



JULY-AUGUST 2022

AGRIVOLTAIC FARMING



**Green Hydrogen Pioneer Bullish
About Namibian Venture**



**NamPower 40MW
Wind Farm Secures
German Funding**



**20MW Omburu Solar Park
To Reduce Electricity Tariff**

NAMPOWER ADDS ANOTHER POWER STATION TO ITS GENERATION FLEET

NamPower added an additional 20 MW to its generation capacity with the successful commissioning of its new Omburu 20 MW PV Power Station, situated 12 km outside of the town of Omaruru in the Erongo region.



The Omburu Power Station has a footprint of 42ha and is located on a 300ha site adjacent to the Omburu Substation along the C36 gravel road. The station boasts 58,104 solar panels and five inverter stations, each producing 5MW.

At the inauguration ceremony which took place on 24 June 2022, NamPower Managing Director Kahenge Haulofu highlighted that in addition to the provision of electricity, the Omburu Power Station, including NamPower's other planned renewable energy generation projects, will reduce the overall NamPower tariff to the customer by introducing an affordable "new-build" renewable energy to the Namibian grid. "Today, we are proud to see the inauguration of our first renewable energy generation project," Haulofu said.

NamPower's planned generation projects will support Namibia's Energy and Renewable Energy Policy targets for 70% of renewable energy generation by 2030, as well as the commitments made at COP26 to reduce Namibia's emissions by 91% within the next 5 years.

"NamPower's investment in clean energy contributes to Namibia's commitments to increase the share of renewable energy as declared in the Nationally Determined Contributions (NDCs) to the UNFCCC and it supports the National Development Plan 5 (NDP 5) objectives of achieving 755 MW of local generation by 2022," Haulofu added.

The power station was built by Hopsol Africa and Tulive Private Equity Joint Venture, at a cost of approximately N\$337 million. The site construction works

were successfully completed on 29 March 2022. NamPower is proud to report that the project was completed within budget, although it was delayed due to the impacts of the Covid-19 pandemic.

The Omburu PV Power Station can be regarded as "customer funded", as the Electricity Control Board permitted NamPower to make use of the Long Run Marginal Cost (LRMC) funds for the project. The LRMC funds are funds that the regulator allows NamPower to over recover through various tariff applications and these funds are intended to cushion future price shocks.

The overall tariff of the Omburu PV Power Station has therefore been substantially reduced to the benefit of all electricity consumers in Namibia.

The project is a truly Namibian product, as the entire workforce that was involved were Namibians, including the consultants involved in the design, the sub-contractors, and the labourers.

"The inauguration of the project is a demonstration of NamPower's unwavering commitment to becoming the leading electricity solutions provider of choice in SADC, a catalyst for economic growth in Namibia and in the region".

NamPower is geared towards ensuring security of supply and a predictable tariff path that will support economic growth and maintain the company's financial sustainability through the implementation of its planned generation projects.



Could Agrivoltaics be the answer for Namibia?

Agrivoltaics is a word that we are set to be hearing a lot more often in the coming years.

Agrivoltaic farming is the use of the shaded space underneath solar panels to grow crops. Apart from increasing climate resilience among crops, agrivoltaics increases land-use efficiency as it allows solar farms and agriculture to co-exist rather than making them compete against each other. Other farming options, such as raising chickens or pigs under the panels, can also be incorporated.

Agrivoltaics is still a relatively new concept and its innovative applications are still being developed and tested. But, as food and energy security emerge as top priorities in Namibia and the African continent, innovative use of existing technologies can in fact help serve both.

For an arid country like Namibia, with one of the highest solar irradiation levels in the world and often prone to droughts, growing crops under solar panels could go a long way towards boosting food security. Agrivoltaic projects could use some of the electricity generated by the solar panels to power cold-

storage facilities thereby prolonging the shelf life of the harvested crops.

As it reduces evaporation and protects plants from the scorching sun, agrivoltaics is helping farmers to adapt to more challenging conditions. At its most ambitious, farming under solar panels is reversing desertification and restoring depleted agricultural land in countries like China.

Agri projects in other similar arid countries on the continent, like Algeria and Morocco, have recorded higher crop yields under the solar panels. The panels keep the heat off the plants and prevent the soil from drying out. You can also run irrigation and even desalination off the solar if you need it, with all energy needs met on site.

A number agrivoltaic pilot programs have emerged on the continent for research purposes. Early data is showing that under the agrivoltaic installation there are significantly higher yields and size of the crop compared with an uncovered field.

In addition, some formerly fertile agricultural land in Africa now suffers from progressive

infertility due to rising temperatures or water scarcity and agrivoltaics could help restore fertile conditions to areas.

Some schools of thought argue that in the Food-Energy-Water (FEW) Nexus, agrivoltaics also deliver a number of other eco-friendly solutions. For instance, that the crops, protected by the solar panels from the worst of the midday sun's rays, become little evaporative coolers on the landscape. They take up carbon for photosynthesis by opening up their pores, or stomata, while letting water escape from their leaves and create a cooler microclimate.

It has also been found that solar panel modules can lose efficiency while operating under the blazing sun. With agrivoltaics, the panels perform at a higher level thanks to this cooler microclimate afforded by the plants. The panels, in turn, protect the plants from sunburn and dehydration.

Happy Reading!

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Cover picture:

EFFECTIVE LAND USE ... Agrivoltaic farming involves the use of the shaded space underneath solar panels to grow crops. This increases land-use efficiency, as it lets solar farms and agriculture share ground, rather than making them compete against one another.

Photo: Fraunhofer Institute for Solar Energy Systems ISE

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Etango Editor Tabby Moyo, 2nd from left, during a recent visit to Enertrag in Germany

World Green Hydrogen Pioneer Bullish About Namibian Venture

TABBY MOYO

Germany's Enertrag, one of the world's green hydrogen pioneers and a partner in Hyphen Hydrogen Energy, the consortium selected to drive Namibia's gigantic project, is optimistic about the prospects of the US\$12 billion Namibian venture.

Enertrag and its partners in Hyphen have set the mega project timeline to be implemented in two phases between now and 2028.

The first phase, to run till 2026, will see 2000 megawatts (2GW) of wind and solar generation being installed in the Tsau // Khaeb National Park to produce green hydrogen and eventually green ammonia which would be exported. This phase will see an investment of US\$3.2 billion (about N\$54.4 billion).

Phase two, to run till 2028, will increase the renewables generation capacity to

“

Namibia is certainly one of our priority areas, together with Uruguay and South Africa. We will be focussing on these areas in the coming years as part of our international business development,

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5 000 megawatts (5GW) to push the green hydrogen production volume to 300 000 tonnes per annum (tpa) with a further US\$8.5 billion (N\$144.5 billion) investment.

During a recent visit to Enertrag's head office at Dauerthal in Germany, officials spoke highly of the Namibian green hydrogen project and Enertrag's commitment to make it a success.

"Namibia is certainly one of our priority areas, together with Uruguay and South Africa. We will be focussing on these areas in the coming years as part of our international business development," said Daffne Pilger from Enertrag's International Business Development division.

Germany has earmarked US\$220 billion for industrial transformation focusing on building out electric charging infrastructure and deploying hydrogen technologies. Value chains for green hydrogen — using renewable electricity

to split water via electrolysis instead of steaming natural gas — and ammonia are the centerpieces of Germany's strategy.

As countries like Germany move toward fully decarbonized electricity systems, the need for long-term energy storage will ramp up, and green hydrogen will play an important role. Hydrogen can be stored in underground geological structures and then used for on-demand power generation.

However, Germany's ambitious electrification targets cannot produce large volumes of green hydrogen locally by 2035, hence the country's move to leverage its strong bonds with Namibia, Australia, Chile and others to help expand global hydrogen markets.

In his address to the Namibia Fourth Industrial Revolution (4IR) Conference held in Windhoek in June, President Hage Geingob said Namibia has embarked on a green future, where it was positioning itself as a global producer of green hydrogen and ammonia.

"Not only do we want to produce green hydrogen for the world, but we want to utilise it in Namibia and include our citizens in the entire production value chain. This new industry will serve as catalyst for Namibia's rapid adoption of 4IR technologies, while positively contributing to the global fight against climate change," he said.

Meanwhile, the Namibian Government reported progress on the green hydrogen project during the World Economic Forum (WEF) held in Davos, Switzerland, last June.

Since the announcement of Hyphen as preferred bidder at COP26, Government and Hyphen have been working to undertake planning and pre-feasibility activities and have agreed an ambitious timeline for negotiating the implementation agreement in line with the requirements of the tender process.

These pre-feasibility activities include a master planning process, which will focus on how the Namibian Ports Authority (Namport) will best accommodate the green hydrogen industry in southern Namibia in the future.

The master plan, which will commence shortly and is proposed to be undertaken by international port consultancy, PRDW, is being developed by Namport and the Port of Rotterdam as strategic partner to Namport, with Hyphen providing technical input.

The new port master plan will integrate green hydrogen exports from the Southern Corridor Development Initiative (SCDI), with Namport's expansion plans for other cargos to support regional growth.

The signing of the implementation agreement will trigger the commencement of a full feasibility study for the project.



A simulation of Hyphen's green hydrogen facility in Namibia.

Energy veteran Baake heads German-Namibia collaboration

Former German energy state secretary Rainer Baake has been appointed as his country's special emissary for the energy cooperation with Namibia on green hydrogen.

Baake was appointed by German economics and climate minister Robert Habeck. His appointment follows a German-Namibia green hydrogen cooperation agreement signed in March.

Germany believes that Namibia is one of the best suited places in the world to produce green hydrogen and ammonia.

"There is hardly a better place on earth to produce green hydrogen using wind and solar energy," Habeck said, adding that onshore wind turbines would generate more power in Namibia than offshore wind machines in the North Sea, and that the yields of solar panels there are three times those in Germany.

Baake was recently on a 10-day visit to Namibia to discuss details of the hydrogen ramp-up plan that includes projects for green ammonia production under the country's Southern Corridor Development Initiative (SCDI).

"Namibia will produce green ammonia that we urgently need in Germany for the decarbonisation of our industry," Baake said.

Germany is Europe's largest consumer of ammonia, a key raw material for industry that currently is still produced from fossil gas and last year caused the emission of 6 million tonnes of CO₂.

"A cooperation therefore brings advantages both for Namibia and Germany. It is a real win-win situation," Baake said.

As producing hydrogen from renewable power via electrolysis requires great amounts of water – a scarce resource in dry Namibia – the plan also foresees the construction of a desalination plant near the harbour town of Lüderitz that is slated to be powered by renewable energy, and would also supply the local population with clean drinking water.

As hydrogen can't be transported inexpensively with ships, Namibia plans to further process hydrogen into the easier-to-transport ammonia by adding atmospheric



Former German energy state secretary Rainer Baake

nitrogen. A new port facility is planned for shipping the green ammonia.

It is envisaged that 15,000 jobs will be created during the construction phase, and 3,000 during operations.

Baake also agreed with Mines and Energy Minister Tom Alweendo to carry out an expert investigation into how wind and solar capacities for hydrogen production can be integrated into Namibia's power system.

"I see a great opportunity for Namibia to become the first African country with 100% renewable energy in the electricity sector still within this decade. That would allow the country to stop the import of electricity from coal-fired power plants in South Africa," Baake said.

Baake is a veteran energy and climate expert, and has been state secretary in both Germany's environment and its energy ministry. He has also worked as head of the Agora Energiewende think-tank, and in his latest function led Germany's Climate Neutrality Foundation.



STRATEGIC PARTNERSHIP ... Germany, through the KfW Development Bank, is financing NamPower's mega wind farm. Finance Minister Iipumbu Shiimi and German Ambassador Herbert Beck signed the agreement recently.
Photo: German Embassy Windhoek

NamPower 40MW Windfarm Set For Tsau //Khaeb

Plans to establish Namibia's first major windfarm with a capacity of up to 40 megawatts are inching closer as NamPower makes progress towards the realisation of the project to be located some 30km north of Rosh Pinah.

The wind farm recently saw 66 million Euro (about N\$1, 1 billion) being allocated towards it through the Renewable Energy Program supported by the German government. Finance Minister Iipumbu Shiimi and German Ambassador to Namibia Herbert Beck recently signed a Financial Cooperation Agreement on interest-reduced loans between Germany and Namibia, which includes the funding for the NamPower wind farm to be located in the Tsau //Khaeb (formerly Sperrgebiet) National Park on Namibia's Atlantic coast.

The mega wind farm, which will provide a valuable learning experience for NamPower, is part of the utility's ambitious targets to increase the supply of renewable energy and to improve the country's energy independence. In addition, the wind power plant will contribute to Namibia's aspirations becoming a hub for the production of green hydrogen.

NamPower is in the process of recruiting a company that will handle the engineering, procurement and construction (EPC) of the wind farm. The utility has selected five Chinese, Indian, German and Danish consortia after the pre-qualification

phase for the wind farm. These are;

- Harbin Electric Corporation Wind Power/China Huadian Engineering;
- India's Suzlon Energy Limited;
- Ming Yang Smart Energy Group/Zhuhai Singyee Energy-Saving Technology/Zhongnoa Green Energy Technology;
- Sany/CGGC;
- Nordex Energy South Africa RF, a subsidiary of Germany's Nordex Group;
- Vestas Southern Africa, a South African affiliate of the Danish Vestas Group; and
- Chinese consortium GoldWind-Hydrochina.

The Rosh Pinah wind farm will be equipped with 16 x 2.5 MW turbines, capable of generating 40 MW of power. This will be Namibia's second wind farm after the 5 MW Ombepo wind farm, outside Lüderitz, commissioned in 2019 by InnoSun Energy.

The Rosh Pinah wind farm is one of two clean energy projects that NamPower wants to implement in the Tsau//Khaeb National Park. The second project will be developed by an independent power producer (IPP) for a capacity of 50 MW.



ENGAGEMENT ... A stakeholder engagement workshop was held at NIPAM on 14 July.

Photo: GPE

GPE, MME Lead Review and Update of Code of Practice for Solar Installers

The GIZ Green People's Energy Project in collaboration with the Ministry of Mines and Energy have embarked upon a comprehensive review and update of the 2006 Code of Practice for solar installers.

The review, being done with the assistance of RDJ Consulting, is aimed at coming up with a new version of the code which takes into consideration broader conceptual national matters, such as social, policy and standards, economic environment, technical and emerging technologies as factors that govern solar installations.

The first stakeholder consultation meeting, which brought together some key technical professionals in the solar sector, was held at NIPAM on 14 July.

In addition, the update of the Code of Practice for solar installers aims to ensure quality and safe installations of renewable energy technologies (RETs) that benefits both the end-users and the installers, as well as all other stakeholders involved.



It is envisaged that the revised and updated version will be a national document that will be able to provide solutions that are contextually appropriate, have less administrative red tape, uncomplicated to understand and implement, inclusive, accountable, dynamic, self-correcting and robust



It is envisaged that the revised and updated version will be a national document that will be able to provide solutions that are contextually appropriate, have less administrative red tape, uncomplicated to understand and implement, inclusive, accountable, dynamic, self-correcting and robust to ensure that customers with small budgets, installers and SMEs, new technological advancements, new techniques for installation, alternative accountability and defect liability mechanisms are not excluded.

The overall goal is to reduce hurdles of accessibility, while ensuring accountability.

Renewable energy technologies have evolved over time and more so since the Code of Practice and Register of Products for Namibian Solar Energy Technologies came into effect in 2006. With the rapid growth, these RETs are proving to be game changers and having utilities either embrace or fear them.

An updated version of the Code of Practice and Register of Products for Namibian Solar Energy Technologies produced by RDJ Consulting will

be limited in scope and have a clear application for off-grid solar technology actions.

Relevant RETs standards as mandated by the Namibian Standards Institution (NSI) will accompany the updated code for implementation nationally.

The revised Code of Practice will have a clear application for off-grid actions. Its definitions and outlook will be influenced and, in some cases, directly attributed to existing standards and industry norms.

It must also be stated that all stakeholders are considered as beneficiaries and efforts are being made to be inclusive and not exclusive. As pointed out by the International Renewable Energy Agency, codes play a critical role in building trust between the system operators and stakeholders.

The Namibian Code of Practice will always be applied as secondary to the Namibian Constitution and any applicable law or regulation that will apply during its lifetime until the Government of Namibia decides otherwise.

Based on the requirements of the update process, the new code will seek to provide the industry with information

that will aid in the designing, building, and installation of solar photovoltaic systems in a manner that should meet the objectives of both the solar PV industry and that of the consumer.

As with the 2006 COP, the updates are designed and intended to help mitigate the availability of "poor quality" equipment and materials as well as provide a "guide" for Approved Installers to improve reliability, consumer confidence and ultimately economic advancement particularly in "off-grid" areas.

Use of solar technologies to bolster service delivery is gaining ground globally and with ever rising costs for energy particularly from fossil fuels, the transition to renewables is gaining speed. Many of the solar suppliers and Approved Installers provide services and equipment to the grid as well as the off-grid sector. Simply having the Code of Practice will not be enough as the history of the Code of Practice 2006 shows. The process followed once the COP is developed or in this case reviewed, then a "rollout" should take place that helps develop behaviour and culture going forward.

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A Solar Home System typically has the capacity to power lights and devices such as radios, TVs, fridges and cell phone chargers.



A Business Solar System typically has the capacity to power lights and devices for business use.



A Photovoltaic Pumping System produces energy for pumping water for livestock and domestic use.



A Solar Water Heater uses energy from the sun to heat water for domestic use.



FINANCIAL SOLUTIONS FOR RENEWABLE ENERGY TECHNOLOGIES



Ministry of Mines and Energy,
6 Aviation Road,
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OGEMP
SOLAR REVOLVING FUND

FACT SHEET
FINANCIAL SOLUTIONS FOR RENEWABLE ENERGY TECHNOLOGIES

SRF Mandate

The Ministry of Mines and Energy (MME) is the sole administrator of the Solar Revolving Fund (SRF). The SRF is a credit facility established by MME to stimulate demand for the utilization of renewable energy technologies in off-grid areas, especially for communities living in rural areas, but also to urban clients. The SRF is the element of the Off-Grid Electrification Master Plan for Namibia (OGEMP) whose objective is to provide access to appropriate energy technologies to rural areas.

Registered Energy Service Providers

SRF has a pre-qualified list of registered Energy Service Providers approved by the National Technical Committee on Renewable Energy (NTCRE) at Namibia Energy Institute (NEI). The Energy Service Providers provide installation services to SRF clients by providing them with detailed quotations and eventually install their solar systems at a site of choice.

Who can apply for the SRF Loan?

- Applicant must be a Namibian Citizen, age 21-55 and pensioners up to the age of 75 years old.
- Any person with an active bank account into which his/her monthly or regular income is paid and with a clean credit record. Credit references will be verified with Trans Union®.
- The applicant must prove 2 years of un-interrupted employment term or be in business operation for 2 years

Loan Criteria

- Maximum loan amount: N\$60,000 for Solar Water Pump, N\$6,000 - N\$60,000 for Solar Home System, N\$95,000.00 for Business Solar Systems and N\$35,000 for Solar Water Heaters
- The loan interest rates are in a range of 0-5% charged over the loan period of 60 months.
- Loan amount must not exceed three (3) times the applicants' basic income.
- Deposit is payable in the range of 5% - 30% of quotation amount.
- Applicants over the age of 55 years, pensioners, farmers and businesses with proven regular income pays 30% deposit of total quotation amount.
- Upon approval of the loan application form, an administration fee of N\$350.00 (non-refundable) is payable together with the deposit.

Loan Application Process

How to obtain Application Form: Forms can be obtained from the Ministry of Mines and Energy, Energy Service Provider and at all Regional Offices, and can be downloaded from the MME website.

Submission of an Application Form: Applications can be submitted to MME by attaching the following documents:

- Recent certified copy of your ID (All)
- Latest stamped pay slip or proof of income (Individuals)
- 6 months bank statement (Individuals)
- Founding Statements (Business)
- 1 year bank statement (Business)
- Financial Statements (Business)
- A detailed quotation from accredited Energy Service Provider (All)
- Proof of land ownership (land certificate, title deed or lease agreement)

Loan Application Outcome: The application will be assessed. If successful, client will be notified in writing, telephonically or contacted via an Energy Service Provider to pay the required deposit and forward proof of payment to MME.

Purchase Order: Once the deposit is confirmed with the bank, SRF will issue a purchase order within 14 days to your Energy Service Provider to arrange for the system delivery and installation at the address indicated on the application form. The Purchase Order is valid for two months, thereafter it will be cancelled together with the application.

System Installation: The client should sign the installation report, to prove that they have received the system as per quotation and to signify that they are satisfied with the installation and the system is operational. Do not sign the installation report if your system is not installed or not working.

Systems Inspection: The Ministry will conduct an installation verification to ensure that your system was installed. This is a once off activity, and will be done within twelve months after installation.

Repayment: Once the loan is granted, the applicant will be responsible to honor the monthly installments until full payment of the loan. The loan can be repaid via debit order and payroll deduction.

Loan Defaulting: A 5% interest rate will be levied on any overdue amount in respect of any period (s). After five (5) years of repayment the remaining balance becomes due & payable immediately.

General Information

TAKE NOTE: Arrears and/or defaults in installments for three consecutive months may result in legal proceedings and possible backlisting on Trans Union® (ITC).

Insurance: The Ministry of Mines and Energy provides insurance that covers only "Acts of God", such as lightning, flood or hail, wind as well as damages caused by wild animals. An excess fee of 15% of the claim value is payable by the borrower on any claim made out to the insurer. The insurance cover is valid for a period of the loan. Theft is not covered.

Failure to repay the loan will result in terminating insurance benefits from the Ministry.

Applicants can obtain claim forms from the Loan Officer and should be submitted within two (2) months after the damage. Client should provide a quotation and a statement made under oath from the nearest police station.

In case of death, the remaining balance of the loan is written off and the system becomes a property of the deceased's family, provided that a certified death certificate is submitted to the Ministry.

Cancellation Fee: Clients will be charged cancellation fee, 15% of total deposit received, upon cancellation of loan applications. The Ministry may cancel the application if the client fail to pay full deposit on time or delay installation of the solar system.

TAKE NOTE: Failure to repay the loan will result in terminating insurance benefits from the Ministry

After Sales Services and Warranty: There is limited maintenance of solar systems once installed properly. However, after sales service and warranty will be provided by your Energy Service Provider. The Ministry will not be held liable for malfunctioning systems.

TAKE NOTE: The Service Provider is required to provide to the client guarantee or warranty of the materials provided. The SRF does not give any guarantee or warranty to the borrower in relation to the solar system.



THE FUTURE OF FARMING ... Agrivoltaics could enable farmers to grow a greater range of higher-value crops while also taking care of the problem of land scarcity.

Agrivoltaic Farming: Beating Global Warming

Increasing climate resilience across food systems will be needed to counter rising hunger and malnutrition, according to UN General Assembly President Abdulla Shahid.

Agrivoltaic farming, which uses the shaded space underneath solar panels to grow crops, could be a solution. This increases land-use efficiency, as it lets solar farms and agriculture share ground, rather than making them compete against one another.

And certain crops appear to thrive when grown in such environments, according to a number of recent studies.

Solar panels have to sometimes be elevated or suspended to allow plants to grow beneath them. Another option is putting them on the roofs of greenhouses.

This allows enough light and rainwater to reach the crops, as well as providing access for farm machinery.

Researchers in South Korea have been growing broccoli underneath photovoltaic panels. The panels are positioned 2-3 metres off the ground and sit at an angle of 30 degrees, providing shade and offering crops protection from the weather.

A study into this project found that the quality of the broccoli was not any lower than that of broccoli grown in the traditional way. Nor was there any significant change in its taste.

The researchers, from Chonnam National University,

also discovered that the broccoli produced was a deeper shade of green, making it more appealing to many consumers.

Elsewhere, agrivoltaic systems in East Africa are allowing farmers to make better use of land that was previously seen as unviable.

An agrivoltaic farming project in Kenya is using solar panels held several metres off the ground, with gaps in between them.

The shade from the panels protects vegetables from heat stress and water loss. This has resulted in rural farmers being able to grow a greater range of higher-value crops.

The project effectively harvests the power of the sun twice, the researchers say.

If solar panels can be added to greenhouses, the results could be especially transformative. Greenhouse-based farming reportedly produces 10 times more food than growing in an open field, but it can require 10 times as much power.

At the same time, the UN estimates that the global population is set to rise by an estimated 2 billion people in the next 30 years, and land is at a premium.

Agrivoltaics is one way of using the same area of land to produce more food while also rolling out more sources of renewable energy.



President Hage Geingob virtually addressing the 2nd Renewable Energy Forum of the African Renewable Energy Initiative (AREI). Photo: Namibian Presidency

President Geingob Underscores Renewable Energy Role in Fighting Climate Change

The climate change crisis, which is posing unprecedented threats to human existence, makes it imperative to ensure the provision of clean energy from renewable energy sources to the majority of households and businesses in order to spur development in a manner that is sustainable.

This was President Hage Geingob's main message when he virtually addressed the 2nd Renewable Energy Forum of the African Renewable Energy Initiative (AREI) on 26 July.

He said in order for the world to meet the United Nations Sustainable Development Goals (SDGs) by the year 2030, there was need to work with urgency to ensure the successful implementation of Goal 7 of the SDGs, which seeks to "ensure access to affordable, reliable, sustainable and modern energy for all."

The International Energy Agency (IEA) has said Africa needs to invest around US\$120 billion (About N\$2 trillion) annually in order for the continent achieve full energy access by 2030.

"At the 41st Ordinary Session of the Executive Council, the African Union Commission adopted the African Common Position on Energy Access and Just Transition. I am pleased to note that the Common Position on Energy Access puts a strong emphasis on increasing the uptake of renewable energy to ensure a low carbon and climate-resilient trajectory for the African continent.

"In this regard, Africa should continue to speak with one voice and we should champion African solutions to African

problems. Therefore, for AREI and Africa to be successful in the ambition of Phase II, which is to add 300 gigawatts, the results of this Forum should be tangible. Policy convergence and regulatory reforms in the African energy governance architecture are crucial to unlock the potential of renewable technologies in green hydrogen, wind projects, solar power and other low-carbon generation capacities," said Geingob.

The head of state said he was pleased with the fact that countries like Namibia, Egypt and Morocco were taking the lead in green hydrogen and other low-carbon generation capacities.

"Green hydrogen is part and parcel of Namibia's long term decarbonisation agenda. We are focusing efforts on achieving large-scale, low-cost Renewable Energy development. To this extent, we intend to become the front runner as a continental green hydrogen production hub," Geingob said.

Geingob believes that Africa has the potential to become a key player in the global energy market and should seize the opportunity by doing the right things and at the right time. "Yes, with the right kind of collaborations and partnerships the time has come to ensure that no one is left behind in our ambition of energy for all. Let us therefore hold hands, pull together and work together to ensure access to affordable, reliable, sustainable and modern energy for all," he told the AREI forum.

AREI was launched in 2016 and is led by institutions from

the continent under the mandate of the African Union. Its Governing Board is composed of representatives of various African institutions such as the Committee of African Heads of State and Governments on Climate Change; the African Ministerial Conference on the Environment; and the African Development Bank.

The initiative has set itself the challenging goal of building 300 gigawatts of renewable power generation capacity by the year 2030.

The president of the African Development Bank (AfDB), Dr Akinwumi Adesina, said the continent currently loses 4% of its GDP due to a lack of clean energy.

"Africa is the continent suffering the most from the scorching heat from rising temperatures, and droughts have become more frequent and with greater intensity than ever before. Africa needs more money for adaptation.

"The continent has been short-changed by climate change. But we must ensure that it is not short-changed by climate finance," he said.

Sub-Saharan Africa is the only region in the world where the number of people without access to electricity is set to rise. By 2030, Africa's share of the world's population without electricity will increase from less than half today to more than two-thirds.



Dr Akinwumi Adesina

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NAMPOWER MILESTONE ... Mines and Energy Deputy Minister Kornelia Shilunga inaugurated the 20MW Omburu PV plant outside Omaruru.

NamPower Pushes Renewables

Agenda with 20MW Omburu Solar Park

In its quest to make Namibia reach its target of 70% power generation from renewables by 2030, NamPower has added 20MW of PV solar energy generation with a N\$337 million plant at Omburu, outside Omaruru.

This is NamPower's first fully owned and operated solar photovoltaic power station.

The Omburu PV Project was constructed by the joint-venture of Hopsol Africa and Tulive Private Equity which was awarded the engineering, procurement and construction (EPC) contract by NamPower. Although the project was delayed due the impacts of Covid-19, it was completed within budget.

NamPower's latest power generation project is also ready for battery energy storage. Last year Namibia and Germany, through the KfW Development Bank, entered into a €20 million (close to N\$350 million) grant agreement towards the implementation of the first ever utility scale Battery Energy Storage System (BESS) in Namibia. The grant will go towards the construction of a 58 MW BESS that will be situated at the Omburu Substation, which is situated right next to the 20MW power station.

Thus, NamPower will be able to utilise a combination of various applications which were identified for the Omburu

BESS, namely: peak shifting, energy arbitrage, provision of emergency energy, ramp-rate control and reactive power control.

NamPower Managing Director Kahenge Simson Haulofu said the utility is set on harnessing renewable energy and has been involved with renewable energy projects since the Renewable Energy Feed-In Tariff (REFIT) programme which was launched by the Electricity Control Board (ECB) to stimulate the uptake of photovoltaic and wind technologies. NamPower was the off-taker for the REFIT IPPs and consequently signed a Power Purchase Agreement (PPA) with all the REFIT IPPs.

NamPower adopted its Integrated Strategic Business Plan in 2020 in which the utility identified its strategic focus, application, and prioritisation of resources over the next five years. One of the identified key strategic focus and priority areas is to ensure security of supply through ensuring a least-cost electricity supply mix through diversifying the local energy mix and increasing local generation capacity.

A determination was made in October 2018 that 220 MW of power generation should be developed, where:

- 150 MW would be allocated to NamPower;
- 70 MW would be allocated on a competitive procurement

basis as per current government procurement laws to Independent Power Producers (IPPs) for implementation. Further, the NamPower Board ratified the implementation of the following projects as part of NamPower's 150 MW allocation.

- 20 MW PV Power Project (the Omburu PV Power Station)
- 40 MW Wind Power Project – The Wind Power Project is currently in the bidding phase where the prequalification of potential bidders is currently being evaluated. The next phase of the bidding process is anticipated to commence in August 2022, with the EPC contract award anticipated in the first quarter of 2023.
- 40 MW Biomass Power Project – The Biomass Project is currently in the bidding phase which is expected to be concluded in August 2022, with the EPC contract also expected to be awarded in the first quarter of 2023, and;
- 50 MW Firm Power Project (now known as Anixas II Power Station) – This is currently in the construction phase and the construction is expected to be completed in December 2023.

Haulofu said in addition to the provision of electricity, the Omburu solar plant, and the renewables generation projects mentioned above, will have added benefits to consumers and the country at large.

"They will reduce the overall NamPower tariff to the customer by introducing an affordable "new-build" renewable energy to the grid. They support Namibia's Energy and Renewable Energy Policy targets for 70% of renewable energy generation by 2030 and will support the commitments made at COP26 to reduce Namibia's emissions by 91% within the next 5 years," said the NamPower MD.

The Omburu plant was funded through Long Run Marginal Cost (LRMC) funds, which are funds that the regulator (ECB) allows NamPower to over recover through various tariff applications and are intended to cushion future price shocks. This means that the project was ultimately "customer funded" and its tariff is therefore substantially reduced to

the benefit of all electricity consumers in Namibia.

Mines and Energy Minister Tom Alweendo, in remarks delivered on his behalf during the inauguration by his deputy Kornelia Shilunga, said the Omburu plant was a major step towards Namibia's efforts of transitioning to renewables for energy supply.

He said there was a wealth of opportunities in the expansion and production of renewable energy in Namibia and Africa as a whole that will help close the energy gap on the continent, while contributing to the energy transition acceleration.

Alweendo said in order for Namibia to ensure energy supply security, both public and private sectors, and the public at large, need to come on board in creating local energy generation.

Managing Director of ANIREP, which owns 70% of Hopsol Power Generation (Pty) Ltd, Iyaloo ya Nangolo, said the Omburu plant was a significant achievement for NamPower, as it was the first major solar PV plant that was wholly designed, built and owned by Namibian entities and delivered using Namibian companies and local expertise.

"We have been blessed with an abundance of natural resources and it is important that we use those resources, responsibly and sustainably.

The sun, is one of our greatest resources and it is time, for us, to use it to uplift our nation's masses, by giving them access to sustainable and competitively priced electricity through clean energy," he said. Ya Nangolo said by focusing on producing its own renewable energy, Namibia can become self-reliant for its energy needs, with the prospect of eventually exporting power to neighbouring countries as well.

"At present, only 57% of our country has access to electricity. This Omburu 20MW Solar PV Plant, will have the capacity to power around 18,500 homes, which is equivalent to around three small towns in Namibia," he said.

ANIREP and other IPPs are working on helping the country to increase the commercial installed renewable energy generation in Namibia from the current 150MW to 760MW by 2025.



CONSUMER BENEFIT ... The Omburu solar plant will reduce the overall NamPower tariff to the customer by introducing affordable renewable energy to the grid.

Omburu 20 MW PV Power Project Inauguration



EU eyes green hydrogen deal with Namibia

The European Union is planning a deal with Namibia to support the country's nascent green hydrogen sector and boost its own imports of the fuel, EU and Namibian officials said, as the bloc works to reduce its dependence on Russian energy.

Hydrogen has long been touted as a less emissions-heavy alternative to fossil fuels, but while it has seen some uptake in the EU, chiefly in heavy industry and transportation, high costs and a lack of infrastructure have limited consumption, and the fuel covers just 2% of the bloc's energy needs.

Most EU consumption is of so-called "grey" or "blue" hydrogen produced using gas, which drives up costs and related emissions. That has made easier access to green hydrogen, made using renewable energy, a priority.

The EU's energy strategy in May set a goal of importing at least 10 tonnes of green hydrogen by 2030, with another 10 million tonnes to be produced within the bloc.

Under the plan, the EU would sign a memorandum of understanding (MoU) with Namibia on hydrogen and minerals at the UN Climate Change Conference in Egypt in November, one EU official said.

The European Commission confirmed that it was working on green hydrogen projects in Namibia but did not give details. The officials did not comment on the costs associated with transporting the fuel. MoUs usually carry little detail about import volumes, investments and delivery timings, but they are important political commitments that pave the way for long-term partnerships. Namibia, one of the world's driest and least densely populated countries, is trying to harness its vast potential for solar and wind energy to produce green hydrogen.

The German government has already agreed to invest 40 million euros (about N\$680 million) in Namibia's green hydrogen, and Belgian and Dutch companies are also operating in the country in that field.

However, direct EU funding for Namibia was likely to be limited although a deal could attract other investors and funding via green bonds.

Namibia is among the priority countries in the EU's "Global Gateway strategy", Brussels' version of the Chinese Belt and Road Initiative to boost infrastructure investment and diplomatic ties in developing countries.



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RAISING R.E. AWARENESS ... GIZ Green People's Energy has entered into an agreement to finance the Renewable Energy Industry Association of Namibia's Rural Awareness Campaign. Photos: Tabby Moyo

GIZ GPE Supports REIAoN's Renewable Energy Rural Awareness Campaign

The Renewable Energy Industry Association of Namibia (REIAoN) has launched the Renewable Energy Rural Awareness campaign financed by the GIZ Green People's Energy project.

GPE supports the development of decentralised renewable energy systems in rural regions of Namibia with the involvement of citizens, municipal structures, cooperatives and companies.

Speaking at the launch of the rural awareness campaign initiative, GPE Technical Adviser Hafeni Motsi said promoting access to reliable information for consumers formed part of the project's key elements to promote the uptake of renewable energy.

The rural awareness campaign was proposed to GIZ GPE by REIAoN, with the aim of improving access to information and strengthening advocacy for rural renewable energy product and service providers, through

the creation of awareness and training. REIAoN, being the relevant industry representative, is ideally positioned to leverage its position to support and maximise the impacts of the off-grid renewable energy sector.

Alastair Aspara, REIAoN Vice Chairperson said wind and solar do not require water, which is beneficial to rural areas especially where farms are concerned. He said households can use renewable energy for power, cooking, charging batteries and heating up homes. There is also major economic benefit to be had in the use of renewable energy in rural communities, especially in improving methods of subsistence and small-scale commercial farming.

The campaign, to be held over six months, will thus focus on raising awareness on these issues in rural communities, and to assist small renewable energy businesses from these areas. The information will be shared through platforms such as radio clips in various local languages, distribution of flyers



ATTENTIVE ... Paulus Mulunga from REIAoN and renewable energy Consultant Harald Schütt following the proceedings.

as well as a road show to selected regions catering over 12 rural communities, and reaching over 2000 people.

"Additionally, we will be doing rural stakeholder engagements and advocacy meetings with several local authorities and local agencies (excluding municipalities and town councils). Furthermore, REIAoN hopes to establish at least one professional partnership with a renewable energy association occupying a similar position in a foreign or global market through this campaign," said Aspara.

REIAoN's objectives include the promotion of matters concerning renewable energy, with a focus on renewable technologies, to create awareness on matters relating to the adoption and use of technologies using renewable energies and energy efficient technologies and practices and to establish a network of professional relationships with national and international bodies that share similar objectives.

Furthermore, the association aims to promote, foster and endorse enabling policies and regulatory frameworks for renewable energy as well as to promote the adoption of high standards, either directly or indirectly.

Through active participation and cooperative idea sharing, REIAoN intends to play a key role in setting Namibia's



Alastair Aspara, REIAoN Vice Chairperson (on podium), and GPE Technical Advisor Hafeni Motsi officiating at the launch

Renewable Energy Agenda and facilitating the growth of a world class sector.

Over the last 20 years, the renewable industry in Namibia has developed from a niche market for early adopters to a diverse and competitive industry. The period between 2015 and 2022 has seen major acceleration and investment into the renewable energy, albeit, within utility and industrial-scale applications. Smaller, broad-base applications have not seen similar growth.

NamPower Finally Finds Solution for Malfunctioning Walvis Bay Transformers

NamPower engineers and technicians have found a remedy for the ever-malfunctioning transformers at the Walvis Bay Substation in the Erongo region.

The utility's Protection, Telecommunication, Metering & Control (PTM&C) team has designed, tested, and successfully implemented a simple, but reliable Automatic Voltage Regulation (AVR) solution for the Walvis Bay Substation Transformers.

Three years after its commissioning in 2016, the AVR devices, with which the transformers were equipped, started malfunctioning and failing. These failures were not only observed at the Walvis Bay substation, but also at other substations namely Okapya and Kuiseb.

The device regulates and keeps the voltage on the load side within an acceptable margin, while it also ensures equal transformer loading during parallel operation and block tap changer operation under abnormal and system fault conditions to prolong the lives of transformers.

During the period 2020 to 2021 more than five units were replaced due to failure and sent for repairs at the Walvis Bay substation alone. However, even the replaced units began failing after a few months of installation.

The major problem was the lengthy turnaround time of repair, which takes almost a year, thereby leaving the burden with power system controllers and operators to manually monitor and regulate the voltages of these transformers in the Walvis Bay substation and other sites.

The Walvis Bay substation



"The new device has a high reliability and is very cost-effective, as the solution costs NamPower about N\$4 500 per device as the engineers had to procure, install, and programme a three-phase voltage input card into the SEL2411 relays, while previously it would cost NamPower approximately N\$50 000 per device repaired.



OLD... The old installations which were malfunctioning and failing that have now been replaced.



NEW... The new installation

is a very important station as it has a three-fold role in the Erongo region with its heavy energy-consuming industries such as mining, fishing, and tourism, among others. The substation is essential in supplying a wide range of electrical loads in the residential, commercial, and industrial sectors in and around the town of Walvis Bay.

The substation also provides auxiliary power supply to the ANIXAS and Paratus power stations and at the same time dispatching power from these power stations into the network. There are five 40MVA 132/11kV transformers operating in parallel to provide a total power capacity of 200MVA.

The engineers at PTM&C discovered a potential solution involving the functional extension of the already-installed SEL 2411 transformer monitoring device to implement voltage monitoring and onload tap changer control.

The device has a high reliability and is very cost-effective, as the solution costs NamPower about N\$4 500 per device as the engineers had to procure, install, and programme a three-phase voltage input card into the SEL2411 relays, while previously it would cost NamPower approximately N\$50 000 per device repaired.

Despite this being the first installation, it took engineers four days to implement and commission this solution on three transformers. This has not only resolved the persistent failure of the initially installed tapcon AVRs but could also serve as a benchmark for future AVR solutions on most of NamPower transformers.

The PTM&C section is responsible for installation, testing, maintenance and fault-finding of protection, telecommunication, metering, and control equipment in NamPower substations to safeguard the continuity of supply. The section is also responsible for implementing Capital and Operational projects.



REVOLUTIONARY ... Paratus' new Armada first-of-its-kind carrier-neutral data centre which recently opened its doors in Windhoek.

State-of-the-Art Paratus Data Centre to be Backed by Multiple Solar Banks

The new Paratus Namibia data centre (DC) in Windhoek, which opened its doors in August, is set to propel the local economy into the era of carrier-neutral DC offerings, the company announced.

Armada, as the data centre is called, will be Namibia's first-of-its-kind carrier-neutral data centre. It will enable any client hosting within the facility to choose which telecommunications provider they wish to purchase services from.

The Armada campus boasts a high availability environment, with resilience at each infrastructure level, from power to cooling, carrier interconnects and extremely low latency, all backed by a bank of international ISO certifications and PCI DSS certification.

Chief Operations Officer of the Paratus Group and CEO Designate, Schalk Erasmus said Armada is one of a kind, and a one-stop shop for businesses of all sizes to compete at world-class levels.

"With 99.98% uptime, backed by the most sophisticated technologies, including multiple solar banks – it provides unique assurances. The resilience we offer at Armada is unmatched in Namibia. We have invested heavily and have appointed the best designers and engineers to make Armada the most secure, environmentally friendly, and efficient facility in the country. Armada is the archetype of modern technology at work. Effectively, Armada will provide Namibian businesses with the opportunity to participate in the fourth industrial revolution (4IR)."

The new purpose-built facility will enable businesses to host their ICT infrastructure, providing 24/7 access in a secure and world-class Tier III equivalent DC. Armada has been designed to exact standards, leveraging the latest

physical and virtual security and the highest possible uptime. The DC will also offer businesses a colocation solution with a resilient infrastructure environment for clients to host their equipment in, thereby minimising IT capital expenditure and operating costs associated with on-premises hosting and management.

Moving ICT equipment off-site to a fully secured facility offers resilience in connectivity, power, cooling, and features fire suppression and security capabilities that traditional onsite setups might struggle to achieve economically.

The carrier-neutral facility will offer various colocation services, from half-cabinets to multi-tenant rows and private cages. Key features of the facility include: 2 Megawatt Power Capacity (Phase 2); diverse A&B utility power supply (Phase 2); dedicated generators – per A&B feed, for comprehensive resilience and 72-hr fuel autonomy; diverse Power Feed design throughout from utility to cabinet level; fully inter-resilient 500 kVA UPSs per feed (A&B) dedicated to the Data Centre; separate utility UPS to ensure electrical autonomy; dual UPS feeds per cabinet to deliver up to 3.3kVA; cold Aisle Containment and inter-resilient CRAC cooling units at N+1; multiple diverse carrier routes with separate Meet-Me-Rooms (A&B) as well as access to tower across diverse infrastructure from fiber to microwave; direct link to the new Equiano cable and CLS in Swakopmund and access to Paratus backbone network linking multinational customers to the Paratus data centers in Angola and Zambia

"Paratus has two DCs in Angola and another in Zambia, and with Armada, we are raising the bar again. This is in line with our main objective of transforming Africa through exceptional digital infrastructure. We're helping to 'unlimit' the future," Erasmus said.

Ramaphosa doubles SA's next renewables procurement round

South African President Cyril Ramaphosa has unveiled several far-reaching interventions – including a doubling in the allocation for the next renewables procurement round, the scrapping of the 100 MW licence-exemption threshold for distributed generators and a proposal of a feed-in tariff for self-generating households and businesses – as part of a much-anticipated action plan for ending load-shedding.

Ramaphosa also announced that “special legislation” would be placed before Parliament to address remaining legal and regulatory obstacles to the urgent introduction of new generation capacity.

“We will in the meantime waive or streamline certain regulatory requirements where it is possible to do so within existing legislation. This includes reducing the regulatory requirements for solar projects in areas of low and medium environmental sensitivity. It also means Eskom can expand power lines and substations without needing to get environmental authorisation in areas of low and medium sensitivity and within the strategic electricity corridors,” he said.

South Africa will establish a single point of entry for all energy project applications, to ensure coordination of approval processes across government.

The overall plan is two-pronged, with the first aimed at arresting Eskom’s operational instability, as reflected in the precipitous decline in the coal fleet’s energy availability factor to below 60%, and the second designed to introduce new generation capacity to the grid as quickly as possible so as to close an estimated supply shortfall of about 6 000 MW.

Without the additional capacity, Eskom says it lacks the “headroom” required to carry out much-needed maintenance across its 81-unit coal fleet that is made up of both aged and neglected coal plants and two new stations, Medupi and Kusile, which are not only years behind schedule and billions over budget but include



SA President Cyril Ramaphosa

Continues on next page



We will in the meantime waive or streamline certain regulatory requirements where it is possible to do so within existing legislation. This includes reducing the regulatory requirements for solar projects in areas of low and medium environmental sensitivity.

defects that require remedying.

Much of the innovation in the plan, which Ramaphosa canvassed widely before announcing it on 25 July, rests on the second pillar of speedily injecting additional capacity through the following interventions:

- A doubling of the allocation for Bid Window Six (BW6) of the Renewable Energy Independent Power Producer Procurement Programme (REIPPPP), the bid submission date for which is in August, from 2 600 MW to 5 200 MW;
- Lifting altogether the 100 MW licence-exemption cap on distributed generation plant being developed by miners and heavy industry. The reform, which was announced in June last year, had already stimulated 80 confirmed private sector projects with a combined capacity of over 6 000 MW;
- Confirmation that the Independent Power Producer Office and the Department of Trade, Industry and Competition would announce a "pragmatic approach" to the local-content requirements that were currently impeding financial close for delayed projects procured under BW 5 of the REIPPPP;
- The leasing of more grid-ready land by Eskom to facilitate further private projects in addition to the 1 800 MW private distributed investment expected following the first leasing round;
- The issuance of a request for proposals for battery storage by September this year, and a further request for gas power thereafter; and

- The Gazetting by Mineral Resources and Energy Minister Gwede Mantashe of a determination for the remaining allocations in the Integrated Resource Plan (IRP) of 2019, which would facilitate the opening of further bid windows on an expedited basis.

The SA President also announced that surplus capacity available from existing renewables independent power producers (IPPs) would be mopped up and Eskom would also be allowed to make a standard offer to buy electricity, for a period of two to three years, from those enterprises, mines, paper mills and shopping centres that have surplus electricity available to sell into the grid.

Possible imports from the region, including Botswana and Zambia, would also be explored.

The intervention, Ramaphosa said, would also seek to stimulate investments by businesses and households into solar rooftop systems, which will be incentivised by the creation of a feed-in tariff that Eskom will extend to commercial and residential installations alike.

"This means that those who can and have installed solar panels in their homes or businesses will be able to sell surplus power they don't need to Eskom," he said.

Ramaphosa said that Eskom would also pursue the roll-out of energy efficiency retrofits to reduce demand on the grid as well as demand management solutions, which could lower or shift demand by as much as 600 MW, particularly over peak periods. – **Adapted from Cremer Media**



ENVIRO MATTERS ... (from left) Julia Kanyemba and Ester Haikola from Wakapinya Environmental Education with German Ambassador Herbert Beck. Photo: German Embassy Windhoek

Wakapinya Secures German Funding for Climate & Enviro Awareness Project

The German Embassy in Windhoek has committed a 34, 200 Euros (about N\$582, 000) grant to the Wakapinya Environmental Education project to support the raising of awareness about climate and environmental topics.

German Ambassador to Namibia Herbert Beck and Ester Ishiwa Haikola, Executive Director and Founder and Julia Nangula Kanyemba, General Manager of "Wakapinya Environmental Education" signed the funding agreement in Windhoek. The funding is being allocated from the Climate Fund of the German Federal Foreign Office.

Wakapinya Environmental Education will implement a project that will create awareness for environmental and climate issues amongst the youth in Namibia. The aim of the project is to sensitize young people and school learners about the environment and its challenges and also to provide them with information about climate in general and climate change in particular.

The organisation will produce an online show called "Youth Enviro Show" which will transfer knowledge and awareness and will be airing twice a month on social media platforms such as Facebook and YouTube.

The online show, which will be held in different Namibian

languages, will also provide a platform called "Clubhouse" to the audience and through this, give all interested parties the opportunity to discuss current topics.

Additional to the online-show, a road show will be conducted in three different schools in the Khomas, Omaheke and Hardap regions. This road show will introduce environmental clubs called "Enviro Warriors Club" in the selected schools, which will initiate a gardening and tree planting activity at these schools as well as in the surrounding communities.

Furthermore, learners and any interested youth will be taught to create design and arts from recycling materials. This will give them an understanding of sustainability and teach them more about the concept of reduce, reuse and recycling. The produced items can be sold for an income.

Wakapinya Environmental Education was founded by Haikola, a 28-year-old woman from the north of Namibia. With a strong enthusiasm and commitment for both education and the environment, and while working as a teacher, she discovered that many young people and students were not environmentally conscious; which sparked her ambition to start a non-governmental organisation to raise awareness around environmental issues.



MAIN SUPPLIER ... China currently enjoys a major advantage on solar panel manufacturing because of lower energy and labour costs.

IEA warns on China's Dominance of Solar Panel Supply Chain

The International Energy Agency (IEA) has warned that China's dominance of the solar panel supply chain could slow the global transition to cleaner energy.

An IEA report on the issue, the first of its kind by the organisation, found that China's share in the manufacturing stages for solar, from the production of polysilicon to the panels themselves, exceeds 80%, and in some stages could reach as high as 95% by 2025.

"The world will almost completely rely on China for the supply of key building blocks for solar panel production through 2025," the agency said in the report, adding that: "This level of concentration in any global supply chain would represent a considerable vulnerability."

The report found that high commodity prices and existing bottlenecks in the supply chain had already led to a rise of 20% in panel prices over the past year, which has resulted in delays in their delivery across the world.

"One of the reasons we made this report is to highlight this important weakness in the solar PV supply chain, to call for the governments for diversification, to reduce the supply chain vulnerabilities," Fatih Birol, head of the IEA, told the Financial Times.

The risks of a solar panel supply chain concentrated in China "is not only a geopolitical issue. It can be a fire in major facilities. It can be floods. Disruption of [the solar PV supply chain] has huge implications for our clean energy transition and energy security," Birol said.

Solar energy is a key element in the IEA scenario of the world reaching net zero emissions by 2050. The energy source is scheduled to account for 33% of global electricity

generation by then. A quicker shift to solar energy is a more pressing issue for the European Union, which is facing the need to wean itself off its dependence on Russian gas.

Under the bloc's "RePowerEU" plan, it is targeting to install more than 320GW of solar PV by 2025, and almost 600GW by 2030.

Birol has previously said that Europe needs to prepare for a total shutdown of Russian gas exports. Countries and groupings like the EU "need to have tailor-made investment policies" to spur investment in solar panel manufacturing and build their own supply chains, Birol said.

China currently enjoyed a major advantage on solar panel manufacturing, because of lower energy and labour costs, according to the IEA chief.

"Tax incentives for manufacturers, build a manufacturing facility in industry clusters to reduce land cost — those could be some concrete, quick implementable policies that could be introduced in order to provide a competitive edge vis-à-vis cheap cost of manufacturing in China," Birol said.

The report also noted that China's Xinjiang province accounted for 40% of global polysilicon manufacturing. China has faced allegations of widespread human rights violations there, and the US in late June started enforcing a ban on imports from the region, including solar panel materials.

While the report did not mention the alleged use of forced labour in Xinjiang, it said the world needed to "strengthen international co-operation on creating clear and transparent standards, taking into account environmental and social sustainability criteria". — **Financial Times**



MUTUAL INTEREST ... SADC Deputy Secretary for Regional Integration Thembinkosi Mhlongo (2nd from right) during a meeting with Yuka Fujino (centre), the Chargé d'affaires of the Japanese Embassy in Botswana.

SADC to Increase Renewable Energy Generation to Reduce Carbon Emissions

The Southern African Development Community (SADC) is developing the Regional Gas Masterplan to enable the utilisation of the abundant gas reserves in the Region to reduce its reliance on coal in the wake of the global commitment, including the Paris Agreement's ambition to decrease carbon emissions and maintain global temperatures below 1.5° Celsius.

This was said by Thembinkosi Mhlongo, the SADC Deputy Secretary for Regional Integration, during a meeting with Yuka Fujino, the Chargé d'affaires of the Japanese Embassy in Botswana. The purpose of the meeting was to discuss the Eighth Tokyo International Conference on African Development (TICAD-8), as well as other issues of mutual interest to the two parties.

Mhlongo highlighted SADC's efforts to expand solar energy generation output in order to increase its power generation capacity, corridor involvement, and economic prosperity while also reducing the Region's carbon footprint.

He said that in light of the recent increase in the number and severity of disasters, there was a need for increased collaborative efforts with partners to put in place mechanisms, including the operationalisation of the SADC Humanitarian and Emergency Operations Centre that will aid the region in mitigating disasters and monitoring all disaster risk factors.

Mhlongo underscored the importance of the existing



In light of the recent increase in the number and severity of disasters, there was a need for increased collaborative efforts with partners to put in place mechanisms, including the operationalisation of the SADC Humanitarian and Emergency Operations Centre that will aid the region in mitigating disasters and monitoring all disaster risk factors.

cordial relations between the Japanese government and the SADC region, in particular the technical assistance offered by the Japan International Cooperation Agency (JICA), which has successfully assisted in the implementation of a number of programmes in the region, including the recently built Kazungula bridge which connects Botswana and Zambia, and support towards the implementation of the SADC Forestry Programme, as evidence of Japan's dedication to serving the SADC community.

Fujino emphasised the Japanese government's willingness to collaborate with SADC and the entire African continent as part of its international policy. In addition, the envoy underlined the significance of working on engagement mechanisms to promote a more inclusive relationship.

Fujino said her government will spearhead the 8th TICAD, which will be held in Tunisia on the 27th and 28th of August 2022, with the participation of heads of state and government from African countries, as well as co-organisers from the African Union, United Nations, United Nations Development Programme, and World Bank.

She noted that the forum will provide Japan with the opportunity to strengthen its engagement in Africa. She expressed her regret that in view of the limitations posed by the need to contain the Covid-19 pandemic, participation at the upcoming TICAD-8 will be limited, and as such regional organisations, including Regional Economic Communities, may not be able to participate.

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 - agri-enterprise water efficiency
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