ABU DHABI
SUSTAINABILITY WEEK

ADSW SUMMIT:
The journey to
Net Zero

Principal Partner

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DEPARTMENT OF ENERGY

Hosted by

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ABOUT

Abu Dhabi Sustainability Week

Abu Dhabi Sustainability Week (ADSW) is the global sustainability platform that convenes the world's leaders to develop action-oriented solutions to the most pressing challenge of our time – climate change

Hosted by Masdar, ADSW has Since 2008, hosted a series of global events which bring together heads of state, policy makers, international business leaders and technology pioneers, providing them with am inclusive platform to share knowledge, showcase innovation and outline strategies as we work together towards a net-zero future.

ADSW focuses on delivering climate action across three principles; Global Collaboration & Leadership, Economic Development, and Technology & Innovation.

ADSW takes a proactive approach at a grassroots level, encouraging social inclusion by hosting a series of platforms and initiatives aimed at engaging and empowering young people, females and members of the community to play an active role in delivering a sustainable future.

The ADSW Summit

As the anchor event of Abu Dhabi Sustainability Week, the ADSW Summit provided a platform for global leaders to discuss the latest trends shaping the world's sustainability agenda.

The ADSW Summit brought together heads of state, senior policymakers, CEOs, entrepreneurs and members of academia to identify pathways to accelerate global leadership, economic development and the implementation of the technologies and innovations needed to deliver the world's climate and sustainability goals.

To reflect the principles of ADSW, the Summit focused on Global Collaboration & Leadership, Economic Development, and Technology & Innovation.

THE JOURNEY TO NET ZERO

As the United Nations (UN) climate science panel announced last year that man-made emissions will need to drop by about **45 percent by 2030,** from 2010 levels, countries around the world are doubling their efforts in ensuring they reach **'net zero' by the middle of the century to give themselves a chance of limiting warming to 1.5C and avoiding the worst impacts of climate change.**

Under the 2015 Paris Agreement, almost 200 countries pledged to curb the rise in global average temperatures to 'well below' 2 degrees Celsius above pre-industrial times and attempt to keep it to a ceiling of 1.5C. But with extreme weather conditions continuing to impact the globe, driving hunger, migration, drought, and other natural disasters, urgent action is now needed to avoid increased damage.

Over the years, Abu Dhabi has hosted a series of vital conversations examining the future of energy and bringing together diverse voices from around the world to engage, inform, educate, and inspire others. Following the COP26 Summit in Glasgow in November 2021, **the world is refocusing its efforts on sustainability and the net zero journey,** ahead of COP27 in Egypt and COP28 in the United Arab Emirates in 2023.

With more than 80 specialists, heads of states, policy makers, global CEOs and leaders of international organisations, the Abu Dhabi Sustainability Week (ADSW) Summit 2022 tackled the vital energy conversation, as well as the transition to sustainable economies and societies. Based on conversations from the summit, which was hosted by Masdar, a global leader in renewable energy and sustainable urban development based in Abu Dhabi, this whitepaper has gathered ground-breaking ideas, recommendations, and insights from global experts in order to reach net zero by 2050.

"We should look for the solutions where the energy expertise exists and we should always remember that our goal is to hold back emissions, not progress.

Behind every challenge lies a much greater opportunity.

H.E. Dr. Sultan Ahmed Al Jaber

Minister of Industry and Advanced Technology, UAE Special Envoy for Climate Change, and Chairman of Masdar in the UAE

"With the UAE and others in the Gulf region announcing net zero commitments, we have some true momentum. But now, the real challenge begins, translating those commitments into real action and hitting the milestones up to 2030. In practical terms, the next few years will be crucial. If we want future global development, we have to change. We need smarter, more sustainable and circular economies, better public-private cooperation. There is no easy solution, but we must take up this challenge.

H.E. Mark Rutte
Prime Minister of the Netherlands

"We share common concerns with the UAE. We all agree in the preservation of mangroves and coral. We also work to protect, not only them, but to strengthen our petition with our communities to restoring the coral reefs. We believe that common challenges are the way to join efforts to combatting climate change. It is time to act, and we have to act now.

H.E. Ivan Duque Marquez
President of the Republic of Colombia

"Climate change remains an existential threat, with far-reaching impacts on lives and livelihoods. The latest Intergovernmental Panel on Climate Change report was sobering. It projected that every region in the world will experience concurrent and multiple changes in climate impact drivers. Tackling climate change is an immensely complex challenge and must go far beyond annual conferences. Singapore is a key advocate for robust global responses to the climate crisis.

H.E. Halimah Yacob
President of the Republic of Singapore

"Let us concentrate on the reductions of all green house emissions. Let us not be picky on what solution or energy source, if you want inclusiveness, we have to be comprehensive, what matters the most is the reductions of emissions by all.

H.R.H. Prince Abdulaziz bin Salman bin Abdulaziz Al-Saud
Minister of Energy, Kingdom of Saudi Arabia

Global Collaboration & Leadership: Projecting COP Ambitions

As countries around the world look towards projecting their COP ambitions, pressure is being placed on the energy sector to reduce power generation emissions, as well as emissions from their supply chains. Together, they have joined the **long-term energy transition to decarbonise their power sector and promote electrification,** while many have identified individual net zero commitments and accelerated the shift to renewable energy.

With human consumption of energy growing at a rapid pace, and with renewable and clean sources of energy supplying only 20 percent of energy at a global level, current projections estimate that renewable energy sources will form only 40 percent of the total global power generation by 2040. Such figures entail that the world will still need to use fossil fuels for decades to come. And the recent COVID-19 pandemic has exacerbated challenges, causing shortages in natural gas and coal in some countries and disrupting supply and demand which, in turn, have led to a rise in energy prices.

As global energy continues to make headlines around the world, concern is growing around energy security. Yet significant progress is being made by countries throughout the Middle East and Africa.

"We have made a big leap forward but no one is moving fast enough. We are way behind in our retirement of coal power plants, in our efforts to stop leakage of methane, and in our efforts to deploy renewable energy. We need to do a lot more, a lot faster, and that is going to be the centre of the debate going forward.

John Kerry

Special Presidential Envoy for Climate in the United States

According to John Kerry, Special Presidential Envoy for Climate in the United States, the region is stepping up, sending out a crucial message to the rest of the world that producers of the current source of power, energy and heating, recognise that the net zero transition is serious. **"We are moving towards clean power, renewable power, and sustainable structures,"** he says. "And the Middle East, together with the Horn of Africa, is going to play a huge role in that over the course of the next two years."

In 2016, the UAE built its own energy security strategy that would take the country some 30 years into the future. Such a strategy not only includes energy security, but it encompasses affordability and sustainability, by shifting to 50 percent clean energy by 2050 and reducing 70 percent of the UAE's emissions. "We knew that the world will be facing some challenges in the future," says H.E. Suhail Mohamed AlMazrouei, UAE Cabinet Member and Minister of Energy and Infrastructure.

Both the Kingdom of Saudi Arabia and the UAE have been focusing their efforts on renewable energy in an aim to reach their net zero commitments, including the launch of projects such as the Saudi Green Initiative and the Saudi power sector shifting from liquids to 50 percent gas and 50 percent renewables. According to H.R.H. Prince Abdulaziz bin Salman bin Abdulaziz Al-Saud, Minister of Energy of Saudi Arabia, such moves rely on a conviction that there is a solid economic case. "We cannot have a place like the Red Sea project or NEOM without being too careful about what you do to the environment," he says, adding that the Kingdom plans on reducing 278 million tonnes of its emissions – the equivalent of almost all the emissions of Kuwait, Qatar and Oman.

Such initiatives focus on greening and adopting a circular carbon economy using different technologies. Today, the circular economy is viewed as a paramount tool in creating jobs while saving the environment. The UAE is also making great strides in its net zero pledges by enabling and incentivising the private sector to adopt such a circular economy.

And as the number of energy sources continues to grow at a rapid pace, **the Emirates has put forward a hydrogen roadmap at the COP26 Summit,** with more than seven projects currently underway. For H.E. AlMazrouei, part of that strategy is to capture a 20 to 25 percent market share, potentially exporting hydrogen to different countries around the world. After building the Middle East's first green hydrogen plant, the UAE is also engaging in research and development within the region and abroad to ensure such an energy source remains a viable option in the future.

H.R.H. Al-Saud called on countries around the world to tend to their share of responsibility and focus on the reduction of all greenhouse gas emissions. "We owe it to ourselves, to our friends, and if you look at our commitments when it comes to emission reductions, we are going beyond what our share is," he concludes.

Innovation and Technology

Innovation and technology are key for us to be able to meet the UN Sustainable Development Goals (SDGs) and to ensure that we are building climate resilient, smart agricultural systems. With **food systems contributing to a third of greenhouse gas emissions,** agriculture is truly at the heart of the net zero conversation.

By implementing technologies and innovations in the last few years, the UAE has been able to grow certain foods sustainably and commercially. In partnership with the United States, the country created he Agriculture Innovation Mission (AIM) for Climate, where non-governmental organisations joined hands to enhance productivity and sustainability, reduce the agricultural sector's carbon footprint, increase livelihoods, conserve natural resources, and boost the sector.

AIM seeks to significantly increase investment in new agricultural technologies and approaches by 2025 to help food producers cope with climate change as well as reduce the nearly 33 percent of global greenhouse gas emissions that food systems generate. The all-inclusive initiative focuses on scaling up and accelerating current food systems to transform them into more sustainable ones.

During the COP26 Summit, AIM members announced an initial US$4 billion of new investment for agricultural innovation. At the time, US President Joe Biden challenged AIM members to double the current commitment to US$8 billion in increased investment in climate smart agriculture and food systems by COP27. "We really do need to have significantly greater investment across the board if we are to reach the goals," says H.E. Thomas J. Visack, Secretary of Agriculture in the US.

From new seed technologies to vertical farming and cellular agriculture, such innovations have the creative potential of producing more food with less, playing an integral role in allowing agriculture to meet the growing demand for food.

Yet technology and innovation are not only limited to food production, but also include the broader energy transition, where the UAE is playing its part with plans of reaching net zero emissions by 2050 and investing Dh600 billion in renewable energy. Home to the largest and lowest-cost solar power plants in the world, the country is at the forefront of ground-breaking discussions relating to the energy transition.

"In the past few years in the UAE, we are growing salmon, quinoa, vegetables of high quality and this is all because of technology and innovation. So it is just amazing to see that a hot arid country like the UAE has been able to use or adapt to the technologies that are available to be able to grow these foods. As we move to COP27 here in the region and COP28, for us, food systems are going to be an important aspect in both of these summits

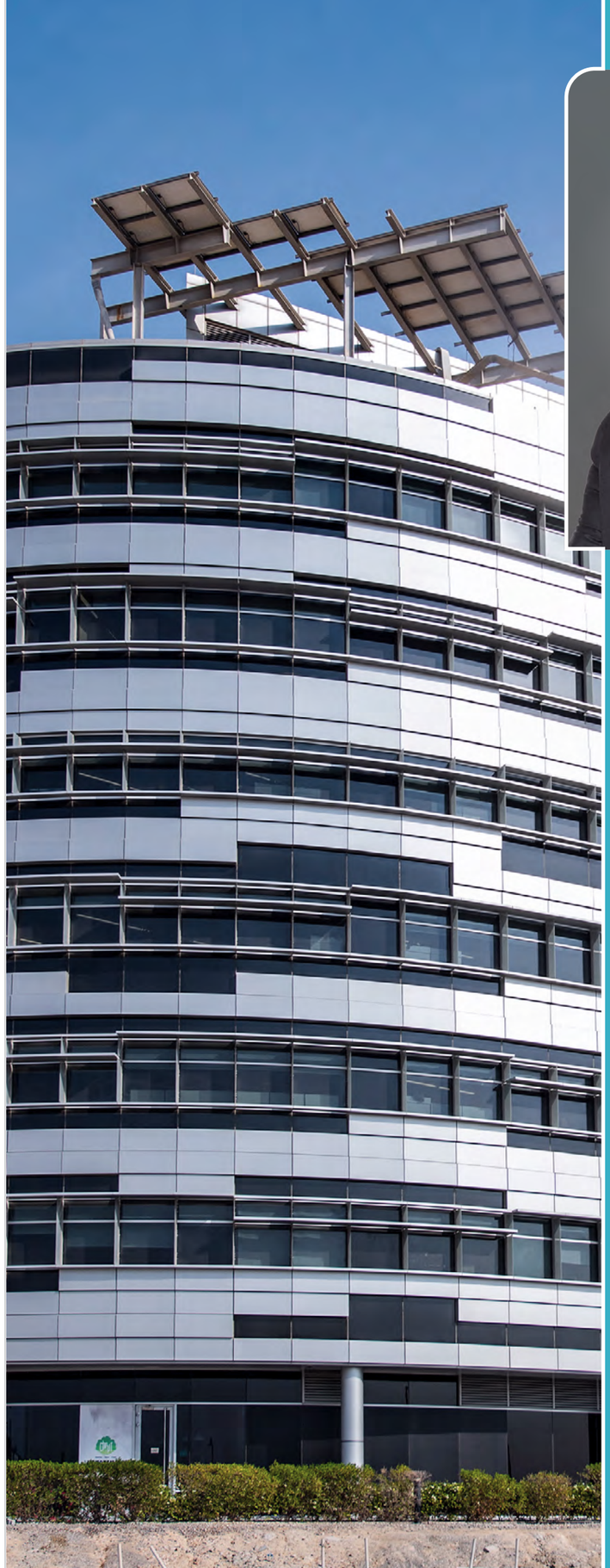
H.E. Mariam bint Mohammed Saeed Almheiri
UAE Minister of Climate Change and Environment

Through Masdar, the UAE has already invested in wind and solar projects in 40 countries around the globe. In December 2021, three of the UAE's energy giants also joined forces to transform Masdar into a truly global supercharged clean energy powerhouse.

According to H.E. Dr. Sultan Ahmed Al Jaber, Minister of Industry and Advanced Technology, UAE Special Envoy for Climate Change, and Chairman of Masdar in the UAE, the country's ambition is to accelerate this development to reach 100 gigawatts (GW) and, ultimately, double the figure to 200 GW. "This represents a massive opportunity," Dr. Al Jaber highlights at the opening ceremony of this year's Abu Dhabi Sustainability Week.

In the UAE's approach to the upcoming COP28 and in line with its own energy transition, the country plans on giving an equal voice to the developing world, and align the public and private sectors, academics, engineers, businesses, civil society and industry.

And to successfully navigate such a complex transition to the energy system of tomorrow, the energy system of today cannot simply be unplugged. Dr. Al Jaber underscores the importance of remaining pragmatic while being progressive, hopeful, and practical. "We should look for the solutions where the energy expertise exists and we should always remember that our goal is to hold back emissions, not progress," he concludes. "Behind every challenge lies a much greater opportunity."



We all know that this decade will be decisive in understanding if our energy system will be in line with achieving the Paris Agreement goals in 2050.

There are still a lot of people without basic electricity and energy services so we need to build a system that could be more resilient, cleaner, in line with the Paris Agreement, and offer opportunity for development for the poorest countries in the world and provide safer and sustainable development for all.

Francesco La Camera

Director-General of the International Renewable Energy Agency (IRENA)

Sustainable Finance and ESG

As an urgency to act sets in, a net zero economy is today viewed as the only way out of the current global sustainability crisis. However, the finance needed to enable a net zero economy and the capital required to fund such a **transition is a long way ahead – as much as US$3.5 trillion a year.**

Today, as companies and countries look to make credible progress on their net zero commitments, there is a need for them to create strategic resilience in an era of volatility. Governments and business need to align around a common framework that lays out where more capital is required, its generation and distribution, to avoid an unmanaged or disorderly transition.

According to Harry Bowcott, Senior Partner at McKinsey & Company, the transition to a net zero economy will be complicated, messy and hard. In the firm's article 'Solving the Net Zero Equation' published ahead of the COP26 Summit in 2021, year-long research laid out the nine elements that need to play in concert, if not in unison, to navigate the transition in an orderly way.

"We think COP26 was an important step forward. Not because of the temperature trajectory implied by the commitments made, but because the demand signal for the transition has now been set unequivocally.

Harry Bowcott
Senior Partner at McKinsey & Company

They include the physical building blocks, the technology innovation, the scaling of supply chains and the access to the raw materials necessary. Such elements are followed by the economic and societal adjustments encompassing effective capital allocation, the management of demand shifts and the compensating mechanisms necessary to address the regressive nature of the cost of carbon.

Thirdly, Bowcott mentions the commitment and consent from public and private sector leadership to enable market mechanisms to operate in this journey. "This is the ensemble orchestra that needs conducting," he says. "And like any good symphony, the interdependence between these instruments is hard to unravel."

However, in McKinsey's 2020 report that laid out how the European Union could reach net zero at net zero cost, it revealed that more than 80 percent of the emissions reduction that was required could be delivered through technologies that already exist today, although not necessarily at scale. Despite the percentage varying country by country around the world, each of the 40 or so decarbonisation pathways that were completed in recent years provide cause from relative optimism that the world will be able to solve the issues in the physical building blocks.

The main challenge Bowcott foresees is how to navigate the economic and societal adjustments with the right governance, institutions, and commitment. "And the toughest part of that, arguably, is how the global economy generates sufficient capital and allocates it to where it is needed while maintaining popular consent globally," he adds.

Today, tangible progress is expected at a country and company level, as net zero is now an organising principle for government and business around the world. The credibility of an institution's delivery on a clear plan is already driving differentials in valuations and access to cheap capital. The clarity of this shift is why McKinsey believes that companies now need to prioritise building strategic resilience in an era of volatility.

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Every nation needs to draw it's own roadmap and solve it's own pieces of the puzzle. To give you some examples, we need a solution in terms of technologies, the technologies we have today simply won't get us to net zero. Innovation in electricity storage, carbon capture, hydrogen and others will be necessary. We need to build better cities, cities that are smarter and more sustainable, and our transport and mobility solutions must be cleaner and more efficient.

Mohamed Jamel Al Ramahi
Chief Executive Officer, Masdar

CONCLUSION

From more sustainable food systems to meaningful action on nature and more dedicated funds aimed at green investments, the world is looking to the future in a multilateral way. With climate change affecting billions of people around the world – up to 85 percent of the global population, **technology and innovation are expected to play a crucial role in that net zero future,** serving as a major platform to help lower carbon footprint and transform different aspects of society into more sustainable ones.

Following the last few decades which witnessed great acceleration of unsustainable use of natural resources and consumption, many positive signs are now emerging that a net zero transition is finally underway. As we embark on a new year and as we continue to confront the challenges of the pandemic, it has become clear that the sustainability agenda must play a central role in nations' development over the next 50 years.

From the resources we use, to the products we produce, the processes we deploy and the people we hire, we must collectively make decisions that have a positive, long-term impact across the entire value chain. More efficient processes, cleaner energy sources, improved infrastructure planning, and new agricultural production methods that boost productivity, create opportunities, and enable sustainability, will prove crucial in the world reaching a net zero future.

Today, world leaders have a responsibility towards the global population to act on climate. This includes mitigation measures, phasing out coal, focusing on the energy mix to bring in green technologies and green jobs, and reducing emissions to set forth the net zero path. **Investing in energy, connectivity, and food systems, while using the necessary resources to make the required sustainable changes** and ensuring jobs are at the heart of it, will render such a path all-inclusive.

In addition, the UN has a central role to play in accompanying countries on their net zero transition thanks to its framework and footprint on the ground. The homework taken from the COP26 Summit in Glasgow will have to be addressed at the upcoming COP27 in Egypt's Sharm El Sheikh, including bridging the gaps in mitigation, adaptation, loss and damage and climate finance as well as promoting investments for climate action.

Individual nations cannot do it alone, nor will the climate dilemma be resolved at the speed it is hoped. However, partnerships are expected to be placed at the core of the success of the sustainability agenda – a global response through ambitious plans, concrete action and resolute commitment from all countries is the only way the world will be able to close the emissions gap and reach its collective goal of a net zero planet.

"Beyond investment, research, and the development of new technologies, it is critical we form regional and international partnerships. Abu Dhabi Sustainability Week is a great platform to do that.

H.E. Eng. Awaidha Murshed Ali Al Marar

Chairman of the Abu Dhabi Department of Energy (DoE)

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