



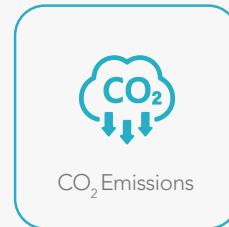
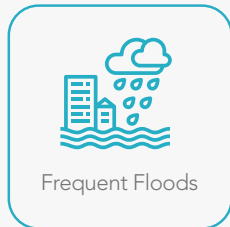
ABU DHABI
SUSTAINABILITY WEEK

TECHNOLOGICAL INNOVATION
**KEY IN TACKLING
CLIMATE CHANGE**



Introduction

From frequent floods, storms, extreme heat, natural disasters, and rising carbon dioxide emissions, climate change continues to manifest itself around the globe, impacting the world as we know it and transforming global ecosystems.



Humanity has reached a pivotal point in its history, as the last decade, from 2010 to 2019, was recorded as the warmest than any other decade in the past 1,300 years. As a result, the international community has come together to unearth various solutions to mitigating climate change, one of which is innovative technologies.

In February 2021, Abu Dhabi Sustainability Week gathered global leaders from government, business and industry to explore new technologies and innovations that are most likely to come to fruition over the next decade and have the

potential to make major inroads in climate change mitigation. A key topic during the discussions was the importance behaviour change and sustainable technologies that can be adopted in our day to day lives.

ADSW Web Series, February 2021

In the fourth episode of the #ADSW Web Series, “Innovation in Climate Change – Using Innovation to Tackle Climate Change”, Jean-Francois Chartrain, Chief Operating Officer of Tabreed, spoke of the climate technology trend in his market of district cooling. As an essential service in the GCC, selecting and using the best technology is critical for citizens, the environment and the local economy. As such, Tabreed has been focusing on more efficient production of the energy

it distributes and enhancing the energy efficiency of its systems. “We are looking at evolving the technology available on the market, such as more efficient chillers, pumps, cooling towers and all the equipment that is part of our business,” he explained. “And the technologies are evolving quite fast: on the pumps and chillers, all the rotating machines are now supplied through variable frequency drivers, which helps to enhance the mechanical and electrical efficiency of equipment.”



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Chief Operating Officer of Tabreed



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Overall, the Tabreed is targeting a **10% to 30%** improvement in energy efficiency, while focusing on technologies to tackle energy sobriety and conservation, with zero waste. In the water or electricity industries, sobriety has already started helping consumers avoid wastage, using smart meters and advice on how to better consume energy. Chartrain mentioned research and development activities around regional technology to improve the production of cooling, including geothermal wells and geothermic sources to produce cooling from zero carbon energy sources. “New technologies are available on the market and will continue to emerge to better produce,

distribute and help our customers to consume less energy with the same comfort,” he added.

And the UAE is at the forefront of such efforts, paving the way for the region for the past decades when it began its district cooling industry. Such efforts have paid off, with penetration around the technology reaching **30%** in Dubai and around **20% to 25%** in Abu Dhabi, compared to less than **10%** in neighbouring Saudi Arabia. With room for improvement, the region has much potential to grow even further, developing and investing in technology to enable the air conditioning supply to have a lower impact on the planet.



Other organisations are following suit, such as bp Ventures (New Markets) where reimagining energy for people on the planet has become a new purpose. In an aim to become a **net zero company by 2050**, or sooner, bp hopes to help the world reach net zero in a way that continues to lift people out of poverty. “Increasingly, people want to ensure energy is clean, reliable and affordable, so adaptation is essential to increase resilience in energy systems,” said Sophia Nadur, the firm’s Managing Partner. “We are deploying our own technology to improve efficiency and using others to help with that transition, like deploying

PowerShare to help EV drivers find chargers in China and making an easier switch to cleaner forms of transportation.”

In the Middle East and elsewhere, bp currently has two launchpad companies which are **supporting oil and gas companies with fibre optic sensing** for production, pipeline use and parameter security. But adaptation is not enough. “The world does still need a more rapid transition to net zero and we are also supporting other large corporations to decarbonise their operations, including Microsoft and Amazon,” Nadur added. “It’s about sharing technologies and know-how.”



Sophia Nadur

The firm’s Managing Partner

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Wind power is another area where promising innovation is taking place to tackle climate change, including a move towards optimised energy production. Leader in **wind turbine technology**, Vestas, is developing variants in the size of its blades, rotors and towers to address different wind conditions around the world. “Internally, we set a target to become carbon neutral by 2030

through the reduction of carbon emission in our own operations as well as the supply chain,” said Muhamed Bou-Zeid, General Manager and Vice President of Vestas MENA.

“We won’t stop there because we are also exploring the use of recyclable materials for our wind turbines to produce zero waste turbines by 2040.”



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General Manager and Vice President of Vestas MENA



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Pooling technologies is also considered beneficial in helping regional oil and gas companies decarbonise and diversify. In addition, **solar power offers massive opportunity to deploy new technologies** that can deliver next generation

storage, transmission, and demand management solutions. “There is so much talent in the region and I am sure we can find solutions here,” Nadur noted. “We can mix and match technologies to solve issues. A lot of it comes down to partnering.”

Ultimately, major change will come from the possibility to use green energy or zero carbon energy within systems. For Nadur, decarbonising and digitalising oil and gas facilities is expected to take quite a bit of heavy lifting, however, the way funds are deployed will have a determining

role to play in how swiftly carbon emissions are reduced. “Blue hydrogen is an opportunity and probably the most interesting to this region, as well as carbon capture and storage,” she added. “The question is how we do this, and the short answer is together, building a strong innovation culture and partnership.”

RECOMMENDATIONS

According to Bou-Zeid, the drive towards electrification, decarbonising and digitalising around the building, transport and agriculture industries, is also emerging. In terms of renewables, he spoke of applications within hybrid solutions,

such as wind and solar, as well as storage, which is set to help create more cost efficiency with grid reliability. “More interestingly is the storage and many companies are launching pilot programmes to solve this challenge,” he noted.



Chartrain: Without any partnerships, the fight against climate change will never give significant results. Isolated industries cannot efficiently fight this. Partnerships should happen at all levels, with clients, communities, worldwide organisations, technology providers and universities. It is absolutely crucial to tackle the climate change issue.



Nadur: Bringing our partners in quite early bring us to the root of the problem we are trying to solve. Once you sit down with partners, you inject humility into the conversation and realise you probably don't have everything you need to solve the problem. So getting to the acceptance that the whole is better than the sum of its parts is key to show more success. It's about a broader ecosystem.



Bou-Zeid: Collaboration is key, and we cannot work in silos. Future success lies in the youth. The UAE formed Youth Councils and we have a similar experience in Saudi Arabia with the NEOM Innovation Challenge. This type of mentorship is important internally and for the bigger community. We should really mentor the youth and guide them and make them ready for the innovations for the future.



For more information

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