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creating green communities for a better tomorrow

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Dubai launches region's
'first industrial scale' green hydrogen plant

New KONA Electric:
Expressive from every angle

Q50

UNLEASH YOUR POTENTIAL



Chairman's Message

The UAE is on a pioneering path towards a more sustainable energy system – an ambitious path set forth in the nation's 'Energy Strategy 2050', which aims to increase the contribution of clean energy in the total energy mix from 25 percent to 50 percent by 2050.

Last month, the Green Hydrogen project was inaugurated in Dubai at the Mohammed bin Rashid Al Maktoum Solar Park, marking a new achievement for the emirate as a leader in renewable energy, while in March, Mubadala had signed a deal with an European energy infrastructure operator to collaborate on hydrogen investment and development initiatives in the UAE and globally.

Green hydrogen, which uses renewable energy to produce hydrogen from water, could reduce dependence on fossil fuels worldwide and drive decarbonization targets. The Green Hydrogen project in Dubai, developed as a collaborative venture between Dubai Electricity and Water Authority (DEWA), Expo 2020 and Siemens Energy, will test and showcase an integrated megawatt-scale plant to



**Prof. Mohammed
bin Fahad**
Executive Editor

produce hydrogen using photovoltaic power at the Solar Park, store the gas, and then utilize it initially for re-electrification purposes. This venture marks a breakthrough moment for a more prominent role for hydrogen in the energy transition and demonstrates how strategic cooperation between governments and private sector partners can lay the groundwork for a fundamental transformation of the energy system.

Green hydrogen is the fuel of the future, and by building up a significant hydrogen economy, the UAE is aiming to be a major player in green hydrogen as it drives efforts for the global energy transition on the international stage. At the national level, diversifying its energy production chain and its industrial capabilities will help meet the goals laid out by the leadership in the 2050 Energy Strategy.

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PUBLISHED BY



Executive Director

Prof. Mohammed Bin Fahad

Advisors

Eng. Hamdan K. Al Shaer
Dr. Eisa M. Abdellatif

Marketing

Fahad M. Al Ghus
marketing@zayedprize.org.ae

Editor

Sangeetha K
editor@zayedprize.org.ae /
mail@zayedprize.org.ae

Design Director

Nash - Intoto Marketing
Communications
intotoadv@gmail.com

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EXPO 2020: Luxembourg gifts its Expo 2020 Dubai Pavilion to UAE



Upcoming events

COVID-19 Related Wastes and the Informal Waste Recycling Sector

Date: June 17

Online Event

Within a short span of time, the COVID-19 pandemic has engulfed the entire world, affecting more than 206 countries and territories. As the caseload of patients surged so did the increased production of hazardous healthcare waste. In this webinar, the United Nations Environment Programme (UNEP) will offer technical assistance training sessions on effective approaches towards managing medical waste. These include effective management practices for COVID-19 related healthcare waste; COVID-19 related wastes and the informal waste recycling sector; and appropriate technologies to address COVID-19 related healthcare waste management.

World Sustainable Energy Days 2021

Date: June 21 - June 25

Location: Austria, Hybrid event

Becoming the first climate-neutral continent by 2050 is an ambitious goal which requires ambitious measures. Energy efficiency and renewable energy are at the centre of this roadmap for making the EU's economy sustainable.

In three days, the event - which attracts over 600 participants from over 60 countries each year - offers delegates 6 dedicated conferences, including the European Energy Efficiency Policy Conference, the European Pellet Conference, the Industrial Energy Efficiency Conference and the Smart E-Mobility Conference.

The First International Conference On Renewable Energy Advanced Technologies And Applications

Date: June 28 - June 30

Virtual event

The aim of the conference is to promote an exchange of recent advances and developments among scientists, scholars, engineers and in the various areas of renewable energy technologies include solar photovoltaic and thermal systems, wind farm, hydroelectricity power, biomass, biofuels, geothermal systems, Hybrid energy, Energy Storage, Hydrogen and Fuel Cells, etc.

Zayed Foundation hosts webinar on 'Nanotechnology and Renewable Energy'

The potential of nanotechnology to provide cleaner, more affordable, more efficient, and more reliable ways to harness renewable energy resources, and the contribution of this technology in driving solutions in the solar sector, was highlighted at a recent webinar hosted virtually by Zayed International Foundation for the Environment earlier this year.

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ZAYED FOUNDATION



ZAYED INTERNATIONAL FOUNDATION FOR THE ENVIRONMENT
Environmental Awareness Raising Seminars

Invites Keynote Speaker:
Prof. Yarub Kahtan Al-Douri
Malaya University, Malaysia

Webinar Title
"Nano-Technology & Renewable Energy"

Date: Sunday 31 January 2021 / Time: 10:00 – 11:30 am Dubai Time (GMT+4)

Panellists

			
Dr. Eisa Abdellatif Chief Technical Advisor Zayed Intl. Foundation	Prof. Yarub Al-Douri Nanotechnology Expert MU, Malaysia	Eng. Hamdan Al Shaer Higher Comm. Member Zayed Intl. Foundation	Prof. Mohammad Bin Fahad Chairman Zayed Intl. Foundation

Participants Link:
<https://zoom.us/j/92670855989>
Webinar ID: 926 7085 5989

Webinar, hosted by Zayed International Foundation for the Environment, discussed how the low efficiency of renewable energy systems can be improved with the use of nanomaterials

At the webinar session titled, 'Nanotechnology and Renewable Energy', Prof. Dr. Yarub Qahtan Al Douri, Professor of Nanotechnology at the University of Malaya – Malaysia, presented the keynote address. The Zayed Foundation members on the panel included Prof. Dr. Mohamed Ahmed Bin Fahad, Chairman of the Higher Committee; Eng. Hamdan K. Al Shaer, Member of the Higher Committee, and Dr. Eisa M. Abdellatif, Chief Technical Advisor.

The Zoom session was held in accordance with the UAE's precautionary measures to contain the spread of Coronavirus and was hosted by the Zayed Foundation as part of its efforts to raise awareness of environmental issues and highlight emerging trends in environmental technologies.

As the keynote speaker, Prof. Al-Douri shed light on the uses of nanotechnology in the field of

Nanotechnology has the potential to economically leverage renewable energy production through new technological solutions and optimized production technologies



energy, and discussed its potential in enhancing energy efficiency across all branches of industry and to economically leverage renewable energy production through new technological solutions and optimized production technologies. v Prof. Al-Douri also referred to the contribution of this innovative technology in impacting each part of the value-added chain in the energy sector, especially in the field of producing solar cells.

Speaking at the event, Prof. Al-Douri said: "The global demand for energy is predicted to be approximately 30 and 46 TW by 2050 and 2100, respectively. To fulfill this requirement, there is a serious a serious shift toward renewable energy sources as solar, wind, biomass, hydrogen, and geothermal energies instead of conventional fossil fuels and nuclear energy."

What weighs in favour of nanotechnology is its ability to utilise the unique properties of materials

at the nanoscale which leads to benefits such as increased efficiency of lighting, increased electrical storage capacity, and decreased amount of pollution, he explained. 'To combat climate change, renewable energy sources need to be rapidly developed. Solar cell is an ideal candidate as it directly converts solar energy into electricity without greenhouse gas emissions.'

However, the relatively high cost of Si wafer-based photovoltaic (PV) modules compared to other electricity sources severely restricts wide adoption of solar cells for civil utilities. It is in this regard that the promise shown by Si-based nanostructures such as quantum dots (QDs) and nanowires (NWs) in enhancing power conversion efficiency (PCE) due to their unique optical and electrical properties, assume significance, he added. "The spectral response of solar cells can be adjusted by incorporating Si-QDs with different sizes, owing to quantum confinement effect on the energy gaps. Accordingly, solar energy can be more efficiently utilized as compared to Si wafer solar cells of a fixed band gap."

Presenting the current research and development efforts on solar cells enhancement via integration of these nanostructures, Prof. Al-Douri said: "The development of nanofabrication techniques has enabled researchers to prepare various nanostructures with controllable size, shape and spatial distribution in a low-cost manner, potentially leading to further cost reduction of resultant PV modules."



Dubai launches region's 'first industrial scale' Green Hydrogen plant

His Highness Sheikh Ahmed bin Saeed Al Maktoum, Chairman of the Dubai Supreme Council of Energy and Chairman of the Expo 2020 Dubai Higher Committee, has inaugurated the Green Hydrogen project at the Mohammed bin Rashid Al Maktoum Solar Park in Dubai.

This marks a new achievement for the emirate as



The Green Hydrogen Project at Mohammed Bin Rashid Al Maktoum Solar Park is developed in collaboration with DEWA, Expo 2020 Dubai, and Siemens Energy

a leader in renewable energy.

Commenting on the occasion, His Highness Sheikh Ahmed said: "The launch of pioneering initiatives in the fields of development is driven by the vision of His Highness Sheikh Mohammed bin Rashid Al Maktoum, Vice President and Prime Minister of the UAE and Ruler of Dubai, which seeks to strengthen the UAE's leadership across various fields".

He added, "These initiatives seek to ensure people's happiness and wellbeing and provide solutions to challenges that may hinder our development journey."

Sheikh Zayed bin Sultan bin Khalifa Al Nahyan, Chairman of His Highness Sheikh Sultan Bin Khalifa Al Nahyan Humanitarian & Scientific Foundation; Dr. Sultan bin Ahmad Sultan Al Jaber, Minister of Industry and Advanced Technology

Dubai's Green Hydrogen Project marks a major milestone in the advancement of the sustainable energy industry in the region



and UAE Special Envoy for Climate Change; Suhail bin Mohammed Faraj Faris Al Mazrouei, Minister of Energy and Infrastructure; Dr Abdullah Belhaif Al Nuaimi, Minister of Climate Change and Environment; and Reem bint Ibrahim Al Hashemy, Minister of State for International Cooperation, and Director General Expo 2020 Dubai, attended the inauguration event.

Alos in attendance were Saeed Mohammed Al Tayer, MD & CEO of Dubai Electricity and Water Authority (DEWA); Dr. Christian Bruch, President and CEO of Siemens Energy, and officials from the public and private sectors.

First-of-its-kind facility in MENA region

The project, implemented in collaboration with DEWA, Expo 2020 Dubai and Siemens Energy, is the first solar-driven green hydrogen producing facility in the MENA region.

In his keynote speech, Saeed Mohammed Al Tayer said that 2021 has witnessed important developments in the hydrogen sector. "His Highness Sheikh Mohammed bin Rashid Al Maktoum recently approved a UAE system for hydrogen fuel-powered vehicles, which aims to develop the Green Hydrogen economy in the UAE, open local markets to hydrogen-powered vehicles and encourage an increase in environment-friendly vehicles."

Al Tayer added: "The system is the cornerstone for encouraging the use and licensing of vehicles, facilities and equipment related to hydrogen fuel and will contribute to achieving sustainable growth that balances the environmental, economic and social aspects."

He continued: "This project to produce hydrogen using solar power also supports the Dubai Clean



Energy Strategy 2050, to provide 75% of Dubai's total power capacity from clean energy sources by 2050 as well as the Dubai Green Mobility 2030 initiative, which aims to stimulate the use of sustainable transport."

"In Dubai, we have a clear direction for the energy sector. It includes expanding the use of clean energy and employing digital transformation, smart grids, the tools of the Fourth Industrial Revolution and disruptive technologies, for their impact on the energy and water sectors," Al Tayer added.

Green fuel produced entirely from renewable sources

Al Tayer explained that with this pilot plant, DEWA aims to demonstrate the production of green hydrogen from solar power, storage, and re-electrification. Daylight solar power from the

solar park will enable the pilot project to produce around 20.5kg/hr of hydrogen at 1.25MWe of peak power.

HE said: "This is a system that allows for buffering renewable energy production, both for fast response applications, as well as for long-term storage. The plant has been built to accommodate future applications and test platforms for the different uses of hydrogen, including potential mobility and industrial uses."

DEWA has already explored and developed a pilot project for green mobility using hydrogen that can be executed in future, in addition to a number of studies, business strategies and a potential roadmap for hydrogen usage. DEWA is building expertise, experience and capabilities to contribute in shaping the clean hydrogen future of the UAE.

Hydrogen can be used for re-electrification through gas motors, gas turbines and fuel cells



Al Tayer thanked DEWA's partners, Expo 2020 Dubai and Siemens Energy, commending their efforts in implementing the project to the highest standards of quality, safety and efficiency.

UAE - early adopter of a hydrogen economy

Dr. Sultan bin Ahmad Sultan Al Jaber said that being an early adopter of a hydrogen economy will be instrumental in achieving sustainable economic growth in the UAE. "The Green Hydrogen Project represents a major step forward in this direction and will greatly accelerate our production of renewable and clean energy sources and contribute to our on-going climate action efforts."

Al Jaber added that increasing investments into research and development into the capture, storage and production of green hydrogen will

greatly enhance national efforts to reduce the impact of climate change on a local, regional and international level."

"The UAE's sustainability efforts have benefitted greatly from the bold vision of the nation's leadership which has always encouraged close collaboration between local and federal entities, and the public and private sector. The cabinet's approval of the UAE's hydrogen vehicle system, in March – a project proposed by the Ministry of Industry and Advanced Technology – exemplified how the government is promoting a culture of conservation by striving to strike a balance between economic growth and environmental protection," he said.

UAE on the global map of hydrogen markets

"The UAE is one of the leading countries globally



in renewable energy," said HE Suhail bin Mohammed Faraj Faris Al Mazrouei. "The country has adopted state-of-the-art innovations to drive sustainable development and protect the environment. These innovations are key to combating climate change and mitigating global warming."

Dr. Abdullah Belhaif Al Nuaimi said: "Advancing the energy transition is a strategic priority for the UAE in line with its commitment to developing the green economy and tackling climate change. Innovative green hydrogen solutions are a key driver of the diversification of energy sources and increasing reliance on clean power."

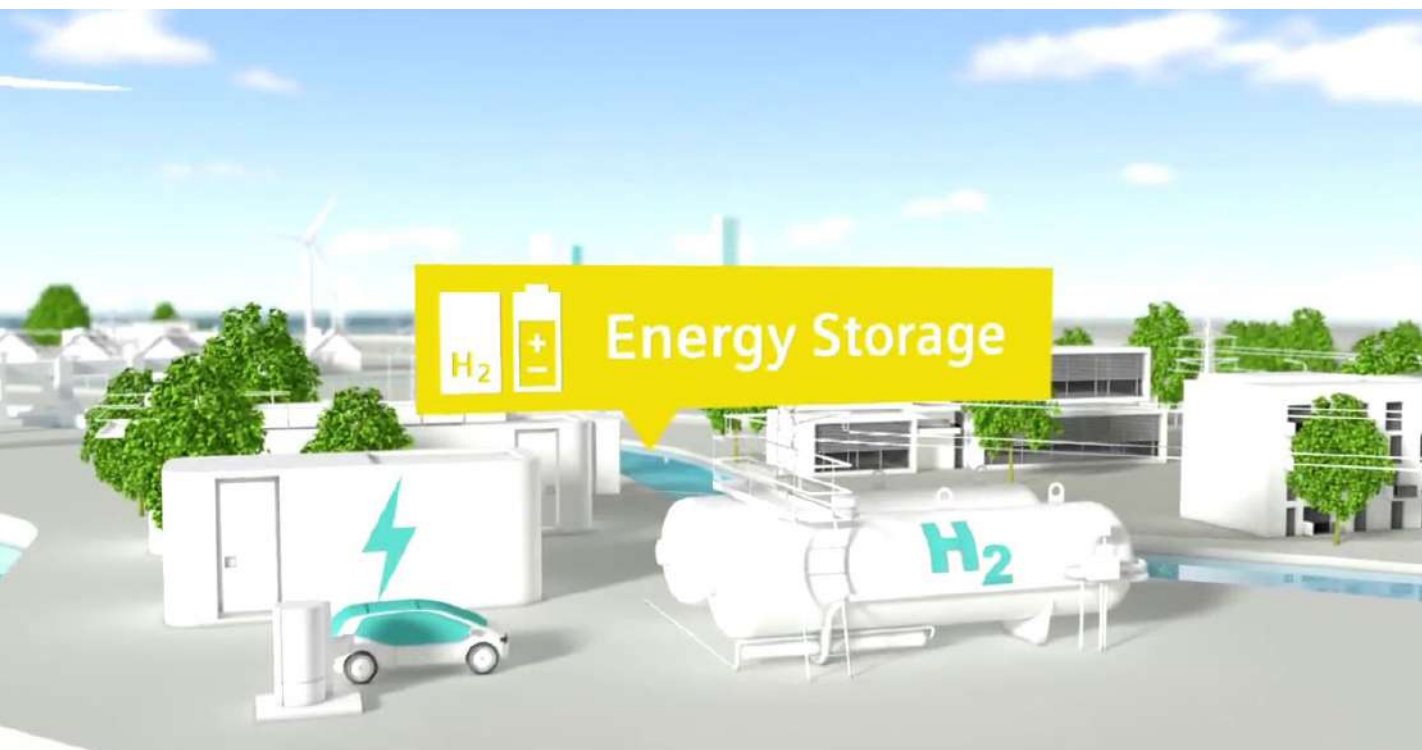
He said: "According to the International Energy Agency (IEA), the demand for hydrogen as a power source has grown threefold in the past few decades, and its global production is estimated

at 70 million metric tonnes annually."

"As a result, the costs of producing hydrogen are projected to fall by 64 percent by 2040. DEWA's inauguration of the Green Hydrogen project represents a momentous milestone in positioning the UAE on the global map of hydrogen markets. The project will reinforce the country's efforts to protect the environment, combat climate change and achieve carbon neutrality," added Al Nuaimi.

Reem bint Ibrahim Al Hashemy said: "The Green Hydrogen Project is leading by example, showing how technology and collaboration can help build a cleaner, safer and healthier future for everyone. It epitomises the shared desire of Expo 2020 Dubai, DEWA, our Official Sustainable Energy Partner and Siemens Energy to develop a global culture of innovation and deploy life-changing ideas and technologies around sustainability."

The experience gained from the Green Hydrogen Project will be invaluable in developing sustainable and carbon-free solutions for numerous industries



Important milestone in energy transformation

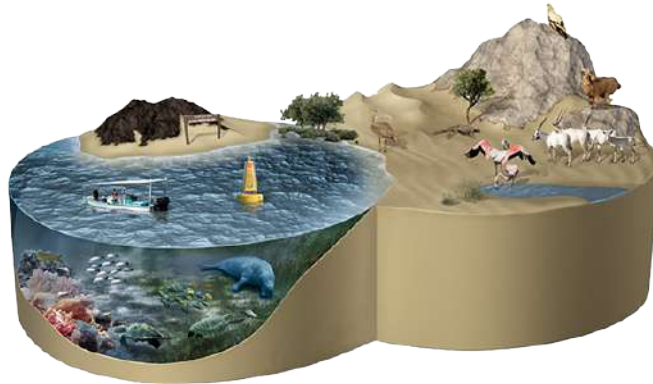
Dr. Christian Bruch said: "This landmark Green Hydrogen Project highlights the importance of partnership in driving forward innovative new clean energy solutions and tackling the existential threat from global climate change. As the first industrial-scale facility to produce green hydrogen in the Middle East and North Africa, it is an important milestone of the energy transformation. We look forward to working together to decarbonize industries that are hard to abate with renewable energy alone."

Electrolysis of water is the separation of water into oxygen and hydrogen using an electric current. A DC electrical power source is connected to two electrodes, which are placed in the water and separated by a Proton Exchange Membrane

(PEM). The membrane allows the transfer of Hydrogen ions (Protons) produced by the electrochemical water splitting from the anode to the cathode. Protons will recombine with the electrons flowing through an external circuit to produce H₂ molecules in gaseous form. Oxygen gas will appear at the anode through this electrochemical reaction.

This technology allows the storage of large amounts of energy for long periods. Hydrogen can be used for re-electrification through gas motors, gas turbines and fuel cells. It can also be used as a feedstock for the chemical industry (e.g., ammonia, syn-fuels, green-chemicals, etc.), as fuel for transportation, a reducing agent for the steel industry, to produce heat for industrial processes, or as gas for residential heating and cooking purposes, and as energy for export.

UAE unveils three initiatives to mark World Environment Day



The Ministry of Climate Change and Environment unveils three national initiatives to advance UAE's efforts in developing game-changing solutions to combat climate change

To celebrate World Environment Day 2021, held under the theme 'Ecosystem Restoration', the Ministry of Climate Change and Environment (MOCCA) has rolled out three national initiatives that advance the UAE's efforts to leverage innovation to conserve and restore ecosystems.

Dr. Abdullah Belhaif Al Nuaimi, Minister of Climate Change and Environment, said: "Over five decades, the UAE has worked hard to ensure that its development journey did not come at the expense of the environment. MOCCA continues these efforts through an integrated approach that combines effective environmental legislation and regulations with on-the-ground action."

He added: "As we celebrate World Environment Day, we are proud to announce three new initiatives that will help develop game-changing solutions to environmental issues and inform decision making."

MoU to promote pioneering solutions in climate change

MOCCA has signed a memorandum of understanding (MoU) with idea innovator company Ideanco to initiate collaboration in promoting pioneering climate solutions and entrepreneurship in the field.

Under the agreement, the Ministry will support Ideanco's Climathon. Set to run from October 2 to 12, 2021, the hackathon will bring together the brightest minds to present promising cleantech ideas with a potential global impact that can help solve common challenges to air quality, mobility, and agribusiness. MOCCA will determine the initiative's mechanism, main pillars, and future steps, as well as coordinate with partners to promote the hackathon.

In addition, the scope of the MoU covers joint campaigns and programs aimed at raising public environmental awareness and engaging youth in environmental preservation and sustainability drives.

The two entities will also work together to support startups in the climate change and sustainability space.



UAE State of Green Economy Report

MOCCAE has published the fourth edition of the UAE State of Green Economy Report. The document examines long-term post-COVID-19 recovery strategies in green economy and digital economy as well as the achievements of government and private sector green growth initiatives.

The report reviews climate change adaptation measures from an economic perspective with a focus on the climate risk assessment that the Ministry conducted across key sectors. It also outlines the implementation framework of the UAE Green Agenda and its progress five years after the policy's issue.

Highlighting the importance of international cooperation in advancing the shift to green economy, the publication lists some of the events

that the UAE convened to catalyse global partnerships in this area.

Launch of UAE Chemical Research Platform

MOCCAE has launched the UAE Chemical Research Platform, a research network that studies the effects of chemicals on humans and the environment with the aim of promoting the use of clean production technologies and building the capacities of workers in the field of chemicals management.



HH Sheikh Mohammed bin Rashid launches Food Tech Valley

His Highness Sheikh Mohammed bin Rashid Al Maktoum, Vice President and Prime Minister of UAE and Ruler of Dubai, has launched the 'Food Tech Valley' a new initiative that seeks to triple the UAE's food production.

The launch, on May 1, 2021, was attended by H.H. Sheikh Hamdan bin Mohammed bin Rashid Al Maktoum, Crown Prince of Dubai and Chairman



The new city will spearhead innovation and leverage collaborative networks to lead regional transformation and export knowledge on sustainable food systems globally

of The Executive Council of Dubai; H.H. Sheikh Maktoum bin Mohammed bin Rashid Al Maktoum, Deputy Ruler of Dubai and First Deputy Chairman of The Executive Council of Dubai; H.H. Sheikh Ahmed bin Saeed Al Maktoum, Chairman and Chief Executive of Emirates Group and President of the Dubai Civil Aviation Authority; H.H. Sheikh Ahmed bin Mohammed bin Rashid Al Maktoum, Chairman of the Dubai Media Council; Mohammed Abdullah Al Gergawi, Minister of Cabinet Affairs; HE Mariam Hareb Almheiri, Minister of State for Food and Water Security; Khalifa Saeed Sulaiman, Chairman of Protocols for the Vice President and Prime Minister of the UAE; and Hesham Abdullah Al Qassim, CEO of Wasl Asset Management Group.

Shaping the future of the food industry

The initiative aims to create an integrated

The Food Tech Valley will host vertical farms, an advanced smart food logistics hub, Research & Development (R&D) facilities and a marketplace



modern city that will serve as a hub for future clean tech-based food and agricultural products and an incubator for researchers, entrepreneurs, startups and industry experts involved in developing solutions that have the potential to shape the future of the food industry.

It will support the use of technologies and applied research in food processing and agriculture and apply modern farming techniques – such as vertical farming, aquaculture and hydroponics – to accelerate self-sufficiency in fresh food produce and reduce wastage of resources.

His Highness Sheikh Mohammed bin Rashid Al Maktoum said, "Food Tech Valley is part of a series of projects that aim to sustain the UAE's food, water and agricultural systems in line with the National Food Security Strategy. Food and medicine represent strategic sectors that help us ensure a prosperous and sustainable future for

the next generation."

Food Tech Valley is the outcome of a partnership between the Ministry of Food and Water Security and Wasl Properties to explore urban planning of future smart and food independent cities. Equipped with cutting-edge technologies, Food Tech Valley aims to achieve the objectives of the National Food Security Strategy 2051 and support a diversified knowledge-based economy.

Driven by a circular economy model

The Food Tech Valley will host vertical farms, an advanced smart food logistics hub, Research & Development (R&D) facilities and a marketplace. Driven by a circular economy model, the city will bring together companies, investors and researchers in a sustainable agribusiness ecosystem to develop the latest aquaculture and hydroponics technologies.



Through an innovation-based approach to food, the new site aims to enhance local food production, diversify investments, and advance research to align and influence future food trends and preferences. It will act as a global hub for start-ups, SMEs and international companies with a wide range of expertise to exchange knowledge in the food industry.

Mariam Almheiri, Minister of State for Food and Water Security, stressed that the Food Tech Valley project will establish the UAE's position as a global laboratory for the latest technologies in innovation-based food security.

"The Food Tech Valley project represents an instrumental stride towards enhancing food security and will serve as a global destination for expertise in the entire food ecosystem. It will also be an economic zone, which is particularly

significant considering that the size of the AgTech market is projected to grow from \$13.5 billion to \$22 billion over the next four years. The project is part of our efforts to achieve our strategic national goals with respect to food security, as it constitutes an incubator for advanced farms - including indoor and vertical farms - with more than 60% of the project's space allocated to these activities."

"The project features a food innovation centre that has been designed to resemble a head of wheat and will incorporate laboratories, research centres and prototype agricultural systems. Strategically located close to universities and academic institutions, it will support the R&D ecosystem and explore and deliver sustainable solutions around food," she added.

"As we celebrate the past 50 years of

Over 300 varieties of crops will be produced in the new city using modern farming techniques and the latest agri-technologies



achievements inspired by our founding fathers, we look forward to the next 50 years with confidence to realise our National Food Security Strategy and enhance our capabilities in food production as a nation. We seek to adopt and develop the latest methods for smart agriculture and food production, rationalise water use, accelerate basic food self-sufficiency, and share our successful experiences with countries around the world. This will help us achieve the Sustainable Development Goals and safeguard the future of forthcoming generations."

A vital hub for applied research and development

The city is established on the basic principles of establishing flexible legislative frameworks for the food industry, leveraging joint collaborations and global trade networks to reach markets, and providing immediate and comprehensive services

for food processing companies in Dubai at competitive costs.

Food Tech Valley will be a vital hub for applied research and development to support farmers and food production companies in the UAE and around the world. It will develop new solutions to solve multiple challenges facing the food sector including weak adoption of modern agri-technologies, lack of skilled workforce in agriculture and low competitiveness of local products.

Food Tech Valley will be home to four main clusters: agricultural technology and engineering, a food innovation centre, R&D facilities, and an advanced smart food logistics hub. The agricultural technology and engineering cluster will have a vertical farm that will employ the latest food technologies to grow year-round vital



crops for future smart cities. The cluster will also be centred on developing innovative projects in bioengineering, automation, robotics and artificial intelligence and supporting capacity building across the food ecosystem.

The food innovation centre will provide an integrated agri-business ecosystem to nurture promising ideas and support start-ups and entrepreneurs. The cluster, which will have a specialised food factory to produce new foods and second-generation restaurants (restaurants 2.0), will explore a futuristic model that applies the highest standards of sustainability and production sufficiency to reduce consumption and wastage of resources.

The third cluster will have world-class R&D facilities to train food specialists and support food establishments. The facilities will explore

the use of agri-robotics to maximise yields and drought-resistant crops. Specialised researchers will also explore the application of 3D printing in algae cultivation and alternative protein production.

The R&D facilities will also study the use of artificial intelligence to monitor, analyse and manage agricultural crops, and detect environmental impact and climate change. They will contribute to global food security research efforts by exploring successful saline agriculture, nutritional genomics, agricultural mechanisation and the use of drones in food production.

The fourth cluster will feature a fourth-generation food storage system that provides smart and automated logistical storage services. The comprehensive smart storage system will apply block chain technologies and big data in sorting,

Food Tech Valley will be a vital hub for applied research and development to support farmers and food production companies in the UAE and around the world



transporting and distributing various food products. It will track food quality, origin, components, processing methods, storage and delivery to ensure efficiency of food supply chains.

Sustainable food production for future generations

The comprehensive city aims to contribute to achieving the National Food Security Strategy that seeks to make the UAE the world's best in the Global Food Security Index by 2051.

According to the Ministry of Climate Change and Environment's 2019 figures, the UAE has more than 177 advanced farms that use modern agricultural technologies and hydroponics, and over 100 entities that implement organic farming across the UAE. These facilitate the growth of locally sourced produce all year-round and reduce reliance on seasonal farming.

The Food Tech Valley project aims to establish the UAE as a leader in food technologies. The country currently hosts over 500 specialised food processing companies and establishments that supply to local markets and export to countries across the world.

Attracting Investment As an economic zone, the Food Tech Valley is a valuable addition to the UAE's 1,250 legislations that support agriculture and food production sectors in ensuring food safety, storage and transport.

With food and beverage investments in the UAE currently totalling AED62 billion, the Food Tech Valley will contribute to attracting further local and foreign direct investments in promising projects that help diversify the national economy and develop the supply chain and logistic services.

Uae Reaffirms Commitment To Increase Clean Energy Use By 2050

Suhail Al Mazrouei, Minister of Energy and Infrastructure, has reiterated the UAE's commitment to reduce carbon dioxide emissions by 70 percent and increase clean energy use by 50 percent by 2050 during the inaugural Middle East Energy virtual event on May 17.

"Today, renewables alongside new technologies



and services are transforming the business of supplying and delivering power. For this energy transition, a more responsive and interconnected power system is emerging. This changing energy landscape offers new opportunities for both leadership and action," Suhail Al Mazrouei told the audience.

"Over the past 50 years, the UAE has been at the forefront of the ongoing energy transition in the region and among leading nations worldwide. We were among the first nations to ratify the Paris Agreement, thereby showing our commitment to the efforts toward a low carbon economy, which requires a low carbon energy system," he added.

Yousif Al Ali, Assistant Under-Secretary - Electricity, Water and Future Energy Ministry of Energy and Infrastructure, who discussed the UAE carbon capture programme, said, "The UAE

is well-positioned to be one of the top producers of hydrogen in the world. The UAE is committed and working with confidence to reduce the nationwide carbon footprint, by working on the demand side, supply-side and working on our different energies and future technologies to reduce our carbon footprint."

Other notable speakers included Mohammed Angawi, Regional Climate Change Coordinator, United Nations Environment Programme (UNEP) West Asia; David Rennie, Global Head of Energy, Scottish Development International (SDI); Eva Ramos Torreblanca, Director - Environmental Analysis and Economics, Environment Agency - Abu Dhabi; and Farid Al Awlaqi, Executive Director - Generation, TAQA Global - with all underscoring a commitment to low carbon, renewables and clean energy.

Minister of Climate Change and Environment discusses UAE's transition to circular economy

Dr. Abdullah Belhaif Al Nuaimi, Minister of Climate Change and Environment, participated in the onboarding meeting of the Platform for Accelerating the Circular Economy (PACE) Leadership Group that explored ways to fast-track the global transition to a circular economy.

PACE brings together 90 business, government,



and civil society leaders that are championing global action towards a circular economy at speed and scale.

The platform works with its leadership group across sectors to develop a collective agenda, implement demonstration projects that address critical barriers to the circular economy transition, and disseminate learning globally to inform key decision-makers.

"The UAE is keen to contribute to accelerating the adoption of a circular economy worldwide. For our country, the transition means new economic opportunities to help the nation become stronger and more resilient following the massive disruptions caused by the COVID-19 pandemic. In addition, it aligns with the global sustainable development drive," Dr. Al Nuaimi stated.

"We are proud to share our achievements in this regard, which include the approval of the UAE Circular Economy Policy 2021-2031 targeting four priority areas – green infrastructure, sustainable transport, sustainable manufacturing, and sustainable food production and consumption. I look forward to stepping up our efforts through this important initiative to achieve synergic outcomes," he added.

The PACE Leadership Group members praised the UAE's key role as the first signatory to the World Economic Forum's (WEF's) Scale360 initiative, a PACE-affiliated project. They also highlighted the potential of the newly formed UAE Circular Economy Council to spearhead commitment to climate change mitigation and adaptation, and provide a model for other governments to follow.

Curated Expo 2020 itineraries span food, health, heritage, tech and more

Visitors from across the globe and every walk of life will be able to enjoy a spectacular line-up of sights, sounds and tastes at Expo 2020 Dubai, through a series of curated itineraries designed around their passions and interests.

Available in a half-day, full-day or three-day formats, the guided and self-guided journeys –

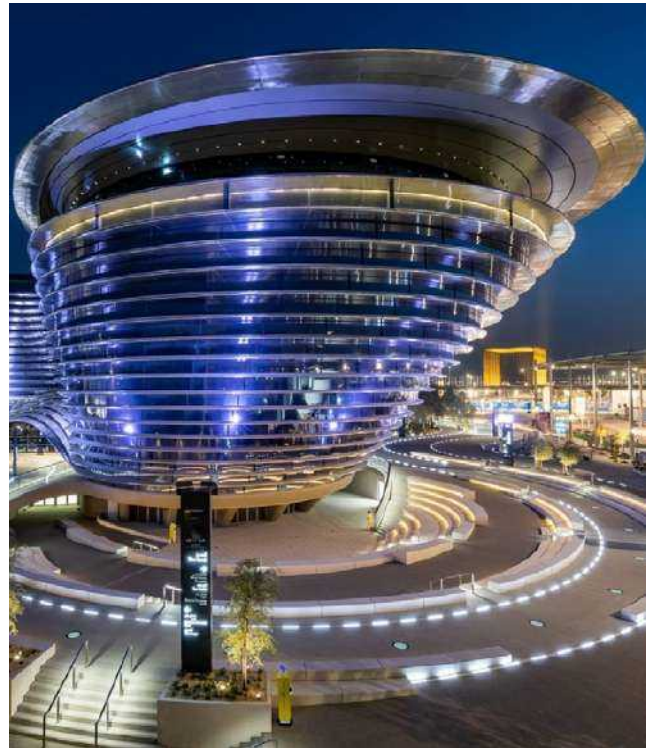


Tailored journeys star site-wide highlights based on visitors' passions and interests to ensure unforgettable experiences for millions of visitors

the latter available through the Expo 2020 Mobile App – will highlight site-wide attractions appealing to families, couples, students, business travellers and everyone in between. They will help ensure Expo 2020 is packed with unforgettable experiences for all when it opens its doors to the world on 1 October 2021.

Sumathi Ramanathan, Vice President, Market Strategy & Sales, Expo 2020 Dubai, said: "Expo 2020 is for explorers, foodies and culture enthusiasts, for children and grandparents, for entrepreneurs, inventors and businesses travellers, for the casual tourist, and for the curious who want to experience the future – now. Our easy-to-access itineraries will enable every visitor to discover the game-changing innovations, world-class entertainment and once-in-a-lifetime experiences that are relevant to them, ensuring everyone who walks through

Self-guided itineraries to be made easily accessible through Expo 2020 Mobile App



our doors has a safe experience that amazes, inspires and excites the senses.”

Expo Essentials will introduce the world in one place, and include innovations such as the world's largest radio satellite capable of detecting signals from alien life and a 4D 'bioprinter' that can reproduce live cells, as well as world fusion music, choirs and orchestral performances, and cuisines from countries visitors may have never considered before.

The Expo for Families tour offers an exciting, interactive journey packed with fun, educational experiences for all ages, from a Beethoven-inspired robo-band to an encounter with a giant sharp-toothed fish; while Expo for Couples is for those who want to discover the site's most romantic offerings, including the magical Al Wasl Plaza, which will feature spectacular night-time light shows on its 360-degree projection surface.

The Expo Architecture and Design Journey will take visitors through some of Expo's architectural marvels – from the falcon-shaped UAE Pavilion to self-sustaining buildings and pavilions that merge nature and architecture, while on the Expo for Foodies tour, guests can taste the future of food, discover a star chef, or sample a new cuisine while taking in a show.

Alternatively, take time out to explore human well-being on the Expo Health and Wellness Journey, ride a bike or attend a yoga class in Jubilee Park, nourish yourself with the latest superfoods and discover life-changing healthcare innovations.

Other itineraries include the Business and Entrepreneurship Journey, which explores how changemakers from around the world strategise to create a lasting impact, and the Expo Mobility Journey, showcasing next-gen innovations moving



data, people and goods across the world, from how AI is changing the way we live, learn and play, to the future of air travel.

The Expo Energy Journey will allow visitors to discover vertical farms and stroll through net-zero energy pavilions, while on the Expo for Techies and Innovators tour, they can explore artificial intelligence, space and augmented reality – with a break for lunch with robots.

Hosting an exceptional Expo while ensuring the health, safety and well-being of all participants is Expo's highest priority. A far-reaching programme of precautionary measures will be in place to ensure the safety of all visitors, participants and staff. These include the installation of thermal cameras and sanitisation stations across the site, mandatory face-mask wearing and the implementation of social-distancing regulations. Building on the UAE's successful vaccination

programme, Expo 2020 is also offering free COVID-19 vaccinations to all official participants and their staff.

The first World Expo to be held in the Middle East, Africa and South Asia (MEASA) region, Expo 2020 will run from 1 October 2021 to 31 March 2022, inviting visitors from around the world to join the making of a new world, experiencing a six-month celebration of creativity, innovation, human progress and culture.



UAE researchers sequence genome of extinct date palms

Researchers from NYU Abu Dhabi's Center for Genomics and Systems Biology have successfully sequenced the genome of previously extinct date palm varieties that lived more than 2,000 years ago.

They did so by using date palm seeds that were recovered from archaeological sites in the southern Levant region and radiocarbon-dated

UAE NEWS



from the 4th century BCE to the 2nd century CE.

The seeds were germinated to yield viable, new plants. The researchers conducted whole genome sequencing of these germinated ancient samples and used this genome data to examine the genetics of these previously extinct Judean date palms. This study marks the first time that researchers have sequenced the genomes of plants from ancient, germinated seeds.

By examining the genome of a species (*Phoenix dactylifera* L.) that thrived centuries ago, Professor of Biology Michael D. Purugganan and his NYUAD colleagues, along with research partners in Israel and France, were able to see how these plants evolved over a period of time. I

n this case, they observed that between the 4th century BCE and 2nd century CE, date palms in

the eastern Mediterranean started to show increasing levels of genes from another species, *Phoenix theophrasti*, which today grows in Crete and some other Greek islands, as well as southwestern Turkey, as a result of hybridization between species. They conclude that the increasing level of genes from *P. theophrasti* over this period shows the increasing influence of the Roman Empire in the eastern Mediterranean.

"We are fortunate that date palm seeds can live a long time and germinate with minimal DNA damage in dry environments," said Purugganan. "By reviving biological material such as germinating ancient seeds from archaeological, paleontological sites, or historical collections, we can not only study the genomes of lost populations but also, in some instances, rediscover genes that may have gone extinct in modern varieties."

Emirati scientist on a mission to develop lasting solutions for impactful change

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PROFILE



Dr. Saeed Alhassan Alkhazraji,
Associate Professor and Senior
Director of Petroleum Institute,
Khalifa University, and
Founder @ Manhat

Developing on his childhood passion for problem solving, Dr. Saeed Alhassan Alkhazraji, Associate Professor and Senior Director of Petroleum Institute, Khalifa University, and Founder @ Manhat, tells Society & Environment how he is today applying those skills on a bigger scale by devising pioneering ways to save water and improve the quality of soils in arid regions.

Dr. Saeed Alhassan Alkhazraji was the first recipient of Sheikh Mohammed bin Rashid Medal of Scientific Excellence in 2017. He is also two times recipient of Sheikh Rashid Award for Scientific Achievement (2008 and 2012).

His other research works focus on materials for different applications including water harvesting, water remediation, energy storage, hydrogen production and catalysis.

Excerpts from the interview:

1. How did your journey as a scientist and as an inventor begin? What inspired you on this path?

Well, there is no specific time or single event that has guided me on this journey. It is a collection of events, situations and conscious understanding of purpose. Even at an early age, I enjoyed problem-solving at home by fixing things and even creating a periscope!

Majoring in chemical engineering eventually led me to pursue career in research. I enjoyed my PhD to the fullest with fantastic advisors and freedom to think outside the box. During this period, I committed to be a researcher for life and provide solutions to our pressing issues.

2. Were you always curious as a child? What areas of science did you explore in your early years?

I was not as curious in terms of taking risks. I was a bit silent compared to my peers. I did enjoy art more early on but then I molded my interest in art with my passion for science and the sense of discovery. The latter became more apparent in levels 7-11 in school. I enjoyed engineering and application of scientific principle in early years. Geometry continues to fascinate me.

3. Your inventions and research are focused on issues that are so relevant to the UAE and the region such as water scarcity and soil for farming. What drives you to seek solutions and drive innovation that benefit arid regions?

I enjoy tinkering and thinking of hypothetical scenarios. The water scarcity is a well-known problem and addressing such problems require fundamental change in thinking. I always appreciate eureka moments when consensus on issues are not supposed to be fixed in stone and we have to look at different angles. Thus, I have to be more aware about my own domains and then use them for solving these problems. Without this awareness, solutions will be superficial.

4. Could you explain about your inventive solutions to save water and the artificial soil project you pioneered? What factors led to these inventions and what were the main challenges you encountered?

There are three inventions under discussion here. The first one is to make water from humidity using smart materials. These materials are thermos-responsive where they are hydrophilic at low temperature and hydrophobic at high temperature. This invention was developed at early stage of my academic career and was well funded by the Petroleum Institute and ADNOC Onshore.

The second patent was developed individually where I came up with a modification of solar still concept. In this invention, the idea is to simply trap the water evaporating from open water surfaces. Water vapour forms all the time from open water surfaces. Instead of allowing this water to leave the local water system, we trap it to produce fresh and pure water. For this patent, I established Manhat to commercialize the technology and we are in the process of conducting an evaluation experiment for the device.

The third patent is about artificial soil. UAE shores are made of soil with poor quality (low nutrients, high salt content, low water uptake. etc). In order for UAE to grow its agricultural output, it is important to improve the quality of soil used in this industry. Thus, we came up with a method to provide soil made with more than 80% sand from local sand-dunes which can be customized for specific crops. We can make the soil with different water uptake, different aeration, varied nitrogen content, different texture. etc. Most materials used for this purpose are locally sourced to make it affordable.

I currently have seven patents and six patent applications.

5. Who have been your mentors, and who have inspired you on your journey?

There are different kinds of mentors that we interact with throughout the years. For my academic career, I had the pleasure to be advised by two Professors - Dr. Syed Qutubuddin and Dr. David Schiraldi.

Our leaders in the UAE are a constant source of inspiration. UAE President His Highness Sheikh Khalifa Bin Zayed Al Nahyan; HH Sheikh



Mohammed Bin Rashid Al Maktoum, Vice President and Prime Minister of the UAE and Ruler of Dubai; and HH Sheikh Mohamed Bin Zayed Al Nahyan, the Crown Prince of Abu Dhabi.

6. What has been your greatest professional achievement till date?

Winning the Medal of Scientific Achievement from H.H. Sheikh Mohammed Bin Rashid in 2017 was an exhilarating experience. When I received a call informing me about it, I started reflecting and reviewing my career as a scientist. It was a surreal experience.

7. What are some of the projects you are currently working on, and what are some of the topics you would like to explore further in future?

Currently I am involved in different projects

across several disciplines. One project is focusing on capitalizing on elemental sulphur, of which UAE is the largest exporter worldwide. Etihad Railway is currently transporting more than 6 million tons of sulphur per annum. Our project is focused on developing materials based on sulphur for applications in optics, water remediation, and supercapacitor.

I am also engaged in developing more materials for water collection from humidity as source of water.

8. Expo 2020 will spotlight ingenious solutions that have great global impact. What are you most looking forward to witnessing at Expo 2020?

The Expo has played a significant role in showcasing advances in technologies over the

past 100 years. They are a crucial hub for advancing human future. At Expo 2020 this year, Manhat will be showcased to the world. These once-in-a-decade events are memorable and will be ingrained in the consciousness of every visitor.

9. The onset of the coronavirus pandemic has spurred the shift towards technology. As a scientist, how do you view this development, and what avenues does it open for budding young scientists?

I was working on artificial soil in 2019 and luckily, we foresaw the need for more technologies to secure food production in UAE. Once the pandemic started, it became clear that our intuition in providing solutions to food security is the right one. I think young scientists should view this pandemic as an opportunity to refocus their priority on serving humanity.

10. According to you, what are the qualities the youth need to fuel their interest in science and technology? And what should be done further to build up fundamental sciences across the UAE's educational institutions and universities?

The aspirational goals set by the UAE government is continually inspiring our youth. The Emirates Mars Mission is a prime example of such a goal. The moment the UAE became the first Arab nation to send the Hope Probe to Mars, will forever be etched in our minds, and young scientists are today excited to join space programmes and advance their careers by pursuing grand goals.

The possibilities and the challenges for each generation evolve with time. The UAE has strong institutions that focus on science and technology. We are still growing and for the next phase, what we need is enhancement of the current ecosystem to create value from R&D activities done across these institutes.

“The aspirational goals set by the UAE government is continually inspiring our youth.”



Wetland opens UAE National Pavilion's 10th exhibition at Biennale Architettura 2021

Noura Al Kaabi, the UAE's Minister of Culture and Youth, inaugurated Wetland, the National Pavilion UAE's 10th exhibition at the Biennale Architettura 2021 (Venice Biennale) on May 21, 2021.

Curated by Wael Al Awar and Kenichi Teramoto, Wetland presents an environmentally friendly salt-based cement alternative which could



Curated by Wael Al Awar and Kenichi Teramoto, Wetland presents an environmentally friendly salt-based alternative to cement

reduce the climate impact of the construction industry.

Created from recycled industrial waste brine, the MgO cement has been hand-cast into organic shapes recalling the UAE's traditional coral-built houses, forming a hand-built 7 x 5-meter prototype structure.

The prototype is accompanied by large-scale images created by New York-based Emirati artist Farah Al Qasimi of the UAE's UNESCO World Heritage Site-nominated sabkhas (salt flats), which provided inspiration for the research process. A virtual tour of the exhibition is available on the National Pavilion UAE website.

Noura Al Kaabi, Minister of Culture and Youth, said: "Over 10 fantastic exhibitions, the National Pavilion UAE has brought some of the best of

Wetland presents an environmentally friendly salt-based cement alternative which could reduce the climate impact of the construction industry



the UAE's cultural stories to a global audience, demonstrating our ambition, our creativity and our commitment to cross-cultural exchange while making a tangible contribution to national development."

Curators and architects Wael Al Awar and Kenichi Teramoto said: "Exploring the relationship between nature and the built environment and developing new and more sustainable architectural methods are vital for our future, and this global conversation is long overdue. The theme for the 2021 Biennale, 'How Will We Live Together?', asks us to consider new modes for a shared future. For us, that meant examining the relationship between urban development and nature, but also reconsidering how we worked throughout our research process to bring a new focus on collaboration and collective thinking."

The curators collaborated with specialist teams

at three universities in developing the project. NYU Abu Dhabi's Amber Lab contributed to the chemical formula for the cement; the University of Tokyo's Obuchi Lab and Sato Lab supported the development of the construction modules and used advanced 3D remote engineering technology to formulate a viable hand-built structure in Venice; and the American University of Sharjah's Department of Biology, Chemistry and Environmental Sciences contributed research that advanced understanding of the sabkhas.

Wael Al Awar is also participating in the Curators' Collective, a collaboration between curators of many of the national pavilions at the 2021 Biennale. To support the goals of sustainability, the curators are working together to share and repurpose excess materials from the construction of their exhibitions, including an open call supported by the National Pavilion UAE for designers to develop a public bench from recycled materials left over from the construction of exhibitions, which will function as both an architectural statement and public seating that supports social distancing.

Wetland is now open to the public at the 17th International Architecture Exhibition of the Venice Biennale until November 21, 2021.



Climate change is local: Translating global goals into local action

The ambitious goals announced and reaffirmed at summits such as the Regional Climate Dialogue, the Leaders' Summit on Climate and others, reflect the growing consensus that we are at a critical moment of action. Across the globe, governments, individuals, and companies are taking tangible steps to confront the unprecedented crisis that climate change represents. That is good news.



Across the globe, governments, individuals, and companies are taking tangible steps to confront the unprecedented crisis that climate change represents, writes *Nabil Habayeb, Senior Vice President of GE and President & CEO of GE International Markets*

And yet, our ability to overcome this challenge and achieve the results we so urgently need will not happen only through events such as these, nor during government policy meetings, or in corporate boardrooms. While these are essential to alignment and making commitments, the action to achieve these goals will happen in the local markets.

Where the rubber hits the road

Success actually occurs "where the rubber hits the road" – in the homes, factories, industrial facilities, power plants, and office buildings where sustainable, low- and zero-carbon technologies, systems, and practices are deployed. This needs to happen in a diverse array of geographies, climates, demographics, and economies. Some countries are densely populated; others have vast uninhabited areas. Some regions get all their water from

Across the Middle East and North Africa, there is a strong focus on cutting down carbon emissions and diversifying the energy mix



desalination and require constant air conditioning for brutal summers; others have rivers that run full year-round, and their major concern is heating during freezing winters.

These different conditions not only impact each country's response to climate change, but also how they approach the broader "energy trilemma." This trilemma reflects the challenge countries face to address sustainability, while at the same time balancing their needs in two other critical areas: energy equity (often related to affordability), and energy security and reliability.

Even as the world rallies around the need for concerted action, the path taken by each country and community will look different. What that means, quite simply, is that effective climate action – particularly in the context of the energy trilemma – will need extensive localization. This

local approach requires technology and an understanding of the local environment and market.

That is why at this moment of action, we will build on our work with customers and governments across the globe and support the execution of the commitments outlined to move further and faster toward a more sustainable future. We must look forward to the future with new paradigms and technologies, alongside customers, governments, and partners.

Reimagining tomorrow's technologies

We bring proven technologies that will support customers in taking steps today, while our ongoing research and development – with an annual spend of US\$1.5 billion on energy related R&D – will deliver the new technologies they require in the years ahead.



Already, our gas turbines can run on fuels that blend natural gas with hydrogen, resulting in lower CO₂ emissions. Ongoing innovation means that many of our turbines can transition to run on 100 percent hydrogen. This is a major milestone, as gas turbines fueled by hydrogen will unlock an era of lower carbon dispatchable electricity, providing a necessary backstop to the intermittency of renewable power. In the renewables sector, we have some of the largest, most efficient turbines in the world. Our hardware and software for the electrical grid helps ensure electricity is delivered efficiently and reliably to consumers.

In aviation, we are continuing to improve engine performance for greater fuel efficiency. Longer term, we are trialing sustainable airline fuels, and we are exploring electrically driven propulsion systems that reimagine the aircraft engine.

Supporting the energy transition

Across the Middle East and North Africa, there is a strong focus on cutting down carbon emissions and diversifying the energy mix.

With the goal of building one of the world's most efficient energy systems, Saudi Arabia plans to diversify its energy mix to generate half of its electricity from renewable sources by 2030. During its G20 presidency in 2020, the Kingdom advocated the need to adopt a circular carbon economy and launched the Green Saudi Initiative and the Green Middle East Initiative to reduce carbon emissions in the region by more than 10 per cent of current global contributions.

In the UAE, diversification is also key to progress. By 2050, the country aims to have an energy mix that includes 44 percent renewables and 38 percent natural gas. GE is providing its record-

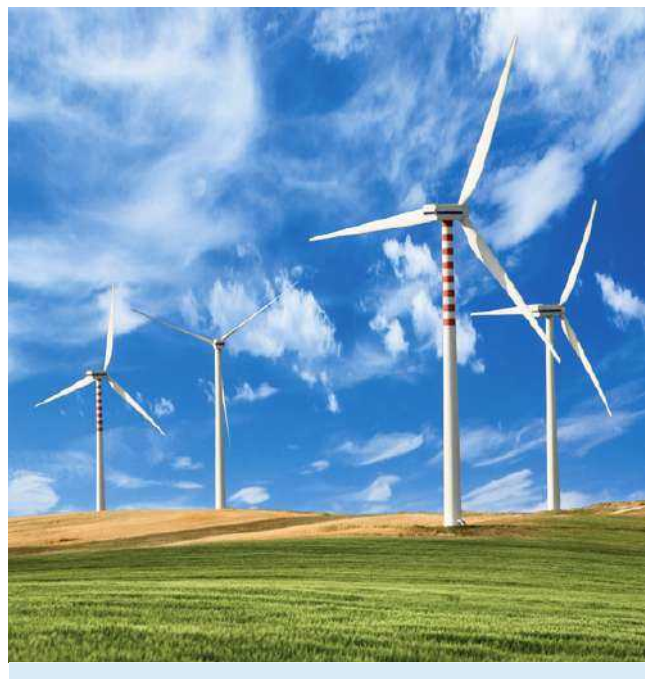
By 2050, UAE aims to have an energy mix that includes 44 percent renewables and 38 percent natural gas



breaking H-class gas turbine technology for a power plant that is expected to be the most efficient in the Middle East's utility sector. We also have provided solar technologies for what will be the largest single-site solar energy project in the world.

Ultimately, our success as a global community in pursuing a low-carbon future requires steps now, across the entire value chain and around the world. The commitments announced and reaffirmed by world leaders give us the direction and inspiration we need.

For those of us who operate in the plants, facilities, and systems where decarbonization happens, our task is to translate these global and national commitments into the local implementations that will lead us to a sustainable, low-carbon future.



New KONA Electric: Expressive from every angle

KONA Electric is a car of no compromises. It embodies the two fastest growing automotive trends – electrification and SUV style. It carries the same expressive design and 'go-anywhere' attitude of the regular KONA.

The fully electric version reflects the individual lifestyle of modern customers who benefit from great fun-to-drive and the low environmental



Combining bold, roomy
SUV with impressive
electric driving range,
KONA Electric offers the
seamless connectivity you
expect and innovative tech
that makes life easier

impact of a fully electric car. The unique platform enables a space-saving integration of the battery packs without compromising the roominess.

Since launching in 2018, demand for the Hyundai KONA Electric has exceeded all expectations thanks to its powerful electric drivetrain, long driving range and stylish SUV looks. In just two years, over 150,000 units have been sold globally, and the sub-compact SUV also won many awards, making the list for the WardsAuto 10 Best Engine List for 2019 and earning the title "Affordable Electric Car of the Year" at the Auto Express New Car Awards in 2018.

U.S. News & World Report named KONA Electric the "Best Electric Vehicle" in 2020, and consumer magazine Which? named it "Product of the Year" in December 2019.

The all-new KONA benefits from superior rigidity using advanced high strength steel and high impact energy absorption



In April 2020, TopGear magazine named KONA Electric their “Best Small Family Car” in the inaugural TopGear Electric Awards, after it completed a 1,600-kilometre road trip across nine European countries. The car was praised for its efficiency and long-distance capability, as well as its smooth and effortless performance.

The Hyundai KONA Electric has also been recognised for small carbon footprint. KONA Electric was declared the “2018 Car of the Year” at the UK’s Next Green Car Awards and named “The Greenest Car in Switzerland” at the 2019 Swiss Car of the Year Awards. In 2020, the EV was awarded the five-star Green NCAP rating, the highest possible rating, based on clean air, energy efficiency, and greenhouse gas metrics. Green NCAP is an independent organisation that rates cars based on energy efficiency and emissions. Next, Green Car Awards gave the

KONA Electric the “Car of the Year” and “Family Car of the Year” awards for its value for money and family-friendly practicality.

Design

The new KONA Electric combines a clean and sleek appearance with the protective and bold B-SUV body type. A closed grille with an updated look, new light architecture, and body-coloured wheel arch claddings give the model a wide stance and a distinctive appearance on the road. The body has been lengthened by 25mm for a stronger visual stance.

On the interior, a new, horizontal layout with advanced connectivity technology and new ambient light technology in the front footwells contribute to a modern look.

Driving performance and range

As with its predecessor, the new KONA Electric offers two different zero-emissions battery electric powertrains: a long-range version with a 64-kWh battery with a maximum range of 484km, and a 39.2 kWh battery with a driving range of 305km (WLTP). The range has been increased thanks to the addition of new premium tyres with the latest product update. The new tyres also offer benefits in terms of performance and range.

The new KONA Electric is also equipped with shift by wire, regenerative braking, and an optional three-phase on-board charger.

Safety

The new KONA Electric features several upgraded Hyundai SmartSense active safety features, including Rear Cross-Traffic Collision-Avoidance Assist and Blind-Spot Collision-Avoidance Assist. These features offer a warning and activates the vehicle’s brakes to prevent a collision if necessary. Safe Exit Warning and Rear Seat Alert are tailored to ensure rear passenger safety.



Connectivity

The new KONA Electric has been upgraded with a new 10.25-inch digital cluster, and an optional 10.25-inch AVN screen or an 8-inch Display Audio continue to be available. The AVN features the latest Hyundai Bluelink telematics, while the Display Audio comes with wireless Android Auto and Apple Car Play. The new KONA Electric is also available with a head-up display and an optional wireless charging pad.

Comfort and convenience

New second row heated seats and a new backseat USB chart deliver even more convenience for rear passengers. Onboard comfort features such as power front seats, three-step ventilation, and an optional heated steering wheel allow for an even more pleasant driving experience even in a variety of conditions.

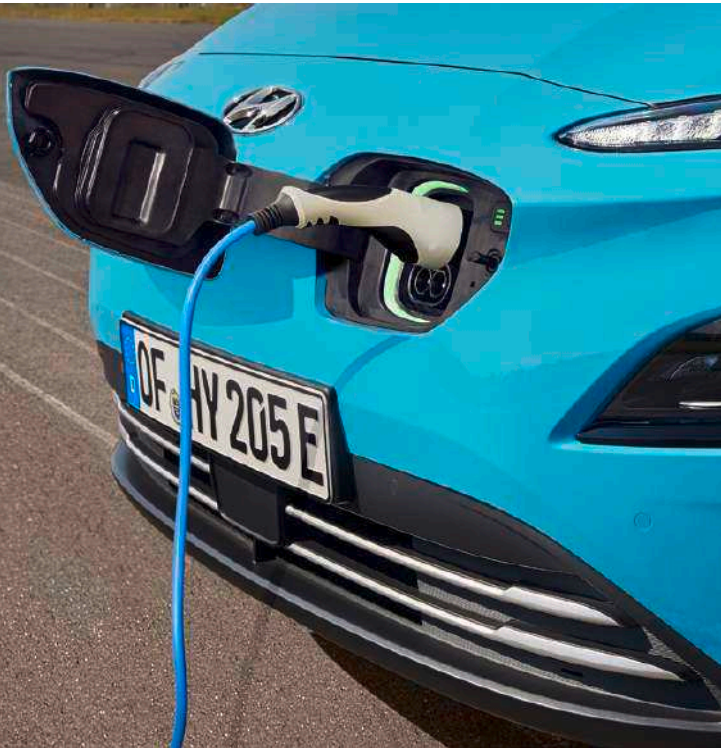
Segment-leading driving range and all-electric powertrains

Like its predecessor, the new KONA Electric offers two different zero-emissions battery electric powertrains, with no compromises on performance.

The long-range version with a 64kWh battery (electricity consumption combined: 14.7 kWh/100 km; CO2 emissions combined: 0 g/km according to WLTP) features an electric motor which delivers maximum power of 204 PS (150 kW), accelerating the KONA Electric to 100 km/h in 7.9 seconds.

The basic version has a battery capacity of 39.2 kWh (electricity consumption combined: 14.7 kWh/100 km; CO2 emissions combined: 0 g/km according to WLTP), with the motor delivering 136 PS (100 kW), accelerating to 100 km/h in 9.9

KONA Electric continues to deliver one of the best all-electric driving ranges of any electric car, with up to 484 kms for the 64kW version



seconds. The long-range battery version provides a maximum speed of 167 km/h, with the standard-range battery version offering 155 km/h.

Both powertrain versions deliver 395 Nm of immediate torque, ensuring the new KONA Electric is fun-to-drive with full power available from the first second.

The 64kWh battery version offers a class-leading range of 484 kilometres (WLTP) on a single charge. Meanwhile, the 39.2kWh model offers a range of up to 305 kilometres (WLTP).



3M Drafts Plan to Reduce Plastic by 2025

3M has committed to reduce its use of new plastic made from petroleum. By 2025, 3M is aiming to achieve a new sustainability goal: reduce dependence on virgin fossil-based plastic by 125 million pounds. “Future-focused businesses are more pro-active in safeguarding the health of our planet., For 3M such actions are catalyzed through our sustainable science-based solution, staying to true our commitment



to improve lives,” said Robert Nichols, VP and Managing Director Middle East & Africa.

“3M has a history of applying science to create sustainable alternatives to plastic and with this public goal, it will be easier to share these solutions and collaborate with others on advancing a global circular economy,” said Gayle Schueller, 3M senior VP and chief sustainability officer.

To achieve this new goal, 3M is innovating the products and packaging in its Consumer Business Group. Advancements will include use of recycled content and bio-based plastics, and designs to decrease overall plastic use. 3M is implementing its transition away from new plastic quickly and aims to achieve the 125-million-pound reduction—more than five times the weight of the Eiffel Tower—by the end of 2025.

“The time is now,” said Jeff Lavers, group president, 3M Consumer. “The pandemic has created significant new ways of doing business that can benefit both the economy and environment.” 3M continues to work with its researchers, engineers, and scientists, as well as suppliers, customers, nongovernmental organizations, and community leaders to improve the circularity of 3M products and materials. Commitments include recyclability, using recycled or renewable materials, opportunities for reuse at the end of a product’s lifespan and more.

3M Middle East & Africa has been active in contributing towards plastic pollution reduction. In the UAE, employees have been contributing to waste-reduction actively taking part in the UAE Recycling Campaign for 2021.

AUS, Petrofac partner to improve solar energy efficiency

With solar energy a high priority for public and private organizations throughout the UAE and wider region, American University of Sharjah (AUS) and Petrofac combined forces on May 24, 2021, to increase solar farm efficiency.

AUS and Petrofac have developed an IoT edge device that can remotely assess the cleanliness



of solar panels. For solar plant operators, knowing how clean individual panels are is essential in reducing costs, optimizing power output and enabling preventative maintenance.

Project researchers found that two months of soiling can reduce the power generation of a panel by 40 percent, with dust the biggest obstacle to reliable solar energy production. However, large-scale cleaning of solar farms is costly, inconvenient and disruptive to grid security. Having multiple edge devices that can identify specific panels that require cleaning offers operators the opportunity to optimize energy generation without the traditional costs associated with panel maintenance.

The edge device continuously measures solar panel performance using open-sourced technology, micro-controllers and smart sensors.

Those responsible for operating the solar farm receive information about the state of panels through a wireless network and cloud-based server, allowing them to see, and act on, the data in real-time. In addition to reporting when panels need cleaning, the device is also capable of detecting faults and forecasting power output. The device can also measure temperature, humidity and solar radiation. It is intended for large-scale solar facilities such as Noor Project in Abu Dhabi and Mohammed Bin Rashid Al Maktoum Solar Park in Dubai.

As part of the UAE's National Energy Strategy 2050, over \$163 billion was allocated to meeting UAE's goal of increasing the contribution of clean energy sources to the total capacity mix to 50 percent. The new technology has potential for widespread use as the industry develops.

Cape Town: Embracing Sustainable Development

Home to over 4.5 million people and one of the fastest growing cities in South Africa, Cape Town is being greatly impacted by the effects of climate change.

The crippling droughts, electricity insecurities, and rising costs are simultaneously concerning and mobilising the people of the region. Transitioning to a more equitable, efficient and



Since 2001, the City of Cape Town has adopted an integrated Metropolitan Environmental Policy identifying a need to shift from business-as-usual to a targeted sustainable agenda

sustainable future is essential for the sake of the City of Cape Town and all its citizens. City practitioners and residents alike are adapting to new economies, demographics and geographies in the city, all aiming to create a city that is socially and environmentally just, and doing so in a way that is sensitive to the city's assets and risks.

Notably, in 2020 the City of Cape Town finalised a Green Procurement Action Plan. The overall aim of the action plan is to define a set of principles to guide green procurement decision-making, define a set of desired objectives and outcomes for the City to strive towards achieving, and lay out the specific actions required to effectively transition towards green procurement in all of the city's operations and purchasing decisions.

Cape Town vehicle fleet tenders have included fuel efficiency and Euro emission standards

The Action Plan's objectives include: maximising the city's sourcing and purchasing of sustainable products and services, increasing the number of green/sustainable buildings built by the City with a long term aim of complete transition to green/sustainable building, incorporating green procurement into the city's large capital projects and monitoring and evaluating the procurement effectively.

The Action Plan also includes a goal to 'Proactively address climate change through the creation of green jobs and through the use of green procurement'. It further details a commitment to 'take active steps to expand zero carbon electricity provision in both the retail and supply sectors through direct procurement from Independent Power Producers' and reiterates the city's commitment to reach carbon neutrality by 2050. Some of Cape Town's procurement achievements that have made the city a leading example for sustainability are:

Transportation

Cape Town vehicle fleet tenders have included

fuel efficiency and Euro emission standards. It has begun to focus on spatial transformation that is Transit-Oriented Development – a transit-led development agenda at all levels of the built environment.



Energy Saving

All traffic lights in the city have been retrofitted with LED lighting technology. 34 percent of street lights in the city are fitted with energy efficient street lighting. The city continues to roll-out SmartFacility, an integrated and automated resource data management system for city facilities. Approximately 847 smart electricity meters have been installed in 557 facilities.

Buildings and Housing

More than 57 percent of Cape Town's large corporate buildings have been retrofitted. The city has incorporated green procurement and green building practices in the development of many new buildings and facilities such as the Dunoon Library, the Mannenberg Housing Centre,



the Bloemhof Electricity building and the Water Services head office.

By making administrative buildings more energy efficient, the retrofit programme reduced costs and improved the quality of the working environment. The designs of some low-cost housing developments incorporate green elements to promote resource efficiency and quality of life for the occupants.

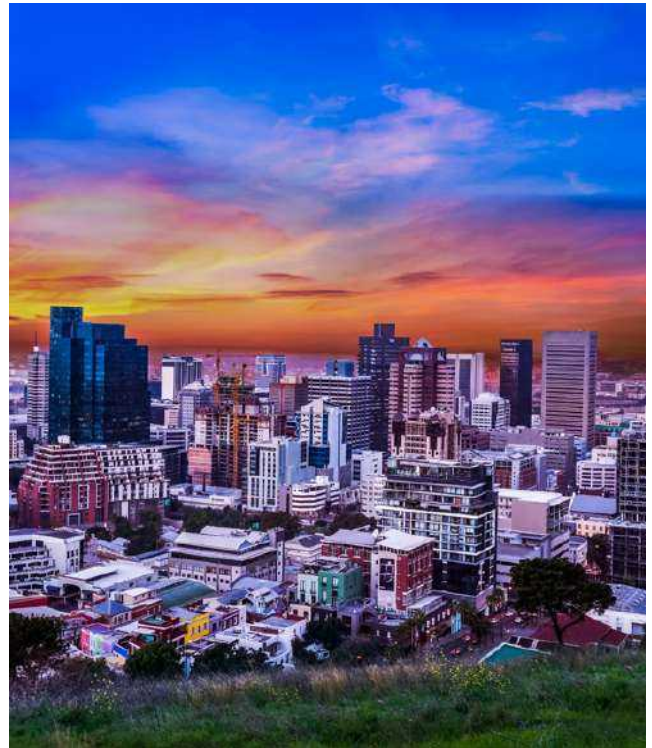
But no single area is more symbolic of Cape Town's sustainable transformation than the bustling V&A Waterfront, a mixed-use sustainable development project encompassing more than 300 acres of residential and commercial buildings. One of the green projects at the Waterfront is the Zeitz Museum of Contemporary Art Africa (Zeitz MOCAA), which opened in September 2017 and is housed in a converted

historical grain silo. Developers had to find innovative ways to preserve and acknowledge the building's history while recycling and reusing material, minimizing the carbon footprint, and still giving it a new, contemporary use, essentially "reverse-engineering" sustainability into the property.

Other innovations implemented within the waterfront area include efficient water and electrical design to minimize demand on resources, water and energy metering systems to manage consumption, efficient use of space using light-weight internal walls to reduce wall thickness and decrease total building weight and using low-VOC finishes and natural lighting.

The area also incorporates durable yet cost-effective building facades that could withstand the harsh harbor environment and offer thermal

34 percent of street lights in Cape Town are fitted with energy efficient street lighting



performance, and an impressive cooling system that uses cold Atlantic seawater from the harbor to regulate internal building temperatures and eliminate the need for air-conditioning and other cooling systems.

Information Technology

All monitors of the city, approximately 15,500 computers, have been replaced with energy efficient technology which has led to 84% increase in power saved. The city replaced its computer monitors from CRTs (Cathode ray tube) to liquid crystal displays (LCDs) and then to light emitting diodes (LEDs).

The city also started using Tiny Form Factor desktops. These are small desktops that use a third of a conventional PC power which equates to the energy consumption of a laptop. It is of a far lower cost, uses less material to make, takes

up less space, causes less heat emissions and runs more quietly than a conventional desktop. The implementation of improved desktop power across the city computers has resulted in savings of 905 MWh of electricity per year.

Current projections reveal that by the year 2050, two-thirds of the world's population will live in cities. In this urban vision of the future, building efficiency will become increasingly important to economic, social, and environmental development in sustainable cities. For this reason, choices in architectural design, construction practices, and technology used in buildings is vital to maximize energy and resource efficiency in the sustainable cities of the future. The city of Cape Town is steadily working towards that goal and actively taking measures to combat climate change, setting an example for the rest of the world.

Bee'ah Joins Forces with PepsiCo for Plastic Recycling

Bee'ah, the Middle East's award-winning sustainability pioneer, has joined forces with PepsiCo, one of the leading food and beverage companies, to support the company's commitment to collect and recycle the equivalent of 100 percent Aquafina plastic packaging produced in the UAE in 2021.

The pledge is in line with the UAE's goal to divert



The partnership includes overseeing the collection, transportation and recycling of polyethylene terephthalate (PET) plastics

75 percent of total waste from the landfill and is part of PepsiCo's ongoing goals to reduce, recycle and reinvent for a more sustainable food system.

As part of the partnership, Bee'ah will oversee the collection, transportation and recycling at their Material Recovery Facility (MRF) of polyethylene terephthalate (PET) plastics. Bee'ah's MRF is one of the largest and top producers of plastic recyclables in the Middle East with an annual capacity of over 600,000 tonnes.

The mass collection project will utilize Bee'ah's far-reaching network of recyclables collection systems in strategic locations, communities, malls and more across Sharjah, Abu Dhabi, and Dubai, to improve waste segregation and collection. Additionally, to ensure traceability,

Bee'ah's MRF is one of the largest and top producers of plastic recyclables in the Middle East with an annual capacity of over 600,000 tonnes



Bee'ah will leverage digital data capturing, weighing system, and GPS monitoring to track and report the progress of PepsiCo's recyclables.

HE Khaled Al Huraimel, Group CEO of Bee'ah, said: "As the Middle East's sustainability pioneer, Bee'ah is leading the charge for a circular economy and zero-waste targets in the UAE and wider region. This partnership with PepsiCo addresses plastic pollution through Bee'ah's holistic approach to integrated waste management, and we are proud to support companies in meeting their environmental, social and governance targets, while increasing the UAE's waste diversion away from landfills."

Aamer Sheikh, President and General Manager at PepsiCo - Middle East, North Africa and Pakistan, said: "We are proud to be partnering with Bee'ah to meet our sustainability goals and work towards

a brighter and better tomorrow for us all. We believe that there is an opportunity to change how the world produces, distributes, consumes, and disposes of foods and beverages, in order to achieve scalable and economically viable solutions."

To encourage consumers to join PepsiCo's commitment for sustainability, Bee'ah will also leverage its community recycling incentivization programme - Bee'ah Rewards, which uses a blockchain-powered mobile app to track recyclers' deposits of plastic bottles at any of Bee'ah's collection points. Encouraging greater public participation in plastic recycling, Bee'ah will continue to raise awareness among UAE youth through Bee'ah School of Environment, an environmental education initiative.

Globally, PepsiCo aims to reduce 35 percent of virgin plastic content across its beverage business by 2025. PepsiCo is also committed to designing 100 percent of packaging to be recyclable, compostable, or biodegradable; and increasing recycled content in its plastics packaging to 25 percent by 2025.



Slow fashion for a fast-approaching sustainable future

50

SUSTAINABLE FASHION



The fashion industry accounts for around 8 percent of the world's greenhouse gas emissions, making it the third highest polluting industry on the planet, marking the need for a sustainable change, writes **Samrat Amarnani**, CEO and founder of Collars & Cuffs, a Dubai-based bespoke tailoring service

As one of the glamorous and significant industries affecting the everyday lives of people around the world, fashion has continually constituted an important industry for the world economy through substantial global contributions with 3,000 billion textile and garment industry companies entering the market daily. In more recent times, the industry had been scrutinized for its lack of sustainability, heralding forth what has been labelled as 'fast fashion' that is represented by a design, manufacturing, and marketing method focused on rapidly producing high volumes of clothing with little to no regard on the ecological impact.

With fashion amounting for 8 per cent of the world's greenhouse gas emissions, the third-highest polluting industry on the planet, the need for instant change was all but made necessary. As such, the concept of 'slow fashion' was introduced and adopted by the industry, a term first coined by author, design activist, and professor Kate Fletcher, as a quality-based output rather than a time-based one. This is a direction that has been embraced by almost all within the industry and beyond and perfectly aligns with the global need to reduce the carbon footprint and create a healthier tomorrow for our planet.

The road to such a paradigm shift was undoubtedly challenging and still is. To combat the current waste, pollution, and other environmental-related problems, we must primarily subscribe to the mentality that 'fashion is not disposable, but rather a long-term investment.' It is therefore imperative for the industry to collectively consume materials more consciously by reducing, reusing, and recycling and becoming more 'vocal for local.'

At Collars & Cuffs, a UAE-based bespoke tailoring brand, effective measures to create more sustainable and ethical collections with the future of the planet in mind are taken, all while creating a sense of responsibility with its customers to ensure that this greener philosophy is shared and embraced by them. The brand keeps in mind the biodegradable qualities of the materials chosen for its created garments, and all its items are designed locally to encourage job creation and bring down the carbon footprint caused by shipping and logistics.

Less than 1 percent of fashion materials are recycled into new clothing at the end of their life cycle



While slow, ethical, and sustainable fashion comprises efforts towards an aspirational goal, it will soon become the standard whereby every brand would operate under an umbrella of sustainability in service of the environment first and foremost. Today, many mills in Italy are churning out fabrics made only from natural sources, and at C&C, these same fabrics are used and recycled to remain environment friendly. The company also explicitly employs biodegradable fabrics, such as wool and linen, for suits and avoids using any polyester. It also utilises recyclable fabrics for the suit covers, wooden hangers, paperless bills, and ensures that its designs are drafted on recycled paper. Additionally, unlike a multitude of fashion brands, C&C replaces plastic for buttons with horn or mother-of-pearl.

Such measures will make the fashion industry

more responsible in the long run, and as the world turns to sustainable-only practices, C&C will continuously be position itself at the forefront of these efforts to herald a more worthwhile future for the fashion industry and all others.



Advanced waste management system launched in Zabeel 1&2 areas

Dubai Municipality has launched an advanced system for Collection, Storage and Transport of Waste in Zabeel 1 and 2 areas on May 27, 2021.

The new system, in line with the Emirate's direction to build a smart and sustainable city, and in pursuit of Dubai Municipality's efforts to achieve the environmental targets of the



National Agenda, is considered the most modern and advanced in integrated waste management systems.

Eng. Abdulmajeed Saifaie, Director of Waste Management Department said: "We are introducing efficient and effective systems in collection, storage and transportation of waste in order to meet the strategic objectives and requirements of the Smart Government, while adhering to international best practices and practical experiences in the field of smart waste management."

The project contributes to providing the basic infrastructure for segregating waste in residential areas and beautifying the general appearance of the area. All old waste storage methods have been withdrawn from the Zabeel 1 and 2 areas, and installing of bases for 212 new

containers have been completed. A plan has been adopted and followed up for emptying these containers according to a supervisory and technical program and an approved daily course, in addition to preparing a field visit program for all residential units to raise awareness about the importance of adherence to waste separation and the optimal use of new containers.



AED 3.67 bn 'Helios Industry' Plant to export green ammonia from Abu Dhabi

Khalifa Industrial Zone Abu Dhabi (KIZAD), a subsidiary of Abu Dhabi Ports, has announced the formation of a green ammonia production facility, targeting regional and international markets.

Helios Industry, a privately-owned special project vehicle company (SPV), plans to invest over AED3.67 billion (USD1 billion) in the



construction of the facility over several years, which it aims to develop with local and international partners in two phases and is projected to produce 200,000 tonnes of green ammonia from 40,000 tonnes of green hydrogen.

The Helios facility located in KIZAD, will be powered by a dedicated 800-megawatt solar power plant within KIZAD in the near future, with capacity of 100MW in phase 1.

Abdullah Al Hameli, Head of Industrial Cities & Free Zone Cluster, Abu Dhabi Ports, said: "Abu Dhabi Ports is proud to be the host of an innovative company like Helios Industry, and one of the region's first green ammonia plants with zero carbon emission.

"We are committed to the growth and success of our customers and strive to continue supporting

responsible manufacturers who are helping bring about increased sustainability across industries, whilst simultaneously enhancing the level of green knowledge and awareness within the UAE."

The plant will use solar power to electrolyse water and split molecules into Hydrogen and Oxygen. At peak capacity, 40,000 tonnes of the green hydrogen released will be used to produce 200,000 tonnes of green ammonia.

According to Helios Industry, the newly announced facility will be the first production plant within Abu Dhabi to produce green ammonia from hydrogen using renewable energy. Upon completion, the plant is expected to reduce CO2 emissions by an excess of 600,000 tonnes annually, equivalent to the amount of pollution generated by roughly 140,000 vehicles.

Abu Dhabi To Ensure Protection of Al Wathba Fossil Dunes

The Environment Agency - Abu Dhabi (EAD) is continuing its efforts to implement a comprehensive plan to develop and protect Al Wathba Fossil Dunes, which includes developing the site's infrastructure, services and tourism facilities and work. This aligns with its aim to declare the site as a natural reserve to protect the emirate's natural heritage and encourage eco-tourism.



EAD aims at protecting the Abu Dhabi Emirate's natural heritage of Al Wathba and promote sustainable eco-tourism

Fossil dunes are outcrops of lightly cemented, cross-bedded dune sands, formed by the precipitation of calcium carbonate and other salts from ground water during the glacial period. The formations in the Al Wathba area derive their shape from the interaction between wind force and sediment supply.

Dr. Sheikha Salem Al Dhaheri, EAD's Secretary-General said: "Abu Dhabi is rich with a unique diversity of environments, habitats, and scenic natural formations. Among these are the fossil dunes of Al Wathba. These fossil dunes, which are also present in other areas of the emirate, have been classified as lithified sand dunes under EAD's Habitat Map and serve as an important habitat for many wildlife species."

Dr. Al Dhaheri highlighted that these sand formations are extremely fragile and prone to

Fossil dunes are outcrops of lightly cemented, cross-bedded dune sands, formed by the precipitation of calcium carbonate and other salts



damage, therefore EAD, in cooperation with partners from the concerned government entities, is working to protect the site through inspection and monitoring.

Ahmed Al-Hashemi, EAD's Acting Executive Director of the Terrestrial and Marine Biodiversity, said: "EAD has prepared and implemented a monitoring programme by conducting morning and evening patrols on the site to ensure the protection of the area's environment and prevent infringements. An inspection and control team consisting of four environmental inspectors implemented approximately 1,400 hours of inspection tours in the morning and evening periods, at a rate of 16 hours per day during the first quarter of this year."

Al-Hashemi added that during the last period, two campaigns were organised to raise awareness

and clean the site, in cooperation with Tadweer, and more than 100 volunteers from the general public and Green Youth Majlis participated and collected around 300 kg of waste. In addition, the EAD team removed the graffiti which was found on the fossil and intensified monitoring to prevent such acts from occurring in the future.

EAD also launched a social media campaign to educate the general public about the importance of the site. The Agency stressed that visitors should avoid hosting events, climbing and disposing of waste at the fossil dunes. The fossil dune can be a picturesque place to host a picnic or gathering, however they are being damaged with the amount of waste left behind. Drawing and writing on the fossil dunes is considered unacceptable behavior as it damages the formations and distorts the overall aesthetic of the site.

Word Scramble

ENACT TESANNUESC
LWDRO
AEHLYHT SHMLAE
TEESR
JNRNEIOTG

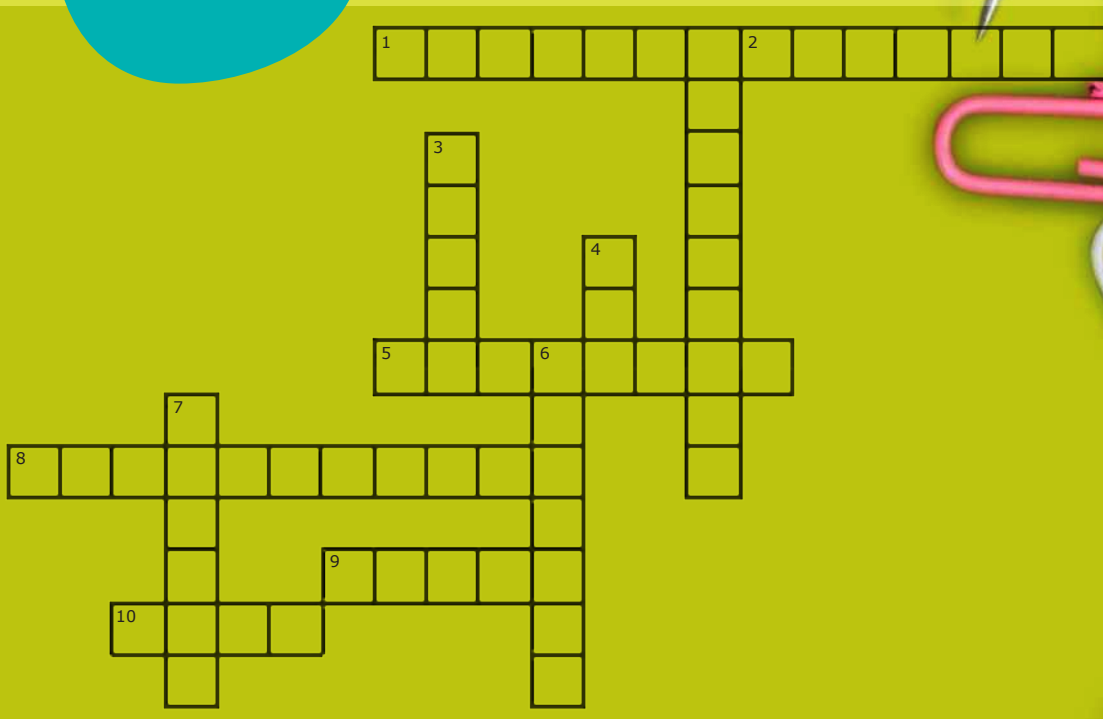
Answers: 1) Trees 2) Whales 3) Environment 4) World 5) Government 6) Clean 7) Sustenance 8) Healthy

Word Search

N	S	S	O	M	S	E	L	T	R	U	T	L	A
A	R	I	F	A	R	M	E	R	S	M	G	R	E
F	L	O	R	A	S	Y	M	L	R	A	S	R	M
N	T	D	D	O	C	E	A	N	S	I	S	E	E
B	V	A	G	Y	G	G	N	D	L	C	E	R	M
T	T	M	V	A	R	O	N	W	W	U	N	P	A
L	S	C	I	M	E	D	N	A	P	R	R	L	N
V	E	B	R	E	E	I	T	C	V	R	S	U	A
W	E	A	E	Y	N	E	A	I	R	U	E	R	G
D	D	M	U	L	R	I	R	E	C	Y	C	L	E
M	R	L	D	I	V	E	R	S	I	T	Y	O	M
S	E	N	V	I	R	O	N	M	E	N	T	R	E
N	L	R	E	N	E	W	A	B	L	E	R	Y	N
W	I	L	D	L	U	S	H	R	T	S	A	T	T

PANDEMIC
ENVIRONMENT
GREEN
MOSS
FARMERS
DIVERSITY
WILD
WATER
LUSH
OCEANS
RECYCLE
TURTLES
FLORA
RENEWABLE
MANAGEMENT

Crossword Puzzle



Across

1. Increasing population to unsustainable levels
5. Rain that contains a high concentration of pollutants
8. A natural fuel such as coal or gas, formed in the geological past from the remains of living organisms
9. 40% of premature deaths in this country were caused by air pollution
10. Smoke and other pollutants combined with fog

Down

2. Contamination of the environment
3. Another word for poisonous
4. The government of the US and the world have enacted policies and created agencies to regulate the quality of the
6. Also known as an illness or sickness
7. Air pollution can cause us to have an upper respiratory disease called

Answers: 1) Overpopulation 2) Pollution 3) Toxic 4) Air 5) Acid rain
6) Disease 7) Asthma 8) Fossil fuels 9) China 10) Smog

WORD OF THE DAY:**OZONE LAYER**

Ozone is a gas made up of molecules that are formed by three oxygen atoms. Its molecule formula is O_3 . Ozone is formed when the sunlight hits oxygen molecules (O_2) and breaks them up into individual atoms. These individual atoms then join up with the O_2 molecules and make O_3 or, the ozone.

Way up high in the Earth's atmosphere, called the stratosphere, there is a fairly high concentration of ozone molecules – this is called the ozone layer.

Why is the Ozone Layer important?

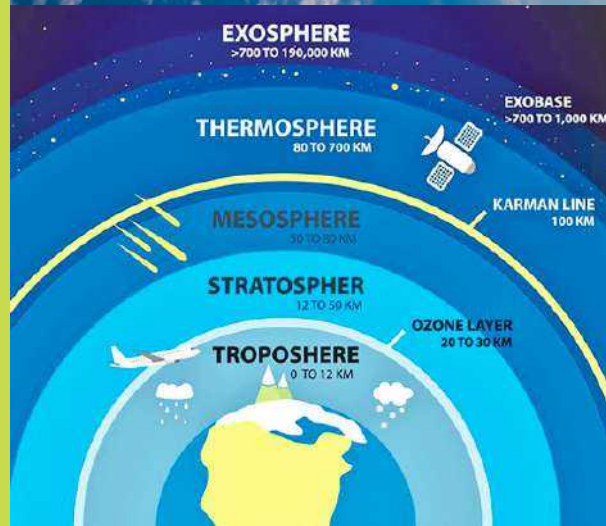
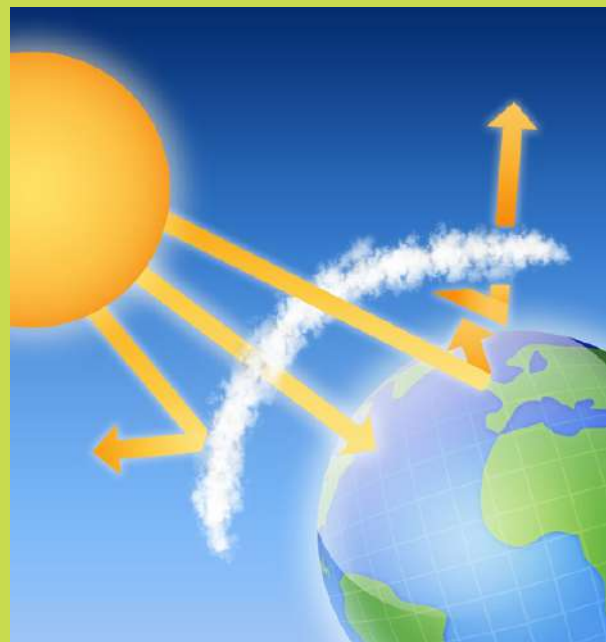
Ozone molecules in the atmosphere provide us with important protection from the rays of the sun thereby regulating Earth's temperature. These molecules absorb ultraviolet rays that can be damaging to us.

How is the Ozone layer getting damaged?

Certain molecules can cause a chemical reaction when they come in contact with the ozone. This results in the ozone layer depleting and unable to absorb ultraviolet light. The main molecules that are causing this are called Chlorofluorocarbons or CFCs. Chlorofluorocarbons (CFC) are gases used for various purposes including solvents, refrigerants and aerosol sprays. They are organic chemicals and contain carbon, (sometimes hydrogen,) chlorine, and fluorine.

FACTS ABOUT THE OZONE LAYER

- The word 'ozone' means smelly in Greek because it has a strong odour.
- CFC molecules are highly stable and can last upto a hundred years.
- The ozone layer over Antarctica is very thin and often referred to as the 'hole' in the ozone layer.
- The ozone layer was discovered by Charles Fabry and Henri Buisson, French physicists in 1913.
- In 1978, Sweden became the first country in the world that banned CFC products.
- If people stopped producing ozone destroying substances, the ozone layer may be capable of recovering by 2050.



WORLD ENVIRONMENT DAY:

The UN Environment Programme (UNEP) annually celebrates World Environment Day, which encourages worldwide awareness and action for the protection of the environment. It is celebrated on June 5th in over 100 countries. World Environment Day 2021, with Pakistan set as the host country this year for its official celebrations, calls for urgent action to revive our damaged ecosystems. The theme for this year's World Environment Day is "Reimagine. Recreate. Restore."

Ecosystem loss is depriving the world of carbon sinks, like forests and peatlands, at a time humanity can least afford it. Global greenhouse gas emissions have grown for three consecutive years and the planet is on pace for potentially catastrophic climate change. The emergence of COVID-19 has also shown just how disastrous the consequences of ecosystem loss can be. By shrinking the area of natural habitat for animals, people have created ideal conditions for pathogens – including coronaviruses – to spread. Ecosystem restoration means preventing, halting and reversing this damage – to go from exploiting nature to healing it. This World Environment Day, the UN is on a global mission to revive billions of hectares, from forests to farmlands, from the top of mountains to the depth of the sea.

Only with healthy ecosystems can we enhance people's livelihoods, counteract climate change and stop the collapse of biodiversity.

DID YOU KNOW?

- Over 4.7 million hectares of forests – an area larger than Denmark – are lost every year.
- As much as 50 per cent of coral reefs have already been lost and up to 90 per cent of coral reefs could be lost by 2050.
- Nearly 80 percent of the world's wastewater is discharged to our oceans and rivers without treatment.
- Present in more than 180 countries, peatlands are vital, super-powered ecosystems. Though they cover only 3 per cent of the world's land, they store nearly 30 per cent of its soil carbon.

WORLD ENVIRONMENT DAY



JUNE 5

What can you do to help?

Things to Do...

- ☒ Reuse items when making your crafts for school! _____
- ☒ Pick up the trash around you! _____
- ☒ Read books about the environment! _____
- ☒ Take short showers! _____
- ☒ Volunteer for a clean-up drive! _____

COLOUR ME!



Abu Dhabi's Largest Solar-Powered Car Park Completed

Abu Dhabi Airports and Masdar have announced the completion of Abu Dhabi's largest solar-powered car park which will save 5,300 tonnes of carbon dioxide per year.

The three-megawatt (MW) solar photovoltaic (PV) project is installed on the car shading at the short-term car park of the Midfield Terminal at Abu Dhabi International Airport, with 7,542



solar panels producing electricity. The energy generated by the grid-connected project will be used to power the car parking facility, with excess energy fed to other sections of the airport.

Shareef Al Hashmi, Chief Executive Officer of Abu Dhabi Airports, commented, "The Midfield Terminal is designed to not only deliver a state-of-the-art smooth and seamless passenger experience but also safeguard the UAE's beautiful natural heritage.

"Throughout its development, we have integrated technology which enables sustainability, protects the environment, and creates a cleaner, greener, and more ecologically friendly building."

"By making smart and sustainable choices during its development in our use of double glazing, efficient lighting, and environmental controls, we

have achieved considerable reductions across the building's wider energy use," added Al Hashmi.

Masdar's Energy Services department provided a full turnkey solution for the project, including financing, design, procurement and construction. Under the terms of the lease agreement, Masdar will also provide operation and maintenance services for a 25-year period.

Mohamed Jameel Al Ramahi, Chief Executive Officer of Masdar, said, "The delivery of this landmark project for the new Midfield Terminal highlights the commitment of Masdar and Abu Dhabi Airports to supporting the UAE's Energy Strategy 2050 and its climate change mitigation goals, as well as demonstrating Masdar's strength as a preferred partner in renewable energy project collaborations."

Luxembourg gifts its Expo 2020 Dubai Pavilion to UAE

Luxembourg will gift its Expo 2020 Dubai pavilion to the UAE, illustrating its commitment to the meaningful, lasting legacy of the next World Expo and reflecting the strong, growing relationship between the two countries.

The announcement was made on May 31, 2021 as, Reem bint Ibrahim Al Hashemy, Minister of



The gift will serve as a permanent part of Expo's future city of District 2020 to illustrate the strong and growing relationship between Luxembourg and the UAE

State for International Cooperation, and Director General of Expo 2020 Dubai, welcomed Franz Fayot, Luxembourg's Minister of Economy and Minister for Development Cooperation and Humanitarian Affairs, during a visit to the UAE.

Al Hashemy said: "There has never been a greater need for people, communities, businesses and nations to come together to share their ideas for a better future, and we are extremely grateful to the government of Luxembourg for gifting its stunning pavilion to the UAE.

"Our actions today will impact the environment we leave for our children tomorrow, and this generous act reflects our collective responsibility to leave a lasting positive impact. Luxembourg's innovative, sustainable vision will enthrall millions of visitors to Expo 2020 Dubai, and inspire generations to come as a permanent

The three-storey Luxembourg Pavilion will feature a green atrium that repurposes water from its air-conditioning system to water the plants and vegetation throughout the pavilion



region and beyond. We are pleased to be part of Expo's legacy by contributing our pavilion as a permanent building at the site – one that will serve as a beacon of hope for all those who visit, during the six months of Expo and long into the future."

The three-storey Luxembourg Pavilion will serve as a laboratory for rethinking ever-pressing questions around natural resources, featuring a green atrium that repurposes water from its air-conditioning system to water the plants and vegetation throughout the pavilion. Visitors will be able to descend from the top floor to the bottom via a giant slide, a nod to the country's annual fair.

Approximately 80 per cent of Expo's built environment will live on in District 2020, a model global community for the future that will use state-of-the-art innovation, science and sustainability to create a cleaner, safer, healthier environment to live and work.

part of Expo's future city of District 2020."

As part of an economic delegation aimed at strengthening bilateral cooperation, the ministers also discussed their shared vision for innovation, sustainable development, and space exploration and mining.

Fayot's trip marks the first ministerial visit to the Luxembourg Pavilion, which is set for completion by mid-June. Under the theme 'Resourceful Luxembourg', the pavilion is based on the idea of the Möbius ribbon – an infinite form symbolising the openness and dynamism of the country, and reflecting its commitment to the circular economy.

Fayot said: "Expo 2020 will be a unique platform for Luxembourg to collaborate with top innovating countries worldwide, as well as create and strengthen existing partnerships in the



Plans to Apply the City Biodiversity Index in Abu Dhabi

The Environment Agency – Abu Dhabi (EAD) aims to apply the City Biodiversity Index in the emirate of Abu Dhabi – a self-assessment tool for cities worldwide to benchmark and monitor the progress of their biodiversity conservation efforts.

The City Biodiversity Index aims to help cities achieve a development trajectory where



The Index will highlight the importance of the City's urban biodiversity and conservation efforts

biodiversity and people can thrive in harmony, while addressing biodiversity loss and climate change – all based on the latest scientific data generated during the past decade.

The Abu Dhabi City Biodiversity Index will help the emirate benchmark biodiversity conservation efforts in the urban context at city level, help evaluate progress in reducing the rate of biodiversity loss in urban ecosystems and help measure the ecological footprint of cities. Once the index is established future assessments will use this initial effort as a benchmark for further improvements in improving the role of cities, such as Abu Dhabi, in playing a global role in promoting and conserving biodiversity.

EAD has been collecting biodiversity data in urban sites such as parks, golf courses, natural areas, residential areas which have provided a

The City Biodiversity Index is a self-assessment tool for cities worldwide to benchmark and monitor the progress of their biodiversity conservation efforts



“The Mangrove National Park also provides many benefits to both terrestrial and marine flora and fauna. The multitude of parks and green areas in and around the city provide a fantastic host of habitats for species. We are currently in the preparatory phase, and we hope to have the results of the City Index for Abu Dhabi ready by the end of 2021 which will mark a great achievement for biodiversity data that EAD has been collecting for many years.”

For such projects to succeed the role of citizen science is very crucial and the EAD will be launching a Species App with a citizen science module that will enable citizens to collect and submit species data and assist in collecting biodiversity data.

wealth of information on urban biodiversity.

Ahmed Alhashmi, Acting Executive Director Terrestrial and Marine Biodiversity at EAD, said: “We will be applying the City Biodiversity Index to Abu Dhabi city to track the progress we are making when it comes to the preservation of biodiversity, while using the latest research and data available. By 2050, the global population is expected to increase to 9.2 billion, of which 6.4 billion will be urban dwellers. It is commonly assumed that cities are devoid of flora and fauna but, in reality, many cities have a rich biodiversity, regardless of geographical location and climate.”

HE added: “For example, Abu Dhabi and its environs lie in areas that are blessed with high biodiversity value, such as the Al Wathba Wildlife Reserve, an important wetland which is a stopover for migratory species.



New Energy Storage Technology

Two important environmental occasions are being celebrated this month - World Environment Day (WED) on June 5 which saw the launch of the UN Decade for Ecosystem Restoration, and Oceans Day on June 8.

Marine ecosystems are very important because they cover 75 percent of the Earth's surface and provide food for 3 billion people around the globe. However, almost 10 tons of plastic waste are discarded in the sea annually, causing around \$90 million loss every month. Today, microplastic particles are detected in food and drinking water, including bottled water.

On land, 50 percent of rainforests got destroyed in one century. In 2016 alone, forests - the size of Italy, were destroyed. Habitat destruction, overexploitation of natural



Dr. Eisa M. Abdellatif

Chief Technical Advisor
Zayed International
Foundation for the
Environment

resources, and climate change are now threatening one-thirds of the existing plant species. More than 34,000 plant species and 5,400 animal species are now endangered.

Hence, we need to raise public awareness about these facts. People must know the vital role of ecosystems in providing essential services for our survival such as air, water, food, energy, medicines, clothes, accommodation, and recreational requirements.

Since the natural world is so important for human life, we need to know what threatens them. First, ecosystems function efficiently and provide us with quality services when their ecological state is in balance. This is dependent on three vital processes: energy flow, food cycle, and biological relations.

Energy flows from the sun daily and is lost after use, so the flow from the sources must continue. The food cycle is dependent on the biodiversity of omnivorous organisms feeding on dead organic matter and breaking it down to feed back into the inorganic matter reservoir.

Biological relationships include predation, competition, parasitism, mutualism, and commensalism. Any interference with these relations can tilt the ecological balance. Ecological balance is largely threatened by overexploitation, habitat destruction, and pollution.

Let us work together to stop the depletion of natural resources and pollution. New technologies should target clean energy, green industry, and sustainable living.

**THE FUTURE OF OUR WORLD
IS IN OUR HANDS.**

ACT NOW!



يوم البيئة العالمي World Environment Day 5 June 2021



Together we can be
#Generation_Restoration

معاً يمكننا
#استعادة_الجيل



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