

# SOHAR Port and Freezone | Going Green

## Plans to create first green hydrogen hub in Oman

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### White Paper

The sustainability revolution is arriving faster than many companies expected, and it is expanding to include a wider range of environmental and social issues. The action brands and business have to take, has never been more important. The latest Edelman Trust Barometer\* reveals that the vast majority of consumers are now looking to CEOs and business to play a lead role in improving the world.

In the wake of COVID-19, customers, employees and communities expect companies to put purpose front and center.

Sustainability saw a watershed moment last year when the Business Roundtable, Washington's leading big business lobby group, redefined the purpose of America's corporations, to emphasise their commitments to all stakeholders - namely, employees, customers, suppliers and the communities where they do business.

But investor pressure has done more than the BRT to focus boards on a broader purpose, said Harvard Business School's Rebecca Henderson, author of *Reimagining Capitalism*.

Investors are increasingly looking for companies to demonstrate progress towards a low carbon economy in 2020 and beyond.



**I believe we must all commit to better business practices in order to create a more sustainable world for all.**

We have made significant progress with our sustainability efforts, but we know - and are planning - to do substantially more.

Meeting the challenges and pursuing the opportunities require businesses to make strategic shifts as to how to move forward while also building innovative partnerships to accelerate results and increase the odds of success.



## 1. Putting purpose in action: what we have done to reduce energy consumption and improve energy efficiency.

In the Gulf Cooperation Council (GCC) countries, energy consumption has been growing rapidly. Between 2004 and 2014, final energy consumption grew at an average annual rate of 6.8% compared to a global average of 1.8%. Energy efficiency is a strategic priority to help GCC countries manage their energy demand growth.

### **Building an LNG supply chain for the marine sector**

Ports are critical links in the bunker supply chain and we share the SEA-LNG coalition vision of a global LNG marine fuel value chain that enables the transition to sustainable shipping - moving towards a cleaner future.

We are the first Middle Eastern port to join the SEA-LNG coalition - the cross-industry group created to accelerate adoption of LNG as a marine fuel. Natural gas is the cleanest burning and fastest growing fossil fuel, providing a number of environmental benefits compared to other fossil fuels, particularly in terms of air quality and greenhouse gas emissions.

MARSA LNG, a venture comprised of TOTAL and OQ, is developing a new LNG liquefaction plant and bunkering facility in the port. The establishment of this bunkering facility will make Sohar one of the key LNG bunkering facilities on the main shipping trade routes.

SOHAR Port and Freezone is committed to using our resources responsibly to support the long-term sustainability of our business and of the global environment in which we and our clients live and operate.

### **Sustainable Shipping**

We are proud to demonstrate our commitment to sustainable shipping. On 24 September, the International Maritime Organization (IMO) and the global maritime community came together to celebrate the annual World Maritime Day. The 2020 theme was "Sustainable Shipping for a Sustainable Planet". We are proud to demonstrate our commitment to sustainable shipping - as the only port in the Middle East and among 20 international ports - playing an active part in the World Ports Climate Initiative. We use the Environmental Ship Index to identify seagoing ships that perform better in reducing emissions than required by global IMO standards. This year we witnessed a 40% increase in discounted Port tariffs through the Green Award scheme awarding 239 cleaner ships as compared to 148 ships in 2019.

### **Using LED Technology**

A rather simple, but highly effective, solution we implemented, and with wide applicability within the SOHAR Port and Freezone network, is the use of LED technology for the outdoor lighting of different port and terminal areas. The associated energy savings is up to 60%, and the technology is coupled with intelligent control systems (e.g., remote-controlling, automation).

We were the first Middle East port with full LED street lighting for the Port and Freezone concession areas. And, we are ultimately planning to power the system independently from the grid, using solar panels.

### **Energy-Efficient Port Buildings**

We have also implemented energy efficiency in our port area. The solutions we have adopted include our small-scale solar park powering the port's headquarters in Sohar which will ultimately be powered by renewable hydropower.

Focusing on more energy-intensive port buildings, we aim to encourage new tenants to build LEED\*\* - certified buildings including solar to power air-conditioning, inspired by the eco-house constructed by a GUtch team in Oman. The house minimizes energy costs by using solar panels to power air-conditioning

And, our employees worked with Sohar University and TU Delft University, and students at these facilities, to unlock the potential for a floating solar power plant.

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## 2. What we are going to do moving towards a clean energy future.

We are committed to creating a more sustainable future for our employees, customers and communities we serve. That's why we're taking additional steps to address climate change and further promote sustainable development. Global supply chains have been in focus since the pandemic disrupted factories, closed borders and reduced the number of passenger flights able to carry freight. A McKinsey survey of 60 senior supply chain executives **found that 93% of them are planning to increase the level of resilience across their supply chains.**

We see an opportunity to not only focus on resilience and digitisation, but also to put sustainability at the heart of rebuilding our supply chains in the new normal.

LNG is the most sustainable and scalable marine fuel solution today, with a direct pathway via low-cost, readily available marine fuels liquefied biomethane (LBM) and liquefied synthetic methane (LSM) produced from renewable electricity towards our ultimate goal of the net-zero GHG emission ship.

### **Our green initiatives include solar energy and green hydrogen.**

We are very much into solar. Given the strong regular sunshine and the vast unused land outside the free zone, it is commercially viable to develop large solar power plants.

Apart from our small-scale solar park powering our headquarters in Sohar, we are planning larger utility-scale power generation facilities within the industrial port and the adjoining free zone in line with our strategy to offer competitively priced, solar photovoltaics (PV) based electricity to industrial end-users and other tenants operating within the hub. Planned capacity is 3.5 gigawatts (GW), which is equivalent to what we are consuming in the port.

Shell Development Oman's renewable energy arm, 'Qabas', has plans to develop as much as 300 megawatts (MW) of renewable energy-based capacity to support the green energy requirements of industrial companies operating in SOHAR Port and Freezone. The first 25 MW of solar-PV based capacity will be operational before the end of 2020.

### **We have a unique opportunity to make hydrogen an important part of our clean and secure energy future.**

The International Energy Agency recently produced a report: 'The Future of Hydrogen,' which concludes hydrogen is today enjoying unprecedented momentum and that the world should not miss this unique chance to make hydrogen an important part of our clean and secure energy future.

### **We have major plans for scaling up the use of clean hydrogen with the first hydrogen plant in Oman.**

The idea is to make the most of our industrial port by turning it into a hub for lowercost hydrogen, replacing traditional hydrocarbons. With declining costs for solar PV generation, building electrolyzers at our Sohar location with excellent renewable resource conditions could become a low-cost supply option for hydrogen.

The planned facility will create carbon-free hydrogen from low-cost solar power, stored for use on demand. The hydrogen stored for later delivery (via pipelines and trailers) will be used by the port's industries and tenants for clean transport and industrial purposes.

We are working in collaboration with our strategic partner, Port of Rotterdam, as well as Hydrogen Rise, and other research institutes worldwide, to identify cost-competitive solutions for the adoption of hydrogen as an alternative to natural gas. Scale-up will be critical to bring down the costs of technologies for producing and using clean hydrogen, such as electrolyzers, fuel cells and hydrogen production with CCUS.

We have a near-term opportunity to boost hydrogen on the path to more widespread use. We can accelerate efforts to find commercially viable deep sea vessels that run on zero-emission fuels such as hydrogen <https://www.globalmaritimeforum.org/getting-to-zero-coalition/>, while simultaneously optimising ship speed to minimize fuel consumption.

### **It is clear that the time is right to tap into hydrogen's potential to play an important role in a clean and secure energy future in Oman.**

The Ministry of Energy and Minerals recently announced it is undertaking a feasibility study paving the way for policies that directly support investment in hydrogen technologies.

Hydrogen can help tackle various critical energy challenges. It offers ways to decarbonise a range of sectors - including iron and steel - where it has proven difficult to significantly reduce emissions.

## **Hydrogen can lead towards more sustainable steelmaking.**

Steel is vital to modern economies. Global demand for steel is projected to increase by more than a third through to 2050. Meeting this demand growth while reducing emissions poses difficult challenges. But making green steel with hydrogen could be a revolution in innovation and an option for Oman to invigorate manufacturing.

A report by the Grattan Institute, linked to the University of Melbourne, claims green steel made with renewable hydrogen could become a multibillion-dollar export industry. Rather than exporting renewable hydrogen, the analysis found the most economically viable path appeared to be to use it within Australia to produce steel with near-zero emissions.

Similar to Australia, green steel could be built on Oman's unique combination of competitive iron ore and renewable energy resources, matched with emerging hydrogen production. We have the potential for competitive renewable energy to really drive manufacturing, a priority sector in our diversification efforts.

## **Investments in hydrogen can help create new technological and industrial development in Oman, creating skilled jobs.**

But we have to overcome hurdles for green investment. There hasn't been much deal flow of green or sustainable finance so far in the region, in comparison with Europe or Asia.

First, outside the national or local public funding agencies, familiarity with the port sector is low.

Second, it is widely acknowledged that an investment framework is needed to funnel capital to port assets and maybe even build an entire new asset class for investors.

Environmental, social, and governance (ESG) is one metric we should implement to promote green finance. The United Nations' Sustainable Development Goals are a useful framework.

ESG-oriented investing has experienced a meteoric rise - global sustainable investment now tops \$30 trillion.

Data show that during this pandemic, companies with higher ESG rankings had stronger financial performance,<sup>1</sup> one reason why many corporates and investors increasingly view sustainability as a critical performance factor. Environmental sustainability can improve the prospects for the financing of projects.

Once those metrics are established, I also believe that we should integrate sustainability reporting into financial updates. As seen during COVID-19, the purpose of companies has moved beyond profit to helping create a better world.

Local companies are being forced to change the way they approach markets, and also how they conduct their own business and operations.

We are planning to integrate ESG efforts into our strategy and operations. And, we are creating a sustainability frame linking purpose and impact on society.





## Going Green

COVID-19 has underscored the importance of ensuring sustainability is central to our efforts towards a clean energy future.

Our sustainability initiatives will enhance the quality of life in the wider community, generate investment opportunities for continued growth and, by aligning development with Oman's national strategy (Vision 2040), further the economic development of the country and the region as a whole. These joint ventures and relationships will help SOHAR Port and Freezone expand its position as one of the world's fastest-growing sustainable port and free zone developments.

We hope that the changes we are implementing today will also encourage current clients and future investors to adopt cleaner technologies and sustainable practices to have a positive impact on communities and the wider world.

## About SOHAR Port and Freezone

SOHAR Port and Freezone is a large industrial port and industrial site, home to some of the largest industrial plants in the Sultanate of Oman. SOHAR, with its strategic location and state-of-the-art infrastructure, has been a catalyst in attracting business and creating jobs in the region, having attracted over USD 28 billion in investments and creating over 24,000 jobs.

<https://soharportandfreezone.com/en>

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### End Notes:

\* <https://www.edelman.com/trustbarometer>

\*\* LEED (Leadership in Energy and Environmental Design)

1 Morgan Stanley Research



