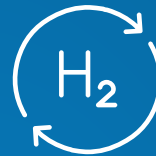


# Duqm, a global centre for green hydrogen production

Duqm –  :

Duqm marks one of the destinations that can attract green hydrogen and ammonia projects due to the availability of solar and wind energy throughout the year. Other potentials include having a port that facilitate the easy import and export, in addition to the spacious areas of land allocated for renewable energy projects, covering 150 square kilometres. Allocating the clean energy zone brings a new addition to the Special Economic Zone at Duqm (SEZAD), which has all the success factors for such projects.



## Key features of investment in green hydrogen sector in Duqm



- Availability of solar and wind energy all year round
- Having a port in the zone to facilitate import and export operations
- Establishment of a clean energy zone over an area of 150 sqkm

## Important milestones

1

**December 9, 2020**

The Board of Directors of the Public Authority for Special Economic Zones and Free Zones decided to increase the area allocated for clean energy in Duqm from 100 sqkm to 150 sqkm.

2

**December 9, 2020**

The Board of Directors approves negotiation mechanism to attract clean energy production projects for local use and green hydrogen production for export purposes in both the Special Economic Zone at Duqm and Sohar Free Zone.

3

**August 23, 2021**

Signing land reservation agreement for the green hydrogen and ammonia project that will be developed by the Indian company ACME in the Special Economic Zone at Duqm.

4

**September 27, 2021**

Signing land reservation agreement for the Hyport Duqm green hydrogen project, a joint venture in the alternative energy sector between OQ and the Belgian DEME Group.

Reflecting OPAZ efforts to attract investments in clean energy

# ACME signs land reservation agreement for green hydrogen and ammonia project in Duqm



Muscat - Delhi - 

The Public Authority for Special Economic Zones and Free Zones (OPAZ) signed land reservation agreement with ACME Group to set up green hydrogen and ammonia project in the Special Economic Zone at Duqm.

The agreement was signed by HE Dr. Ali bin Masoud Al Sunaidy, Chairman of the Public Authority for Special Economic Zones and Free Zones and Manoj Upadhyay, Chairperson of ACME & Gursharan Jassal – GM business developer of ACME.

Eng. Yahya bin Khamis Al Zadjali, In charge of Managing Operations of the Special Economic Zone at Duqm (SEZAD) said that under this agreement ACME Company will be conducting filed studies of the project

in the first phase that include installing anemometers to measure wind speed in Duqm and weather station for the purpose of surveys and data collection.

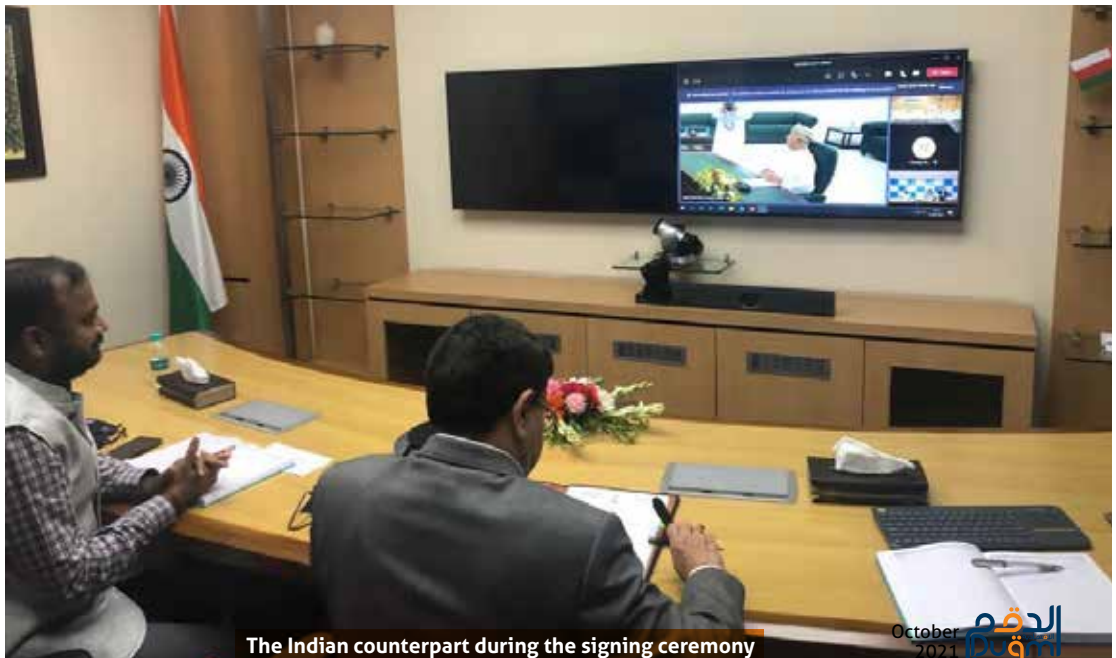
## Promoting investment in clean energy

Singing this agreement comes in line with OPAZ plan to promote investment in the field of clean energy through the production of green hydrogen and ammonia from renewable energy, and to enhance its use in various fields such as transportation and manufacturing sector along with other energy resources in the Special Economic Zone at Duqm.

ACME is the largest solar energy operator in India, as it operates solar power plant with a capacity of 3 GW, in addition to 3 GW under construction plant.

  
First phase includes installing anemometers to measure wind speed and weather station

  
ACME is the largest solar energy operator in India



The Indian counterpart during the signing ceremony

October 2021 

Aimed to strengthen cooperation for Hyport Duqm project

# Oman and Belgium sign a cooperation programme in green energy



During the signing ceremony

Muscat – **الدوقم** :  
Duqm

A cooperation programme, in the field of green energy, was signed on September 26, 2021 between Oman and Belgium, reflecting the interest of both countries to enhance the collaboration, especially in green hydrogen. This programme came to build on the bilateral relations between the Sultanate and the Kingdom of Belgium, and to mark an endeavour towards achieving the objectives of Oman Vision 2040.

The programme stipulates strengthening the cooperation related to the strategic project HYPORT Duqm, and supporting the efforts accorded by Omani and Belgian companies to build an international alliance to produce

and import green hydrogen for the Kingdom of Belgium and its neighbouring countries.

## Localising clean hydrogen industry in Duqm

In this regard, HE Dr. Ali bin Masoud Al Sunaidy, Chairman of the Public Authority for Special Economic Zones and Free Zones (OPAZ), had discussed with HE Tinne Van der Straeten, Minister of Energy of Belgium, the localisation of clean hydrogen and ammonia industry in the Special Economic Zone at Duqm (SEZAD).

The meeting, held on September 20, 2021, touched on ways to ensure the entry of clean hydrogen and green ammonia products that will be produced in Duqm to European Union countries through the Belgian market.

Discussing localisation of the clean hydrogen and ammonia industry in SEZAD

Supporting efforts of companies in both countries to build an international alliance to produce and export green hydrogen to Belgium and European Union



**الدوقم** :  
Duqm  
October 2021

The meeting between OPAZ Chairman and the Belgian Minister



A joint project between OQ and the Belgian DEMA

# OPAZ and HYPOR Duqm sign land reservation agreement for green hydrogen project



**Ahmed Al Dheeb:** We aspire to be one of the pioneering projects in producing green hydrogen and green Ammonia in the Sultanate



**Alain Bernard:** The project will form an integral part of SEZAD's ambitious growth

The company will start the preparative engineering works and site data collection

**Muscat – **

The Public Authority for Special Economic Zones and Free Zones (OPAZ) signed a land reservation agreement for the green hydrogen project of Hypor Duqm Company, a joint project of alternative energy between OQ and Belgian DEMA Concessions. Hypor Duqm will now start the preparative engineering works and site data collection to establish a green hydrogen and ammonia project in the Special Economic Zone at Duqm (SEZAD).

The agreement was signed by HE Dr. Ali Masoud Al Sunaidy, Chairman OPAZ and Dr. Salim Al Huthaili, OQ Alternative Energy CEO and Chairman of Hypor Duqm Company and Alain Bernard, Chairman and Managing Director of DEMA Concessions.

The project will cover part of the 150-sqkm land allocated for renewable energy projects. This land will accommodate both an onshore wind and solar PV farm with a

combined capacity of 1.3 GW, which will be developed in subsequent expandable project phases.

## Field works

Hypor Duqm is currently completing the installation and commissioning of 4 meteorological wind masts and 2 meteorological solar stations within the site in order to confirm Duqm's excellent solar and wind conditions which, are available throughout the year. Hypor Duqm project fits well in the Sultanate's strategy of developing Al Wusta Governorate, while achieving renewable energy and other objectives of Oman Vision 2040.

## Pioneering project

HE Eng. Ahmed bin Hassan Al Dheeb, Deputy Chairman of OPAZ, pointed out: "OPAZ welcomes this project in SEZAD, which is expected to be a pioneer in introducing green hydrogen and green ammonia



**Dr. Salim Al Huthaili: OQ and Oman Investment Authority continue to support this project and company's strategy to grow this important sector**

to the country. Further, it will lead the diversification beyond hydrocarbons efforts and contributing to Vision 2040".

#### **Global centre**

Dr. Salim Al Huthaili, CEO Alternative Energy at OQ, commented: "The agreement is yet another milestone in the development of this important project. SEZAD will be a global green hydrogen hub combining power, manufacturing and logistics activities while focusing on the decarbonisation and electrification."

"The excellent renewable resources and the existing infrastructures along with the upcoming national grid connection makes Duqm an attractive and competitive destination for renewable projects. Oman continues to be a global leader in delivering clean energy projects to accelerate the energy transition effort. OQ and our shareholders Oman Investment Authority continue to support this project and our strategy to grow this important sector", he added.

#### **Promising renewable energy project**

Alain Bernard, Executive Chairman DEME Concessions, stated: "Our flagship green hydrogen project strikes another important milestone, which underwrites DEME Concessions' strong commitment in making the necessary project progress. HYPOR Duqm will form an integral part of SEZAD's ambitious growth. This milestone strengthens DEME Concession's sustainable, long-term presence in SEZAD".



The project accommodates both an onshore wind and solar PV farm with a combined capacity of 1.3 GW



Installing 2 meteorological solar stations in order to confirm Duqm's excellent solar condition



**Dr. Khalil Al Hanashi**  
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## Clean Hydrogen.. Energy for the future and the future of energy

The traditional energy trilemma of availability, security and affordability of energy had a fourth dimension added to it in recent years, that is decarbonisation. Following Paris Climate agreement and in the build up to the United Nation climate change conference, COP26, which will be held in November this year, the decarbonisation agenda dominated many energy discussions and clean hydrogen surfaced as one of the promising clean energy carriers that only emits water vapour when its energy is extracted back unlike fossil fuel that is associated with CO<sub>2</sub> and methane emissions.

As of 2018, the size of the existing hydrogen market, which is mainly produced from natural gas and coal, is about 9% of the size of the natural gas market. With the expected high growth in Hydrogen demand, expected to double in 2022, clean hydrogen will play a central role in new hydrogen demand and demand replacement for decarbonisation.

Today, we see 4 main pillars on which hydrogen positions itself as a player in the future of global energy use. First, hydrogen can tackle the emission from hard to decarbonise industries, such as steel and cement industries that require vast amounts of heat. Such industries currently rely on fossil fuels to produce the required heat. The recent announcement of SAAB, the Swedish car manufacturer, to buy green steel (steel made using hydrogen heat) demonstrated for the first time that steel smelters can run 100% on Hydrogen. Such a move will position green steel at a premium for those who care about the carbon footprint of their products.

Second, Hydrogen could maximise the value of renewable resources especially in places where natural gas resources are depleting, but ample renewable resources are available. Such an opportunity is very relevant to Oman and will allow for the excess renewable energy to be used to produce hydrogen as a replacement of natural gas. Green hydrogen is produced using renewable

electricity to split water into its basic components, Hydrogen and Oxygen, which can then be stored, transported and used anywhere to address the issue of renewables intermittency and natural gas resource depletion.

Third, Hydrogen presents itself with interesting versatility, from being used as feedstock to chemical industry like ammonia to an agent to run many processes like the desulfurisation of crude oil in refineries. Oman's local consumption of hydrogen, mainly from natural gas, marks about 1 million tonnes per year. Therefore, the potential for local production and consumption of clean hydrogen exist in addition to the export opportunity to capitalise on Oman's long history in energy as an energy exporting nation.

Fourth, hydrogen could provide energy security in two dimensions; one against the intermittency of renewables and another as a replacement for declining natural gas resources in countries that rely on natural gas and have built natural gas infrastructures.

The recent announcement of the world's largest green hydrogen project in Oman to be located in Al Wusta Governorate highlighted the great momentum and the promising future for clean hydrogen in Oman. The coordinated plans for the future hydrogen industry in Oman was also consolidated by the formation of the National Hydrogen Alliance (Hy-Fly). The National Hydrogen Alliance with its 13 members representing the energy players at policy making, regulation, and energy companies in addition to research and development centres will push forward the hydrogen agenda in Oman.

As well, it will ensure Oman is well positioned in an emerging energy market and promising energy diversification vector where the ample renewable resources are not only used for electrification, but become exportable and locally used in many industries.