and two oxygen atoms of oxygen, while CO has one carbon and one oxygen atom.



The 4 Rs and the Circular Carbon Economy

rate until 2030 to get to 1 billion tons of CO<sub>2</sub> captured per year," he said.

"We have done this before, with solar and wind energy. We can do it again, if we work together to create an environment of collaboration, cooperation, and a level playing field for all energy sources."

#### added benefit of hydrogen

Bashir M. Dabbousi, Saudi Aramco's director of Technology Strategy and Planning, chaired a "Hydrogen and CCUS" panel, discussing how CCUS enables production of low carbon hydrogen at industrial scale.

"Hydrogen is the fuel of today, not the fuel of the future," said Dabbousi, adding people easily understood that hydrogen is a clean fuel, "because when it burns it only produces water."

Hydrogen is considered an ideal energy carrier for deep emissions reductions in hard-to-decarbonize sectors such as heavy-duty transport, heating, and industrial applications.

Also participating from Saudi Aramco on the conference stage was EXPEC ARC manager Ashraf M. Al-Tahini on a "Lessons from Large-Scale Demonstration Projects" panel, which was chaired by Environment Protection Department manager Omar Abdulhamid, Technology Strategy and Planning Department CCUS lead Tidjani Niass on a "CCUS Value for the Low Carbon Economy" panel, and Research and Development Center chief technologist for carbon management Aqil Jamal on a "Carbon Removal from Air" panel.



ement, methane leak detection and repair, and flare operated by the company to capture and inject large

# technology and exploration paradigm shift lead to resurgence of ‘super basins’

by Susan V. Gonzalez

**Sugar Land, Texas** — There is a resurgence in the world’s greatest oil and gas basins that is driven by technology and shifting strategies, taking exploration and production teams back to these giant basins to further unlock their potential.

During the opening keynote of the American Association of Petroleum Geologists’ (AAPG) Global Super Basins Leadership Conference 2020, Misfir A. AzZahrani, Saudi Aramco executive director of Exploration, noted that while exploration principles remain the same, it is tools and data integration that are allowing for better predictive models and risk mitigation.

## new data and the story it tells

“Technology, inherently, is only a tool,” said AzZahrani. “A tool is only of value in the hands of the right people. Today, our professionals are capable of simultaneously placing horizontal wells continuously in real time while drilling.”

He pointed out that unlocking additional hydrocarbon potential of super basins requires advanced 3-D seismic data, integration of more than 30 different geoscience disciplines, and the inclusion of data scientists to help organize and manage complex data sets faster.

“Due to the unseen and untouched nature of subsurface landscape, the arrival of new data always tells us the details of its story,” said AzZahrani.

## the history of ‘super basins’

The concept of a “super basin” was introduced by oil consultancy IHS Markit in 2016. This label applies to a world-class petroleum basin with at least 5 billion barrels of oil equivalent (BBOE) produced, with a potential of more than 5 BBOE left to produce. Beyond individual fields or plays, the super basin’s framework fosters a wider view of the entire basin considering com-



Misfir A. AzZahrani offers insights on Arabian ‘Super Basins’ during his keynote at the AAPG Super Basins Leadership Conference 2020.

mercial viability, infrastructure, and potential future resources such as unconventional, or tight gas.

While differences exist, key essentials to all big super basins are prolific reservoirs and regional seals, and often more than one source rock, which leads to stacked petroleum systems.

There are about 100 or so super basins around the world, with recognition that the Middle East basins have some of the most prolific reservoirs and source rocks. Attendees from Venezuela, Brazil, Guyana, Africa, Eastern Mediterranean and the U.S. shared their insights on regional basin differences, similarities, and challenges during the two-day conference.

## a geological journey around the Kingdom

During his remarks, AzZahrani took attendees on a geological journey through Saudi Arabia, highlighting the main surface features of Arabian basins, stopping to discuss key basins such as the Rub’ al-Khali, Gotnia, Jafurah, and the Red Sea, commenting on the complexity of the Red

Sea geology that requires high resolution 3-D seismic with accurate depth imaging.

Recognizing the mindshift of going back to the big, mature super basins with the technology to rejuvenate reservoirs, AzZahrani pointed to Saudi Aramco’s successful gas exploration and its Unconventional Gas Program reaching new milestones.

“We have been pleasantly rewarded with the positive results of our unconventional program — both in the North and Jafurah Basin,” AzZahrani said during a panel discussion.

Aramco supported the inaugural AAPG Super Basins Leadership Conference in 2018 and served as the platinum sponsor for this year’s event. Decision makers from the world’s most significant basins around the world attend, with 32 global experts providing a review of 20 of the world’s greatest basins at this year’s event.

Growing interest in super basins has expanded AAPG’s coverage on the subject with a number of hosted conferences, forums, and an initiative for more papers on the subject in the *AAPG Bulletin*.



## your voice

# Aramcons from varied backgrounds built a ‘real construction story’ for the ages



by Saeed A. Al-Omani  
Tarout Island  
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It was in the morning inside our secondary school right at the center of Sanabis village in Tarout Island where representatives from Saudi Aramco had come to explain the various opportunities associated with joining the company.

That was the early 1980s as the students back then were close to graduating from high school. The representatives explained the different hiring programs to support students on planning their careers and future.

The company was doing the same type of official visits countrywide. Many students willingly enrolled in the programs available then, based on their grades obtained, and potential determined through interviews and placement tests.

From across the country, thousands of students had joined the job skills training in the Eastern Region at designat-

ed sites. It was almost the largest ever we had all seen. It was like a college or university that was providing academic training with hands-on training for two to three years, including the learning of the English language.

The fields were not limited to mechanics, electricians, machinists, and clerical jobs either. There were many other careers and paths to fulfill the entire company’s industrial demands.

The company had also expanded the undergraduate program, where many students had the opportunity to get bachelor degrees and higher from inside and outside the country. Many scientists, engineers, and business studies were among the assorted resources that the company had built to run the massive activities in the oil industries and in all of the many supporting divisions.

Not very long before, the results were clearly noticed and seen in all areas and

fields. It was great and enjoyable to work in such an environment and system for a very long time. I would say complete and perfect in all aspects.

Yes, many others and I had lived that perfect and outstanding work life. We remember each moment and still use most of the knowledge and experiences gained throughout the time.

Since the origins of the company, Saudi Aramco has always invested in its employees. Saudis and other employees from different countries, bringing with them the varieties of culture, were always considered one — Aramcon.

Along with the industrial initiatives, there has also been the construction of roads and schools, as well as other major projects, for the Kingdom — all signs that the company remains strong and stands high. It has been a real construction story we all lived and enjoyed, and has stood the test of time.

# SAEV gives company leg up on new technology

**Dhahran** — To maintain its leadership role globally in the oil and gas industry, Saudi Aramco is relentless in its pursuit of new technological innovations.

One way the company drives innovation is through its venture capital (VC) fund, Saudi Aramco Energy Ventures (SAEV), which invests in early-stage startup companies.

SAEV was established in 2012 with the objective of investing globally in startup companies with technologies that have strategic importance to Saudi Aramco's operations, accelerating their development, and ultimately, deployment in the company.

SAEV targets investing in six to eight new companies each year and continues to expand into new markets and geographies, with plans of doubling its portfolio in size over the next five years. Since starting its investment activities in 2013, SAEV has amassed equity holdings in 40 diverse international companies, in addition to a number of fund partnerships.

Its sweeping investment strategy is designed to create long lasting value for Saudi Aramco. The modus operandi is to identify and target technologies that have the potential to add value across many of the company's business lines, including upstream, downstream, petrochemicals, renewables, energy efficiency, and water sectors. SAEV is further expanding investment focus sectors into digital solutions and non-metallics, in line with the company's corporate strategies.

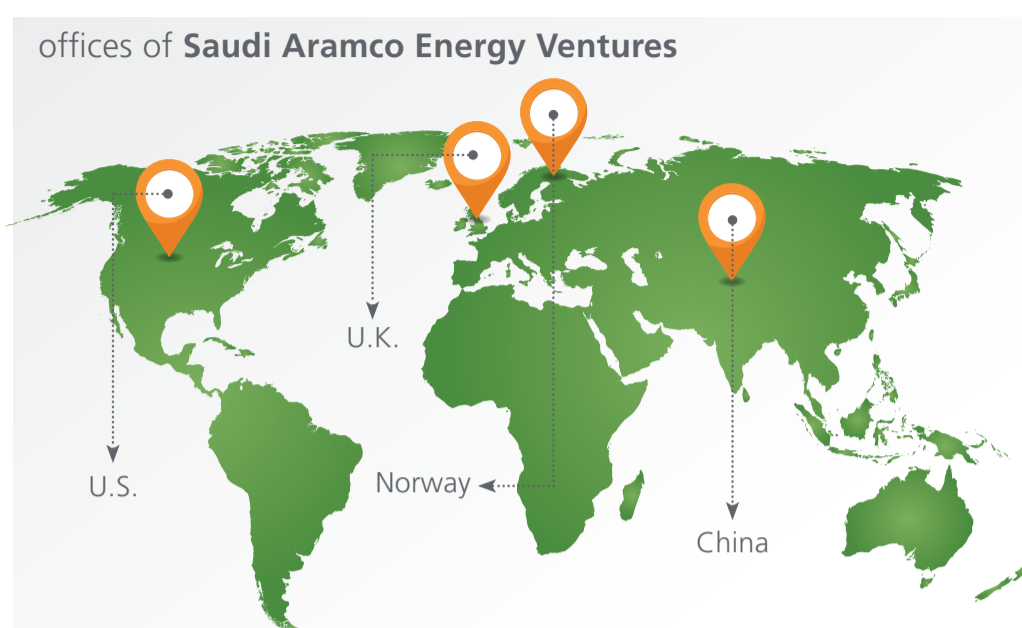
SAEV operates internationally, with offices spanning the globe, in China, Norway, the U.K., as well as the U.S.

"SAEV's contributions to Saudi Aramco are anchored on our ability to introduce disruptive technologies that are innovative and unique in their approach," says Majid A. Mufti, CEO of SAEV. "Frequently, these technologies are in the development phase, where we help them pilot in the field and scale faster. We identify these opportunities by working with the many departments and organizations in the company to assess the potential of these cutting-edge technological solutions."

## employing a methodical investment process

SAEV undergoes a methodical investment process. First, the regional teams scour their markets in search of potential deals that could help to meet the future challenges of the company.

"While hunting for innovative solutions, the global VC team members frequently find new technologies that were not on



their radar that could add value to Saudi Aramco, and work with Saudi Aramco experts to evaluate the impact of such potential technologies," Mufti explains.

"After vetting the technology and its value proposition, the negotiation process ensues."

When terms are agreed upon, the investment is concluded and that company is added to the SAEV portfolio.

"Technology transfer is at the heart of our mission and it is the greatest value we add to the company," adds Mufti, "but these are young companies that need to grow and evolve. Therefore, we sit on the boards of our portfolio companies and support them with the development of their technology, in part by bringing in Saudi Aramco experts to explain their needs.

"You could say that we are very much a catalyst for accelerating technology development and deployment in Saudi Aramco."

SAEV's investment and deployment process complements Saudi Aramco's corporate research and development abilities.

"We are able to cherry-pick different technological developments from companies around the world that are transitioning from the lab to field, and we contribute by funding that stage of development and scaling," Mufti says.

## a prime example of success

One example of successful technology deployment involving SAEV is ConXtech, an innovative steel erecting company based in San Francisco.

ConXtech has developed a large-scale customizable, modular, prefabricated high precision and sustainable structural steel building system.

The first, and very successful, deployment

of ConXtech was completed at the Ethane Deep Recovery Project in the 'Uthmaniyah Gas Plant. A total of 2,000 tons of ConXtech steel structure — 30% of the total steel structure — were deployed in one-third of the time that conventional steel construction takes.

Riyadh S. Shibani, coordinator with the Civil and Structural Engineering, Consulting Services Department (CSD), says the benefits of deploying the technology have been impressive.

"CSD, with the support of SAEV, completed the required technical and financial assessment," says Shibani. "Then, a corporate deployment team was established to accelerate the deployment in Saudi Aramco projects. The team was led by CSD and included members from the Project Management Team, SAEV, Facilities Planning, and Procurement and Supply Chain."

Ahmed O. Aredhi, manager of the Oil Facilities Projects Department, hailed the introduction of the technology as a first for Saudi Aramco and the Kingdom.

"The technology hasn't been used in Saudi Arabia or the Gulf region before, nor in oil and gas facilities," says Aredhi. "We are proud to be the first adopters and beneficiaries of such technology in a sector that is not known for tech innovation."

Furthermore, says Aredhi, the cost benefits to the company are significant.

"The total installed costs were more attractive than the conventional structural way of doing things. All of our oil and gas facilities have significant steel structures. The deployment of ConXtech has helped in reducing the total installed costs.

"We have installed more than 2,000 tons, and the total installed cost is cheaper. We placed two cameras to monitor the ex-



Technology transfer is at the heart of our mission and it is the greatest value we add to the company. You could say that we are very much a catalyst for accelerating technology development and deployment in Saudi Aramco.

— Majid A. Mufti

ecution progress for the pilot section, and it proved to be done quicker."

It only took 10 hours per metric ton with ConXtech, whereas conventional erecting takes up to 30 hours. A whole section can be erected in two to three hours. It's like a Lego concept, to put it simply."

In addition to the proven benefits for Saudi Aramco, ConXtech has numerous applications in the Kingdom and is now being manufactured locally.

The ConXtech investment aligns with Saudi Vision 2030, and Saudi Aramco's iktva program for local manufacturing.

## credibility

Mufti notes that the scale of Saudi Aramco as a company gives SAEV added influence and credibility in the market.

"SAEV's ultimate advantage is Saudi Aramco's global team and facilities," says Mufti. "We also have the purchasing power and brand name that attracts entrepreneurs and startup companies."

## Aramco Trading Company inaugurates new office in London

**London** — Aramco Trading Company (ATC) recently announced the establishment of its London subsidiary — Aramco Trading Limited (ATL).

ATL will be at the forefront of ATC's business activities in Europe and extended ATC's operational reach to cover North and West Africa as well. ATL is now the third international office for ATC, alongside Aramco Trading Fujairah and Aramco Trading Singapore.

"With the establishment of our London entity, we are pleased to now have a firm presence in Europe that will serve as the launching pad for our operations in Africa and the Mediterranean region," said Ibrahim Q. Al-Buainain, president and CEO of ATC.

"Europe is an important market for ATC

and the ultimate goal for ATL is to explore and develop new partnerships and opportunities with our clients in Europe, as well as North and West Africa."

ATL will be led by Mohammed A. Kadi and supported by an experienced team to service ATC's existing and potential customers in the region. The ATL office in London was inaugurated by Saudi Aramco's senior vice president of Downstream, Abdulaziz M. Al Gudaimi.

Abdulaziz M. Al Gudaimi cuts the ribbon during the opening of the Aramco Trading Limited office in London alongside Ibrahim Q. Al-Buainain. The office is the third international office for Aramco Trading Co., with the other two being in Fujairah and Singapore.





# rebuilding the center of 'Udhailiyah

## House of Jasmine boosts quality of life

by Scott Baldauf

'Udhailiyah — The smallest and most remote of Saudi Aramco's residential communities for families, 'Udhailiyah is famed as the "Flower City." Here, individuals and families make tight bonds with each other — bonds that are strengthened at community activities, sports events, and special celebrations.

So when the Jebel Complex, with its dining hall, function hall, library, and bowling alley that served as a central meeting place burned down in 2015, it was an especially difficult blow to the community.

Community Services recently celebrated the inauguration of a brand new community center, renamed House of Jasmine, and with that, the 'Udhailiyah community has turned a corner. With a new slate of dining options, upgraded entertainment and conference hall facilities, a recently restocked library, a new six-lane bowling alley, and vastly improved safety features, 'Udhailiyah has gone far beyond the good old days and taken a giant leap forward with the best community center in the company.

**Mohammed M. Al Khamsan**, administrator for 'Udhailiyah Community Services, said his team understood the mission was not only to replace the previous facility, but to build a complex that would bind the community together for decades to come.

"'Udhailiyah is far away from any other community, so it has to be self-sufficient," Al Khamsan said. "If you drive to Dhahran, it takes two hours. If you drive to al-Hasa, it takes 45 minutes. So we felt people deserved to have options for food and entertainment. In the design phase, we made sure the facility would be attractive, but with safety measures that not only met but exceeded company safety standards."

On Jan. 23, the new House of Jasmine was inaugurated with Nabeel A. Al-Jama', acting service line head of Operations and Business Services; Abdulhakim A. Al-Gouhi, vice president of Industrial Services; Nabeel Afaleg, acting executive director of Community Services; and Aali M. Al-Zahrani, executive director of Safety and Industrial Security, as well as other members of management attending.

### state-of-the-art facility

Nestled in the heart of the community just steps away from the school, the House of Jasmine is designed to be the central gathering place for this community of approximately 2,000 residents. The Lotus Restaurant, a multi-cuisine restaurant with a seating capacity for 200 people, offers a

rotating menu of foods cooked by chefs specializing in Middle Eastern, Indian/Pakistani, and Western and Latin American cuisines, as well as fresh grilled barbecue.

Next door, the Falcon E-Diner, which can accommodate 68 people, offers fast food options such as pizza, hamburgers, and sandwiches, which are popular with the younger crowd. For those wanting greater variety, there are vendors offering *Khaleeji* (Gulf) specialties, a specialty tea shop, a health food restaurant, and even an eatery featuring Indian street food. Each of these restaurants offers customers the option of ordering meals in advance — either through their computers or through mobile phone apps.

"When you live in a community as remote as 'Udhailiyah, people can't just drive outside the camp to find other restaurant options," said **Abdulaziz A. Alzamil**, supervisor for food services with Community Services. "We ask our vendors to submit menus in advance to make sure they include the most popular dishes.

Across the hall, Game Time, a popular hangout, features billiards, table tennis, foosball, and virtual reality games. Down the hall is Switch, a six-lane bowling alley. For major functions, Fayrouz Hall offers a large multipurpose room for business meetings, formal dinners, and gatherings for 'Udhailiyah's many self-directed groups.

**Robert Rooney**, a supervisor with Recreation, speaks of the light and airy library with 10,000 books, numerous study tables, and a computer/business center. "This facility has a children's room with weekly times for arts and crafts and storytime," Rooney said. "We currently have 10,000 volumes, but there are plans to grow back to a circulation of 25,000."

### safety at the core

From the outset of the project, the new complex was designed with the highest possible safety standards, said **Mohammad S. Al Qarad**, compliance supervisor for Community Services at 'Udhailiyah.

"The House of Jasmine was created with an intensive pacifier system with the most stringent safety codes," Al Qarad said. "We took the British and the American standards, and the ISO for fire prevention and suppression, and we exceeded them."

Every material in the building is either fire rated or fire retardant, Al Qarad added. Each room exceeds the number of exits, emergency lights, and sprinklers required, and each room is compartmentalized, so that if a fire starts, it will be contained and



*Dalip A. Dwarika, right, and his family couldn't wait for the Jasmine House Project to be completed. "It's like a breath of fresh air," said his wife, Hema, as they recently dined at the lunchroom of the recently completed facility.*

then extinguished. Even the alarm system has been modified to provide spoken instructions to evacuate calmly, with flashing light systems for the hearing impaired.

### customer satisfaction

**Perla V. Isidro**, a staff Human Resources administrator with 33 years at the company, said she remembers living at 'Udhailiyah before there was a dining hall. Now, in her first lunch at the Lotus Restaurant, she said she is "very impressed with the excellent food, and the bright and modern facilities." She said that 'Udhailiyah is a small town, and the House of Jasmine is the center of the community. "We are all family here. Even if we don't know someone, we say hello anyway."

Nearby, **Nicci Huysamen**, an executive secretary for the Southern Area Gas Production general manager, and **Paula Frederick**, a secretary for the South Ghawar Producing manager, are also grateful to see the dining hall back up and running.

"From a point of view that we didn't have this place for a long time, we appreciate it so much more," said Huysamen.

"It's like coming back to a family," Frederick added.

In the Falcon E-Diner snack bar, Hawiyah Gas Plant field supervisor **Dalip A. Dwarika** and his family are enjoying a lunch of sandwiches and French fries that they ordered using the new digital request system at the door. "We couldn't wait for this project to finish," said Dwarika's wife, Hema. "It's like a breath of fresh air."

"The community is small, so this is like a central meeting place," Dwarika added. "This is a nice cohesive environment, and the facility has a lot of protocols for teach-

ing kids safety, responsibility, and accountability."

### looking forward

The Event Planning and Marketing Team, consisting of team leader **Maleeha A. Khan (Ahmad)**, **Mohammad Al Majed**, and **Rand Al-Khayal**, are ecstatic about the options available to organize and host community gatherings at the House of Jasmine. Plans are already in the works for more than 50 themed events this year alone at the Lotus Restaurant, Al Fayrouz Hall, and the outdoor garden and outdoor theater areas with its jumbo screen.

The Happiness Team, with team leader **Syed Mohsin Rizvi**, **Duaa Al Nufai**, and **Malak Jafar**, are equally eager to continue to provide customer centric training to the front liners who are the touch points between Community Services and 'Udhailiyah residents and employees.

The team monitors positive feedback and suggestions from all users of the House of Jasmine by analyzing customer satisfaction and closing the communication gap between Community Services and customers.

### a satisfying conclusion

In the words of **Mohammad Fashkhi**: "As a maintenance engineer working for 'Udhailiyah Community Services, I was responsible for the completion of the House of Jasmine construction and readiness of operation in a safe manner. After completion of this mammoth project, during the official opening of the House of Jasmine, it was wonderful to see our customers and end users laughing, eating, and playing, and enjoying something I had a hand in bringing to reality," he said.



*The new library facility has numerous study tables, computers, a business center, and a children's room where arts and crafts and story time sessions are conducted. Currently, it houses 10,000 books, with plans to grow circulation to more than twice that size.*



*The Lotus Restaurant, a multi-cuisine restaurant with a seating capacity for 200 people, offers a rotating menu of foods cooked by chefs specializing in Middle Eastern, Indian/Pakistani, and Western and Latin American cuisines, as well as fresh grilled barbecue.*



*Outdoor seating greets visitors to 'Udhailiyah's Jasmine House, where community groups have been eagerly planning events for the upcoming year. The facility is designed to be the central gathering place for approximately 2,000 residents.*

# read it on the intranet

## National Energy Services Reunited Corp. breaks ground for research and innovation center at Dhahran Techno Valley



Muhammad M. Al-Saggaf, president of King Fahd University of Petroleum and Minerals; Mohammed Y. Al Qahtani, Saudi Aramco senior vice president of Upstream; and Sherif Foda, National Energy Services Reunited (NESR) Corp. CEO and chairman of the board, were among key officials and dignitaries on hand for the groundbreaking ceremony at Dhahran Techno Valley for the NESR Oil Field Research and Innovation Center. (Photo: Hatim Oweida/MPD)

## Junior Board — S-Oil’s version of YLAB — gets inside look at Saudi Aramco operations



Visitors from S-Oil’s Junior Board recently visited Saudi Aramco facilities in the Kingdom — from OSPAS to the Geosteering Operations Center to the Ras Tanura Refinery and other areas of interest. The Junior Board is the Saudi Aramco joint venture’s version of the Young Leaders Advisory Board, which seeks to harness the expertise of high performing young employees and their unique views on the company and the industry. Pictured here with the S-Oil contingent are Abdulaziz M. Al-Gudaimi, senior vice president of Downstream; Ziad T. Al-Murshed, vice president of International Operations; Said A. Al-Hadrami, acting vice president of Retail and Lubes Development; and Salah M. Al Hareky, controller.

## Upstream Development Strategy and Reserves Department recognizes top performers, milestones, and accomplishments



The Upstream Development Strategy and Reserves Department (UDS&RD) recently recognized dozens of employees for top accomplishments and milestones over the past year. “UDS&RD values the contribution of every member of the department,” said Ali A. Al-Meshari, UDS&RD manager. The inaugural event recognized teams and individuals alike.

## 14 Area Information Technology Department employees certified as unmanned aerial vehicle pilots



Recently certified unmanned area vehicle pilots from the Area Information Technology Department (AITD) pose with their manager, Adel S. Doulab, and Bader A. Busbait, Inspection Department manager. Those certified included Saleh A. Mohammed, Abdullah M. Almalki, Faisal S. Aljohani, Ibrahim H. Alshaer, Naif M. Meteeb, Naser F. Qahtani, Mohammad T. Hazazi, Turky K. Almutairy, Mohsen Shammari, Waleed K. Alhwaiti, Abdullah Alnaim, Abdullah Hammam, Akram S. Thobeani, and Ali A. Ibrahim.

## Knowledge Management Group earns key certifications through international certification courses



The Knowledge Management Group (KMG) poses with facilitator John Hovell (eighth from the right) after successfully completing the Certified Knowledge Manager and Certified Knowledge Specialist in Knowledge Transfer training workshop. The certifications are designed to help practitioners gain a deeper understanding of KM principles and approaches. KMG is now better prepared to improve KM initiatives across Saudi Aramco as a result of the training.



The Manifa Producing Department (MPD) recently recognized 152 employees for their years of dedicated service. Mohammed H. Al Ghamdi, MPD manager, presided over the award ceremony and luncheon, acknowledging the employees’ commitment to excellence and perseverance in their collective 1,250 years of continuous service to Saudi Aramco. Al Ghamdi was joined by other members of management and the employees’ colleagues. Among those recognized included: (15 years) Yaser A. Al Sinan, Mohammed H. Al Marri, Rami F. Al Shamary, Baqer A. Al-Kadhim, Nasser A. Aldossary, Hadi A. Al Abbas, Fahaad J. Al Qahtani, Saad M. Al Otaibi, Waleed A. Mubarak, Mohammed A. Alsadiq, Mahdi A. Al Abbas, Mohammed S. Al Barqi, Saleh M. Al Yami, and Tariq T. Hakami; (10 years) Khalid R. Al Dossary, Abdulaziz A. Alkarny, Abdulgafour J. Almotairy, Mohammad S. Alhashmi, Ammar A. Al Zhrani, Majed H. Aljahlali, Hazem G. Al Zahrani, Turki H. Al Heshibri, Murad M. Al Zahrani, Fadel H. Al Saihati, Saeed M. Aljamhoor, Nawaf H. Alshammarey, Raed O. Al Harbi, Fahd R. Al Muatiri, Ahmed A. Algregre, Abdallah A. Albarqi, Hamad M. Alsuaie, Majed A. Alghamdi, Mohammad M. Al Mubar, Kumail H. Abutaki, Musa H. Al Ashoor, Abdulrahman A. Alharbi, Bader M. Aldhafeeri, Mohammed H. Alanazi, Abdullah S. Alharthi, Abdulmalik A. Alshammari, Khaled M. Alkhalidi, Muhammad S. Al Garea, Fayeze B. Alshammari, Khalifa A. Aldoosary, Yousef N. Al Otaibi, Abdulmuhsin F. Alshammari, Saad A. Al Ghamdi, Faisal M. Hazazi, Turki E. Alzahrani, Majed A. Alhysoni, Abdullah A. Al Amri, Nasih G. Alshaibany, Sultan Y. Al Amri, Khaled A. Alshammari, Mostafa A. Al Darweesh, Abdulrahman N. Almuhanha, Mohammed F. Alshammari, Fahad M. Alshammari, Muntadhar A. Almohaishi, Mustafa M. Al Hashim, Naif H. Alanezi, Adel A. Al Salamah, Riyad B. Al Ghanim, Alaa F. Eblees, Ali M. Al Sinan, Ali A. Al Salem, Saad A. Al Shammari, Mohammad A. Al Ibrahim, Ali I. Al Khatem, Mohammed A. Al Zalaig, Mohammed K. Baban, Hussain I. Alkhalaf, Meshal F. Alshamary, Hussian A. Alsaffar, Jasim A. Alrajab, Jawad R. Al Karam, Salem N. Al Gusaa, Khaled A. Alharbi, Monadel A. Alnemer, Abdulrahman M. Alhajri, Abdulwahab Y. Alzhrani, Jafar M. Al Dakheel, Abdulrahman S. Alrasheedi, and Mohamed S. Al-Faifi; (Five years) Umesh C. Gadani, Saiful Islam, Abdullah M. Hazazi, Elmer L. Dimacaling, Salem R. Almarri, Abdulmalek S. Al-Zhrani, Mohsen M. Al Shammre, Abdullah M. Alqahtani, Waleed A. Al Dossary, Farag G. Alsubei, Abdulaziz A. Almutairy, Abdurahman M. Al Ossailan, Maher M. Alanzi, Abdulaziz S. Alhusaini, Ageel M. Al Anazi, Bader H. Alshammari, Ahmed I. Alsayed, Ahmed J. Al Hamad, Fahad H. Al-Rouqi, Ali A. Alahmed, Mohammed H. Aljohani, Ahmed H. Al Rouqi, Adel H. Al Zayed, Mohammed A. Alamri, Ali M. Alessa, Eyad O. Alqurashi, Turki A. Aljumei, Fahad A. Alshehri, Sultan O. Asiri, Fawaz R. Alanazi, Ali A. Al Gassar, Abdullah A. Al-Ghamdi, Essa H. Al Shammri, Khalid W. Kamal, Montather I. Al Rashid, Ameen A. Alharoon, Abdallah A. Almotery, Rashed F. Al Ghurairi, Salman A. Al-Zahrani, Mamdouh F. Al-Anazi, Majed A. Alzahrani, Salem E. Alshammari, Fahad M. Al Dossary, Yazid S. Khabti, Abdullah M. Al-Ghamdi, Talal M. Alotaibi, Ali M. Alshahrani, Almajd K. Alhakami, Bader M. Almadani, Ali M. Al Ghamdi, Hossam M. Al Ghamdi, Zayd H. Alhajri, Abdulrahman F. Almutiri, Ali H. Al-Nasser, Saleh A. Alkhuwailidi, Raid A. Osaimi, Ali S. Alshammri, Abdulaziz A. Aljohani, Mrae A. Alwaked, Khalid F. Alzahrani, Majed S. Alghamdi, Hussain T. Alhumaid, Abdulaziz H. Alkharji, Bassam H. Alamri, Yousef E. Alghamdi, Saad K. Alqahtani, Rayan A. Allassaf, and Meshari M. Alshammari.

# well-being caring for your health and wellness

## championing women's health globally at all times



With International Women's day coming up on March 8, we would like to not only celebrate all women's achievements, but also to provide women with essential health awareness information to ensure their good health and well-being.

Women and men have many of the same health problems, but they can affect women differently. For example, heart disease presents differently in women, and some diseases are more common in women, such as osteoarthritis, obesity, and depression.

The biggest threats to women's health, which are often preventable, include heart disease, cancer, stroke, chronic lower respiratory disease (such as bronchitis and emphysema), Alzheimer's, and Type 2 diabetes.

### healthy habits are your best medicine

To reduce the risk of developing one of these life threatening conditions, adopt healthy habits.

Don't smoke or use tobacco products, and avoid second-hand smoke. Talk to your health care provider if you need help quitting.

Avoid pollutants. Minimize your exposure to chemicals and outdoor air pollution.

To prevent infections and illnesses, wash your hands with soap and water often. You should wash your hands before eating, after going to the bathroom, and any time after touching something that is not clean.

Eat a healthy diet with vegetables, fruits, whole grains, high-fiber

foods, and lean sources of protein. Limit foods high in saturated fat and sodium.

Manage chronic conditions. If you have high cholesterol or blood pressure, follow your health care provider's treatment recommendations. If you have diabetes, keep your blood sugar under control.

Include physical activity in your daily routine. Participate in activities such as sports or dancing. Regular exercise helps control weight and relieve stress.

Maintain a healthy weight. Take steps to reduce stress, and make time to relax. Talk to an emotionally supportive friend or family member. Take a bath, read a book, go for a bike ride, or meditate.

Also, visit a health care provider regularly for check-ups and screenings, which can detect problems before they cause symptoms.

### prevent breast cancer

Breast cancer affects one in eight women during their lives, but thanks to screening, it can be detected early, when the chance of successful treatment is best.

Early on, breast cancer often has no symptoms. But, as the cancer grows, it may cause a lump in the breast. Sometimes, the skin over the tumor becomes coarse and wrinkled, and the nipple may produce a discharge.

Most cases are discovered either by a mammogram or clinical breast exam. Health care providers recommend a woman have her first mammogram between the ages of 35 and 39 and continue once every two years, then once annually after age 50. Mammograms should be started earlier if a patient has a family history of breast cancer.

If pregnant, you can get prenatal care information from your physician. Prenatal care includes health care, along with education and

counseling about how to handle a pregnancy.

### menopause

Menopause marks the time when a woman stops having a menstrual period, usually between ages 40 and 55. During menopause, women go through physical and mental changes.

At first, menopause causes a woman's period to become irregular, eventually stopping, as the ovaries stop producing hormones and releasing eggs.

Menopause may cause a variety of symptoms such as irregular periods, hot flashes, vaginal and bladder problems, fatigue and sleep problems, mood changes or depression, as well as such body changes as weight gain, reduction in breast size, headaches or memory problems, joint and muscle stiffness or pain.

It can weaken bones and cause osteoporosis, which in turn can lead to fractures of the hip, wrists, or other bones in the body. To prevent osteoporosis, get plenty of calcium and vitamin D. Milk and dairy products are good sources.

Regular exercise can also help keep muscles and bones strong.

Following a healthy lifestyle can help prevent these health threats. Also:

- Plan for pregnancies and see your health care provider regularly while you are pregnant
- Have regular mammograms
- Get regular checkups and screenings, as early detection is important for treating breast, cervical, uterine, and ovarian cancer.

This content is for informational purposes and is not intended to be a substitute for the advice of a health care professional. It is important that you rely on the advice of a health care professional for your specific condition. If you think you have a medical emergency, call 911 immediately.



### caring profile

**Dr. Hanan Al-Shaikh**  
pediatrician

#### work history

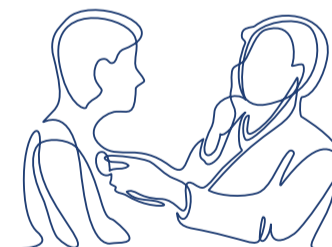
- 2014 - present: Attending general pediatrician, Johns Hopkins Aramco Healthcare (JHAH)
- 2005 - 2014: Attending general pediatrician, Saudi Aramco Medical Services Organization (SAMSO)
- 2000 - 2001: General pediatrician, Pediatric Services Division, Dhahran Health Center, Saudi Aramco Medical Services Organization (SAMSO)
- 1995 - 1997: Primary health care physician, Ministry of Health, Dammam

#### education

- 2005 - Completed postgraduate training in general pediatrics, University of Ottawa, Canada
- 2004 - American Board certified
- 2001 - 2005: Pediatric residency, University of Ottawa Children's Hospital, Eastern Ontario, Canada
- 1997 - 2000: Physician Development Program, Dhahran Health Center, Saudi Aramco Medical Services Organization (SAMSO)

#### quote

"Since my journey in medicine started and I became a pediatrician, I learned that the art of pediatric medicine is not only curing disease, but most importantly, it is about how we nurture these children. Not only are our children the future, but they are part of the present too, and so we need to be constant advocates for them at all levels."



### Become a patient at Johns Hopkins Aramco Healthcare (JHAH)

Eligible Saudi Aramco employees and their dependents are invited to register for healthcare at JHAH.

For more information on how to change your registration, contact your local HR Service Center or visit HR Online, or scan the QR code below for detailed instructions.



800-305-4444 | www.jhah.com

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## tips for prenatal care

Prenatal health care makes sure you and the baby are healthy at each visit. Here are some tips for prenatal health care.

- Make sure to take a multivitamin or prenatal vitamin with 400 to 800 micrograms of folic acid daily. Folic acid is most important in the early stages of pregnancy. However, you should continue taking folic acid throughout your pregnancy.
- Ask your health care provider before starting or stopping any medicines. Some medicines may cause problems during pregnancy. Stopping any medicines you need can also be harmful.

- While pregnant, avoid X-rays. If you need X-rays, tell your health care provider you are pregnant so extra care can be taken.
- Eat a variety of healthy foods during pregnancy such as fruits, vegetables, whole grains, calcium-rich foods, and foods low in saturated fat. Also, make sure to drink plenty of fluids — especially water.
- Getting all the nutrients you need each day is also important while pregnant. For example, getting enough iron prevents you from getting anemia. Anemia can cause preterm birth, and low birth weight. Ask your health

- care provider if you need a daily prenatal vitamin.
- Always wash fruits and vegetables before eating. Don't eat uncooked or undercooked meats or fish. Make sure to handle, clean, cook, eat, and store foods properly. This helps prevent food-borne illnesses.
- Don't eat fish with lots of mercury, including swordfish and king mackerel.
- Unless your health care provider tells you not to, try to get at least two hours and 30 minutes of aerobic activity each week. Attempt a moderate level of intensity, and spread workouts throughout the week.



LEGAL DISCLAIMER: All health and health-related information contained in this Johns Hopkins Aramco Healthcare company material is intended to be general in nature and should not be used as a substitute for a visit with a health care professional. The advice is intended to offer only a general basis for individuals to discuss their health and medical conditions with their health care provider. Your health care provider should be consulted regarding matters concerning the medical condition, treatment, and needs of you and your family.



# King Abdulaziz Center for World Culture by saudi aramco



## Ithra movies

### in cinema

#### Ithra Heroes Adventure

March 7 10:30 a.m.

#### Mission Kathmandu

March 10, 11 3:45 p.m.

#### Son of Sidra

March 5, 6 2:15 p.m.

#### The Cave

March 10 6:15 p.m.

#### The Son of Bigfoot

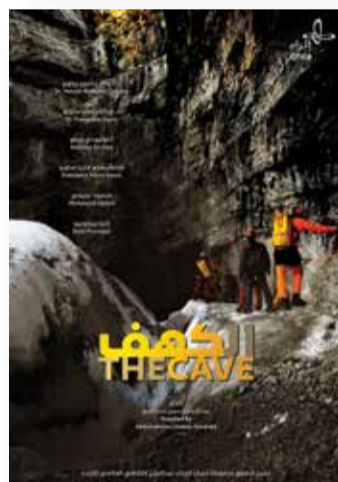
March 4, 5, 6, 7, 9, 10, 11 6 p.m.

#### The Wonderland

March 6, 11 6:15 p.m.

March 7 12:15 p.m.

March 9 3:30 p.m.



#### Son of Sidra

After being physically abused by his father for no reason, Thamer decides to punish his father by stealing his money without his knowledge. His sister Shima sympathizes with him, which led her grandmother to convince her that the money was stolen by the son of Sidra and tells her the ancient myth about a boy who was once buried under the sidra tree and takes revenge on the villagers by stealing their belongings.

#### The Son of Bigfoot

A teenage boy sets off on a journey to find his missing father, only to discover that he's actually Bigfoot.

#### The Wonderland

The story follows Akane, a girl with struggling self-confidence. The day before her birthday, she meets a mysterious alchemist, Hippocrates, and his student Pipo, who tell her they're on a mission to save the world. Together, they set out from the basement for "Wonderland," and Akane finds herself labeled Wonderland's savior.

#### Mission Kathmandu

Quebec, 1956. The destinies of Nelly Maloye, a novice private eye, and Simon Picard, a research scientist at the local university, unexpectedly meet. Bankrolled by an ambitious client, the impulsive and headstrong Maloye joins the methodical and pragmatic Picard in a dubious quest to prove the existence of the elusive Yeti. Along with Tensing, their young Sherpa guide, and Jasmin, a chatty myna bird, the brave-hearted heroes come face-to-face with countless dangers during their trek through the heart of the Himalayas.



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The Arabian Sun is a weekly publication issued free of charge by the Corporate Communication Support Department for Saudi Aramco employees.

North Admin Building, Room AN-1080, C-05A, Dhahran, Saudi Arabia  
Telephone (013) 876-0374  
Email: publishing@aramco.com  
ISSN: 1319-156X  
Articles may be reproduced provided The Arabian Sun is credited.

Publishing director:  
Meteb F. Al Qahtani (A)  
Editors: Jamsheed Din, Todd Williams  
Editorial staff: Jeff McCoshen, Musherf Alamri, Eamonn Houston, Scott Baldauf, and Shaistha Khan.  
Designer: Husam Nasr.

Articles and coverage can be requested through the company's CRM system.  
Correspondence may be addressed to the editor, North Admin Building, Room AN-1080, C-05A.



Saudi Arabian Oil Company (Saudi Aramco) is a joint stock company, with certificate of registration number 2052101105, having its principal office at P.O. Box 5000, Dhahran, Postal Code 31311, Kingdom of Saudi Arabia, and with fully paid capital of SAR 60,000,000,000.

# the arabian sun



championing women's health globally at all times

see page 9

## The Chehade Brothers tune in at Ithra

**Dhahran** — The King Abdulaziz Center for World Culture (Ithra) hosted The Chehade Brothers as they perform their signature style high-energy tunes at the Ithra Theater this past weekend.

The brothers, Farid and Rami Chehade, are uniquely talented in traditional instruments and contemporary music. Their poetic verses and virtuoso talent on authentic Arab instruments have delighted audiences throughout Europe and the Middle East. The brothers infuse world music with a generous serving of Arabesque to create an unforgettable musical experience.

The duo has a rich cultural legacy of music. Growing up, their home was a known artist retreat where art, music, and poetry found strong support and encouragement. Their exposure to art from a young age and their desire to share their music with the world have encouraged them to excel in their skills and historical understanding.

Both brothers have broad skills in playing Arab instruments, including the oud, bouzok, and kanoun, among many others. They are also masters of the poetical art forms of zajal, ghazal, hija'a, and taqsim.

Majed Z. Samman, Ithra's head of Performing Arts and Cinema, noted that as Ithra Theater looks to host world-class performances that expand cultural horizons, few fit the bill as well as The Chehade Brothers.

At the moment they are experiencing soaring success in their musical career, The



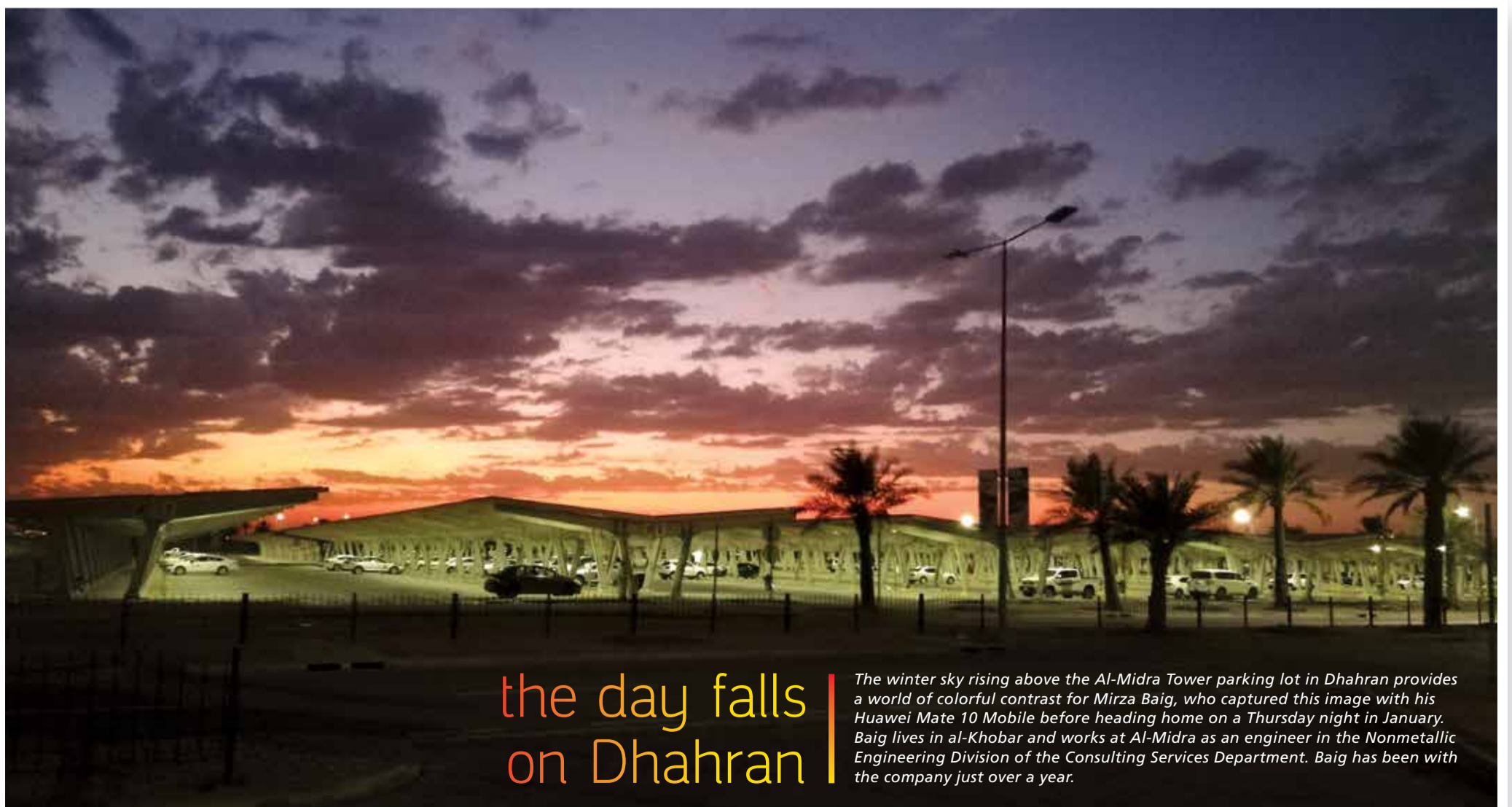
Farid and Rami Chehade, uniquely talented in traditional instruments and contemporary music, recently brought their Arab-influenced stylings to the Ithra Theater, much to the delight of the hundreds of people who attended each showing. (Photo: Ahmed Al-Thani)

Chehade Brothers' performance at Ithra was extraordinary," Samman said. "We are always working to deliver high-caliber musicians to Ithra's stage, and The Chehade Brothers brought a great mix of both poetic art and Arabesque music to our audience — truly upbeat Middle Eastern fusion music."

The 900-seat Ithra Theater has hosted a diverse program of local and international

productions, forums, and discussions that have helped ignite cultural curiosity and inspire creativity through ideas, imagination, and innovation. From showcasing the world's best orchestras, productions and performances, to celebrating Saudi's social and cultural values, the Theater promises world-class experiences to appeal to everyone.

Since opening to the public, it has hosted over 50 performances with more than 25,000 attendees enjoying its diverse programming, including the Fifth Saudi Film Festival, Harry Potter and the Philosopher's Stone™ in Concert with the U.K.'s National Symphonic Orchestra, Russia's Mariinsky Orchestra Theater, oud legend Naseer Shamma, and more.



the day falls on Dhahran

The winter sky rising above the Al-Midra Tower parking lot in Dhahran provides a world of colorful contrast for Mirza Baig, who captured this image with his Huawei Mate 10 Mobile before heading home on a Thursday night in January. Baig lives in al-Khobar and works at Al-Midra as an engineer in the Nonmetallic Engineering Division of the Consulting Services Department. Baig has been with the company just over a year.