

In conversation with Paddy Padmanathan, President and CEO, ACWA Power



An illustration of Paddy Padmanathan, President and CEO, [ACWA Power](#).

The UAE has an established track record as a proponent of sustainable development, and is committed to implementing the United Nations' Sustainable Development Goals (UN SDGs). It is no surprise, therefore to see the sustainability motif echoed in the UAE's Centennial plan. How has ACWA Power imbibed these priorities into its business plan?

ACWA Power has been supporting the UAE in its journey towards sustainability for well over a decade by pioneering the development and cost reduction of renewable power generation and water desalination projects. Our sector plays a vital role in achieving the United Nations Sustainable Development Goals (SDGs). By delivering cost-effective renewable energy and energy-efficient water desalination for the UAE, we are contributing to **affordable energy access** and **clean water** supplies as well as **climate action** through reducing the country's carbon footprint. Beyond our core operations we are also focused on fostering continuous learning for our local operations and workforces by providing training and **education** opportunities to our employees, and **gender equality** and woman empowerment in the communities we serve.

Furthermore, we are ensuring that the projects we work on are in line with global sustainability standards and are proud to have obtained the world's first sustainable and social accreditation based on the Second Party Opinion (SPO) of Vigeo Eiris for the Taweelah water desalination power plant being built in Abu Dhabi. In addition, through our work on the NOOR 1 Energy solar power project, which is a phase of the

Mohammed Bin Rashid Solar Park, we have also qualified for the Climate Bond Initiative certification.

We believe that by aligning ourselves to the SDGs as a strategic lens at the core of our operations, we support the advancement of our host nations on the global goals and, ultimately, their national contributions to the Paris Agreement.

ACWA Power operates in multiple Gulf countries and is accustomed to operating in markets that have traditionally been oil-centric. How do you see the energy sector in the Middle East changing over the next 50 years?

Countries in the GCC are signatories to the COP 21 Paris Agreement and have recognised the need to reduce carbon emissions as fast as possible to contain climate change. In addition, the cost of renewable energy has decreased dramatically in the last few years, allowing us to supply a significant segment of energy consumed each day cost competitively, regardless of whether a country is an oil and gas producer or importer. Based on these facts, GCC governments have all announced ambitious plans to meet 30 to 50 per cent of their energy needs through renewable energy within the next decade. With the right policies in place and by leveraging public-private partnerships, these governments have already seen major projects materialise, with many under construction and in operation today.

By generating low-cost renewable energy and using the electricity intensive electrolysis process, we are now also able to contemplate splitting water molecules to produce hydrogen. As such we can deliver green hydrogen to replace fossil fuels for hard-to-abate transportation and industrial uses to further reduce carbon emissions.

Utilising our experience and expertise is critical for our endeavors in the GCC region. We are challenging costs and accelerating the energy transition by undertaking pioneering projects in the region such as the Mohammed Bin Rashid Solar Park, the NEOM Green Hydrogen project and the Red Sea Project. The Red Sea Project is the first tourism project in the world on this scale spanning an area the size of Belgium where all utility services are to be entirely powered by sustainable, zero emission energy in addition to adopting a zero waste and zero plastics approach.

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The main pillars of the UAE’s future vision are built around strength in economy, happiness, government and education. How does ACWA Power’s work in sustainability interact with these areas?

With reliable, adequate and affordable electricity and water being essential for economic growth and social welfare, and as a developer, co-owner and operator of power and water assets, ACWA Power is proud and privileged to be a partner with the UAE to fulfill its vision. We support the UAE’s economy by delivering power and water reliably, sustainably and at the lowest cost possible. In addition, by deploying clean energy plants and energy efficient water projects, we are also supporting the reduction of the country’s carbon emissions in line with its commitment to the Paris Agreement.

Beyond that, by adopting policies to maximise local content development and procurement and by creating valuable employment opportunities for citizens through the activities of developing, constructing,

operating and maintaining these significant assets, ACWA Power is able to contribute to the health, wealth and happiness of the countries we serve.

ACWA Power is involved in delivering one of the UAE most precious resources: water. What involvement does ACWA Power have in planning for the UAE's other long-term objectives that involve water supply, such as agriculture and food security, happy communities, and regional stability?

The Middle East, and specifically the UAE and KSA, are the largest desalinated water producers in the world, given the scarcity of the natural resource in this region. Ensuring the provision of an adequate water supply and the most efficient use of that vital resource in food supply are both critical for these countries. ACWA Power is focused on producing potable water in a sustainable manner; which in the case of the UAE means using reverse osmosis technology to desalinate sea water, minimising energy use in the process, and transitioning to renewable energy for that electricity required, while also minimising waste disposal and chemical usage. By continuing to reduce the cost of desalinating water, which would in turn facilitate the use/adoption of technologies like hydroponics, ACWA Power may in time be able to also contribute to the food security agenda.

The UAE's Water Security Strategy 2036 sets ambitious targets for the use and treatment of water in a number of areas, including increasing the reuse of treated water to 95 per cent and reducing total demand for water resources by 21 per cent. How is ACWA Power prioritising its medium-term strategy to meet these targets?

Without waiting until 2036, ACWA Power is already embracing the circular economy approach of the 4 Rs; reduce, reuse, recycle and remove. We have progressively been reducing energy intensity of desalination and recovering and reusing energy to further reduce net consumption. We are evaluating what, till recently, has been the practice of disposal of membranes used in the process. We are also pioneering the recovery of economically valuable elements from brine, which is the waste stream of the desalination process. Finally, while ACWA Power is not directly involved in reuse of end product water, we continue to champion water reuse, recognising the environmental and social benefits.

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ACWA Power is involved in multiple projects with the UAE authorities, and is a strategic partner in delivering utilities to the UAE population. Do you think the private sector has an obligation to assist the government in providing sustainable access to these resources?

Given that ACWA Power and others serving the sector are very much in the business of investing significant capital to construct plants and recover those investments and risk related returns over decades, economic growth is vital to ensure our own viability. It is very much in our interest and the collective responsibility of all market participants to promote sustainable access to resources and efficient utilisation

of services to maximise value creation. ACWA Power is able to lead the way by reliably delivering such vital inputs, electricity and water, at the lowest possible cost.

Many of the initiatives that fall under the umbrella of delivering sustainable energy and water resources are extremely costly due to the need to advance infrastructure and technological innovation. Are there any more accessible ways the SMEs and individuals can contribute to the UAE's sustainability?

Renewable energy and water desalination technology and the construction of utility-scale plants rely on the smallest of components and the actions of individuals – demonstrating the potential for including smaller players in the value chain. In the case of renewable energy projects, we are already able to show more than 40 per cent of local content. While a more targeted effort is required, the scope for SME involvement is considerable. Furthermore, the ability to generate power from solar resources at roof top has opened a massive market for SMEs to get involved in supply, installation and maintenance for domestic, commercial and even industrial consumer segments.

From your perspective, what is the most promising development that has the greatest potential to propel the UAE towards its 2071 vision in terms of water security and sustainable energy?

Continuous development and deployment of renewable energy, expansion of sustainable water desalination and production of cost-competitive green hydrogen will be the “collective key” to deliver on the UAE's 2071 water security and sustainable energy ambitions. ACWA Power is committed to partnering with the UAE to propel the country so it continues to lead the energy transition while benefitting from everything the ensuing green economy will provide.

The UAE Federal Competitiveness and Statistics Authority delivered a report in 2019 which revealed that advancements in sustainable communities and cities was the UAE's fastest area of progress in its SDGs. What innovations in water and energy can be partially attributed with this success?

Given that communities and cities advance when quality of life improves, and the central driver of that enhancement is the reliable delivery of sustainable power and water, a range of innovation and evolution of technology in both areas has made a significant contribution to socio-economic progress. In the renewable energy sector, we see continuous improvements in the efficiency of PV modules and the discovery of bifacial modules. Bifacial modules allow us to harvest solar energy not just from the surface of the panel that faces the sun but also from the back of the panel, taking advantage of the reflection of the rays as they bounce off the ground. Beyond these improvements we are also refining methods of construction as well as the architecture of plants, while taking advantage of big data, machine learning and artificial intelligence to enhance operations and maintenance.

In the case of desalination, significant advances in material science and methods of manufacture have increased the efficiency of RO membranes, using low power and delivering cleaner water, while reducing reject brine. In addition, the ability to use renewable energy to further reduce the consumption of more expensive fossil fuel generated electricity is also starting to lower the overall cost and the carbon footprint of desalination.

The report further stated that the UAE could reach the Top 10 in the SDG Index by 2023 by focusing on improvements in clean water, responsible consumption and production, and climate action. How are private sector entities being encouraged to contribute to these objectives?

Private public partnerships for the provision of utility services procured through transparent competitive tenders bring out the best in the private sector by encouraging it to keep innovating and keep challenging costs. This is already being effectively demonstrated at each successive procurement for renewable energy and desalinated water in the UAE. ACWA Power is committed to this cause by continuously leveraging our operational excellence and technical know-how to support communities and governments that we serve to encourage more sustainable projects, generate awareness and support economic development by finding smarter and better ways to achieve these goals.

Water and energy security and sustainability issues are not the sole concern of the authorities and large private sector companies working in these sectors. What cross-sector initiatives and developments are you seeing that contribute to success in these goals?

We see that development and training of local talent, increasing valuable job creation, higher levels of industrialisation and knowledge transfer, and maximisation of local spend and value retention are all critical to focus on to deliver benefits to the wider economy such as increased wealth.

ACWA has aligned its sustainability efforts to the UN SDGs. Outside of the UAE's Centennial plans, how is ACWA working towards other goals such as reduced inequalities, ending poverty, and peace, justice and strong institutions?

Power and water projects are generally located in remote areas, where companies like ACWA Power make significant investments and operate assets for periods ranging from 20, 30 and even 40 years. It is therefore critical that we have an implicit social contract with the local communities by providing training, education and equal opportunities. This will also encourage other economic activities which can grow alongside our presence. While we can cite numerous examples, two that are particularly noteworthy in this context are Morocco and South Africa, where ACWA Power has been activating CSR initiatives and has generated W+ standard, which quantifies women's empowerment and channels funds directly to women developed by WOCAN global women-led organisations. We are also proud and privileged to have been recognised by our peers in this field, among else through an award as a sustainable role model in 2019 by the Gulf Sustainability and CSR Committee.

Despite the promise of big sky thinking and investment, the Centennial plans are hugely ambitious and sometimes, barriers and obstacles can frustrate long-term plans. What areas pose the greatest challenge to ACWA reaching its sustainability goals and why?

Given that many entities have recognised the urgency and benefits of reducing the carbon footprint of all human and industrial activity, the biggest hurdles are already behind us. However, implementing the

energy transition and ensuring that countries retain the maximum value and build solid foundations for the green economy will require committed, passionate and capable professionals at higher numbers than before. While our part of the world is blessed with a disproportionately high percentage of young people, the challenge that needs to be managed is to train and develop them to contribute to this massive task ahead of us, so they can ultimately benefit from it as well.

Strategic visions like the Centennial 2071 can have a secondary benefit of showing the value in advance planning, and having bright, ambitious optimism for the future. What is your personal vision for ACWA by 2071?

As a company driving the energy transition through the expansion of renewable energy and sustainable desalination as well as the propagation of green hydrogen, we have an important role to play in bringing down the cost of electricity, thus laying the foundations for human and industrial activity to be “fueled” by zero carbon electricity. My personal vision for ACWA Power by 2071 is to make headway towards sharing prosperity by reducing the gap between the haves and the have-nots by enabling reliable, affordable access to electricity and water to all people on earth, while preserving the planet for future generations.