

# Hats

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Building Namibia's Future Issue

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# GREEN HYDROGEN AT HEART OF NAMIBIA'S VISION 2030

Green hydrogen gives Namibia the chance to leapfrog the carbon-heavy stage of industrialisation and go straight to low-carbon industry, says James Mnyupe, economic advisor to the president of Namibia.

Around the world, industrialised economies are looking to undergo green transitions. Countries across Europe and North America particularly are seeking to reduce their dependence on carbon and fossil fuels by investing in new technologies and sources of renewable energy, such as green hydrogen. Namibia is also looking to develop its green hydrogen space, but under rather different circumstances, as James Mnyupe, economic advisor to the President of Namibia, explains.

"People think about green hydrogen from an energy transition perspective," Mnyupe says, "but it's the exact opposite for us. Lots of highly industrialised countries are consuming huge amounts of carbon and are trying to go towards a low-carbon environment. Whereas with Namibia, we're going from very little industrialisation to a lot of industrialisation, potentially on the back of a zero-carbon source of fuel."

In this sense, green hydrogen is also integral to Namibia's "Vision 2030" project. This was launched in 2004 and outlines the country's ambitions "to improve the quality of life of our people to the level of their counterparts in the developed world by the year 2030".

#### Namibia's competitive edge

Mnyupe recognises, of course, that "competition is fierce – and so it should be." He points to Kenya, Morocco, Mauritania, Egypt, and South Africa as competitors similarly looking to build sophisticated renewable energy industries. However, he does believe that Namibia has several qualities that could help the country emerge as an attractive option for international investors.

"We have a united government, enabling policy legislation, and very attractive solar and wind resources", Mnyupe says. "We're not landlocked so we have access to a harbour. I also think that something very

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interesting in Namibia is that we have a relatively sophisticated capital market that allows for the construction of various financial instruments that allow for the deployment of blended financing. That can help lower the cost of capital required for the construction of these projects – and all of these things make Namibia an attractive place to consider building green hydrogen assets".

Developing green finance

The quality of Namibia's capital markets is certainly something that the government is trying to lean into as it attempts to promote the growth of its green hydrogen industry.

"So, we started engaging with the European Investment Bank (EIB) to put together a bespoke facility for Namibia that it could tap into to develop complementary infrastructure for the green project".

Source: https://african.business/2023/07/energy-resources/greenhydrogen-at-heart-of-namibias-vision-2030

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## NATIONAL NEWS

### DARK OUTLOOK LOOMS FOR CONSTRUCTION SECTOR

The real value of building plans approved decreased during the first quarter of 2023. This leading indicator for future construction activity, decreased year-on-year and quarter-on-quarter by 27.1% and 33.3%, respectively.

"The decline in this variable does not bode well for the construction sector's outlook. This state of affair may, however, be set off by the afore-mentioned positive outlook in the sphere of government-led construction works", reads the quarterly bulletin from Bank of Namibia (BoN) released 03rd of July 2023.

Building plans are described as an excellent economic barometer, as it creates direct jobs as well as income and tax revenue for the State, and significantly contributes to strong economic performance.

As such, the persistent declines are not a promising sign for the uptick of domestic economic activity after the impact of the Covid-19 pandemic, among other challenges in the economy.

Furthermore, the central bank added that activities in the construction sector displayed mixed signals, year-on-year, during the period under review.

"Government expenses earmarked for public construction work programmes increased in real terms by 37.1% and 12.9%, year-on-year and quarter-on-quarter, respectively. In the meantime, the real value of buildings completed remained weak, declining by 29.9% and 22.7%, year-onyear and quarter-on-quarter, respectively", reads the report.

BoN further stated that construction activity is projected to only show a marginal decline of 0.8% during 2023, an improvement from the large decline of 14.8% registered in 2022. The improvement, it said is expected to arise from the rebound in Southern African Customs Union (SACU) revenue and the revived emphasis to prioritise infrastructure and capital spending, as stated in the 2023/24 fiscal budget.

This is expected to lead to a break in the declining trajectory, which the sector had maintained over the past six years, stemming from the drop in major construction projects in the economy.

Source: https://neweralive.na/posts/dark-outlook-loomsfor-construction-sector





### NAMIBIA SOLAR MODULES COMPETE WITH CHINA

Namibia is among a few countries in Africa where the production of solar modules is already cost-competitive with equivalent manufacturing in China.

A recent report from the United Nations-backed organisation, Sustainable Energy for All, says solar module/solar panel manufacturing in some African countries is marginally above equivalent manufacturing in China.

According to Energy Monitor, while it costs 16,3 US cents (c) to assemble a one watt photovoltaic (PV) module/solar panel in China, it costs slightly more in some African countries, including Tanzania (17,9c), South Africa (18c), Namibia (18,1c) and Ghana (18,3c).

The report considered costs across seven key metrics – availability of raw material, human resources capability, infrastructure readiness, capital intensity per industrial unit, enabling policies and regulations, demand dynamics and production competitiveness.

Leader in the manufacture of renewable energy products is China, producing most of the solar PV supply chain and battery cells. It also leads in the global processing of critical elements of PV battery production like lithium, nickel and cobalt.

China has also emerged as Africa's largest economic partner, with no other country ranking in the top five for trade, foreign direct investment (FDI) stock, FDI growth, infrastructure financing and aid.

Namibia is poised to be one of the renewable energy hubs, with several solar energy plants in the country and a wind energy plant being developed near Lüderitz.

In addition, Namibia has significant deposits of lithium, mined by London Aimlisted company Andrada at Uis. Other deposits are at Karibib and at Omaruru in the Erongo region. Besides being a cut above the rest of African mining jurisdictions, Namibia and Africa have only 1% of the world's installed solar PV capacity, yet the continent holds 60% of the best solar resources that could be more readily exploited if there was more comprehensive value creation.

According to UN Energy, the challenges Africa faces in making comprehensive inroads into the sector include limited access to finance, a lack of supportive policy and regulatory environment, infrastructure constraints, limited local supply chains and a lack of skilled workforce and technical expertise.

Source: https://namibian.com.na/namibia-solar-modules-compete-with-china

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## **GLOBAL NEWS**

## HOLISTIC ARCHITECTURE, SUSTAINABLE DESIGN SHAPING FUTURE OF GREEN BUILDINGS

In the pursuit of creating sustainable and eco-friendly buildings, architects and organisations are focusing on key principles that promote holistic architecture and sustainable design.

According to hydrogen fuel cell developer Mitochondria marketing manager Kutama Ramano, these principles include considering holistic architecture, a sustainable and efficient design, as well as looking to see how one can "work better with energy and the elements of nature".

Ramano emphasises the importance of sustainable and efficient design, which takes into account factors such as landforms, topography, vegetation, wind and light ventilation, adding that "exploring ways to harness the energy and elements of the natural world, such as the sun, water, wind, and earth" are some of the key principles to consider when designing and constructing green buildings or implementing eco-friendly practices in the industry.

Mitochondria project development engineer Nkosikhona Nzimande, meanwhile, highlights the significant strides made by commercial properties in embracing green building standards.

Many organisations have invested substantially in upgrading existing buildings to meet sustainable requirements, including the implementation of green energy technologies, efficient waste management, and responsible water usage.

#### **Promoting Sustainable Practices**

Various tools and certifications play a crucial role in promoting sustainable practices in the construction industry.

The Green Star certification, developed by the Green Building Council of South Africa, recognises and rewards environmental leadership in the property industry.

This certification enables organisations to assess their environmental performance and improve their sustainability measures. Environmental, social and corporate governance (ESG) reporting is another tool that organisations use to develop holistic strategies that balance growth, environment and society, Ramano says.

Ramano adds that Energy Performance Certificates (EPC) and the Carbon Tax Act in South Africa further incentivise organisations to improve energy efficiency and reduce carbon emissions.

Technology plays a significant role in driving such sustainability across various industries, Nzimande says.

#### Source:

https://www.engineeringnews.co.za/article/holisticarchitecture-sustainable-design-shaping-future-of-greenbuildings\_\_\_\_\_\_

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# INFRASTRUCTURE PROJECTS CRITICAL TO SECTOR'S GROWTH

The cement and concrete industry is stagnant and the only avenue for rejuvenation is the implementation of some of the infrastructure projects for which government has allocated over R900-billion, says industry body Cement & Concrete South Africa (CCSA) chief executive officer Bryan Perrie.

"The lack of substantial infrastructure projects has dented the sector greatly and we need government's planned projects to come to fruition'.

However, there is a glimmer of hope, as state-owned entity South African National Roads Agency Limited (Sanral) has planned, and has started implementation, of a large number of projects particularly on the N3 and N2 in KwaZulu-Natal that will result in concrete roads and structures being constructed, he adds.

"These projects will help producers recover marginally, but will unfortunately not be a long-term solution", Perrie says, adding that the proposed infrastructure projects could develop the sector over the medium term.

Concrete roads offer a longer life cycle, less maintenance and a greener outcome than that of bitumen, which is a commodity which largely has to be imported.

Perrie notes that local cement companies that manufacture 100% locally produced cement will no doubt benefit from such a budget, as Sanral has administered a strict tender process, which includes procuring only locally manufactured cement made from locally sourced materials.

However, there are importers of cement and producers that use imported materials to make cement products. These bodies are not subjected to carbon tax, the requirements of the Mining Charter and other costs which local producers are subjected to, which is unfair.

Source: https://www.engineeringnews.co.za/article/infrastructure-projectscritical-to-sectors-growth



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### UK RESEARCHERS DEVELOP A CONSTRUCTION MATERIAL USING FUNGI AND KNITTED WOOL

British scientists have developed a new building material which uses a paste derived from the root network of the mycelium fungus in combination with a knitted textile framework (more pedantically, formwork). Although not the first biomaterial produced from fungi, this new fungus/textile material has a strength and versatility that its predecessors did not have.

The aim of this research is to reduce the environmental impact of the construction industry. The paste, produced from the root network of the mycelium fungus, has been named mycocrete by the scientists who developed it. The knitted formwork was created from sterilised merino yarn.

To create mycelium paste-based composite materials, mycelium spores are mixed with grains that they can use for food and with material that they can grow on. The resulting mixture is packed into a mold and placed in an environment that promotes the growth of the fungus – in other words, dark, warm and humid. This process binds the mixture tightly together. Then, once it has reached the right density, and before it develops fruiting bodies (which we call mushrooms), it is dried out. Source:

https://www.engineeringnews.co.za/article/ukresearchers-develop-a-construction-material-usingfungi-and-knitted-woo

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