

the arabian sun

January 29, 2020 | Vol. LXXV, No. 5

a weekly Saudi Aramco publication for employees

what you need to know about coronavirus

How does novel coronavirus spread? Who is most at risk? How can you best protect yourself from it. Johns Hopkins Aramco Healthcare offers answers to these questions and more.

see page 8



meet the excellence behind our low carbon intensity

Thoughtful reservoir management, world-leading flare minimization, wise energy efficiency, greenhouse gas management, and methane leak detection are among the ways Saudi Aramco employees work to exceed expectations on carbon intensity.

see pages 6 and 7



talking the walk at WEF CEO talks transition on a global stage at World Economic Forum

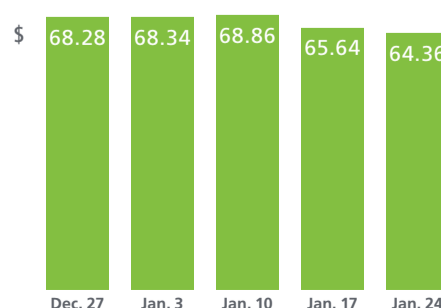
see page 3

Speaking at the World Economic Forum in Davos, Switzerland, Amin Nasser notes that Saudi Aramco continues to drive and position itself for the future in terms of lowering carbon emissions while maintaining its competitive advantage when it comes to cost. The company was lauded as "an exception among its peers" during a panel debate at the forum.



Ilthra launches first Cultural Days festival with tip of the hat to Vietnam
see back page

OPEC basket five-week price trend 2019-2020



Saudi Aramco by the numbers

10 to 15

minutes is the standard service time at Saudi Aramco's first motor vehicle inspection station in Dhahran.

Abu Dhabi Sustainability Week: No single or simple solution reduce emissions plus meet increasing energy demand

by Janet Pinheiro

Abu Dhabi — Conversely linked to the United Nations call for universal energy access, and the world's growing demand for energy, is the complex challenge of building a cleaner energy system for our planet.

At the recent Abu Dhabi Sustainability Week (ADSW) — a fusion of events held since 2008 and attended by international leaders and sustainability experts to accelerate the world's sustainable development — the International Energy Agency (IEA) advised there were no easy answers for achieving the world's sustainable energy goals.

"There is no single or simple solution," said IEA executive director Fatih Birol, who against the background of historic highs in emissions, added that technology innovation was essential to aiding the pursuit of a 1.5 degree Celsius stabilization.

Among Birol's multifaceted advice for building a cleaner, but secure, energy system was energy efficiency, renewables, carbon capture use and storage, nuclear, and other technologies.

For Saudi Aramco, the world's biggest oil-producing company, the IEA head's "no single solution" advice is nothing new.

Oil from Saudi Arabia has the lowest carbon intensity of the top 26 producers because, for years, Saudi Aramco has thoughtfully entrenched multiple greenhouse gas emission actions within its operations.

Crude oil's agility means it provides many modern life essentials, such as energy, construction and household materials, as well as personal items such as fabric for clothing.

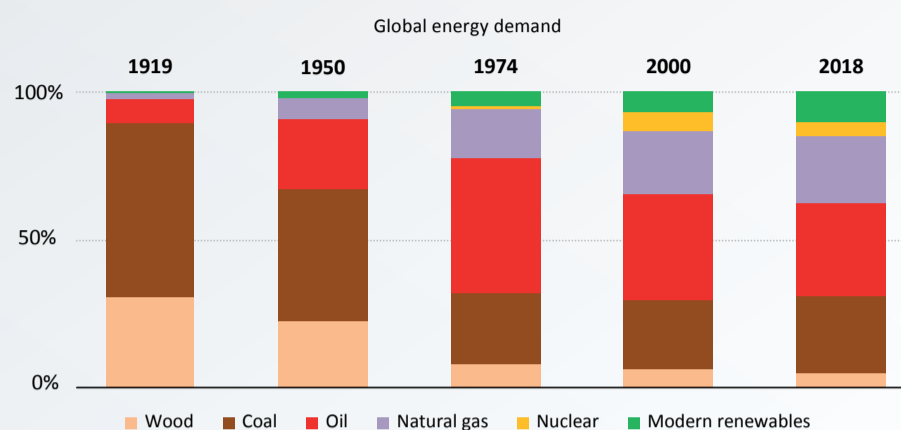
Speaking at ADSW, Saudi Arabia Minister of Energy, HRH Prince Abdulaziz bin Salman bin Abdulaziz Al-Saud, advised that oil demand will remain significant for the coming decades. "By 2040, we will still need a lot of oil, a lot of gas, coal, and a lot of renewables."

To free up crude oil for higher value use, Saudi Arabia has plans for its domestic power mix to be 70% gas and 30% renewables, and the minister, supporting the concept of the circular carbon economy, called for a level global playing field for all energy sources, urging serious and objective discussion.

The minister said people should "give all sorts of energy a fair, equitable chance so long as we mitigate these emissions. It is equally important to be realistic about what sort of an energy mix the global economy will have."

At its modern exhibition stand, one of the company's hydrogen fuel cell vehicles

Perspectives from energy history



The last century has witnessed multiple transitions to and from different fuels and technologies. The challenge today is one of scale: Global energy use is 10 times higher than in 1919.

IEA 2019. All rights reserved.

iea

From left to right, Badr T. Malak, Rashid M. Yami, Adel S. Al-Ghamdi, Shaima A. Al-Khalid, and Faris M. Alkordy.



was displayed, and five Saudi Aramco experts shared insights into some of our "environmental, social, and governance" stories.

world leading flaring minimization

Since the introduction of its distinctive Master Gas System (MGS) in the 1970s, and the rollout of its corporate flaring minimization road map, Saudi Aramco has recovered close to 99% of its total gas produced, while reducing carbon dioxide (CO₂) emissions by more than 98 million metric tons per annum.

"In 2012, the World Bank's Global Gas Flaring Reduction Partnership recognized Saudi Aramco for its pioneering role in minimizing flaring and associated gas unitization," said Adel S. Al-Ghamdi, a flare and relief systems specialist with the Environmental Protection Department.

Saudi Aramco's low flaring levels come from a decades-long focus on sustainability, such as the MGS development, and monitoring flaring in real-time at the company's Fourth Industrial Revolution Center.

In November 2019, Saudi Aramco joined The World Bank Initiative "Zero Routine Flaring by 2030."

digital power generation control

From iPower, an intelligent monitoring

and diagnostic center in the company's Dhahran headquarters, Saudi Aramco keeps a close eye on the performance of the power systems' assets supplying its oil and gas facilities.

Power Systems Engineering Department engineer Badr T. Malak demonstrated how iPower is a digitalization platform for power system assets and processes through the deployment of artificial intelligence-based analytical solutions, which predict the performance of assets and recommend optimal operational scenarios.

"We use the data at Saudi Aramco's iPower control center to predict behaviors of our assets and optimize our power generation performance," said Malak.

nonmetallics in circular carbon economy

The direct conversion of crude to chemicals reduces oil's carbon footprint even further, and with typical foresight, Saudi Aramco commenced work to deploy non-metallic materials more than 20 years ago.

Consulting Services Department engineer Faris M. Alkordy explained that, since then, approximately 7,500 kilometers of non-metallic pipe and liners have been installed across the company's operations, bringing benefits of energy efficiency, safety, and longer product life.

“

Through the pillars of planet and people, our focus has shifted from fragmented relief and philanthropy to developing sustainable projects.

— Shaima A. Al-Khalid

"Nonmetallic materials can be recycled and have a longer life cycle, making them an important part of the circular carbon economy while supporting the Saudi government's pragmatic and cost-effective approach on achieving ambitious climate goals," explained Alkordy.

people and planet

Saudi Aramco has always believed in its power of energy to transform lives, lift communities, advance human progress, and sustain the planet.

Shaima A. Al-Khalid presented on how the company's citizenship efforts focus on the two pillars of planet and people.

"Through these two pillars, our focus has shifted from fragmented relief and philanthropy to developing sustainable projects through providing infrastructure and tools, such as supporting a beekeeping industry with training and a research center in the Al Baha region," said Al-Khalid, a public relations representative with the Corporate Citizenship Division.

leading energy digitalization

Data is blending our physical and digital worlds, and brings with it sustainability benefits.

Showing how Saudi Aramco's leading digital transformation innovations positively impact sustainability was presented by Rashed M. Yami, whose presentation included company robots doing subsea inspections and fighting fires.

"We use sophisticated drones to detect methane leaks, which the ordinary eye cannot see, to protect our reintroduced wildlife at Shaybah, and to monitor our mangrove plantations," said Yami, a senior information systems consultant with Digital Transformation.

"Our digital plant integrated manufacturing operations management and smart manufacturing cloud-based infrastructure is unprecedented in the industry, and avails all operational data at one's fingertips — anytime, anywhere," he added.

ADSW is held under the patronage of HH Sheikh Mohamed bin Zayed Al Nahyan, Crown Prince of Abu Dhabi. The event attracted a gathering of 38,000 attendees from 170 countries.

financial innovation addressing climate change

At an Atlantic Council invitation-only workshop on the "circular carbon economy," carbon dioxide (CO₂) expert and Saudi Aramco Technology Strategy and Planning Department research scientist Niass Tidjani spoke on the capture, reuse and recycling of CO₂ emissions from hydrocarbon combustion.



During ADSW, Majid A. Mufti, the chief executive officer of Saudi Aramco Energy Ventures (SAEV), delivered a talk about the importance of corporate venture capital (CVC) for oil and gas companies and its role in counteracting greenhouse gas emissions.

SAEV is the CVC arm of Saudi Aramco and since its inception in 2012, the \$500 million fund has made 45 investments globally with a focus on strategic new technologies and sustainability.

Approximately half of the startups that are part of the SAEV portfolio have their innovative technologies deployed or piloted in Saudi Aramco operations.

With plans to set up a second \$500 million fund this year, Mufti said: "We are here to help these companies and their technologies to get to the commercial phase."



Atlantic Council, Global Energy Forum 2020

World Economic Forum: the global energy challenge

CEO steps on world stage to debate transition with three top industry leaders

by Janet Pinheiro

Davos, Switzerland — Saudi Aramco's greenhouse gas emissions efficiency was described by Christiana Figueres, the former leader of the landmark 2015 Paris Agreement, as "an exception among the peers" during a live streamed panel debate on the global energy transition with president and CEO Amin Nasser at last week's World Economic Forum (WEF).

The significant acknowledgment from the former U.N. Framework Convention on Climate Change executive secretary included the company's pioneering methane management: "Aramco is taking the lead on that (methane), but not everyone else is doing it," said Figueres, known for speaking her mind.

Figueres' comments were well-earned recognition for the training and committed diligence of Saudi Aramco employees toward best-in-class operational management, and Nasser emphasized that the company wants the "carbon footprint of everything that we do" to be the lowest.

"We continue to drive and position ourselves for the future in terms of lowering our carbon emissions, and maintain our competitive advantage when it comes to cost," said Nasser.

When compared with CO₂, methane gas is 80 times more harmful to global warming in the first two decades after its release, and Saudi Aramco's 0.06% methane intensity is one of the lowest in the industry, while the company's upstream carbon intensity is one of the lowest in the world at about 10 kilograms of CO₂ equivalent per barrel of oil equivalent.

Each year, WEF invites approximately 3,000 of our planet's most influential leaders to gather in Davos to collaborate on international issues, and amid rises in carbon emissions during 2018 with a similar rise expected for 2019, concerns about climate change and sustainability dominated this year's 50th annual conference.

energy transition — a dual solution for a dual challenge

Delivering more, but cleaner, energy with less emissions to the world's growing population — as well as the nearly 1 billion people with no electricity access — is a dual challenge of "more with less."

Nasser said demand for renewables, electrification, and alternatives will increase by 2040, but he cautioned against the simplistic view that a transition to a cleaner energy can occur overnight.

He said transitioning was dependent upon affordability: "It takes a lot of financial capability that might not be available for all countries," adding that meeting the



At the World Economic Forum, an annual invitation-only event for global leaders to collaborate on shaping international agendas for economies, sustainability and technology, Saudi Aramco Chairman HE Yasir O. Al-Rumayyan, and Saudi Aramco president and CEO Amin Nasser hosted a reception for company partners and clients that was also attended by HRH Prince Abdulaziz bin Salman bin Abdulaziz Al-Saud, Saudi Arabia's Minister of Energy.

Addressing the guests for first time since the successful initial public offering in December last year, Nasser said Saudi Aramco has two main priorities.

The first is delivering ample, affordable, reliable energy for the whole world and, second, to make sure our energy is cleaner.

"I am confident that by working with the rest of the industry around the world, we can deliver on making sure our energy for the rest of the world is cleaner, meeting their expectations," said Nasser.

world's future energy demands will require traditional and newer energy sources to work together to meet future demand.

The panel discussed renewables and gas as a dual solution.

"We use renewables as the backbone," said Figueres, adding that gas is then used to firm up renewables "because they are not 24/7, 365," and commenting that using renewables rather than "pulling the grid all the way out" to an isolated poverty area makes more financial sense.

"It is not oil and gas that are a problem, it is the emissions from them," she said.

energy emissions

According to International Energy Agency executive director Fatih Birol, one-third of all the world's CO₂ emissions came from coal power plants.

Adding that coal-fired plants were often the "No. 1 source of electricity generation in low income countries," he advised that energy was not an issue that could be easily simplified, and that "Western-centric discussions" were wrong from both an ethical and climate point of view.

Energy is a very serious complex business, especially in developing countries," said Birol.

With close to 3 billion people still relying primarily on biomass and kerosene for cooking, Nasser said, underdeveloped countries should not be lectured on delivering affordable electricity to their people.

He added that changing coal-fired power with gas would result in a "huge reduction

- Launched in 1971 by Klaus Schwab
- Strives to improve the world
- 3,000 influential leaders
- Invitation-only to Switzerland
- CEOs participate in energy transition debate

said rising energy demand has brought millions of people in the world out of poverty. He said that the future lay in renewables, Kaeser urged cooperation: "We have got to work together. This is something which concerns everybody."

Part of CNN's Global Energy Challenge feature series, the panel provided a timely and realistic perspective to the global energy transition debate, and firmed consensus that hydrocarbons will be necessary to promote development and growth in developing countries.

The panel was moderated by CNN's John Deferios, who remarked it was the "healthiest" energy transition debate so far.

more than a petrol pump

Displayed to an "Art of Possible" theme, a Saudi Aramco exhibition stand highlighted the company's investment in energy technology, global research and development commitment, and its awareness of climate change.

Using the most powerful reservoir simulation algorithm in the world, TeraPOWERS, visitors were immersed into a 3-D 5,000 foot journey below ground into an oil field.

Transparent LED screens told the story of inspiration to commercialization, while other displays included the Fourth Industrial Revolution Center, flaring minimization, and the company's realistic research about how to truly reduce carbon emissions from the light-duty transportation sector.

WEF was founded in 1971 by executive chairman Klaus Schwab, who originated the term Fourth Industrial Revolution. This year's event was held for four days from Jan. 21-24 under the theme of "Stakeholders for a Cohesive and Sustainable World."

Later this year, Riyadh will host a WEF meeting under the banner of the Center for the Fourth Industrial Revolution.

tion in carbon emissions," and his view of the energy transition would be multi-speed, driven by a country's geography and development curve.

world's oil consumption to remain to 2040

Today's oil consumption is 100 million barrels per day, and Nasser said that growing population, an emerging middle class, and lifting countries out of energy poverty means demand will continue at this level for another two decades.

"There will be additional demand," he said. "And the only way you can meet it is by making sure that you continue to provide affordable, reliable, ample, energy to the rest of the world."

Siemens president and CEO Joe Kaeser



WEF ... The Art of Possible

'Sustainability from Well to Wheel'



The Saudi Aramco pavilion highlighted the company's sustainable solutions and technologies such as carbon capture, ARC Plug, and TeraPOWERS 3-D subterranean journey into an oil field.

for more on our carbon intensity, see pages 6 and 7



Other services recently recognized among the most improved included ID and sticker waiting time, Aviation's Umrah flights, introduction of five new fitness centers in work areas, and the operation of women's driving centers.

dining and cafés come out on top in most improved services in Operations and Business Services competition

by Dalia Darweesh

Dhahran — The employees have spoken, and the most improved service for Operations and Business Services (O&BS) in 2019 was dining and cafés.

The increased quantity, variety, and quality of restaurants, cafés, and food outlets such as Chili's, ACAI restaurant, Paul Café, Fud-druckers, and Bran Basket Bakery prompted employees to vote it as the most-improved service.

The O&BS Most Improved Service Competition, which was launched on Dec. 9, was designed to better understand customers' perception of the services provided by Saudi Aramco and its partners that employees, their dependents, and contractors have benefited from the most.

An iPhone 11 Pro Max winner was chosen randomly from employees who voted for the winning service. More than 7,000 employees participated by voting from a selection of 34 improved services.

rounding out the top five

Employees had nearly three dozen services to choose from, and a number of services finished closely behind the winning dining facilities, which were recognized for their diversity and quality.



The increased quantity, variety, and quality of restaurants, cafés, and food outlets such as Starbucks prompted employees to vote it the most-improved service.

ID and sticker waiting time, benefiting from the introduction of one-stop shops and efforts to reduce the waiting time to only eight minutes, was voted the second most improved service.

Aviation's Umrah flights was voted third. In 2019, Aviation started monthly, free same day roundtrip Umrah flights for Aramcons, with an average of 230 users a month tak-

ing advantage of the service.

The introduction of five new fitness centers in work areas and the upgrading of five existing gym facilities earned the fitness centers category a fourth place.

Women's driving centers received the fifth most votes, as the offering of a comprehensive quality driving program for company employees and their dependents in Dhahran

and the al-Hasa communities (with a total capacity of 26,000 users per year) giving it a strong nudge in the most-improved category.

feedback from the winner

Asma M. Alahmadi, a gas reservoir engineer in the Reservoir Description and Simulation Department, was chosen randomly from the service that received the most votes — Dining and Cafés — and won a new iPhone 11 Pro Max. She wanted to learn more about O&BS services, and was surprised to see a list of 34 services. Alahmadi noticed a major improvement with different locations, cuisines, and options.

striving to provide the best services

During the last three years, O&BS has held many initiatives, enhancements, and quality checks that would match services with customers' expectations. Services provided have gone through many enhancements to know exactly where the customers exist, and what services they preferred. O&BS always strives to deliver the best quality services to employees, dependents, and retirees — closing the gap between operational requirements and the expectations of customers.

your voice

how to overcome procrastination



by Billal Lyzzaik
Ras Tanura
billal4959@gmail.com

Procrastination is defined by the *Merriam-Webster Dictionary* as the act of "intentionally and habitually" delaying "the doing of something that should be done." We have all fallen victim to putting something off for a later time, and sometimes can't even explain the reasons for doing so.

Although procrastination is wired differently with every individual, it can be traced back to a few broad explanations as to why it is such a predominant part of our lives.

Procrastination arises due to lack of motivation, negative sensations, and time inconsistency. Once you confront why you are procrastinating, you may then work to decrease its occurrence.

Lack of Motivation: When striving to tackle an action that you are not fully motivated to do, you tend to push it back. With motivation, your care on a topic increases — especially when it concerns you.

You may think about how much you want to go to the gym, or start the report that's due in a couple of days while you're sitting on the couch snacking and watching TV. However, that same motivation that entered your mind can just as easily fade away.

In an article presented by researchers at James Cook University in Australia, it was stated that motivation can be categorized into two different fields — intrinsic and extrinsic. Intrinsic motivation relates to fulfillment internally (doing something because you want to do it), while extrinsic motivation reflects an external satisfaction that would be presented to you (such as a good grade). The first step in gaining and holding onto your motivation is knowing what motivates you in the first place.

To achieve a goal and decrease procrastination, you must identify or create a motivation that would help you tackle a task.

Negative Sensations: A 2013 study done at The University of Sheffield stated that we willingly put off assignments because "most often when we are faced with a task that is viewed as aversive (i.e., boring, frustrating, lacking meaning, and/or structure), it therefore leads to unpleasant feelings or a negative mood."

This is an inevitable part of life — we are attracted to what feels manageable and work against what feels difficult. To get over the negative sensations that can stop us from taking on a task, it is recommended that you look at the positive

consequences that would arise from that specific action.

Time Inconsistency: This is also referred to as Dynamic Inconsistency. In simple terms, it is referred to as an idea that is outlined for you to follow, yet becomes inconsistent over time and your commitment to the idea decreases or changes.

In a study done at Stanford University, it was proven that individuals have a different view on tasks that they have complete control of. Research yielded results showing that this phenomenon is due to the fact that our brains view immediate reward as more beneficial over future outcomes.

Since we are aware that some tasks require more effort and work than others, Time Inconsistency is difficult to overcome. The first step in achieving what you want to achieve is believing that you can do it in the first place. You must stay committed to your beliefs and motivations.

Procrastination is evident in everyone's daily routine. However, the next time you find yourself avoiding a task, try figuring out why you are not putting forth the energy to complete it. Overcome your procrastination and finish the work you know needs to be done.

Your Voice reflects the thoughts and opinions of the writer, and not necessarily those of the publication.

quick and convenient, first motor vehicle inspection station opens in Dhahran

by Maytham Al-Musawi

Dhahran — If your motor vehicle periodic inspection certificate is almost expired, and your office is in Dhahran, you will be pleased to know that you need not drive far and wait in a long queue to get your certificate of roadworthiness, which must be renewed annually to ensure vehicle safety.

Just a stone's throw from Ajyal Gate in Dhahran, the very first Motor Vehicle Periodic Inspection Station at Saudi Aramco was recently launched by Saudi Aramco's Transportation and Equipment Services Department (T&ESD). The station is dedicated to serving Saudi Aramco employees and their dependents, as well as company contractors.

quick and convenient service

The new service gives customers the option to schedule periodic inspection appointments by visiting the intranet site <https://officeservices.aramco.com.sa/mvpi/Booking.aspx>, or simply drop in and wait for the earliest available time. T&ESD's goal

is to provide its customers with a fast and high quality service, as the service takes only 10 to 15 minutes.

And while you wait for your car to be inspected, you can enjoy a cup of coffee in the air-conditioned waiting area, designed especially for the comfort of customers.

a comprehensive solution for everyone

The station also serves the company's vehicles, including those of T&ESD. Sami A. Al-Ajmi, acting manager of T&ESD, said that since T&ESD has a vast vehicle fleet of approximately 17,000 vehicles — including cars, buses, cranes, and heavy-duty vehicles — the nearby service will be a boon to the company.

"Having this large number of vehicles, periodic inspection has always been an issue," Al-Ajmi said. "Therefore, we searched for a solution that would benefit everyone. Our contractors can use the station to conduct the periodic inspection for the company vehicles, while employees can use it for their own cars."



The new service gives customers the option to schedule periodic inspection appointments, in addition to walk-ins, where customers can go to the station without an appointment and wait for the earliest available time.

continuous improvement

Through measuring the customer satisfaction level at the station, T&ESD seeks to develop and ensure the highest quality of service, said Albara Askandarani, then the administrator of T&ESD's Engineering and Technological Support Division.

"We plan to build on what we achieved

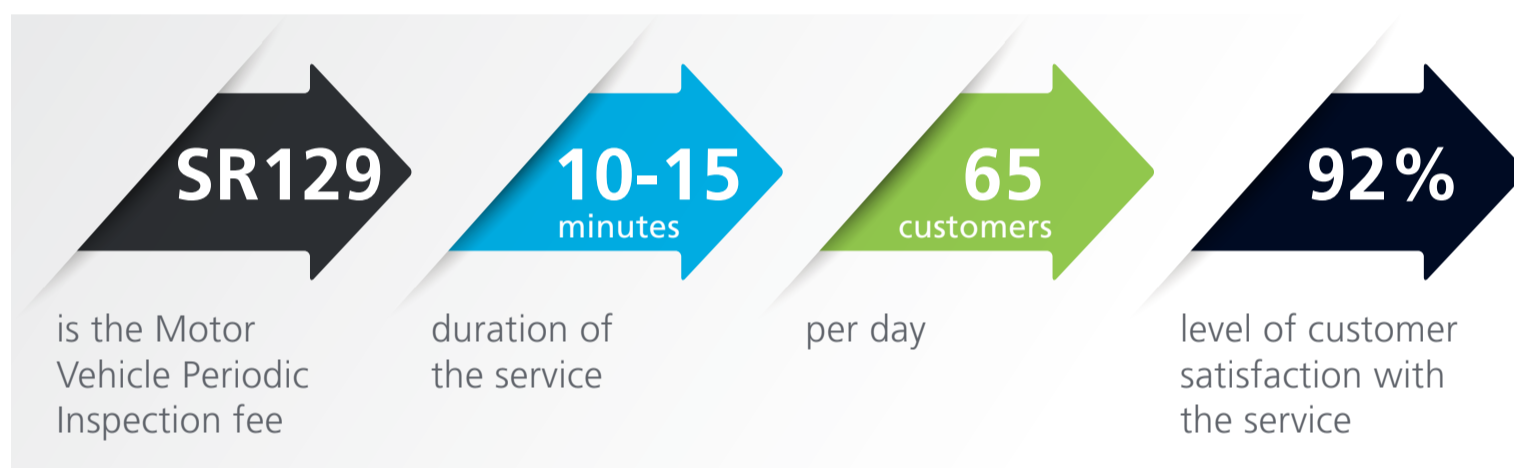
until now through monitoring the usage of the service," said Askandarani. "If there is a high and continuous demand, we will examine the possibility of increasing the capacity of the station."

After their visit, the customer receives an email that encourages them to provide feedback on their experience. And so far, that feedback has been positive and encouraging, said Alaa A. Al-Shehab, a T&ESD business systems analyst.

"In efforts to ensure continuous improvement, we have made some improvements based on customers' recommendations," she added.

Yousef Al-Maghlouth, a technical inspector at the station, said he strives to provide excellent service that rises up to Saudi Aramco's standards.

"It is very pleasant to deal with our customers because of the level of cooperation they demonstrate," said Al-Maghlouth. "Nothing is more important to us than achieving their satisfaction by providing the highest level of service at the station."



taking knowledge sharing to the next level

Khurais Knowledge Transfer Center celebrates first cohort of graduates

Khurais — In one cubicle, young technicians are getting a chance to analyze how flow meters are integrated with control systems in the Khurais Producing Department (KhPD) facility, while in another cubicle, other technicians learn how to deal with metals in a safe environment.

A few feet away, another technician gets hands-on training from an experienced subject matter expert on how to troubleshoot electrical breakers.

Welcome to the Khurais Knowledge Transfer Center, a recently completed initiative of Southern Area Oil Operations that takes knowledge transfer to the next level to help realize KhPD's continuing vision to become a leader in hydrocarbon production.

This effort supports Saudi Aramco's position as the world's leading energy supplier, recognized by its operational excellence, performance, and pioneering in safety, environmental stewardship, and energy efficiency. KhPD has taken a proactive action in this direction by ensuring that its workforce is well-trained and equipped with the necessary resources.

where the theoretical and practical meet

The center was established in May 2019 and since then has been evolving and providing support to young technicians and engineers through its various programs, including hands-on training and theoretical



The first graduates from the Khurais Knowledge Transfer Center pose for a photo with members of management and academy staff. These young employees were converted from trainees to regular employees in four months, compared to six to 12 months in the normal duration.

sessions to help accelerate the young workforce's acquisition of the required technical skills to perform their work. And this is all done while also instilling an innovation culture among these young employees.

The academy has four programs, including:

- **Accelerated Apprentice Development Program**

This program runs for approximately four months, and the participants (who are new apprentice graduates) go through four phases:

Phase 1, which includes an overview of the organization's vision and mission, and an emphasis on good safety practices, such as promoting the use of mass transportation. This phase also includes a plant visit.

Phase 2, which involves an introduction

of the company's five corporate values, the successful individual behaviors, and an overview of the Safety Management System

Phase 3, which includes preparation courses for Work Permit Certification, as well as courses on confined space and hazard recognition

Phase 4, which includes completion of Individual Development Plan (IDP) tasks for GC 7 and 8 employees, as well as a meeting with a third-party evaluator to certify the apprentice technician.

- **Maintenance Technicians Hands-on Training**

Physical hands-on training sessions are conducted utilizing the field equipment made available at the center. In 2019, a total of 223 participants covering various disciplines such as mechanical, electrical, instru-

mentation, intelligent field, and competency remedial reviews attended these sessions.

- **IDP Tasks**

A total of 43 technicians from different disciplines have completed all task requirements for the next target GC.

- **Competency Certification Preparation Program**

In 2019, seven technicians were certified in the basic competency test, and three technicians have been certified in the advanced competency test.

The finale of this journey was the graduation day, which included four apprentice technicians who have completed the program. These young employees were converted from trainees to regular employees in four months, compared to six to 12 months in the normal duration.

meet the excellence behind our actions and outcomes achieving ‘b

by Janet Pinheiro and Maytham Al-Musawi

Photos: Habeeb Hadad and Hasan M. AlMubarak/MPD

About 70% of our 70,000 employees work at the frontline of our business — operating and maintaining Saudi Aramco’s world leading processing, production, and distribution facilities.

Science Magazine published a research finding that the amount of greenhouse gases (GHG) associated with each upstream barrel we produce ranked as the second lowest among the 50 countries analyzed.

Deploying “best-in-class management” into our operations is a critical component of the Kingdom’s enviable low carbon intensity, and three of our front-line workers share how their roles exemplify key factors behind this.

Chief engineer Jamil J. Al-Bagawi explains that for decades, Saudi Aramco has known that carefully managing its fields, minimizing flaring and GHG, stopping leaks, and limiting energy use is a win-win for both sustainability and profitability.

“Our large and productive oil reservoirs have low per barrel gas flaring rates and low water production, resulting in less mass lifted per unit of oil produced and less energy used for fluid separation, handling, treatment, and reinjection,” says Al-Bagawi.

“Thanks to the support and guidance of various company teams, the work our capable operators undertake is vital toward our best-in-class operational management, and in turn, crucial to our low upstream carbon intensity,” says Al-Bagawi. “Low carbon intensity is not an intrinsic gift; it is how we carefully manage this gift.”

thoughtful reservoir management

Since 1951, we have meticulously managed production from the world’s largest conventional oil field — Ghawar Field.

Instead of the typical industry practice of maximizing production rates per field, we manage all our amazing fields by carefully balancing production from across our portfolio.

When required, we tap into our newer reservoirs, thoughtfully choosing how much to produce from where, and we can



‘Uthmaniyah’s gas-oil separation plant No. 7 outside operator Mohammed M. Alrashdi works on the frontline of one of the Middle East’s largest carbon enhanced oil recovery initiatives.

do this because of the staggering size of our portfolio. By using seawater injection as our main recovery mechanism, we maintain reservoir pressure and maximize reservoir sweep.

We developed 3-D seismic and horizontal drilling, and also introduced super computers to discover, develop, and manage reservoirs.

‘Uthmaniyah’s gas-oil separation plant No. 7 is a special place, and it is where Mohammed M. Alrashdi has worked for two years.

The plant is the center of one of the Middle East’s largest carbon enhanced oil recovery initiatives, which sees carbon dioxide (CO₂) captured and reinjected back into an oil reservoir.

While examining the product level of one of the project’s tanks, Alrashdi explains that the project is a “win-win” for the environment and the company.

“Reinjecting CO₂ reduces its emission into our environment, and improves oil recovery,” says the outside operator.

Alrashdi says he is proud to be part of the CO₂ capturing project.

“We have special equipment here, and I have shared with my family that this investment by Saudi Aramco is considered to be the first-of-its-kind in the Middle East,” he says. “I know the work being done here is reducing the amount of the CO₂ being re-

leased into the atmosphere. It is enhancing the environment we operate and live in.”

world leading flare minimization

No Saudi Aramco flaring event happens without justification.

As far back as the 1970s, we introduced our zero routine flaring program, significantly reducing the amount of gas we flare.

Our flaring intensity remains at less than 1% of our gas production, and the World Economic Forum has recognized this impressive leadership.

Although flaring is a critical part of ensuring safety in the oil and gas industry, we are not slowing down our efforts. Our ambitious target is to achieve and sustain best-in-class status among industry peers by reducing routine flaring down to an absolute minimum.

At the heart of achieving reduction are production and processing facilities designed to reduce the need to flare.

Wasit Gas Plant outside operator Naser M. Alotabi prepares for the startup of the flare gas recovery system.

Part of the Saudi Aramco team for eight years, Alotabi explains how his team works diligently to ensure flaring is minimized by sustaining continuous operation of the Flare Gas Recovery System.

“Although flaring is essential for safety of the people and plant equipment during

behind our low ca

thoughtful reservoir management

world-leading flare minimization



Drone-mounted cameras are used to monitor and measure

emergencies, eliminating routine daily gas flaring is a common objective at Wasit to protect the environment from emissions, including carbon dioxide,” says Alotabi.

During the design stage of the Wasit Gas Plant, flare minimization was a priority.

“A flare gas recovery system was built to achieve near-zero routine flaring during normal operation of the plant,” says Alotabi. “The recovered gas is reused at the plant utility system.”

wise energy efficiency

Rigorous commitment to low energy consumption is a key part of low carbon



Outside operator Hussain A. Al-Salem works with Wasit Gas Plant’s cogeneration unit, which uses leftover heat and pressure to power the facility’s entire operations.



Outside operator Naser M. Alotabi is part of the team working to ensure flaring is minimized at the Wasit Gas Plant.



Saudi Aramco’s Fourth Industrial Revolution insights into the health of the energy efficiency, flaring or gr

Our low carbon intensity 'best-in-class management' since 1933

Carbon intensity

Leading
operation

meticulous
methane leak
detection and
repair

greenhouse
gas
management

wise energy
efficiency



The low carbon intensity of Saudi Arabian crude oil is a result of multiple factors, including the company's continuous implementation of best-in-class reservoir management practices, flare minimization, energy efficiency, greenhouse gas emissions management, and the methane leak detection and repair program.

— Amin Nasser,
Saudi Aramco president and CEO

Low methane emissions from Saudi Aramco's operating facilities, and the company's 0.06% methane intensity is one of the industry's lowest.

intensity. Being careful about the power we use helps the environment.

In 2019 alone, Saudi Aramco implemented more than 200 energy efficiency initiatives to get the best energy performance from our operating facilities and residential communities.

Since 2000, the amount of cumulative energy saved is 239 million barrels of oil equivalent per day, representing 25 million tons of CO₂ reduction — equivalent to 20% of Saudi Vision 2030 commitments.

Our cogeneration program gives a purposeful use for steam production. From electricity generation, we balance opera-

tional conditions, supply, and demand — and always lookout for new ways to save energy.

Wasit Gas Plant outside operator Husain A. Al-Salem checks the operating parameters of the cogeneration unit.

Stepping down from the ladder leading to the cogeneration stack, Al-Salem explains that his role involves manning the area, and communicating with console operators to check plant parameters.

Al-Salem, who has worked for Saudi Aramco for seven years, says his work helps to maintain optimum operation of the cogeneration unit.

"This unit makes use of the heat from the steam to power the operation of the whole plant," Al-Salem says.

"It achieves maximum utilization of the energy from the gas, enabling wise utilization of this valuable resource," he adds.

Through its cogeneration unit, Wasit Gas Plant is able to generate and sustain 600 megawatts of power production, with high efficiency of up to 85%.

GHG management

For many decades, Saudi Aramco's relentless focus on environmental performance has been central to how it operates.

"As we go about meeting the growing demand for ample, reliable, and affordable energy, we have a commitment to emissions reduction and a goal to meet the world's growing demand for much cleaner energy," says Environmental Protection Department manager Omar S. Abdulha-

"The Kingdom has a small number of large and productive oil reservoirs, low per barrel gas flaring rates, and low water production, resulting in less mass lifted per unit of oil produced and less energy used for fluid separation, handling, treatment and reinjection — all of which contribute to low upstream carbon intensity.

Based on the company's 2018 upstream total deliveries of 13.2 million barrels of oil equivalent per day, the company's 2018 upstream carbon intensity was 10.2 kilograms of carbon dioxide equivalent per barrel of oil equivalent.

According to an article published in the Aug. 31, 2018, edition of *Science Magazine*, the Kingdom's volume weighted average crude oil upstream GHG intensity in 2015 ranked second lowest among the 50 countries analyzed."

— Saudi Aramco Prospectus

Through transformative digital technologies such as advanced analytics, artificial intelligence, unmanned aerial vehicles, robotics, and augmented and virtual reality, the center offers timely insights that drive decisions and improvements across the company.

With a digital finger on the company's emissions, product quality, energy efficiency, and much more, data is being translated into meaningful results, and potential issues are detected before they happen.

meticulous methane leak detection and repair

Amazing engineering components such as valves, pumps, compressors, and pipes go into oil and gas processing plants, but without checks and maintenance, they have the potential to leak.

For more than eight decades, Saudi Aramco has invested carefully in the design of its plants, providing extra layers of protection for safety and operational continuation.

Well-resourced and maintained operating assets translate into environmental protection.

We use drone-mounted cameras to monitor and measure methane emissions from our operating facilities' equipment, and with a 2018 methane intensity of 0.06%, Saudi Aramco's methane emissions are among the lowest in the industry.

Methane gas is 80 times more harmful to global warming in the first two decades after its release when compared with CO₂.



Industrial Revolution Center provides comprehensive digital monitoring of the company's key assets, such as the live monitoring of greenhouse gases.

Worried about coronavirus? Here's what you need to know

In December, a new strain of coronavirus was identified in Wuhan, China. The virus, novel coronavirus (2019-nCoV), is causing concern worldwide. As yet, no cases of 2019-nCoV have been reported in Saudi Arabia.

Johns Hopkins Aramco Healthcare (JHAH) is working with Saudi Aramco and the community to raise public awareness, share information, and keep our families safe.

China's National Health Commission is reporting a total of 2,742 cases for 2019-nCoV. Cases have been confirmed in 15 countries outside China, to date there have

been 80 deaths resulting from 2019-nCoV. No cases have been reported in Saudi Arabia or the Middle East.

How does novel coronavirus (2019-nCoV) spread?

Evidence suggests that 2019-nCoV, like other coronaviruses such as (Middle East Respiratory Syndrome, or MERS), can be transmitted from one person to another by:

- Droplets from coughing and sneezing
- Close personal contact, such as touching or shaking hands
- Touching an object or surface with the virus on it, then touching your mouth,

nose, or eyes before washing your hands.

Who is at high risk?

People who have recently traveled to China, or who have had close contact with someone who has traveled to the region, and have developed flu-like symptoms, such as a high temperature, sore throat, coughing, or breathlessness.

Dr. Jaffar A. Al-Tawfiq, JHAH director of Infection Control and Infectious Disease specialist, advises, "If you have recently returned from China (in the past 14 days), and you have respiratory symptoms, call your registered health care provider.

JHAH-registered patients can call the Nurse Care Line at 800-305-4444, option 3.

In addition, practice personal hygiene, hand hygiene, cough etiquette, and wear a mask.

JHAH has protocols to support staff in quickly identifying and isolating at-risk patients.

protect your health

Following are the World Health Organization standard recommendations to reduce exposure to and transmission:

- Clean your hands frequently by using an alcohol-based hand rub or soap and water
- When coughing and sneezing, cover your mouth and nose with your flexed elbow or a tissue, and throw the tissue away immediately and wash your hands
- Avoid close contact with anyone who has a fever and cough
- If you have a fever, cough, and difficulty breathing, seek medical care early, and share your previous travel history with your health care provider
- When visiting live markets in areas currently experiencing cases of novel coronavirus, avoid unprotected contact with live animals, and surfaces in contact with animals.

stay tuned

Saudi Aramco Studio 1FM and 2FM are broadcasting public service announcements containing essential infection control advice, and additional information can be found at JHAH.com or follow @JHAHNews on Twitter for health recommendations.

مرکز جونز هوبكنز
أرامكو الطبي
Johns Hopkins
Aramco Healthcare

الوقاية من فيروس كورونا 2019-nCoV
Novel Coronavirus 2019-nCoV Prevention

استشر طبيبك
Seek medical advice

اهتم بالنظافة الشخصية ونظافة اليدين
Practice personal hygiene and hand hygiene

التزم بأداب السعال
Follow cough etiquette

ارتد قناع في الأماكن المزدحمة
Wear a mask

advancing nonmetallic deployment in Manifa

technologies help Saudi Aramco in the continuing battle against corrosion

Manifa — Corrosion is known to be one of the main driving factors in the oil and gas industry when it comes to fixed, operating, and maintenance costs.

With this in mind, nonmetallic materials, because of their intrinsic resistance to natural corrosion, have become the No. 1 solution against such impacts.

The Manifa Producing Department (MPD) has been at the forefront of the nonmetallic materials journey, falling in line with the corporate objectives of reducing corrosion effects, minimizing associated costs, and increasing value across the hydrocarbon chain.

three important nonmetallic solutions

MPD has collaborated with the Consulting Services Department to deploy three critical nonmetallic technologies in its pipeline network — raised temperature, high-density polyethylene (HDPE-PERT) lining, reinforced thermoplastic pipe (RTP), and reinforced thermosetting resin (RTR) pipe. The deployments cover a variety of services ranging from hydrocarbons to water applications.

HDPE-PERT lining: The introduction of this technology has allowed for existing carbon steel lines to be reconditioned and protected against corrosion. It has unlocked a wide range of new deployment opportunities in challenging environments where large size and high pressure are the norm.

HDPE-PERT lining material was deployed for the first time in the 16-inch lateral lines of the power water injection facilities in the Manifa field. The deployment scale was considerable, covering a total pipe length of 5



The Manifa Producing Department has teamed up with the Consulting Services Department to deploy critical nonmetallic technologies in its pipeline network such as raised temperature, high-density polyethylene lining.



Crews deploy reinforced thermoplastic pipe (RTP) in Khursaniyah. A well-proven technology that has proven to be a vital product for Saudi Aramco's oil production facilities, the use of RTP is just one of the many nonmetallic solutions being applied by the Manifa Producing Department, and across the company as a whole.

kilometers. The nonmetallic lining material offers an additional layer of protection to these critical lines.

RTP: This technology has already proven to be a vital product for the successful operation of Saudi Aramco's oil production facilities.

The first deployment of RTP occurred at a Northern Area Oil Operations onshore oil well in Kursaniyah. The 6.5-inch pipeline can sustain high pressure (2,200 psig) at a design temperature of 190 degrees Fahrenheit.

The RTP recently completed its first service

anniversary successfully with no setbacks along the way.

Following this success story, the deployment of RTP was further expanded to cover water applications. An opportunity was presented to deploy two 9-kilometer long RTPs in two separate high-pressure (3,000 psi) water injection wells at a temperature of 176 degrees Fahrenheit. This further cemented the stance that the performance of RTP can meet operational specifications even in the most challenging conditions.

RTR pipe: The Manifa Central Processing



MPD has been at the forefront of the nonmetallic materials journey, falling in line with the corporate objectives of reducing corrosion effects, minimizing associated costs, and increasing value across the hydrocarbon chain.

Facility was facing a few challenges with their original carbon steel neutralization pit line, which had recurring operational anomalies due to corrosion issues. To solve this problem, MPD created a strategy to deploy the RTR pipes, achieving sustainable and reliable operations.

Following the successful RTR pipe deployment, MPD is planning to deploy this technology in all of its facilities.

The successful nonmetallic deployments have MPD fully committed to exploring new opportunities ahead.

striking opportunity

by Dalia Darweesh

Dhahran — Growing up in the Saudi Aramco community, Othman I. Al-Mulla has been representing Saudi Arabia internationally as a golfer for more than 16 years now.

In 2019, Al-Mulla debuted as a professional at the first Saudi International tournament held at the Royal Greens Golf and Country Club in King Abdullah Economic City (KAEC).

“To be given an opportunity to fulfill my lifelong dream of becoming the first Saudi professional golfer is beyond what I have imagined,” said Al-Mulla, an Accounting staff analyst with Saudi Aramco’s Capital Programs and Contract Compliance Department.

His father has been with Saudi Aramco for 37 years, while his mother recently retired after 33 years of working with the company.

Al-Mulla captured the 54th annual SAIT tournament at the Dhahran Rolling Hills Golf Club last fall — allowing him to take the trophy yet again from the prestigious tournament sponsored by Saudi Aramco.

Al-Mulla expressed his gratitude for being a part of the growth that’s happening in the Kingdom — especially in sports.

The 33-year-old feels fortunate to be sponsored



Aramcon Othman I. Al-Mulla, who has represented Saudi Arabia as an amateur — and now a professional golfer for more than 16 years now, says he is grateful to have a chance to fulfill a lifelong dream of becoming the first Saudi pro golfer.

by Invest Saudi, KAEC, Golf Saudi — the development arm of the Saudi Golf Federation (SGF), and Saudi Aramco — and to have the backing from a game changing company that supports him is a blessing.

In October, Al-Mulla met with the SGF board to discuss plans for building more golf courses, attracting world renowned golfers at events, and supporting local talents.

Golf Saudi recently announced that, along with the SGF, it will host its first Ladies European Golf Tour event in Saudi Arabia. Al-Mulla believes the tournament, to be played in March at KAEC, will be a great platform to showcase the sport for both men and women.

a year filled with experiences

After participating in tournaments such as the Saudi International, Oman Open, and the Jordan Challenge Tour in 2019, Al-Mulla says he is proud

to be representing the Kingdom around the globe.

Being the first Saudi professional golfer has been a learning curve to him, but he plans on using his experiences to better himself, and benefit others.

“I’m proud to be Saudi, and to be representing my partners globally,” he said.

Al-Mulla is participating this week at the Saudi International, a European Golf Tour that will feature some of the top players in the world. He’s been preparing for the four-day event, which begins Thursday.

“I’m excited to get the opportunity to play against the top players in the world,” said Al-Mulla. “My expectations for the week are to put in a competitive performance. If I do that, I’ll be playing in the final two rounds.”

After the first two rounds, the field is cut down for play on the weekend.

Initially, Al-Mulla found it quite challenging to practice golf after work, but recently he has been fortunate to be part of a program for elite athletes that allows for extended time off from work.

“I think most people don’t realize that we have so much in common with everyone else. Sport events are the world’s gateway into that — an opportunity to learn from other cultures,” said Al-Mulla.

“Doing what I love and being able to share it with people is exciting. I thank God for this, and I hope to push forward.”



read it on the intranet

Yanbu’ NGL Fractionation Department hosts innovation-based operational excellence event



Christian Rytting of the Management and Professional Development Department helps lead a design thinking workshop at the Yanbu’ NGL Fractionation Department’s recent #iExcellence forum. #iExcellence featured multiple themed sessions, technical exchange meetings, focused workshops, and one-stop benchmarking roundtables with a high number of exchanged best practices that will promote an OE culture in Saudi Aramco business.

Operational Excellence continues to lead the way forward with technological developments in T&D



Pablo Colman Alvarez, an engineering specialist in the Operational Excellence (OE) and Engineering Services Support Department, leads a workshop on process streamlining at the recent OE Technical Exchange Meeting, which brought together not only Saudi Aramco professionals, but also individuals from across the Kingdom and beyond, and included engaging demonstrations of the future of learning in Training and Development.

‘Digitalization, Data Analytics, and Artificial Intelligence’: Manifa hosts first Reliability and Technology Forum and Exhibition



Participants, organizers, and members of management pose following the conclusion of the first Manifa Reliability and Technology Forum and Exhibition conducted recently by Northern Area Oil Operations. The goal of the event, which featured the theme “Digitalization, Data Analytics, and Artificial Intelligence,” was to bring together technology providers and end users under one roof to discuss Fourth Industrial Revolution technologies in the oil and gas industry, and ways to collaborate.

sharing the power of safety with elementary school students



Local students pose for a photo with volunteers following a safety campaign sponsored by the Power Systems Engineering Department. The campaign was conducted at six elementary schools in the Eastern Province. (Photo: Abdullah Alshammari/MPD)

King Abdulaziz Center for World Culture
by saudi aramco

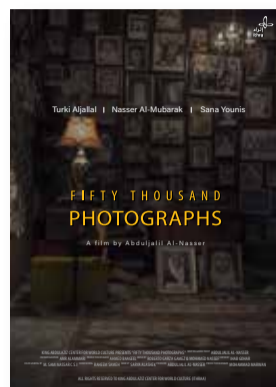


Ithra movies

in cinema

50 Thousand Photographs

Jan. 30 5 p.m.
Jan. 31 5:45 p.m.



A Plastic Ocean

Jan. 30, 31 7:15 p.m.



Ithra Heroes Adventure

Jan. 30 10:30 a.m.
Feb. 1, 3 10:30 a.m.

The Investor

Jan. 31 5:45 p.m.



The Little Vampire

Jan. 30, 31 2 p.m.

Father and Son

Feb. 3, 4, 5 4:30 p.m.



The Cave

Feb. 1 noon
Feb. 3 7:25 p.m.

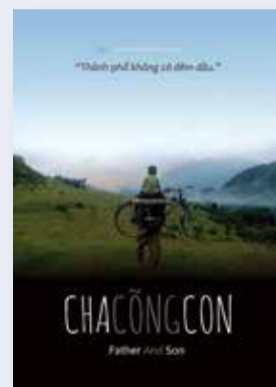
The Son of Bigfoot

Feb. 1, 3, 4, 5 4:20 p.m.



Zero Distance

Feb. 1 4:30 p.m.
Feb. 4, 5 7:25 p.m.



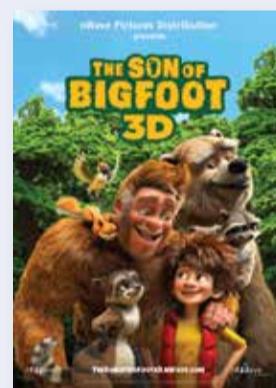
Father and Son

Living by a river, a father and son sit side by side to catch fish and make a penny every day. When the son, Ca, contracts a serious illness, his father must get into the funds to pay for his expensive treatment. Will the father be able to catch enough fish to save his son's life?



The Cave

The Cave is an exploratory film where microbiologist Dr. Hussam Zawawi and speleologist Dr. Francesco Sauro take us on an expedition to produce new scientific research for "A study of Microbes in Caves."



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.



Zero Distance

A photographer faces his questionable past when he finds a picture of a dead body on his apartment floor, and his pistol missing a bullet.



Proud to support
VISION 2030
المملكة العربية السعودية
KINGDOM OF SAUDI ARABIA
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.

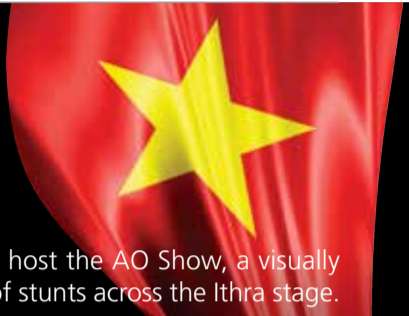


Saudi Arabian Oil Company (Saudi Aramco) is a joint stock company, with certificate of registration number 2052101105, having its principal office at P.O. Box 5000, Dhahran, Postal Code 31311, Kingdom of Saudi Arabia, and with fully paid capital of SAR 60,000,000,000.

the arabian sun



Vietnam Culture Days Festival comes to Ithra



Dhahran — The King Abdulaziz Center for World Culture (Ithra) will celebrate the new year with the inaugural Ithra Cultural Days Festival, taking place Feb. 3 to 15. The festival will celebrate Vietnamese culture with activities and performances curated to introduce the Saudi public to the southeast Asian country's music, cuisine, fashion, and more.

Activities include traditional handcraft workshops, live demonstrations and musical performances, and displays of Vietnamese calligraphy, photography, and fashion. Structured with help from the Vietnamese embassy, the program will feature over 30 chefs, musicians, and craftsmen from Vietnam.

As part of the event, a special presentation of the Ithra-produced documentary film "Hanoi" — which was shot in Vietnam and depicts everyday life there — will be screened. Also, the

Ithra Theater will host the AO Show, a visually dazzling display of stunts across the Ithra stage. **'a vehicle for cultural enrichment'**

"Ithra's mission is to foster creativity, knowledge, and new cultural experiences. The Vietnam Cultural Days program is a vehicle for social and cultural enrichment, and falls under Ithra's ongoing commitment to build cultural bridges between the Kingdom and the world," said Abdullah K. AlRashid, Ithra's head of programs.

"It will be a fun and exciting festival of fresh new experiences for the Saudi public and all of our visitors. Launching the first Cultural Days festival with a focus on Vietnam is a way of introducing an important and globally significant culture that is largely unfamiliar to Saudis.

"Through traditional Vietnamese arts, music, dance, food, film, and crafts, the Cultural Days Festival is not only engaging and entertaining for our visitors but helps to develop a more robust cross-cultural relationship between Saudi Arabia and Vietnam," he added.

A twice-annual event, this February's session is the year's first edition, with a second scheduled for later this year. Promoting and encouraging cross-cultural engagement, the festivals offer Ithra's Saudi and international visitors a unique opportunity to explore diverse and varied global cultures.



Whether it is the AO Show, a visually dazzling display of stunts across the Ithra stage, or the delectable delights of Vietnamese cuisine, the Ithra Culture Days Festival featuring aspects of Vietnamese culture has something for Saudi and international guests alike.



night under the light

Alaa A. Al Othman captured this image of the Kakslauttanen Arctic Resort in Saariselkä in the northern region of Finland last February. Al Othman used his Nikon D750 camera to take the remarkable photo of the Northern Lights. Al Othman lives with his family in Dammam and works in Dhahran as head of the Portfolio Management Division in the Transaction and Portfolio Management Department. He has been with the company for 25 years.