

the arabian sun

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a weekly Saudi Aramco publication for employees

in this issue

putting you and your family's mental well-being at the fore

Aramco has worked hard to ensure employees and their families have resources to meet the demands of these challenging times — from launching new training to offering resources to giving supportive advice.

see pages 6 and 7

45 million safe man-hours at naphtha plant project

The Ras Tanura Refinery (RTR) Clean Fuels Project recently celebrated the achievement of 45 million safe man-hours without a single work-related fatality or lost time incident since construction began in 2017.

see page 11

Aramco geoscientists take the lead at AAPG conference

Our geoscientists reaffirm their place among global leaders in the field, earning top-level awards, presenting as experts in key topical areas, and even leading the American Association of Petroleum Geologists.

see page 5

tackling the tough questions about social media use

If you don't pay for the product, you are the product. That's one of the key themes of a new Netflix documentary that explores the ubiquitous nature of social media and the potential danger it presents to us all.

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Aramco's circular economy in action

Control system operator Ali A. Muyidi works with the company's carbon dioxide (CO₂) capture and reinjection project at the Hawiyah Natural Gas Liquids Recovery Plant. The project, injecting CO₂ into the Ghawar oil field, is an example of one of seven Aramco operation business cycle areas in a circular economy. (Photo: Abdulaziz Al-Moaiweed/IMPD)



we must not become complacent in controlling COVID-19.

Do Your Part by
Wearing a Mask in Public

maintain physical distancing
of 2 meters at all times



circular economy reusing resou

by Janet Pinheiro

With only 9% of the world's economy being circular, this leaves a massive business and environmental opportunity to reuse or recycle 91% of the global economy's resources.

Most of today's global economy operates in a linear way, where raw materials — instead of being reused, refurbished, or recycled — end up discarded as waste.

Whereas in a circular economic system, resources continue to be circulated through different means; similar to how Saudi Arabia values recycling the King-

dom's precious water resources.

According to the 2015 "Waste to Wealth" study by Accenture, the economic growth generated by adopting circular business models has the potential to unlock \$4.5 trillion by 2030 — on an annual basis.

Studies by the Ellen MacArthur Foundation and the World Economic Forum also show similar business benefits with significantly reduced environmental footprints.

reversing the 'throwaway' culture

Aramco has commenced initiatives to-

ward becoming a leading company in the circular economy.

For several years, the company had implemented the circular economy concept, however, not as a stand-alone and structured program.

Technical Services senior vice president Ahmad A. Al-Sa'adi said a circular management approach unlocks both economic and environmental opportunities.

"The circular economy is an incredible economic prospect for the global economy, and Saudi Aramco is seizing this business opportunity by proactively moving to this operating model," said Al-Sa'adi.

"Moving to a circular economic approach delivers both long-term market competitiveness and sustainability."

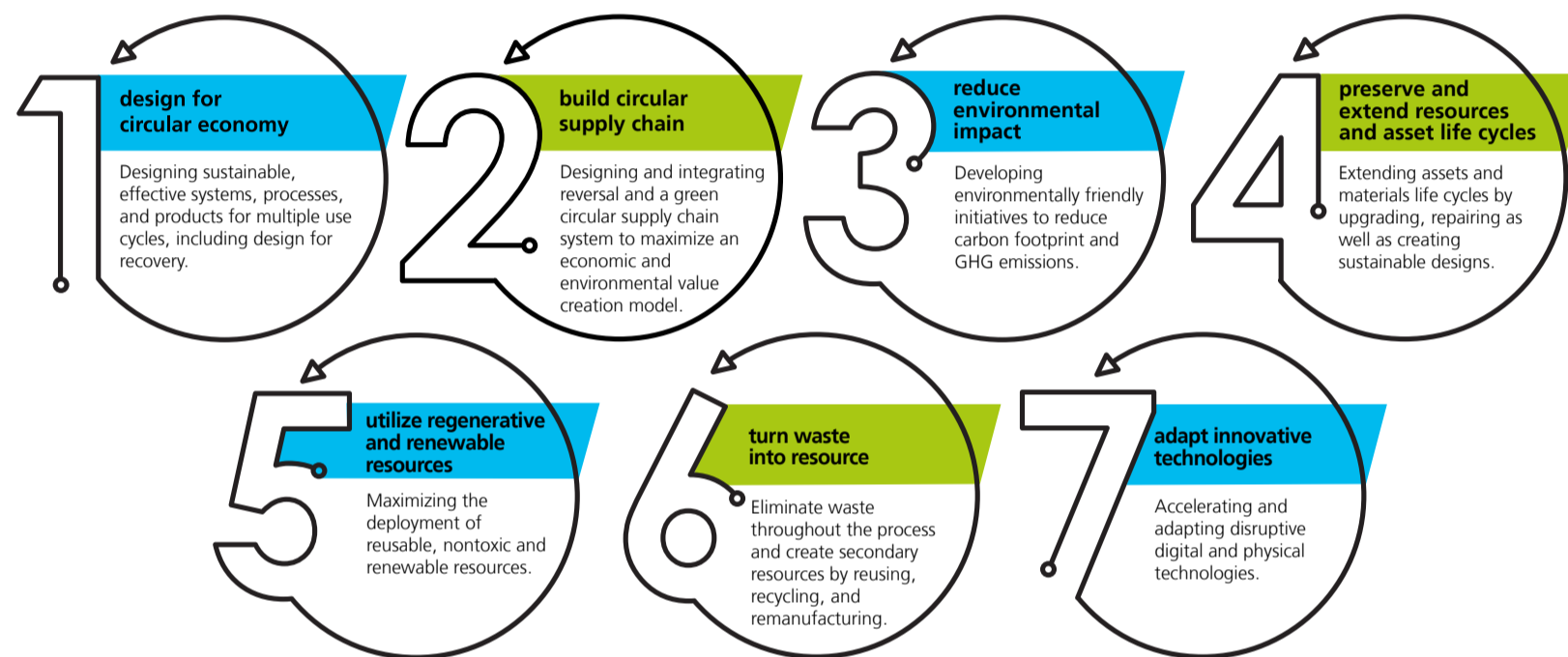
"More importantly, a circular economy is a nature-driven economic concept, which addresses climate and energy goals," he noted.

Aramco's circular plan of action

Before diving into the circular economy, Aramco looked closely at its operating environment, circular economy studies by industry associations, as well as the work of industry peers.

seven focus areas toward circular economy

Aramco's transformation to a circular economy comprehensively covers seven areas of its operational business circle — design, build, environmental impact, asset life cycle, renewable resources, reusing waste, and innovative technology.



see examples of our circular economy in action

design for circular economy



The "SSS" offshore wellhead comes in two design types — electrified and nonelectrified — and their electrical cable trays, junction boxes, signage and posts, sunshades, wind socks, and utility piping abide by Aramco's requirement for the inclusion of nonmetallic materials.

One design for offshore wellheads

Design sits at the heart of the circular economy.

When manufacturing materials and processes work from one design, their resources remain in use for the longest time.

Aramco operates numerous offshore wellhead platforms in the Kingdom's territorial waters.

More than 10 years ago, the company's Offshore Projects team introduced a standard design for Aramco's offshore wellheads.

Upstream Project Management said the

standard design, known as the "SSS," can be used again and again without replication of engineering.

"The 'SSS' meant new wellheads no longer needed customized design," they said. "Having one design that was understood and trusted by everyone built alignment across our stakeholders and reduced our footprint."

Designed to accommodate 10 oil producing wells, the "SSS" can be powered by solar panels or a subsea cable, and has been used in the AbuSafah, Berri, Safaniyah, Manifa, Marjan, and Zuluf oil fields, while a

gas customized design was adopted at the Karan, Hasbah, and Arabiyah fields.

The "SSS" design contributed widely to a circular economy: facilitation of bulk material procurement, quicker, easier and cheaper execution, less maintenance and replacement, and reduced production and procurement costs.

Aramco adopted the design as a company standard, which was incorporated into Saudi Aramco's Engineering Standards.

build circular supply chain



Rather than scrapping materials like unused line pipes, Aramco now maintains their economic value in the circular economy by offering a financial incentive to ensure purpose utilization as was originally intended.

Ensuring original purpose use

In a fully turning circular economy, nothing is wasted.

In business, however, it can be less effort to buy new.

Aramco is incentivizing its business lines to make use of the company's unused materials.

Instead of projects ordering new supplies, idle company materials are offered internally at substantial savings to encourage maximum resource use — and it's a win for both business and the environment.

Salem A. Al-Huraish, then-acting general manager of Procurement, said instead of

sending materials for sale as scrap, other business areas are incentivized to use the materials for the purpose they were manufactured.

"It can be easier to buy new, but there is a strong financial incentive now to look internally at what we already have," said Al-Huraish.

In February 2020, Aramco availed surplus materials to other industrial users, which, to date, have been utilized by multiple projects, including the Khursaniyah and Hawiyah gas plants, Shaybah NGL recovery plant, and the South and North Ghawar projects.

Additionally, last year a three-year contract was signed with a local manufacturer to buy and recycle Aramco reclaimed hydrocarbon chemicals.

The manufacturer uses the reclaimed hydrocarbons for products like paint and asphalt, and collects the feedstock from reclamation yards as well as operating plants, minimizing hazardous chemical transportation.

Recycling these chemicals results in significant savings, and creates a new revenue stream.

Resources for longer | extracting untapped value by turning circular

Recently, the Board of Engineers (BoE) launched an initiative to promote the circular economy across all the company's operations.

"We have started an upskilling and certification program, which has trained and certified more than 550 people across the company in the circular economy," said chief engineer Jamil J. Al-Bagawi, who is also chairman of the BoE.

"We want to be fast in capturing this opportunity to improve competitiveness, unleash innovation, and provide abundant profitable opportunities and sub-

stantially improve our environmental performance, not only for Aramco but also for the Kingdom," added Al-Bagawi.

As part of institutionalizing the circular economy, Aramco introduced an operational excellence process to guide all departments on their journey to increase circularity.

Aramco is also injecting circular economy design requirements in its capital project deliverables, which are governed under the company's capital management system.

Aramco circular impact

Al-Bagawi said Aramco could make a significant contribution toward a global circular economy.

"Aramco has decades of industry experience, an attitude of enterprise, and excellent people who history shows quickly adapt to change and challenge," said Al-Bagawi.

"Across the company, we found many examples where Saudi Aramco works to the operating principles of the circular economy; however, our efforts can be accelerated.

"We need everyone thinking and operating in a circular way," he said.

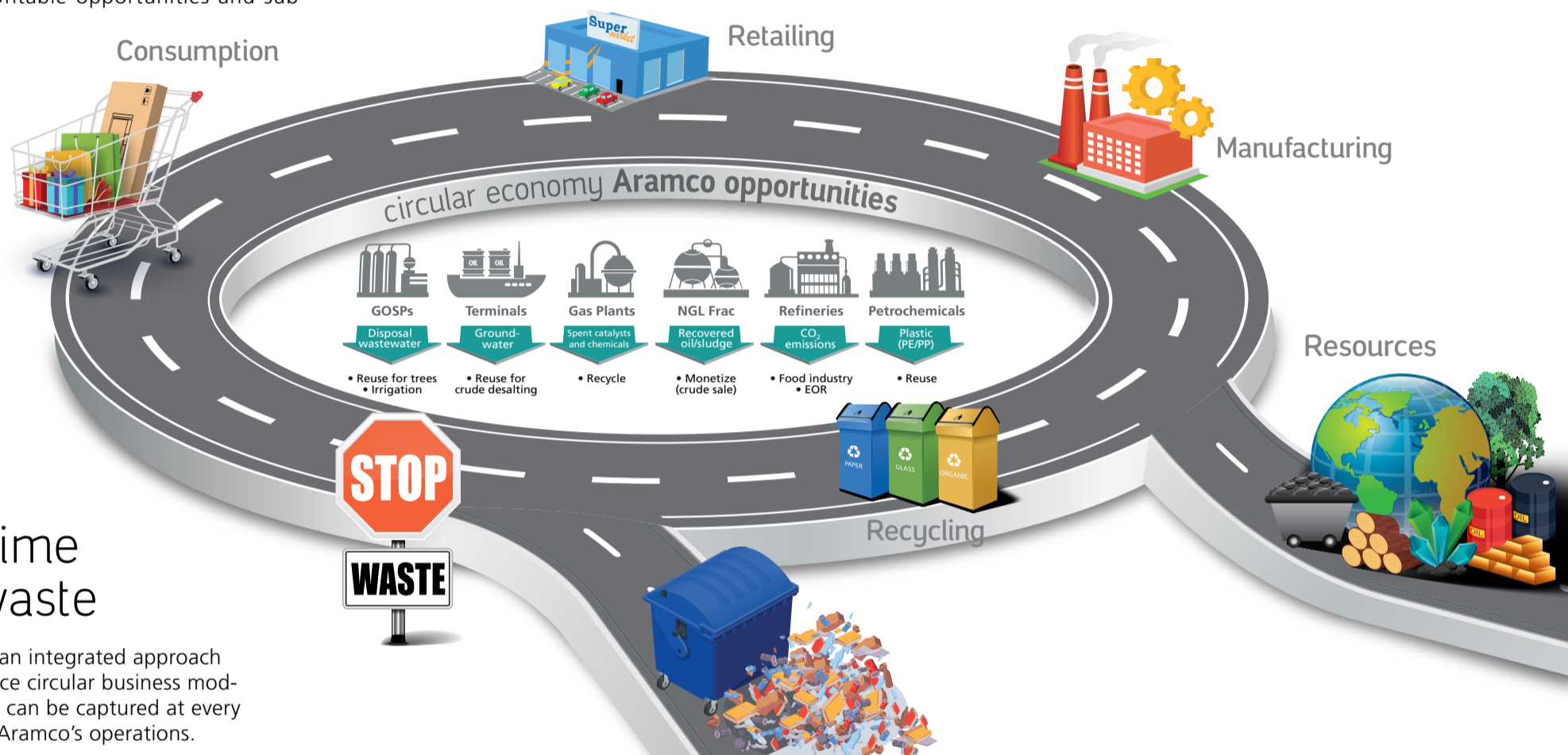
Changing to a circular economy involves a committed change to operating culture, and seeding it starts as early as the planning and design phase.

decarbonization

Together with the Kingdom, Aramco is also promoting a circular carbon economy, which focuses on the reduction, reuse, recycling and removal of carbon dioxide (CO₂) and other greenhouse gas (GHG) emissions.

no time to waste

By using an integrated approach to embrace circular business models, value can be captured at every stage of Aramco's operations.



turn waste into resource



Water is a particularly treasured resource in Saudi Arabia, and the Abqaiq air-conditioning plant cooling tower uses tertiary treated sewage effluent instead of non-replenished raw water.

Converting community water use

Whether a dewdrop or a torrent, water is essential for life's sustenance.

Water in Saudi Arabia's arid environment is a treasured resource, and Community Services executive director Faisal A. Hajji said saving water is a priority for the company's residential communities.

Treated wastewater from residential communities is reused for irrigation and to cool centralized air-conditioning plants.

"By reusing the rejected water from the drinking water plants, and increasing the use of treated sewage water each year, we conserve approximately 4.8 billion gal-

lons per year of precious groundwater," said Hajji.

The filtration process for the drinking water at the upstream of reverse osmosis units was changed from sand to cartridge-type filters.

Changing the filtration type eliminated the need for backwashing, decreasing wastewater by 5,000 gallons per day, reducing operational complexity and long-term maintenance costs.

Using tertiary treated sewage effluent instead of non-replenished raw water in centralized air-conditioning plants' cooling towers has proved to be a safe and

reliable initiative.

Energy efficiency of the air-conditioning units was improved, with outcomes such as less scaling buildup of condenser tubes, resulting in less maintenance activity.

Resource reutilization increases the life cycle of assets in the company's communities and office buildings around the Kingdom.

reduce environmental impact



Rather than sending CO₂ to a stack, an internally geared compressor at the Hawiyah NGL recovery plant uses seven stages to compress CO₂, where the fifth stage involves routing to a gas dehydration unit, before being returned for stages six and seven in the compressor.

Injecting carbon back into its home

Above the world's largest oil field — Ghawar — Aramco operates the Middle East's most advanced large-scale CO₂ capture and reinjection project.

The system, considered a cornerstone of the Kingdom's decarbonization program to minimize GHG emissions, shows Aramco's leading role toward addressing global climate challenges.

Hawiyah NGL plant manager Ahmed Al-Harbi says the system stops CO₂ be-

coming a GHG, and has reinjected 800,000 tons of CO₂ each year since 2015.

"The United Nations Intergovernmental Panel on Climate Change considers large-scale deployment of carbon capture technology a critical enabler of a low carbon future," said Al-Harbi.

At the Hawiyah NGL plant, CO₂ received from the Haradh gas plant is separated from other gases, then dried by a dehydration unit designed to capture

45 MMscfd of wet CO₂, and finally compressed to 3,000 psi to be piped to a reinjection site in 'Uthmaniyah.

The high-pressure liquefied gas is transported through an 85-km pipeline to 'Uthmaniyah GOSP-7 for reinjection and enhanced oil recovery.

The basis of the technology has been in the refining industry for decades — natural gas used for energy has its CO₂ removed.

your voice

safety at work, safety at home, and safety on the road — we take our values with us



By Reemah AlKhalidi
Dhahran
Reemah.ALKhalidi@aramco.com

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

Aramco believes that the real value of energy lies in our potential to serve the needs of human progress and development — a priority to help people achieve success, not just for themselves, but for their families and communities, too. An important part of this is the ability and right of every employee and contractor to go home safely to their families at the end of the working day.

Mitigating health and safety risks, both on- and off-the-job, is our top priority. Aramco has implemented companywide, organizationally driven health and sustainability programs to safeguard workers, contractors, and those living in communities near operational sites. We have a low tolerance for accidents, and rigorously implement a continuous improvement policy and various programs to achieve this. These programs minimize hazards that could occur during day-to-day operations, and include Occupational Health Hazard Assessments, Hazardous Materials Communication,

Comprehensive Environmental Health Assessments, and Contractor Camp Environmental Health Inspections.

An ethos of safe working underlies and sustains the performance of our entire workforce. We have actively promoted a culture that values employee health and well-being, and we enforce strict safety protocols in all of our facilities and workplaces. To achieve this, we have implemented a Safety Management System (SMS) that sets performance expectations and provides safety roles and responsibilities for both employees and contractors. The SMS drives a disciplined approach toward safety and creates a framework for managers to ensure that the highest safety and security standards are implemented.

We benchmark our safety performance against industry standards and track this through a set of rigorous performance indicators. By implementing a strict approach, we have maintained

a leading position in safety records. We take all accidents and injuries very seriously, learning from the mistakes that resulted in the incident, and ensure that any necessary measures are implemented to prevent repeat incidents.

An example of our programs is the Road Safety initiative. Road safety is an important topic in Saudi Arabia, and we are working to increase road safety through a community development program that encourages employee involvement and organizes several events to promote safe driving. We have invested in fleet tracking to monitor driver's behavior and have constructed highway rest stops to prevent the risk of highway shoulder parking, often a high cause of accidents.

Our employees have played an important role in developing the Road Safety program, serving as ambassadors of safe driving behavior and promoting safety inside and outside of Aramco's walls.

It's simply in our DNA.

'/the social dilemma_' forces us to tackle tough questions about ourselves and the world in which we live

by Todd Williams

If social media were a book written by Jeff Orlowski, he just might open it in Dickensian fashion: "It was the best of tools, it was the worst of tools." But make no mistake about it, the director of *"/the social dilemma_*," has a message that leads watchers to trend to the latter.

The docudrama, currently showing on "Netflix," sounds the alarm on social media's growing impact on virtually all aspects of our lives — politics, family, economics, relationships, and current events. It does this by lining up an impressive cast of software developers talking about how the tools they helped popularize have been co-opted by forces who are far more interested in monetizing our attention than creating a form of healthy social interaction.

Early in the 94 minute production, a key point flashes across the screen: "If you are not paying for the product, you are the product." And this is perhaps the most salient point of the production — that social media giants make their money by getting its users (a term they note is used primarily for two types of people: those who use software, and those who use illicit drugs) to consume more content on their tool.

“
Social media is a tool just waiting to be used; it has its own goals, and it has its own means of pursuing them by using your own psychology against you.

While this is not exactly news (its Netflix predecessor "The Great Hack" detailed the Cambridge Analytica scandal and how it manipulated users), *"/the social dilemma_* works hard to bring a human element to the fore.

Rising political polarization, anxiety, depression, suicide rates, and a significant erosion in trust are traced back to tools that are driven by forms of arti-

ficial intelligence that are difficult for even the astute to completely recognize and defend themselves against.

Orlowski even steps away from the documentary formula and introduces an ongoing drama inside the film, following the lives of a family that deals with the growing demands of a culture that is plugged in round the clock to social media and digital communications.

At times, it proves difficult to watch, as a sense of foreboding doom seems to spill over into hopelessness in fighting something so significantly entrenched in our everyday life. However, it does offer some glimmers of hope.

One of the people featured most in the film, Tristan Harris, is seen touting a more reasonable route through his work at the "Center for Humane Technology" that he co-founded. Others who are featured call for increased regulation in a variety of ways — laws, taxes, reform — to help solve the problem.

But it's the questions it raises that provide viewers the real meat, such as: How am I being manipulated by social media? Do I spend too much time on social media? Is that healthy? How does it affect me? And other



than deleting my account, how else can that experience be improved?

In the end, the film's most valuable message may be that the most important thing is to realize there is a problem in the first place, with one expert at one point asking rhetorically, "How do you wake up from the Matrix if you don't know you're in the Matrix?"

With *"/the social dilemma_*," Orlowski is standing before us like Orpheus and urging us to take the red pill (i.e., to recognize the problem). How that problem is resolved, and how we answer those questions, may very well determine our future, as well as that of our children.



Aramco supports advancements in geosciences, recognized for leadership at AAPG conference

by Susan V. Gonzalez

Houston — Nearly 120 professionals from Aramco and our worldwide affiliates last week participated in the world's largest international energy geosciences conference, the American Association of Petroleum Geologists (AAPG) Annual Conference and Exhibition (ACE), held virtually Sept. 29-Oct. 1.

Formed in the United States, AAPG is a truly international organization with about 40,000 members in 129 countries, with a mission to educate, innovate and support a sustainable future through advancements in geosciences.

building a better industry

Aramco geoscience professionals have varied backgrounds — geology, geophysics, and geomechanics — working on some of the largest reservoirs and industry challenges in the world. This experience gives us a unique vantage point and the opportunity to contribute to industry knowledge and advancements.

This year was no exception, with Aramco giving technical presentations, chairing sessions and participating in panel discussions.

As a tradition, Aramco supported AAPG's Imperial Barrel Award, recognizing top geoscience graduate teams in a basin evaluation competition, with Abdullah Theyab, chief explorationist in the Eastern Area, serving as a judge for the annual event held earlier this year.

a leading voice in the field

Special awards and recognition were conferred to Sa'id Al-Hajri, manager of Aramco's Geological Operations Department, who was named an AAPG honorary



Sa'id Al-Hajri is known for his dedication to cultivating future geoscientists, spearheading outreach programs at a university level and encouraging younger students to study geology by working to include geoscience in the high school curriculum. Here he looks for Eocene fish fossils during a field trip in the Green River Basin, near Salt Lake City, Utah, prior to the 2018 AAPG Annual Conference and Exhibition.

member, and Daniele Colombo, EXPEC Advanced Research Center senior geophysical consultant, who was recognized with the Robert R. Berg Outstanding Research Award for his research in surface to borehole electromagnetic methods for water-front monitoring.

Al-Hajri's honorary member award is in recognition for his visionary leadership in petroleum geoscience, business acumen, and active passion for enhancing the diversity, globalization, and success of AAPG.

Aramco Americas Upstream professionals participated in technical panels on the application of data analytics, including:

- Geological consultant Kathy Ball on a panel discussing "Where Should Machine Learning Go (and Not Go)?"
- Data scientist Giewee Hammond on "Digitization, Data and Knowledge



Kathy Ball

Aramco's Gretchen Gillis takes the reins of AAPG

Aramco Americas Upstream geological consultant Gretchen Gillis, AAPG president-elect for the 2020-21 term, officially takes office on July 1.



A member of AAPG since 1990, she is the fourth woman to be voted president-elect and serve as

president in the organization's 103-year history. Gillis is a member of the eight-person Executive Committee guiding the strategic direction of the organization.

Management."

Also, the topic of artificial intelligence (AI) was discussed by Kathy Hull at the opening session with the question asked, "Will a Fully AI Interpreted Prospect be Drilled in the Near Future?"



Giewee Hammond

Researchers from Aramco's global R&D network gave poster presentations, and U.S.-based researchers in Houston and Boston centers presented during sessions related to Unconventional Plays Around the World and New or Developing Methodologies in Geochemistry.

Aramco served as a diamond sponsor for the three-day online event.

company scouts for new tech, backs accelerator project looking to address climate change

by Terry Wade

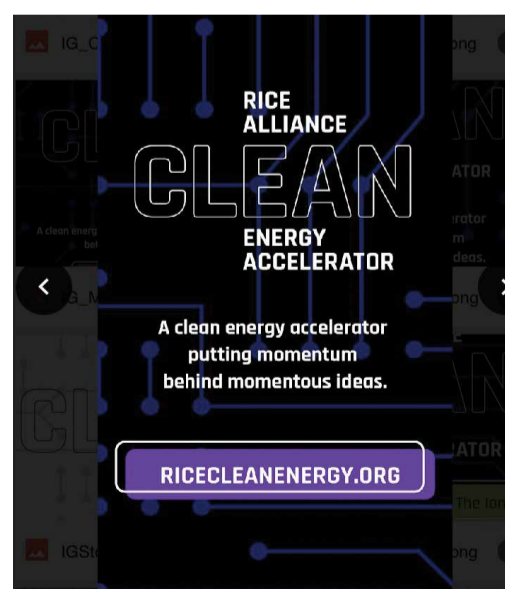
Houston — Saudi Aramco Energy Ventures (SAEV) scouted for new technologies at Rice University's annual Energy Tech Venture Forum in Houston, where startups pitched potential investors, and funders assessed new breakthroughs in a virtual conference environment.

The SAEV team in Houston heard pitches from dozens of companies as it looks for strategic solutions that can be used across Aramco's businesses, and will follow up with 16 startups for closer reviews in the coming months to see if any of them would ultimately be a good fit.

Clean Energy Accelerator Project

SAEV also became a founding sponsor of Rice's Clean Energy Accelerator Project, which was launched at the end of the conference and will be housed at the Ion innovation hub in Houston.

"Rice, SAEV, and our other partners have made important strides developing Houston's innovation ecosystem in recent years, and this new initiative will really take things to the next level," said Jim Sledzik, manag-



ing director of SAEV-U.S.

Through a collaborative approach, the accelerator project will nurture technologists, researchers, and innovators, ensuring that great ideas have the support needed to more fully realize their commercial potential.

The accelerator project will include a

hands-on, 12-week program to support early-stage energy startups from across the U.S. and from around the world. Startups will have access to Rice's network of energy corporations, energy investors, and energy advisors to increase their likelihood of success and accelerate their path forward.

an eye toward addressing climate change

The new initiative will focus specifically on technologies that help address climate challenges.

It will be leveraging a strong ecosystem. Rice's energy tech venture capital conference, now in its 18th year, has brought together more than 840 energy tech startups over the years to raise billions in funding.

The accelerator is also supported by BP, Chevron Technology Ventures, ExxonMobil, NRG, Shell, Total, and Halliburton Labs.

The event was attended by Houston mayor Sylvester Turner, who said the accelerator will help the fourth largest U.S. city reach its goals of becoming carbon neutral by 2050, and spawn a new generation of companies active in the energy transition.



Through a collaborative approach, the accelerator project will nurture technologists, researchers, and innovators, ensuring that great ideas have the support needed to more fully realize their commercial potential.

"The Clean Energy Accelerator is a great example of what we have been seeking to build in Houston. An innovation ecosystem that can develop creative solutions to address our toughest challenges," Turner told the digital audience.

maintaining good mental health in trying times

For many, 2020 has been an extremely challenging year.

The COVID-19 pandemic and its related impacts have created strong feelings of uncertainty for people over health, finances, separation, isolation, and a host of other issues. Often, these feelings can lead to anxiety or depression, affecting their ability to function well at work and at home.

Aramco has worked hard to ensure employees and their families have resources to meet the demands of these challenging times. And as activities begin to resume, it's

important to continue to monitor our own mental well-being.

First, it's important to remember that experiencing anxiety in such uncertain times is normal and common. However, when it begins to cause distress and impact daily activities, you shouldn't hesitate to take note and know you are not alone. Don't hesitate to call your doctor and seek professional help, as dealing with these symptoms early on is significantly critical to improving your health, quality of life, and well-being.

Johns Hopkins Aramco Healthcare has

developed a comprehensive "Mental Health Tool Kit" available online that provides 10 helpful ways to perform first aid when managing uncertainty, anxiety, and depression.

Should you have questions about the long-term mental health consequences relating to COVID-19, be sure to consult with your primary care physician or local mental health services. Treatment like medication and psychological therapy is available.

How do I know if I'm suffering from anxiety or depression?

Anxiety and depression are commonly associated with each other and many of the symptoms overlap. Symptoms of anxiety may include difficulty sleeping, constant worry, lack of concentration, lack of appetite, restlessness, and constant checking of social media, while symptoms of depression include loss of interest, feeling sad or angry, becoming withdrawn, poor memory and concentration, hopelessness, thoughts of death and self-neglect.

COVID-19 Mental Health Tool Kit

The COVID-19 Mental Health Tool Kit is an online resource for people in isolation,

quarantine, and their family and friends. It provides guidance and practical steps to help manage your emotional health during this stressful time. Visit jhah.com/covid-19 to find the Mental Health Tool Kit.

Emotional Help Line

Although we recognize the necessity of the precautions, there is growing concern about the impact on people's mental health as a result of periods of isolation or quarantine. Johns Hopkins Aramco Healthcare (JHAH) has launched a new service, the Emotional Help Line for people who are admitted to JHAH, in a quarantine facility, or in home isolation.

The Emotional Help Line provides psychological support and counseling when needed. The hours of service are 8 a.m. to 3 p.m., Sunday to Thursday (013-870-1919).



managing uncertainty, anxiety, and depression



Recognition

Recognize your own emotions when you are worrying or are in a low mood. Be aware that a high degree of certainty is just not possible, however much we would like it. Manage your thoughts of uncertainty by trying to separate what is in your control and what is not in your control. Attend to things that you have control over.



Promoting a sense of safety

Improve your sense of safety by educating yourself about mental health and the coronavirus using information from reliable sources. Following good hygiene habits and measures to limit the risk of infection, as published by the infection control authorities, will promote a sense of safety.



Connectedness

Try alternative ways of making contact with others if you cannot go out, such as phoning, texting, video calling and emailing friends and family. Contact others on a daily or regular basis and let them know how you feel.



Maintaining a routine

Maintain a healthy routine as far as it is practical. For example, make sure you have enough sleep and do some physical activity if appropriate. Modify your daily activities and increase activities that you enjoy doing.



Worry time

Rather than worrying all the time, try to set aside a specific time each day and call it "worry time," but do not do this close to your bedtime.



Practical measures

Avoid excessive checking of social media and consider turning off notifications from unreliable or anxiety provoking sites. Focus on information that provides practical steps for yourself and your loved ones. Amplify positive and hopeful stories, such as stories about people who have recovered from the virus. Use technology positively to promote community safety and a sense of control.



Challenging bad thoughts

Identify and challenge any worrying thoughts or negative thoughts of helplessness. These are central to anxiety and depression. Examine the evidence that does not support your negative thoughts. Shift your negative self-statements to positive self-statements that allow you to function with less distress. For example, rather than saying, "This is a terrible time," you can say, "I am sure that I will overcome this terrible time." This will normally convert your emotions into positive emotions and positive actions.



Reliable sources of information

Identify reliable sources and allow yourself to check one source once a day, such as the World Health Organization, National Centers for Disease and Control, and your local Ministry of Health or National Health Services.



Practice calmness

This is done through relaxation techniques and anger management. Practice slow, steady breathing and muscle relaxation at the same time. Alternatively, do yoga or another form of exercise, listen to music or practice any distraction technique that has worked for you previously.



Be positive about others

Someone who has a cough or fever does not necessarily have the coronavirus, and someone who has the coronavirus will likely recover well. Self-awareness is important in not stigmatizing others in the community. Recognize that people who are affected and are in isolation have done nothing wrong and they deserve your support, compassion and kindness. And avoid attaching the virus to any ethnicity or nationality.



Industrial leadership is the backbone of Aramco operations, and supporting our front-line employees is more critical than ever in today's challenging environment. Our newest program, "Resilience and Well-Being for the Industrial Leader," has been designed in partnership with world-class faculty from Cornell University to provide useful skills and tools to effectively manage stress for individuals and teams. This latest program builds on the company's investments in the industrial workforce made at the start of the year and further demonstrates management's commitment to the ongoing development of our front-line workforce.

— Colin M. Sloman,
director of the Management and Professional Development Department

setting a course for mental well-being

company curates resilience to help tackle COVID-19 stress

The ongoing COVID-19 pandemic has created new challenges and unprecedented levels of stress and disruption for the industrial workforce. In response to this challenge, Executive Programs has partnered with Cornell University in developing a new four-week offering, "Resilience and Well-Being for the Industrial Leader."

This targeted intervention focuses on the broad need to strengthen skills for increased resilience and well-being for leaders in the field and supports employees in effectively leading teams through these challenging times.

As employee mental health and well-being are critical for our safety, productivity,

and overall employee engagement, the course targets the skills required to reduce risk in our operations and strengthen engagement.

"Resilience and Well-Being for the Industrial Leader" focuses on four key areas:

- Managing stress: Examining the neuroscience behind anxiety and the skills required to effectively manage it
- Resilience in times of disruption: Increasing awareness of each individual's resilience profile and offering a tool kit to strengthen resiliency while creating a climate to enable resiliency

- Creating new opportunities: Teaching how to leverage crisis as an opportunity to renew, innovate, and build new capabilities

- Building social capital: Using communications and care to build healthy teams with purpose.

The programming is being conducted virtually and consists of faculty-led classroom sessions, video content for self-paced study, a series of assignments, supplemental resources and virtual office hours for industrial leaders to connect with world-class faculty on issues relevant to their unique operations.

at work and at home, Aramcons use new strategies to endure

The global pandemic continues to test employees and their families as the Kingdom and the world at large continue to take small steps toward a "new normal."

And it's through small steps that Aramcons across the company have found ways to maintain their mental well-being and positive attitude as COVID-19 continues to impact virtually all aspects of life.

caring for colleagues in remote areas

While isolation may be a new phenomenon for employees in urban centers like Dhahran, Dammam, and Ras Tanura, it's a normal fact of life for employees based in remote facilities such as Khurais, Tanajib, Shaybah, or Pump Station 10.

However, many of the normal activities such as sports leagues, gyms, libraries, social activities, game nights, and others have been suspended due to COVID-19.

In Khurais, a shutdown of social gathering spaces occurred just as the company had raised production to reach a maximum sustained capacity of more than 12 million barrels per day to meet global demand. The intense pressure of the work, combined with the requirement for isolation forced Khurais management to take extra steps to make sure employees had the emotional support they needed.

But confronted with a challenge, Aramco responded in ways that maintained business continuity while protecting the lives of our people and the safety of our communities.

Management checked in on employees regularly and made extra efforts to give employees — who weren't able to travel during the lockdown periods — adequate breaks and days off to recover from long shifts. And remote areas got creative, too. In Shaybah, a trivia contest that employees could take part in from their rooms helped keep employees engaged.

families find variety of ways to adjust

Families have had to develop new strategies to maintain their mental health, as well.

For Rashmi Dalal, a life coach and yoga teacher in Dhahran, that meant traveling in-Kingdom to sites from al-Hasa to



Working in remote areas requires employees to develop habits that maintain good mental health. When the pandemic shut down many of their regular activities earlier this year, management at these locations sprang into action, working diligently to check up regularly on employees, make sure they got days off when needed, and provide alternative forms of activities, such as in-room quizzes in Shaybah.

Riyadh instead of traveling abroad. But Dalal has also relied on some tried-and-true strategies such as maintaining close communication with her best friends and following some of the advice she offers to others, such as establishing and maintaining routines while allowing for spontaneity, exercising regularly, setting aside "me time" every day, and pursuing some short-term goals.

"This has taught me to take things more slowly, one day at a time," she said. "And not to take anything for granted, as our circumstance can change in a blink of an eye.

"Perhaps the most important lesson has been to let go of the things we don't have control over and live every day to the fullest," Dalal added.

exercise, baking, and keeping it touch

At home, one of the critical ways Aramcons keep mentally fit is through keeping physical fit.

"For me, it is always exercise," says Andrea Radi. "When when we were on 24 hour lockdown, I walked around my house and worked out in the garage. When I move, I think better and feel better.

Adrienne Belaire agreed, but noted that combining exercise and family time enhanced the value of activity exponentially. "When it all started, we had a workout group with teams that helped hold each other accountable and competed for points. And during that time, my family did workouts together. It was so helpful

during the lockdown," she said.

But not everything was purely health-linked. Belaire was also part of a group of people who took to baking to preserve a sense of normalcy.

"There's been a sourdough baking revolution on camp," said Zainab Imran. "It's been so therapeutic — failures and all!"

Of course, one of the best way individuals have maintained mental health over the trying period has been through the use of electronic media such as Skype, Facebook messenger, and a variety of apps that provide face-to-face communications with people who are thousands of miles away.

Linda Jo Schick was in the U.S. when borders closed in March, and for months was worried about her husband who remained in the Kingdom working. Talking on FaceTime twice daily, along with several family calls together on Zoom, helped her entire family get through a strong feeling of separation.

"The conversations were just as lively as if I were there," Schick said. Eventually, she made it back to the Kingdom, something that she said she was "so grateful that Aramco put a COVID-19 team together to bring us all back."

Of course, if all these things aren't quite your cup of tea, you might want to follow Kasondra Blacker's example.

"We got a puppy," said Blacker. "'Nuff said!"

Aramcon: 'Don't be afraid to get help'

For Naif Alajlany, the most important defense against depression and anxiety is seeking medical attention if you need it.

Alajlany, who works in Shaybah as a machinist technician, suffered for years before getting treatment that helped him shake a deep, dark, and debilitating depression.

Things got so difficult for him at one point in 2015, he had decided to resign from Aramco, hoping that forgoing his job would help bring a new lease on life and he planned to leave the company by 2018. But after seeking professional help

(with Aramco's support via health insurance), by 2017, he was able to largely recover from the depression that had gripped him for years.

"Before I visited the psychiatric clinics, I thought I'd find very few suffering the same as me," said Alajlany. "What I found is that there are many people who need help in fighting anxiety and depression."

So energized by his fight, he now embraces the opportunity to help others who are suffering in their individual battles with depression, encouraging friends

and colleagues who need help to follow his example.

He was appointed an ambassador for goodwill and peace by the World Federation of United Nations Friends, which has helped him spread his message.

"Many ask me about the name of the doctor who treated me, and I tell them the doctor isn't the reason I recovered," Alajlany said. "True recovery begins from within you, and depends on your desire to get better and love for life.

"But you have to be willing to get help when you need it," he said.

Aramco firefighters join forces with U.S. colleagues in program designed to help them learn on the job

The International Association of Fire Chiefs (IAFC), in concert with Aramco, formed the International Fellowship Program in 2016. The program embeds Saudi firefighters in leading U.S. fire departments for six months to learn the American fire service culture, as well as industry leading best practices. Since its inception, more than 17 cohorts, totaling 132 Aramco firefighters, have successfully graduated from the program.

Due to Aramco's companywide commitment to workplace safety and fire prevention, the firefighters have had minimal operational experience in the Kingdom. And as part of the company's strategic intent to be the world's leading integrated energy and chemicals company, the Fire Protection Department (FrPD) has worked diligently to diversify risk and challenged its personnel to gain new leadership skills and to modernize their approach to firefighting.

The cohorts are composed of eight firefighters that are placed in fast paced and diverse high call volume fire departments throughout the U.S. This challenges the cohort's ability to adapt to a foreign environment while also testing the firefighters' knowledge, skills, and abilities.

Although they are already National Fire Protection Association certified, Aramco's firefighters have their skills verified by training academy staff upon arrival to ensure their readiness at the U.S. fire service level of expectation. This includes:

- Moving with a purpose



This program has strengthened my abilities as a firefighter, and I will return home with a lot of knowledge and experience to share with my colleagues back home.

— Hussain Al-Abbas



Naif Aladal (second from right) was a firefighter in the IAFC International Fellowship Program Cohort 17. Aladal, a fire captain in Aramco's Fire Protection Department who took part in the program in 2019, said the fellowship in the U.S. was a dream come true.

- Working teams
- Confined space self-extrication
- Self-contained breathing apparatus drills
- Pulling attack lines
- Throwing ground ladders
- Mayday drills
- Radio proficiency
- Communicating in clearly spoken and written English.

After completing two to three weeks of skills verifications, the firefighters are released to the operations division, where they will ride as fourth or fifth on an engine (never as minimum staffing), heavy rescue and/or truck company. They will report to the shift lieutenant or captain, and are expected to imitate (accountability/responsibility) what a firefighter does for the host department.

This verification serves to strengthen their firefighter core competencies, further develop their knowledge, skills and abilities, adopt the leadership principles of the U.S. fire service model (para-military), and understand and implement the culture and values (second family, second home, brotherhood/sisterhood) of the American fire service.

a fuller sense of teamwork

Valerie V. Jackson, Cohort 17 coordinator

and assistant chief of support services for the Atlanta Fire Rescue Department (AFRD), said it took teamwork to make the program a success.

"I quickly found out I was not alone in making this fellowship program a success, from the support of the AFRD executive team, training staff, field personnel, to a special IAFC member, John Morris," Jackson says. "The IAFC staff's exemplary customer services, step-by-step, hands-on involvement and professionalism made this process seamless."

AFRD captain Michael McLaughlin has trained some of the cohorts and said he was impressed with the firefighters' abilities.

"They worked extremely hard. They came to work ready to train and did not complain at all," McLaughlin says. "The fellowship program reinforced that no matter what fire department we work for, we are all trying to achieve the same goal for our communities — being the best-trained firefighters we can be while saving lives and protecting property."

He says that as the training went on, the firefighters and the training staff started to get to know each other, and the training environment started becoming like any other day at the academy.

"Everybody was training hard, learning, and having a few laughs here and there," McLaughlin says. "It did not take long to realize that the two of us might come from different cultures, but when it came to the job, the only culture that mattered was that of a firefighter."

The strenuous workload and the constant demands of the high call volume, coupled with a 24-hour shift schedule, is a significant change for the firefighters who worked either an eight- or 12-hour shift for the FrPD at Aramco. However, they proved to be up to the many challenges and embraced the scheduling demands wholeheartedly.

a career milestone

Hussain Al-Abbas, one of the firefighters, says being a part of the program has been a milestone in his career, as well as his future development.

"I have learned and experienced many things that changed my views on firefighting and the fire service culture as a whole," Al-Abbas says. "This program has strengthened my abilities as a firefighter, and I will return home with a lot of knowledge and experience to share with my colleagues back home."

One challenge for fellows in particular is the "X-factor," the immeasurable bounds that Aramco firefighters fight to thrive in the program. They must be able to be away from their family and their country for six months; manage the strain on mental and physical strength to keep up with the workload; keep up with the 24-hour schedule; and adapt to the unfamiliarity of a foreign country, its people, and professional and personal customs.

The gains from this program are exponential for all involved. The international relationships formed, sharing of fire service knowledge and best practices across continents and lessons learned are genuinely changing the U.S. and Saudi Arabia's cultures, both professional, as well as personally.

The future looks even brighter as the program continues to grow and new global relationships are potentially expanding into other exciting, new programs across a variety of continents.

(EDITOR'S NOTE: The following article was originally published in the *iCHIEFS Magazine Summer 2020 Edition*.)

celebrating species around the globe on World Animal Day

by Sarah AlSaidalani

Sunday marked World Animal Day, which is celebrated each year to highlight the importance of species and allow us to reflect on their meaning across societies and to the entire planet.

Aramco, which incorporates protection of species and their habitats as part of its corporate value of Citizenship, also celebrates the day through its ongoing efforts across the Kingdom in regard to environmental protection.

Animals are critical in helping maintain healthy and functional ecosystems, providing irreplaceable "services" to all of mankind — pollinating crops, maintaining soil fertility, and controlling pests. These ecosystems are estimated to contribute approximately \$125 trillion to the global economy — a figure larger than the global gross domestic product itself.

One example of this is pollination by in-

sects such as bees and butterflies, which helps provide us with a variety of foods — approximately 35% of all food globally. Translated into economic terms, this is estimated at \$195 to \$387 billion annually.

However, pollinators face growing pressure from loss of habitat, industrial development, climate change, and the spread of pests and pathogens, significantly impacting human health, food security, and ecosystem functionality.

Biodiversity also improves human health and wellness, as access to protected areas, biodiversity reserves, and other natural areas are known to enhance our health and well-being, while also fostering social connections in communities.

Aramco helps to protect animals and plants in the areas where it does business. In recent years, Aramco has designated 10 Biodiversity Protection Areas



Through protecting habitats and species in areas where it does business, Aramco exercises its corporate value of Citizenship, seeing the value of animals of all sorts.

on company land, which protects almost 1,000 km² of essential habitat, and more than 500 species of birds, reptiles, mammals, bees, butterflies, and plants.

It is essential that we all work together to help protect the plants and animals that share this land with us. After all, they do so much for us.



bytes

a quick look at the trends and news in the digital realm

cybercriminals look to exploit global pandemic

by Abdulaziz AlRushaid

The COVID-19 pandemic is a humanitarian crisis that has greatly impacted the global economy as it has disrupted all manner of business and industry. But its adverse impact doesn't end there.

Cybersecurity threats are on the rise, and as more people have begun working remotely, threat actors have been swift to take advantage of the shift to online operations, looking to pry sensitive data from systems.

Of course, the disruption in standard procedures and uncertainty over continuity plans provide ample targets for some cyberattackers. And since users are the weakest link in the cybersecurity chain, it is critical our alert toward such attempts is proportionately increased.

COVID-19 themed phishing emails are one new form of risk that has increased significantly for large and small organizations alike. Cybercriminals are

luring users through these emails purporting to provide news and updates about COVID-19, hoping to pry sensitive information under the pretense of acting on behalf of legitimate agencies such as local authorities and the World Health Organization.

Meanwhile, malware distribution is increasing rapidly, with attackers using COVID-19 names masquerading as legitimate coronavirus applications to lure victims in providing access to their devices. In March alone, organizations reported a remarkable 475% increase in malware attacks, some directed at workstations and others at mobile devices. Security researchers have identified more than a dozen COVID-19 tracing mobile applications designed to steal sensitive information.

risks grow with teleworking

Of course, teleworking has also contributed to the increase in cyberthreats as employees not only are providing a greater

opportunity for hackers and cyberthieves, but they are also more likely to use personal devices in connection with their work to ensure business continuity.

Also, employees have been required to remotely access services in a way that they haven't experienced previously, and this in turn can sometimes result in inappropriate technology use that increases risks. For example, employees can be required to use web meeting services for remote collaboration. In turn, they may misuse the new technologies and fail to maintain the security measures envisioned through their organization.

When it comes to COVID-19, our lives have been affected in almost every aspect of our lives. So, with the heightened security risks raised due to the pandemic, employees are expected to be highly vigilant and aware of the current cybersecurity risks as they work in totally different ways than in the past.

vigilance, not alarmism

Of course, vigilance shouldn't be confused with alarmism, so it's important to refrain from passing on the many rumors and misinformation that have also accumulated in these uncertain times. It is critical to adhere to the right information from trusted resources such as the cybersecurity awareness section on the Saudi Cert website (<https://cert.gov.sa>).

At the same time companies are required to manage their information systems effectively and identify the possible cybersecurity threats during the crisis as part of continuity plans for the business.

Organizations are also advised to strike a balance between scalability, agility, efficiency, and cybersecurity as they accelerate their transformation digitally following COVID-19 response needs.

so many things to consider when choosing a computer

by Hussain M. Almutawa

Choosing a computer is actually a series of choices.

What is its purpose — gaming, editing, web surfing? Do you need to take the computer with you? Do you need to run multiple tasks at a time?

What about battery use? Is two to four hours enough, five to eight hours, or do you need it to last up to nine to 12 hours.

And last, but certainly not least, what is your budget? Looking for something inexpensive (SR1,000 to SR2,000) or is cost not as much of a concern?

These kind of questions generally point to two types of computers — desktops or laptops. But then there are subcategories, such as gaming computers, Chromebooks, convertible 2-in-1s (computer/tablet), touch screens, and so on.

Knowing what you want will refine your options. Here are some good examples:

- You want to have the highest performance computer with a generous budget SR10,000 to do CAD design, video editing, and occasional gaming. Here, a desktop with proper specs will do the job unless you want it to be portable; then, you may go for a gaming laptop for lower performance but better portability.
- You need a laptop for school but require Microsoft Office, so a Windows laptop or a Macbook should work. Chromebooks won't have Office except online.
- You want a computer to access the web and perform network-based activities such as YouTube, accessing cloud storage, or online testing, but you have a limited budget. Go with a Chromebook.

finding a fit for performance

The key elements that related to performance are the processor (CPU), memory (RAM), graphics (GPU), and storage (hard disk/solid-state disk (SSD)).

The processor is the heart of your computer, the part that does the arithmetic and logic tasks. Most often manufactured by In-



five costliest computers ever*

1. The Luvaglio \$1 million laptop
2. Otaz Ego Diamond (\$350,000)
3. 24K Gold MacBook Pro (\$30,000)
4. Ego for Bentley Notebook (\$20,000)
5. 1975 IBM Portable Computer (\$19,975)

*according to *MoneyInc.com*.

tel or AMD, and there are many categories of each. Of course, price is directly linked to performance, but there are other considerations, in particular power.

Gaming laptops and ultimate performance systems are significantly more in performance, power, and cost. Processors can cost as low as \$50 (Celeron Athlon Silver) to \$1,200 (Core X Threadripper), so investigate closely.

And remember that higher level processors doesn't always translate equally into performance. Sure, best in class will deliver, but it will also cost more. And some processors are meant to work in multiple cores, thereby boosting the performance but requiring more power.

memory, graphics, and storage

Memory is critical to performance as well, with 4 GB being the minimum, and 8 GB the current mainstream. And if you are gaming, you should have 16 GB — anything else higher is a waste of money unless you have a real need, such as CAD applications.

Meanwhile, GPU is usually most important for visually intensive applications such as eSport games or applications such as AutoCAD. The GPU goes hand in hand with screen resolution, with those with a resolution of 720p — HD being on the low end and 4K Ultra being on the highest level.

If a GPU can deliver 25 frames per second (fps), it is playable but may not be suitable for dynamic games such as shooter-based scenarios.

storage

Traditionally, systems have featured magnetic hard disks (HDD) rated based on its spin speed and size. However, these days, the solid-state medium is more common. Just a few years ago, fast storage was available only on premium systems with a limited amount (as small as 128 GB) being avail-

able for the system, with cold data being kept on a regular HDD.

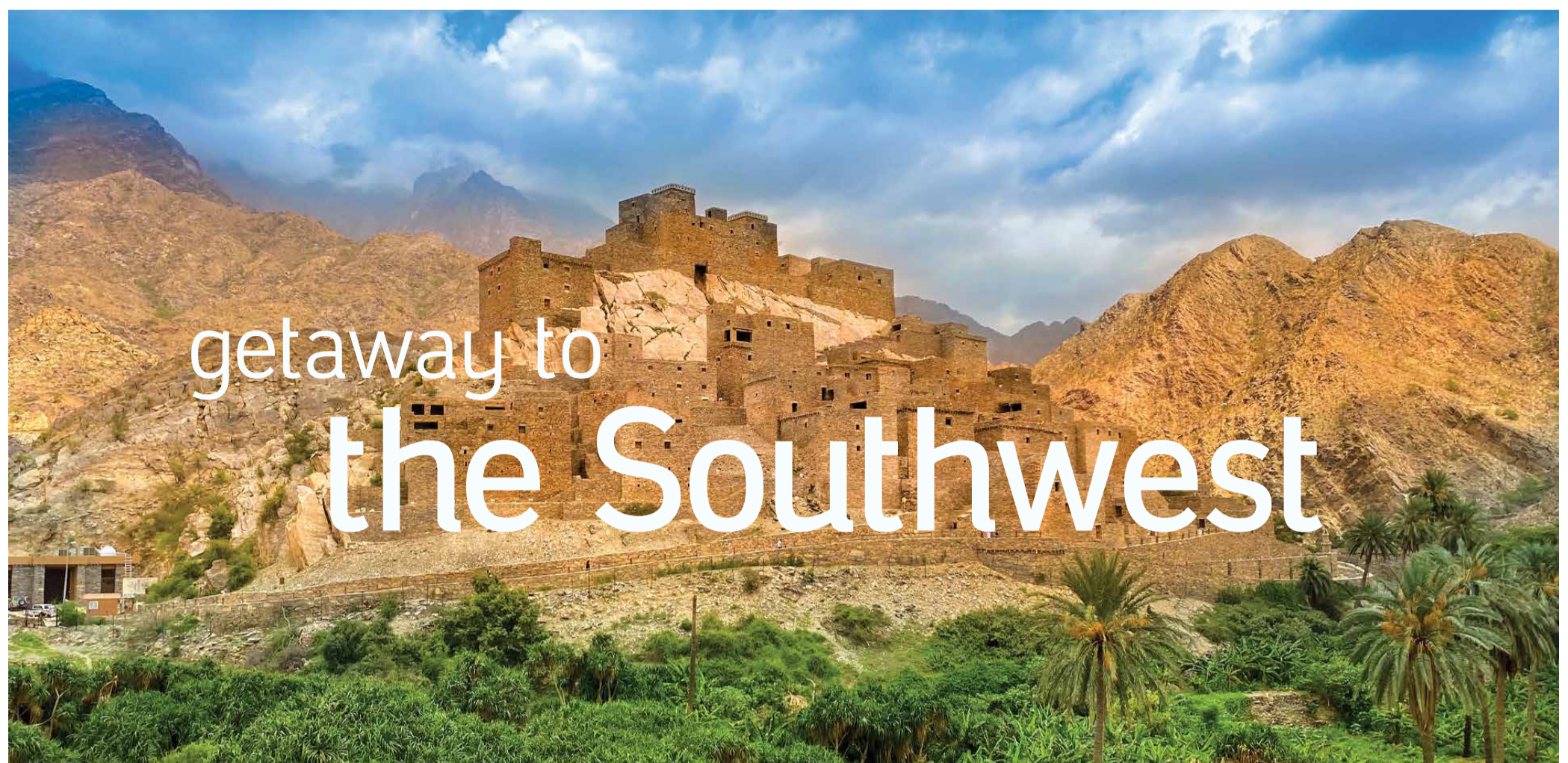
But a shift to utilize the fast SSD has improved speeds while reducing costs.

things to consider in a good laptop

When it comes to practicality, the versatility of a convertible 2-in-1 is hard to beat for university students or for personal use. They are handy when you need them as a laptop, and as a tablet with a variety of performance options.

Again, budget will be a primary concern as you sift through the various brands of convertible 2-in-1s, touchscreen, Windows 10, and Modern 2019+ CPU laptops. Some such as the Flex 5 with its Ryzen 54500U 6-core CPU may be strong in performance, whereas something like the Galaxy Book Alpha has a better screen. Something like the L13 might attract some niche users with the configurable touchpad found on the Zenbook Flip. Others, such as the WiFi6 (AX) or the Spin 3 might feature next-generation connectivity.

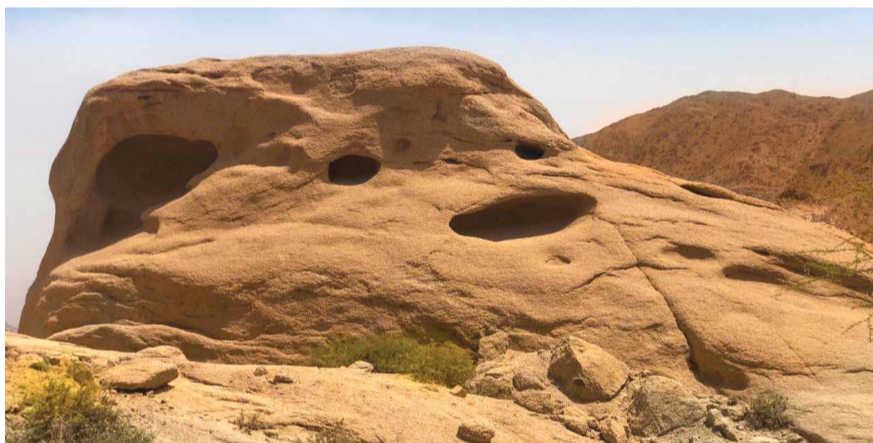
Perhaps the key factor, though, is to remember your choice should you consider the next five years or so of use.



The ancient city of Dhy Ean is about 4,000 years old and rich with history, farms, small waterfalls, and is well-known for the best and tasty bananas in the Kingdom. Below, the city of Al Baha lights up at night; a seasonal river winds its way through Al-Baha; this natural formation known as the laughing rock can be found near the manmade caves of Shada; and olives grow at the Al Zaytona Farm for Tourism in Al-Baha.

Five things to visit when traveling to Abha:

1. AlSoda mountain to touch the clouds
2. Rejal Alma'aa traditional village
3. Bani Mazen villages to taste local original food
4. Al-Habala natural Park
5. Art Street.



taking the time to take in the Kingdom

by Mohammad A. Ghamdi

Abha — Every year, along with my family, we plan our summer vacation and which country will be visiting. 2020 proved to be much different.

With COVID-19 restrictions in place throughout the Kingdom, such plans were erased from the horizon. But that didn't mean a great vacation wasn't in store.

After a little research, we chose Abha in the Kingdom's southwest to be the location of our annual sojourn. Whether it was Abha city, where there were so many beautiful sites, or the Alnamis, where the weather was spectacular, or even the breathtakingly beautiful AlMoqr.

Also along the way there were drives along the Red Sea coast to Jazan and its beautiful coffee bean farms high up in the mountains, and the beautiful nature parks, olive farms, traditional markets, and even the man-made caves throughout the region that made the trip one not soon to be forgotten.



a record 45 million safe man-hours at the world's largest naphtha processing plant project in RT

by Amjad AlQarni

Ras Tanura — The Ras Tanura Refinery (RTR) Clean Fuels Project recently celebrated the achievement of 45 million safe man-hours without a single work-related fatality or lost time incident since the commencement of construction in July 2017.

This safety achievement, reached in a complex brown field environment in the extreme conditions of temperature and humidity, was the result of a collaborative effort made by the Integrated Project Team of the Refining and NGL Projects Department (R&NGLPD).

Demonstrating Aramco's commitment to safety, this accomplishment was made possible by the team's strong focus on identifying and controlling hazards, reducing exposure to health and safety risks, as well as supporting the general health and well-being of the project team members. Strong preparation ensured that the company's safety culture was communicated not only to Aramco employees, but also to a broader multicultural and multilingual workforce that includes Aramco's contractors and partners in the project.

safety during extraordinary times

To maintain the health and safety of the project during the outbreak of the COVID-19 pandemic, the Clean Fuels Project team complied with precautionary



Members of the team responsible for 45 million safe man-hours on the Ras Tanura Refinery Clean Fuels Project pose with Project Management vice president Abdulkarim Ghamdi to celebrate the accomplishment.

measures set by the Ministry of Health, including the deployment of portable voice amplifiers to ensure social distancing at the construction site, and the prevention of crowding by increasing the number of buses transporting workers to and from the construction site.

The project team also arranged weekly

inspections of contractors' and subcontractor camps, focusing on the implementation of COVID-19 established precautionary actions.

The overall achievement was significant as it helped the company maintain business continuity and effectively supply diesel and gasoline products (per Euro V

fuels quality standards). The project also includes a new naphtha complex plant that will include a 138,000 barrel per day (bpd) of naphtha hydrotreater, a 90,000 bpd reforming unit, and a 65,000 bpd isomerization unit, which are classified as the world's largest naphtha processing facilities.



photographic memory

Don Falconer and 125 other Aramcons attended an organizational meeting at the Management Training Center in August 1980 to discover the multiple uses of microcomputers — home computers that were used to play games and solve problems. A committee of eight Aramcons was formed to develop guidelines for the new Dhahran Personal Computer Society, which would help exchange computer programs and technical information, arrange purchase of magazines and technical literature, and offer classes in computer programming for all levels.



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Editors: Jamsheed Din, Todd Williams, William Bradshaw
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