

Etango

Namibia's Leading Renewable Energy Technologies
Magazine

March - April 2016



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- CSP TT NAM calls for expression of interest
- Renewable Energy Policy soon to be a reality
- NEED project tackles obstacles to Renewables
- More farms and lodges turn to solar energy
- Energy Minister says no power cuts this winter

Solar Powered Airport

Events Calender 2016

The following services will be performed at the upcoming Trade Fairs and Expo;

- Registration of employers (MSD & EC Fund);
- Registration of employees (MSD Fund);
- Printing of social security cards;
- Accepting contribution payments and Assessments
- General Customer service



→ Cray Fish Festival: 29 April - 02 May 2016
→ Otavi Investment Expo: 27 - 30 April 2016
→ Okahandja Expo: 11 - 14 May 2016
→ Otjinene Show: 26 April - 01 May 2016



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To improve the welfare of our members and beneficiaries by providing comprehensive social protection.

VISION

To be the preferred provider of comprehensive social protection in Namibia.



Relief as Renewable Energy Policy gains momentum

The lack of a clear public policy on Renewable Energy has for long been identified as one of the major hindrances to investment in this sector. However, this may soon change as the Electricity Control Board has set into motion consultations that will hopefully soon culminate in a comprehensive RE Policy.

It is without a doubt that a clear RE Policy will be key in enabling renewables to claim their rightful place in Namibia's energy mix.

Following the first ever parliamentary conference on Renewable Energy Sources in Namibia two years ago, the Parliamentary Standing Committee on Economics, Natural Resources and Public Administration resolved that it was vital for Namibia to urgently draw up a Renewable Energy and Energy Efficiency Policy and an associated renewable energy law if RE was to have the required impact. This was after it noted the reasons for the slow progress in the

development of renewables despite the fact that Namibia boasted some of the best RE resources.

It is believed that with a clear RE Policy, nothing stops Namibia from attaining independence of energy supply.

The Ministry of Mines and Energy mandated the ECB to spearhead this process and the first consultative stakeholders' workshop was held in Windhoek in April. There will be a series of such consultations.

However, we would like to appeal to the ECB to expedite this process as it is long overdue. The White Paper on Energy Policy of 1998 clearly recognizes the potential benefits of renewable energy resources but the lack of specific and clear rules of engagement in this sector stifles investment and also hinders efforts to make Namibia energy self sustainable.

Indeed wide consultations are required but let's not get stuck in the consultative

stage as potential investors (IPPs) could be forced to look at opportunities elsewhere in the region.

Read more about the efforts towards a Renewable Energy Policy in this edition of **Etango**. Also featured in this edition is an article on the NEED project, a regional network aimed at addressing impediments to the deployment of RETs in Namibia and other Southern African countries. We also carry an article breaking down government's investment in the energy sector, which paints a worrying picture. We have positive news on carbon footprint reduction efforts at the Ohlthaver & List Group, the largest local private sector employer.

Happy Reading!

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Cover picture:

GREEN AIRPORT: South Africa's George Airport, located between Cape Town and Port Elizabeth, has become the first solar-powered airport in Africa. The airport, which serves over 600,000 passengers annually, launched a clean energy project which, during its first phase, will contribute around 40% of the airport's electricity needs. Once the clean energy project is completed the airport will be totally independent of the national grid.

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ECB kicks off process to develop a National Renewable Energy Policy for Namibia



MME PS Simeon Negumbo



ECB CEO Foibe Namene

Twenty-six years after independence Namibia still lacks a comprehensive policy to direct the development of the Renewable Energy industry in the country. This has been identified as one of the main impediments to the development of RE projects in Namibia despite the country boasting the best climatic conditions for renewable energy.

In April 2014, the National Assembly through the Parliamentary Standing Committee on Economics, Natural Resources and Public Administration hosted a public conference on renewable energy sources in Namibia. The conference recommended that a Renewable Energy Policy be finalised as a matter of urgency.

The Electricity Control Board (ECB) has launched the consultation process to develop a comprehensive RE policy for Namibia and recently hosted the first consultative workshop for various stakeholders.

ECB was mandated by the Ministry of Mines and Energy (MME) to facilitate the process in developing a Renewable Energy Policy for Namibia. During 2014/2015, with the assistance of the Commonwealth Secretariat Economic and Legal Section, a task team comprising of MME, the ECB, NamPower and the Namibia Energy Institute (NEI) developed a discussion document in developing a Renewable Energy Policy for the country.

ECB CEO Foibe Namene said while Namibia has substantial energy resources, with a huge potential to positively impact on the security of supply, the lack of a Renewable Energy Policy was hampering the exploitation of this potential.

“It is not surprising that the White Paper on Energy Policy of 1998 currently under review, recognises and articulates the potential benefits of renewable energy resources. In particular the White Paper recognises the role that renewable energy systems can play in providing basic electricity services to rural households, community facilities and other areas such as agriculture, farming, telecommunication, water pumping and desalination. Large scale renewable energy is also recognised for its potential contribution to sustainability, diversification and using locally available renewable energy sources.

“The ECB is in agreement with these sentiments, and believes that for the achievement of the aspirations of Vision 2030 including the Harambee Prosperity Plan, the future energy mix in addition to traditional fuel based energy must comprise of alternative energy sources such as solar, wind, bio-energy and others. It is therefore our commitment to have the Renewable Energy Policy developed,” said Namene. She said stakeholder consultations are critical in the success of the RE Policy and therefore more would be held this year before the final draft Renewable Energy Policy is submitted to the MME for onward consultation and approval.

The motivation for having a Renewable Energy Policy is to ensure that universal sustainable energy access becomes a reality in Namibia. The overarching objective of the Renewable Energy Policy is to grow the share of Renewable Energy to provide the required primary energy / electricity to 100% of the population and to enable the prosperity agenda of the country.

MME Permanent Secretary Simeon Negumbo said there was a need to address Government’s drive towards poverty eradication and promote more Namibian participation in the renewable energy sector, this was in line with the Harambee Prosperity Plan.

“Namibia is in a very untenable situation of relying on imports of power for as much as 70% of demand during some parts of the year. This level of dependency can pose security of supply and economic growth challenges to any country. Ideally we want a diversified generation mix of technologies because of the intermittency in most of the renewable energy technologies, we need renewable energy sources to complement non-renewable technologies. In other words we need a base load power station,” said the PS.

Negumbo said the opportunities available in the renewable energy sector should be thought and looked at against the environment of the persistent energy challenges facing Namibia and the SADC region, hence the insistence on well-planned, innovative and concerted efforts and strategies to overcome these challenges.



BRAINSTORMING: Some of the energy stakeholders who attended the ECB consultation workshop



NEED Project tackles obstacles to the wider harnessing of Renewable Energy in SADC Region

From 14-18 March, 2016, the Faculty of Engineering, at the Namibia University of Science and Technology (NUST), supported by Namibia Energy Institute (NEI), hosted a group of professors and researchers representing higher education institutions from Southern Africa and Germany to discuss progress made so far in the implementation of the Network of Energy Excellence for Development (NEED) project.

The NEED Consortium held its fourth meeting in Windhoek which included a stakeholder meeting aimed at fostering awareness about renewable energy technologies and to canvass for financial and political support. Representatives from the Ministry of Mines and Energy (MME), NUST management, the Okavango Research Institute (ORI), the Botswana International University of Science and Technology (BIUST), the University of Zambia (UNZA) and Germany's Technische Hochschule Ingolstadt (THI) attended.

Prof. Tjama Tjivikua, Vice Chancellor of NUST, officially opened the project meeting on the 14th of March 2016 at the University's Faculty of Engineering. In his opening remarks, he stressed the importance

of international collaboration in renewable energy technologies (RETs) and water sectors. He further stressed that Southern Africa has over the years mainly relied on conventional fossil fuel-based energy generation and supply to meet the power demand. He observed that, in recent years demand had outgrown supply with consequent rampant power outages affecting the economy of the region and the livelihoods of practically everybody. The challenges posed by environmental considerations limit the expansion of conventional power plants and infrastructure, and hence the outlook is to harness renewables.

Professor Tjivikua was encouraged by the NEED project's interlinks with research institutions, Small and Medium Enterprises (SMEs), and national and local public decision-makers in the domain of RETs.

Mr Nico Snyders, the Deputy Director of Renewable Energy Division in the MME, pointed out that expertise in the design, installation and maintenance of solar water heating systems in Namibia was still inadequate and therefore the Ministry was encouraging projects that can help draw up appropriate curricula for local universities so that engineers and technicians are trained.



FRUITFUL DISCUSSIONS: Interaction among Namibian stakeholders during the public segment at the 4th NEED project meeting held at NUST in Windhoek.



R.E. DIALOGUE: Vice-Chancellor Prof. Tjama Tjivikua and Jana Hybaskova, the EU Ambassador to Namibia, on his right, pictured with other delegates who attended the NEED meeting at NUST.

Mrs. Jana Hybaskova, Ambassador and Head of Delegation of the European Union (EU) to the Republic of Namibia, was also present at the meeting and gave her remarks on the sustainable growth for (economic) stability and emphasized on wind energy development. She also touched on the issues of sustainability and governance and how to empower people in energy by making use of best practices.

The Network of Excellence in Renewable Energy Technologies for Development (NEED) is a three-year project funded by the EU and the African, Caribbean and Pacific Group of States' (ACP) Cooperation Programme, aimed at addressing impediments to the deployment of RETs in Namibia and other Southern African countries. It was noted that although the region was endowed with vast amounts of renewable energy potential dominated by solar energy, followed by bio-energy, hydro energy, wind energy and geothermal energy, the deployment of the technologies was still at an infant stage with only clusters of small scale projects across the entire region. Even where there were notable applications, without appropriate policies, technologies originally developed for regions other than Southern Africa posed adaptability or implementation challenges.

The project is being implemented through the Institute of New Energy Systems (InES) at THI in Germany in collaboration with the African partner institutions NUST, ORI, BIUST and UNZA. NEED is engaged in the formulation of policies, research strategies, harmonisation and development of industry standards related to RETs and RET skills enhancement ('Dual Studies') through a 'Network of Excellence' inter-linking existing and successful renewable RET initiatives, institutions and experts.

The NEED project encourages knowledge transfer among the project partners and aims at accelerating research in renewable energy within southern Africa by advocating for the anchoring of research strategies in relevant national policies. In this context, RET research needs in the southern African region have been identified and a RET research roadmap is being developed with a view to institutionalize and mainstream renewable energy into public policies.

Furthermore, the project takes into account that standards play a major role in facilitating widespread deployment and acceptance of RETs. Therefore, a RET standardization framework is regarded as one of the essential measures to remove barriers for the diffusion of RETs in the region. A standardization framework was developed and proposed and work is now on going to get buy-in by all stakeholders, especially the standards organizations in the target countries.

The project also encourages the adoption of a standardized combination of practical work and theory ('Dual Studies'), especially in RETs, for enhanced capacity building in the region. It encourages the development a curriculum framework that will support this goal in addition to promoting a culture of science among young people in the Southern African region. Furthermore, the project aims to demonstrate technical options for renewable energies for typical local environments. Therefore, two model regions – wetlands in Botswana and drylands in Namibia – were selected and energy concepts will be developed which take into account the specific local conditions. The experiences gained from these model regions will then subsequently be incorporated in the formulation of policies on a national scale.

www.need-project.org



EXPRESSION OF INTEREST: CSP TT NAM

Applications are being invited by the GEF/UNDP/MME funded Project: Concentrating Solar Power Technology Transfer for Electricity Generation in Namibia (CSP TT NAM), which is being implemented by the Ministry of Mines and Energy in collaboration with Namibia University of Science and Technology (NUST) / Namibia Energy Institute (NEI) and UNDP Namibia.

Background: Namibia has one of the best solar regimes in the world with an average direct insolation of 2,200 kWh/m²/year (peaking at 3,000 kWh/m²/year in certain areas), minimal cloud cover, and the potential for more than 250,000 MW of power generation capacity.

The CSP TT NAM Project Objective is to increase the share of renewable energies in the Namibian energy mix by developing the necessary technological framework and conditions for the successful transfer and deployment of CSP technology for on-grid power generation, thereby reducing greenhouse gas emissions.

Firstly, this would be achieved through the establishment of CSP technology partnership agreements between foreign providers and Namibian stakeholders in the private sector, government and academia. This is expected to lead to an increased number of local entrepreneurs in the Namibian CSP supply chain.

Secondly, the development of a market policy framework for CSP technology would lead to the approval of policies supportive of its application, a thriving CSP market in Namibia, and increased investments in CSP technologies in the country.

Finally, the development of necessary documents: a business model, financing framework and contracting arrangements would lead to the provision of financing from banks for the construction of Namibia's first CSP plants; an increase in the installed capacity of CSP plants in Namibia; and a subsequent increase in investor confidence in the development of CSP installations in the country.

These goals are set against a background of rising electricity consumption and prices in Namibia and an expected capacity deficit in its generation capacity.

Various potential sites for investment in the setting up of CSP plants were identified in various regions in Namibia, where currently ground measurements for bankable Solar Irradiance Resource Data (DNI) is being collected.

Categories of Interest Submissions

The CSP TT NAM has identified various opportunities for technical collaboration on the project. So as to provide capacity building assistance and enable local entrepreneurs involvement in the CSP market and supply – chain; as well as to facilitate agreements between foreign technology groups and local CSP interest groups and to facilitating linkages between foreign CSP players and local businesses through expositions and workshops – the CSP TT NAM project hereby calls for Expression of Interest by local entrepreneurs.

Selected entrepreneurs will be engaged and provided growth support in the CSP industry / supply- chain by the project in the Categories below.

Interested local entrepreneurs in the following or related CSP supply - chain Categories can apply: **Material/Component Suppliers** (concrete,steel,glass,salt,chemicals,mirrors,HTF,exchangers,generators,pumps,storage,etc.); **Construction/Engineering Works** (electrical, civil, water, plant, procurement, etc.); **Maintenance/Plant Operations/Consulting** (electrical, construction, environmental, business development, etc.); **Project Management/Financiers/Investors/Manufacturing** (components, materials, etc.) and **Policy/R&D Institutions**.

Local entrepreneurs from all regions of Namibia are encouraged to apply and should submit a Company Profile with contact details and indication of supply - chain Category they would like to engage with the project OR alternatively request an Application Form from the contacts provided below.

Deadline for Submission: 31 May 2016

All applications, clearly indicating “CSP TT NAM: (option applied for)”, should be emailed or delivered to:

The Project Management Unit

CSP TT NAM

Att.: Project Manager

17 Brahm Street

Windhoek West

Email: msheya19@gmail.com

Enquiries:

Administrative: Me. Maria Sheya (Telephone: +264 61 207 2735 Cell: +264 081 381 0779, or email: msheya19@gmail.com)

Technical: Mr. Shimweefeleni G. Hamutwe (Telephone: +264 61 207 2735 Cell: +264 81 1700 569, or email: ghamutwe@yahoo.com)

Solar Power for farms and lodges



A Namibian 'off-grid' farm – completely running on RE for many years now. This includes all water pumping.

By Conrad Roedern

The lament 'Solar is too expensive' does not hold water any more. Solar power has become much more competitive within the last years. Let me start with photovoltaic solar water pumping, often abbreviated as PVP: While some years ago only boreholes with a shallow water table (typically less than 70m) and low daily yield (typically 10 cubic meters or less @ 70m head) had been economically feasible solar pumping can now fulfil all requirements in terms of volume and lifting head. This stems from the fact that today solar electricity can be produced much cheaper on site than delivered by a diesel generator or even sourced from Namibian electricity grid.

Highly efficient submersible pumps are available which can be run directly from the panels or – in case of emergencies – from a small AC generator. But it can also make sense to convert traditional shaft-driven MONO pumps to run directly from solar power (with no batteries involved) while keeping the typical LISTER engine just

as a backup. Swopping is easy: One just changes V-belts back to the LISTER.

But why only looking to water pumping?

Running a farmstead on solar power now makes perfect sense when it comes to sites which are already grid-connected but definitely for those which operate 'off-grid'. For the case of 'on-grid-farms' the solution is a so-called PV feed in system which is available for both single-phase and 3-phase clients. Electricity consumers become "prosumers". During sunshine hours the system feeds directly all appliances of the client while excess power goes back into the electricity grid; the grid acts similar to a battery which 'buffers' differences in supply and demand. The excess will be compensated under 'net-metering' (from July 2016) legislation as a non-cash credit to be used again during night time or when the solar power is not sufficient.

Off-grid systems have benefitted from the strong fall in panel price (down to 30% of what it was four years ago) as well. Farms and lodges typically run on a hybrid system where hybrid means running from two energy sources: e. g. solar and diesel. Since solar can produce cheaply the fraction still to be produced by diesel, it will typically go down to below 10%. Night-time power comes from a professional deep-cycle battery set which easily lasts for 10 to 15 years. Maintenance-free Lithium-Ion batteries are on the doorstep and will become cost competitive soon.

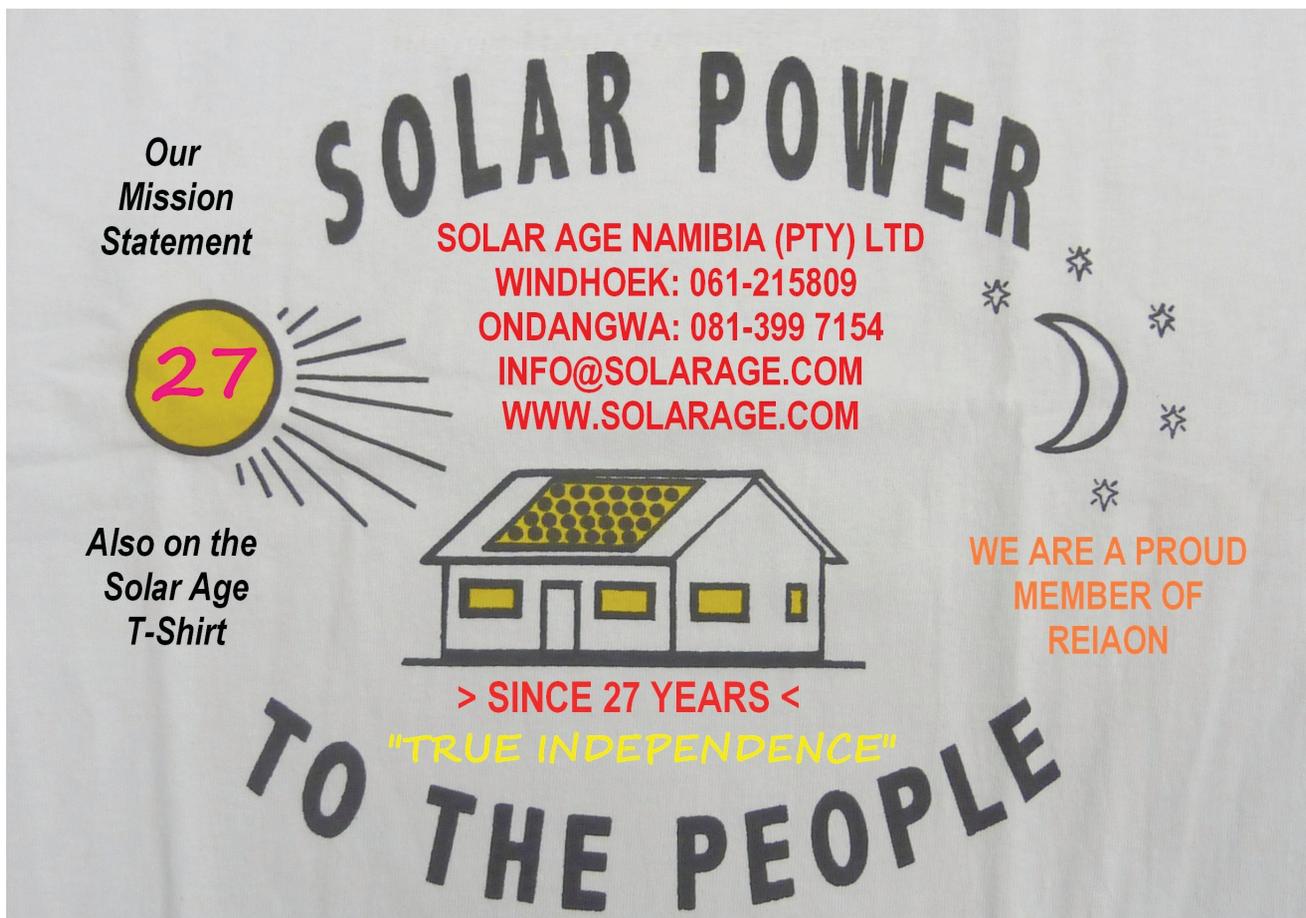
What else helps the ‘Solar Revolution’ to become reality?

Ultra efficient appliances have become available, especially when it comes to lighting and refrigeration. Even modern energy saving bulbs - CFLs, saving up to 80% if compared with incandescent bulbs and having been accused for their, in comparison with traditional fluorescent lights, minute mercury content – finding now strong competition in LED-lighting. LED-lights last about five times longer than good CFLs (some 50 000 hours) and pose even less threat of environmental contamination. But watch out; since LED technology

is still expensive and coming in all sorts of qualities you should lay emphasis especially on long service life, good light colour and low power consumption. Today’s high quality fridges, freezers and cool rooms consume less than half of the energy of their low-cost conventional predecessors. Look for fridges, freezers and combinations which carry efficiency labels like A+ or even A+++.

Made in Namibia: Energy-saving cool rooms with soft-start and extra strong thermal insulation can be sourced locally. Their reduced power and energy requirements allow them to run even on medium sized solar systems. Small is beautiful; new technology also found its way to solar home systems (SHS). So-called pico-SHS satisfies the basic demand for lighting, cell-phone charging and playing a radio. They normally come as DIY-kits. But please watch out; only quality systems are using long-lasting LED hanging lights with switches, a lithium-ion battery (no lead or cadmium anymore!) and a powerful cell-phone charger which is able to even fully charge a smart phone. Accessories and repairs should be available locally.

Going solar means savings from day one! Clean solar power - cheaper than grid power - can be seen as the great game changer towards Harambee prosperity for all Namibians!





Mally Likukela

Concern over lack of government aggression in support of Energy Sector infrastructure

Standard Bank says the 2016/17 National Budget is unlikely to offer any major boost to the cash-strapped energy (infrastructure) sector due to government's lack of aggression in supporting this sector. This is despite government having identified the energy sector as key to the country's economic growth.

Finance Minister Calle Schlettwein mentioned several budgetary allocations for targeted transfers to Public Enterprises for investments in infrastructure projects including some in the energy sector. In this regard, N\$13.6 billion was allocated to the economic and infrastructure sector for investments in growth enhancing infrastructure, including energy sector. In addition, an amount of N\$13.2 billion was allocated as targeted subsidies and other current transfers to Public Enterprises for targeted development of key national infrastructure among them energy related.

Mally Likukela, Standard Bank's Economic and Marketing Research Manager, said while these were welcome developments, the budget speech lacked more details such as how to fund them.

"Namibia's creaky energy infrastructure is a key downside risk to the country and will continue to hold back the country's economic growth if government continues to (financially) support this sector in the business-as-usual manner. Economic revival could be accomplished only by spurring investment in the energy

sector and the budget is one of the most effective tools to close the funding gap that exist in the sector. According to the Bank of Namibia study on infrastructure funding requirement, Namibia requires approximately N\$223.6 billion for infrastructure funding for the next five years and beyond and of this amount N\$50,8 billion (N\$13.9 billion-2016/17) is required for the energy sector related infrastructure," says Likukela.

Budget expectations

Likukela says government's repeated statements on supporting the sector had raised expectations that the Finance Minister would announce major steps in his budget proposals for the fiscal year starting April 1 to boost energy infrastructure investments. However, the budget failed to make any big-ticket announcements in the energy infrastructure sector. "The Minister didn't announce any new incentives in support of funding energy sector infrastructure development except for the development of the Public Private Partnership (PPP) legislation that was still underway. The private sector continues to be reluctant to lend to already debt-laden infrastructure sector due to government's lack of bold financial pronouncements - as a result many large energy projects continue to be stuck. Government guarantees could improve the attractiveness of private funding in this



regards,” says the Standard Bank official.

Currently Namibia is a net importer of energy - meaning that the shortfall in energy supply is made-up from importing from outside of our borders. Namibia generates about 1500 GWh, while it consumes more than 3500GWh. To this end, electricity is mainly sourced from South Africa, Zambia and Zimbabwe. Significant energy infrastructure funding is critical to ensure uninterrupted and sustained energy supply if Namibia aspires to be self-sufficient.

The importance of sustainable energy supply

The NDP4 high growth scenario predicts Namibia’s GDP to grow by 6.0 percent on average for the entire NDP4 span (2012/13– 2016/17) as Namibia looks forward to being industrialised and without power this remains a distant dream. Power supply is therefore critical to the economic growth of the country as lack of it can compromise investment. Experience elsewhere has shown that the unsustainable energy supply and use coupled with an unreliable and energy system have a striking and lasting impact on economic, social and environmental development of any country. In Namibia the main economic sector - mining - remains one of the heaviest energy consumer and together with manufacturing sectors, they drive electricity demand and the combined budgetary allocation remains a serious matter of concern. As in every country energy is the indispensable force driving all economic activities. The more the economy expands the more energy it will require in order to sustain growth.

“The importance of increased budgetary allocation directly or indirectly to the energy sector cannot be overemphasised. Government needs to be seen to be serious about investing in the energy sector. Currently Namibia is facing a critical shortage of reliable energy supply. Government budget is a critical input in the growth and development of the energy sector in Namibia. A budget reduction to the Ministry of Mines and Energy (N\$122.9 million in 2016/17 from N\$231.1 million during the previous financial year) does not seem to be responding to the developmental needs of the sector,” says Likukela.

Furthermore, N\$13.6 billion to the economic and infrastructure sector for investments in growth enhancing infrastructure, including the energy sector, as well as N\$13.2 billion to SOEs is a drop in the ocean if looked against the existing energy infrastructure funding requirement. (N\$223.6 billion for infrastructure funding for the next five years and beyond and of this amount N\$50.8 billion - for the energy sector related infrastructure).

“Government needs to increase budgetary support to the sector given the capital intensive nature of the sector. High capital investment is the key ingredient that would increase energy production locally. It has already been established by numerous researches that PPP initiatives are required if the country is to upsurge investment and I don’t see this happening given the lack of aggressiveness in the budget speech. Government should zoom in on the enhancement of IPP participation and improve private sector funding attractiveness through Government enablers,” he concludes.

Old Mutual to increase investment in renewable energy



Kosmas Egumbo

Old Mutual Namibia Chief Executive Officer Kosmas Egumbo said in an interview with The Namibian recently that the company was currently reviewing various proposals for investment in the renewables sector.

“The scope of investment is based on the quality of the proposed projects and the long-term sustainability in offering value. We have gone out to approach key players, and we have equally been approached by interested stakeholders (in the renewable energy sector) and are thus already considering an increasing number of projects. We are confident that our investments in this infrastructure will increase,” said Egumbo.

He said investment in renewable projects was very much aligned to Old Mutual’s focus as a responsible business.



An open door guide

Development Bank of Namibia
larger enterprise finance



**Development
Bank of Namibia**

Good business is good for development.

Key facts: financing amounts

In terms of the Bank’s mandate to provide finance for larger enterprises, finance is available to all larger enterprises with **an annual turnover or projected annual turnover of more than N\$10 million.**

Finance is provided depending on the requirement and does not have a lower limit, **e.g. if a larger enterprise requires N\$2 million, the Bank will consider the application.**

In the event of **start-up finance**, potential borrowers should convincingly show in business plans and cashflow projections that the enterprise is expected to achieve annual turnover of N\$10 million.

Minimum borrowing amounts will be considered on a case-by-case basis.

Old Mutual is South Africa's major investor in solar PV projects. It has invested in at least nine projects established under the Renewable Energy Independent Power Producer Procurement Programme (REIPPPP) initiated by the government. Old Mutual is involved in 33% of the 27 solar PV projects in rounds one and two of this programme. Companies such as SolarReserve, Intikon and the Public Investment Company are following suit, with a smaller number of project involvements, but most investment companies limit their investments to one or two projects.

With many REIPPPP projects emerging this year, the South African solar PV market is booming. It is expected that, upon the financial closure of rounds one and two of the programme, over four million solar panels will have been installed.

These projections indicate that South Africa's installed solar power will grow from a mere 25 megawatts in 2012 to around 1050 megawatts by 2016. And these are only the figures pertaining to the REIPPPP. Recently, wineries,

factories, supermarkets and mining companies have discovered that a solar PV system can save them money right away and help them hedge against inevitable energy price increases.

The equity providers investing in the PV market are fragmented. Numerous investment companies limit their investments to one of two projects. Old Mutual is the leading investing company, with involvement in some of the largest REIPPPP projects such as the Kalkbult PV project (75 MW), the Lesedi and Letatsi solar PV projects (75 MW each, equity provided by Old Mutual-managed IDEAS-Managed Fund) and the Dreunberg project (70 MW). Solarplaza also found that, in addition to these relatively large projects, Old Mutual is involved in a few smaller projects, such as the Aurora (9 MW), Vredendal (9 MW) and Linde (37 MW). From a different angle, the data shows that, in terms of megawatts, the investment market is more uniformly distributed, but Old Mutual remains the major investor in the industry in terms of megawatts.



Eligibility

Enterprises or business projects with an annual turnover above N\$10 million.

Economically and financially viable start-up business with potential for sustainability and job creation.

Expansion of an existing business.

Management buy-in or buy-out (take-over) of an existing business.

Project finance

Asset finance (as part of a business proposal)

Contract-based finance

Franchising



Preliminary consultations

For a quick telephonic consultation on whether your enterprise may qualify for DBN finance, call a Portfolio Manager or Business Analyst.

Windhoek

Tel. 061 290 8000
Daniel Munamava Street

Ongwediva

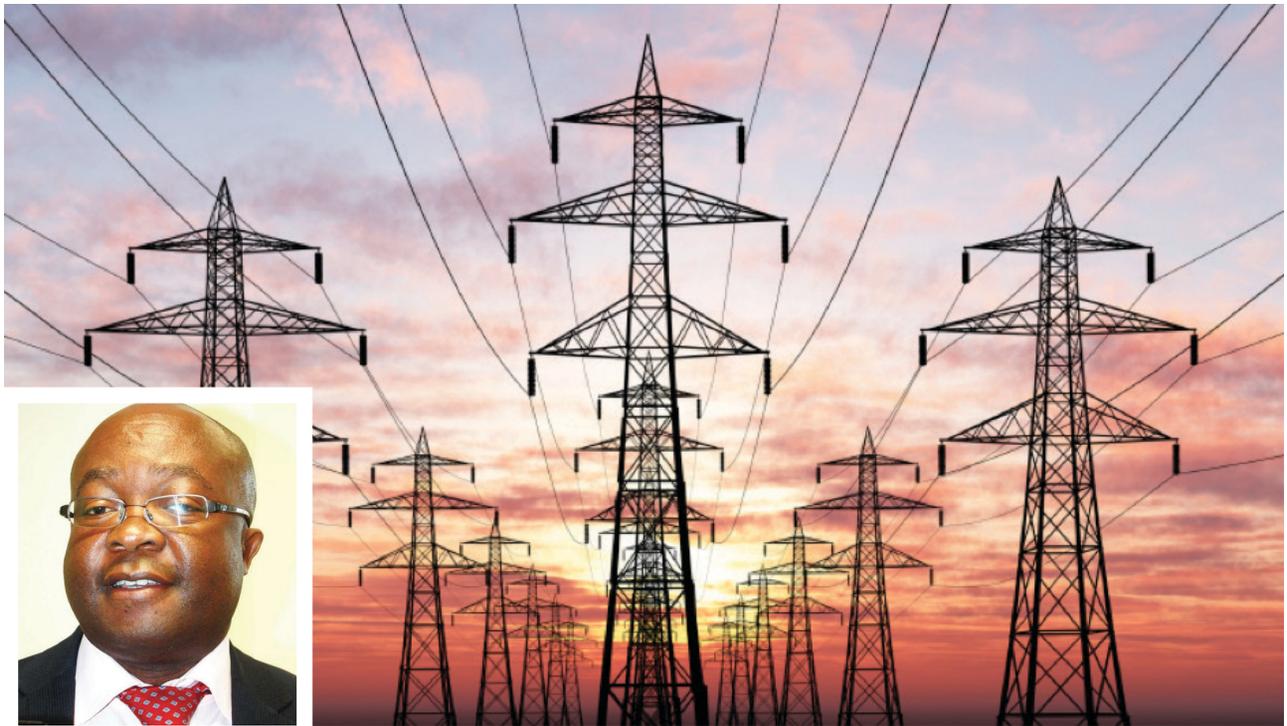
Tel. 065 230 129 / 230 130
Ongwediva Trade Fair Grounds

Walvis Bay

Tel. 064 220 924
206 Sam Nujoma Drive

For more info visit <http://www.dbn.com.na>

Energy Minister allays power cut fears this winter



NO CONCERN: Mines and Energy Minister Obeth Kandjoze

Mines and Energy Minister Obeth Kandjoze has assured the nation that Namibia will not experience power cuts this winter. An earlier NamPower report had pointed to a power crunch, especially by August, 2016.

However, Kandjoze said the power supply situation had changed significantly since then.

“The supply situation has changed considerably since the reporting period. NamPower has secured enough energy for the coming winter and beyond and there is currently no risk of load shedding,” Kandjoze said.

The maximum demand expected for the coming winter is 630MW. Of the total units required for the year (4 015.9 GigaWatt hours), NamPower will be sourcing about 40 percent from internal power plants, namely, Ruacana hydro power plant (installed capacity 347 MW), Van Eck coal power station (installed capacity 80 MW), Anixas diesel power station (installed capacity 22.3 MW) and Omburu solar power plant (4.5 MW).

“In addition, NamPower is in the process of procuring a temporary base load power plant (capacity 40-120 MW) to increase the current installed capacity. Even more, NamPower will be sourcing the remaining 60 percent from imports – ZESCO 39 MW, ZPC 80 MW at a load factor of 50 percent, while the balance will be

supplied by Eskom. The Ministry of Mines and Energy wishes to highlight that Eskom currently has excess power in its system and has indicated its willingness to supply Namibia with power for the year,” assured the Minister.

“Although the power supply situation has stabilised due to the restoration of the line from ZESA, the Ministry of Mines and Energy wishes to underscore the continuous usage of electricity sparingly. We are now in winter and during these winter months, the usage of electricity traditionally goes up, putting additional strain on available power supply,” Kandjoze appealed.

Electricity saving measures to be employed include, switching off air-conditioners, geysers and swimming pool pumps and all other non-essential appliances during peak hours, which is six to nine in the morning and evening to reduce demand.

In safeguarding electricity supply, NamPower is also at various stages of implementing renewable energy generation projects such as the Renewable Energy Feed-In-Tariff programme (70MW), GreeNam solar projects (20MW) and Diaz wind project (44MW), which will, in addition, assist to bridge the gap until the commissioning of a base load power plant. Kandjoze said Namibia will also continue with its massive rural electrification project, using grid-based and off-grid technologies.

German firms want to invest in 150MW plant



GERMAN INTEREST: (from left to right) Ullrich Kinne, Chargé d'Affaires, German Embassy, Minister of Mines and Energy Obeth Kandjoze and Judith Helfmann-Hundack, Head of German Business Delegation

German investors recently unveiled a plan to invest 100 million Euro (about N\$1,6 billion) in Namibian infrastructure, including a 150 Megawatt power plant.

A 16-member business delegation, led by the German-African Business Association (Afrika-Verein der deutschen Wirtschaft), was in Namibia to explore business opportunities. The participating business leaders were mainly interested in sectors such as mining, energy and infrastructure but also in healthcare, automation, financing and security.

The German company Gauff GmbH wants to invest 100 million Euro in the Namibian infrastructure and the G.F.H. Import and Export GmbH is ready to bring a second-hand 150 megawatt power plant to Namibia.

The current status of energy projects and upcoming opportunities, especially in the renewable sector, was introduced to the delegation by the Minister of Mines and Energy Obeth Kandjoze.

Two years ago another German delegation was in Namibia to explore business opportunities in the local renewable energy sector, looking specifically at viable solutions in areas of Solar Thermal Energy and Concentrated Solar Power (CSP).

The mission was facilitated by the Southern African – German Chamber of Commerce and Industry, with the aim of “match-making” the German RE firms with Namibian companies. The delegation held open seminars in Windhoek and Swakopmund, during which they

networked with Namibian companies.

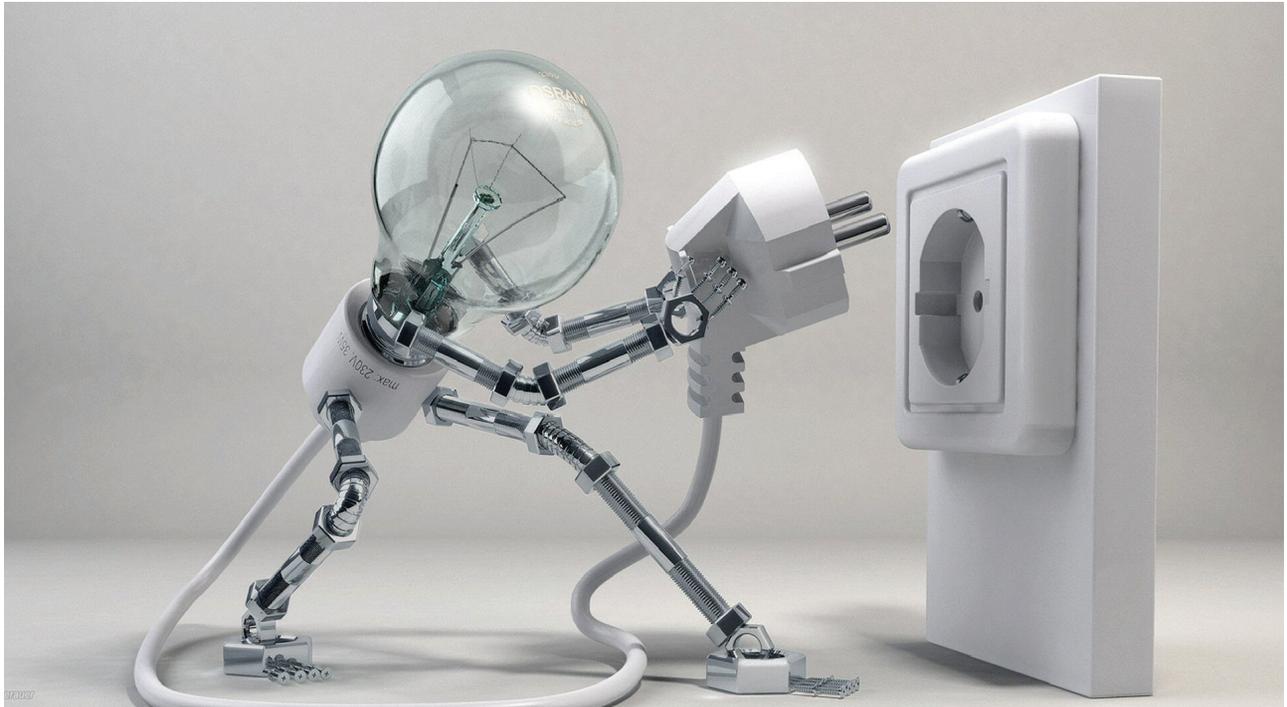
Since 2002 the German government has been closely involved in supporting the global dissemination and transfer of technologies for renewable energies, under the banner “renewables - Made in Germany”. The responsible authority, the Federal Ministry of Economics and Technology, is thus making an active contribution to the global fight against climate change while promoting the worldwide acceptance and use of renewable energies. By showcasing Germany’s technical expertise in the field of renewable energy and by organising business trips to and from Germany, the initiative facilitates business contacts between German companies and those from abroad.

Germany shows that renewable energies can make a substantial contribution to the available power supply, even in leading industrial nations.

The expansion of renewable energies therefore plays a key role in the orientation of the federal government’s energy policy. In 2011, renewables accounted for 12.5 per cent of final energy consumption and 20.3 per cent of gross electricity consumption in Germany. It is intended that this proportion should rise to 35 per cent by 2020, and to as much as 80 per cent by 2050.

This ‘energy transition’ requires a rethink from political leaders worldwide. In order to enable the integration of substantial proportions of fluctuating energies into the electricity grid, the overall system must be optimised through the intelligent networking of generation, transportation, storage and demand.

Renewable energy can drive electricity supply independence in Namibia



By Marco Triebner

For too long Namibia has been benefitting from low electricity costs, unfortunately stifling growth in the energy sector and specifically in affordable and sustainable generation capacity. Vast distances with relatively light loads, coupled with below average income households not able to support the necessary but expensive infrastructure have been contributing factors to this end. Base load generation options, generally requiring adequate economies of scale for affordability have also been challenged by relatively low electricity demand compared to the rest of Sub-Saharan Africa as well as limited natural resources in the form of fossil fuels and the high cost of development to extract these if indeed available.

It is common knowledge that supply constraints in Namibia and the Southern Africa region alike are increasingly being addressed by expensive and unsustainable mid-merit and peaking generation sources. Natural resources for renewable energy, specifically wind and solar, although abundant in Namibia, have historically been expensive to develop until fairly recently. The good news is, however, that generation from renewables in South Africa has redefined their meaning to the sector.

Initially viewed as costly generation, as previously mentioned, when compared to conventional generation, renewables in South Africa have become an invaluable

macroeconomic instrument, with operational savings in excess of N\$6 billion over 24 months. Over the latter period of operation, the renewable sector in South Africa has not only proven to be competitive in terms of meeting the demand/supply balance, but have made a significant difference on a macroeconomic level.

Based largely on Government support and its instrumental role in driving the renewables' programme in South Africa, not only was the Independent Power Producers (IPP) sector unlocked, but a level of competitiveness and efficiency was introduced, commended on an international level. It is imperative to note, that the success in the region, and by example, South Africa and Kenya, in unlocking the power sector potential, was the instrumental role played by these respective Governments. IPPs are provided comfort, given certain eventualities out of their control by way of so called "enablers" in the form of a Government Support Agreement. Through the enabling property and de-risking mechanism of the latter, IPPs are increasingly competitive in their pricing resulting from the favourable view taken by lenders, i.e. funding costs and increased tenure.

In Namibia, the immediate aspiration in terms of photovoltaic power could provide a minimum net saving of 5% to 10% to the country's annual generation revenue requirement by avoiding expensive US Dollar (USD) denominated imports; a pure financial benefit with the potential to translate into even higher macro-economic benefits given the increased affordability of power.

NamPower expects to spend a minimum equivalent of N\$2 billion to N\$3 billion on a combination of USD denominated import generation and currently pursued short term generation options, resulting in added pressure on the Balance of Payments of the Namibian Treasury and general affordability of electricity. It is for these reasons alone that the Government of Namibia is presented with the opportunity to provide support in the form of "enablers" in achieving its objective of unlocking this strategic resource in the most effective manner and therefore providing for a giant leap into the direction of at least one of Government's priorities, namely poverty alleviation through affordability, job creation and economic multipliers.

Notwithstanding the above, Namibia's Electricity Supply Industry (ESI) certainly requires the development of a base load power station to absorb the potential unpredictability of renewable supply to offer the Namibian consumer peace of mind in terms of security and reliability of supply.

Size and fuel independence, where possible, should be the determining factors, with maximum sustainable and predetermined renewable penetration and the remainder of Namibia's current generation fleet augmenting such



Marco Triebner

base load supply to achieve optimum flexibility, use of, specifically local, natural resources, affordability and independence.

Standard Bank, given its vast expertise in the Electricity Supply Industry across the continent and major player in terms of financing the renewable generation sector in South Africa, embraces Namibia's recent drive towards the development of renewables and has already proven its appetite for the sector by being the first commercial bank to extend financing to Solar PV projects in our country. Standard Bank is rapidly moving towards realising its motto 'Sustainability through Growth' by its active involvement in the renewables sector, not only across the continent, but also in Namibia's Renewable Energy Feed-in Tariff (REFIT) Program and other utility scale renewable power projects.

Namibia, as the gem of Africa, can ill-afford the same mistakes made by the Region in terms of crisis management in the power sector, due to its already small, by comparison, and fairly fragile economy. Standard Bank is thus proud to be associated with the recent developments in the country, specifically the drive towards self-sufficiency and security of supply in the Electricity Supply Industry.

Marco Triebner is an Investment Banker within the Corporate and Investment Banking (CIB) Division at Standard Bank

Upscaling sustainable charcoal production in Namibia



Harvesting encroachment bush

It is estimated that between 26 and 30 million hectares of Namibian farmland is affected by bush encroachment. This phenomenon severely degrades rangelands and hampers agricultural productivity. At the same time bush encroachment creates unique opportunities for the Namibian economy if biomass is recognised as a valuable resource for existing and new value chains.

Acknowledging the overall importance of bush control, the governments of Namibia and Germany agreed on a four-year project to address both the challenges and opportunities that bush encroachment entails.

Bush encroachment severely reduces biodiversity and the formation of groundwater that lowers the productivity and livestock capacity of pasture land by up to two thirds. This in turn causes economic losses of over N\$1, 4 billion annually due to reduced meat production.

The Support to De-bushing Project runs from 2014 until 2017 and is a bilateral cooperation between the Namibian Ministry of Agriculture, Water and Forestry (MAWF) and the Government of the Federal Republic of Germany. It is implemented by the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH.

The project's overall objective is to trigger large-scale bush thinning activities. To this end a demand-driven approach is pursued, focusing on the identification and testing of potential bush based biomass value chains. The Project selected three value chains to be supported during the course of its project lifetime, namely the value chains of charcoal, animal feed and biomass energy.

The MAWF/GIZ Support to De-bushing Project conducted a first charcoal stakeholder workshop in November 2015 in Otjiwarongo to identify joint sector promotion activities for the year 2016. The identified activities were based on the Sector Growth Strategy developed by the Ministry for Industrialisation, Trade and SME Development (MITSD).

The charcoal stakeholders agreed on the joint vision to develop a fully functioning sector association and to introduce improved production methodologies in order to foster sustainable charcoal production in Namibia.

N\$1, 6 million for NAU

It is against this background that the MAWF/ GIZ Support to De-Bushing Project has signed a financial

agreement with the Namibian Agricultural Union, to which the NCPA is currently affiliated. The agreement foresees financial support of N\$1,69 million and runs for the period April 2016 to December 2016.

The financial agreement encompasses the following activity areas: 1) re-shaping the organisational structures of the NCPA, 2) setting up a pilot project on improved production technologies and methodologies, 3) developing a marketing strategy for the Namibian charcoal sector, 4) developing informational material

and training manuals. The project is also looking at bush utilisation for energy/power generation. This approach further meets the Namibian potential of renewable energy fuels in general and of wood energy in particular. Immediate options for biomass utilisation for energy/power generation include co-combustion at the Van Eck power station, small to medium scale (5/20 MW) decentralises biomass power stations, and fossil fuel substitution in industrial boilers like the food industry such as breweries, and abattoirs.



Pieter Potgieter, the Manager of the Namibia Charcoal Producers Association, during the inception meeting of cooperation between the Support to De-bushing Project and NCPA



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O&L goes green, reduces carbon footprint



O&L Group Sustainability & Utilities Support Manager, Erwin Stegmann, has expressed satisfaction with the progress the group is making towards reducing its carbon footprint.

“Having a vision metric of reducing our carbon footprint by 20% by 2019, has created the necessary momentum within the O&L Group to do what is right for the environment – be it the installation of energy saving lights throughout the O&L Group, the Biomass Boiler at Namibia Breweries, the Biogas Plant at Namibia Dairies’ Super Farm, or Pick n Pay’s efforts to grow veggies locally - everybody is working towards sustainable environmental practices,” he said.

So far the lights at 9 Pick n Pay (PnP) stores in the country have already been replaced with energy saving bulbs.

“The process will continue until all PnP stores in the country are running on these energy saving lights that already sees a saving of at least 10 percent electricity usage at the nine stores,” he said.

Other O&L subsidiaries that have undergone the installation of energy saving lights include Namibia Breweries Limited (NBL) and Hanganana Seafood. Broll Namibia has also started installing energy saving fluorescent lights, with successful installations having

carbon footprint

been done at Wernhil Park, the O&L Centre, and the Alexander Forbes building parkade.

Namibia Breweries is in the process of installing a biomass boiler at their Windhoek production plant. The boiler, which is imported from Austria, will allow the brewery to replace 80% of the current 3600 tons of heavy fuel oil used per year with wood chips from invader bush in Namibia. NBL has invested N\$50 million into this initiative. NBL's Engineering Manager Bernd Esslinger said that NBL's plan is to use 7500 tons of wood chips per year which will replace 3100 tons of oil.

"This is cost efficient in the long term, however it is primarily driven from our commitment to reducing our carbon footprint," said Esslinger, adding that the company is investing in sustainability.

Esslinger further said that the boiler would deliver an 8000 ton per annum reduction in carbon emissions. The boiler is in line with O&L's group strategy to move towards renewable energy and to continue finding solutions that are more environmentally friendly and enhance sustainability. Wood harvesting is done by an O&L company called Organic Energy Solutions, which has implemented world class technology in harvesting invader bush and so doing not only supporting renewable energy generation, but also optimising land use. This boiler, which joins NBL's other existing boilers, is the biggest wood boiler in the country and is something new for the brewery. The one year project was started last June and work is expected to be completed in June this year.

The boiler is an additional effort by NBL to the solar plant installed more than two years ago, that generates approximately 1.7 million kWh of electricity per annum and thus reduces carbon footprint by 1700 tons of Carbon Dioxide (CO₂) equivalent units per annum.

Furthermore, at its Super Farm in Mariental, Namibia Dairies (ND) is in the process of implementing a system which will see cow dung converted into biogas to generate electricity. This will allow the dairy farm to be self-sufficient in terms of their electricity needs with some redundancy that could be provided to the grid. There is also an additional benefit to produce fertilizer.

According to O&L Group Environmental Manager, Gloudi de Beer, process optimisation and ongoing focus on efficiencies sees all operations constantly monitoring the use of water, electricity and other energy components – cooling systems, transportation, heating systems.

"Thus by constantly monitoring and measuring efficiencies, we are able to identify opportunities for further saving – so doing reducing our carbon footprint."

PnP Namibia is in the process of looking into installing new generation refrigeration systems, which will contribute immensely to energy saving. This will also be explored for other operations such as Hangana Seafood and Namibia Dairies. In reducing carbon footprint attributed to the fuel used by its fishing vessels, Hangana Seafood has made tremendous progress through innovation, and is exploring further options to further reduce its carbon footprint.



TAKING THE LEAD: In pursuit of achieving its 2019 vision metric of reducing its carbon footprint by 20 percent, the replacement of current lighting systems with energy saving lights is but one of the greening initiatives being implemented by the Ohlthaver & List (O&L) Group.

Namibia steps up bid to host Green Climate Fund



President Hage Geingob

Namibia has intensified her bid to host the African regional office of the Green Climate Fund (GCF). The fund was established in December 2011 by the Conference of the Parties to the United Nations Framework Convention on Climate Change (UNFCCC) at Durban. The Fund will aim to provide simplified and improved access to climate change funding to developing countries, including direct access, basing its activities on a country driven approach. It plans to raise US\$1 billion annually.

The Ministry of Environment and Tourism (MET) and the Environment Investment Fund (EIF) are also busy preparing six project proposals to be submitted to the Green Climate Fund, which include areas of renewable energy, climate resilient agriculture and car emissions reduction.

In April President Hage Geingob led a Namibian delegation to New York for a high-level thematic debate on achieving the Sustainable Development Goals (SDGs). The President said he was confident that Namibia would make a convincing bid to host the GCF Africa region head office. Namibia believes hosting the Africa GCF office would complement the various projects its already implementing to protect the environment.

Namibia has extensively lobbied for support from SADC members and beyond. Five other countries have also applied to host the Fund. These include Germany, Poland, Switzerland, Mexico and South Korea.

SADC has endorsed Namibia's bid and the decision on the host country is expected to be made later this year and presented for endorsement at the forthcoming climate

change conference set for Doha, Qatar in December.

SADC has also lobbied the African Union to support Namibia and ensure that the African continent has a sole candidate. The host country of the fund is required to set up an interim secretariat.

Seychelles Foreign Affairs Minister Jean-Paul Adam said Namibia was an ideal candidate for the fund as a number of middle-income small countries are often excluded from climate change funding which is allocated to traditional funding institutions because of their relatively high per capita Gross Domestic Product.

"Namibia's bid represents an important step in our quest for fairness in terms of international development mechanisms," he said, adding that southern Africa and the entire African continent must be activists in the fight against climate change.

This pro-active approach may include intensifying efforts to access the fund through jointly identifying projects that would be suitable for financing.

Research has shown that most financiers tend to favour regional projects compared to individual country projects as joint projects have wider impact and promote regional integration. Although there has been some skepticism about the magnitude of the figures and the conditions to access the funds, the establishment of the Green Climate Fund represents another step closer to comprehensively addressing climate change in developing countries.

The fund is expected to promote the paradigm shift towards low-emission and climate-resilient development pathways by providing support to developing countries to limit or reduce their greenhouse gas emissions.

LIST OF APPROVED & REGISTERED INSTALLERS AND SUPPLIERS WITH NTGRE / TCI

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Category: RENEWABLE ENERGY TECHNOLOGIES SUPPLIERS

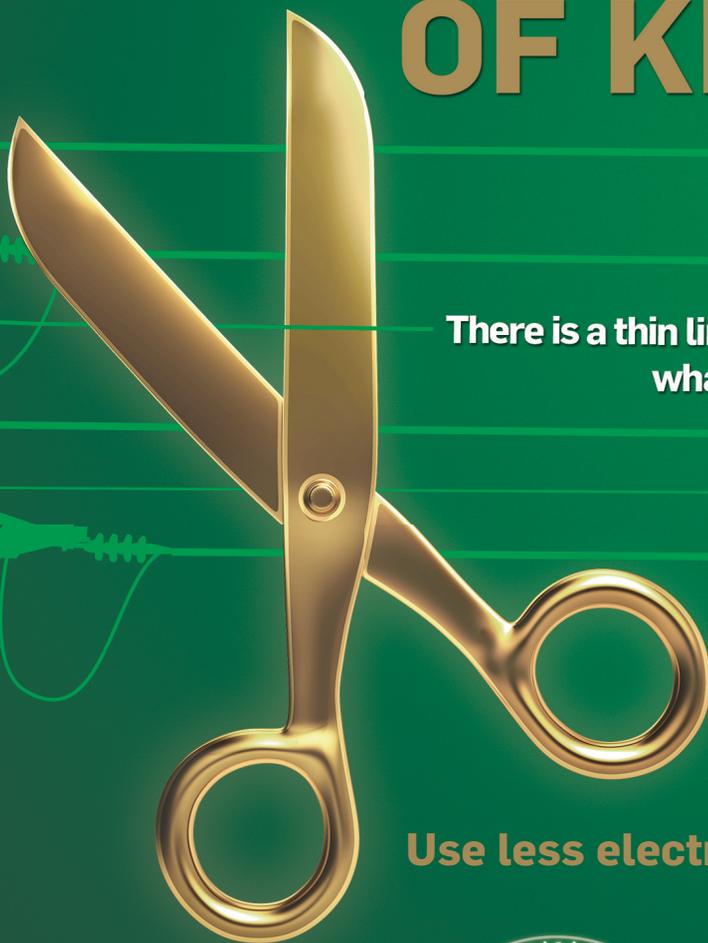
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3	Trinity Business Solutions (TBS)	SWH, Photovoltaic, SHS, Solar cookers/box, streetlights	Bernadette Simana	Telephone no: 061 258112, Fax no: 061 225667, Jacona Street, Hochland Park Erf. 1600B, Windhoek
4	SOLSQUARE Energy	SWH, Photovoltaic	Leonhard Eins	Telephone no: 061 211675, Fax no: 061 210309, 38 Newcastle Str unit 3 Roschpark, Northern Industry, Windhoek
5	Solar Age	SWH, Photovoltaic, SHS, Solar cooker/box, Street lights	Conrad Roedern	Telephone no: 061 215809, Fax no: 061 215793, 2 Jeppe Street. Northern Industry, Windhoek
6	Alternative Energy System cc (Alensy)	SWH, Photovoltaic, SHS, Energy Efficient Appliances; wind.	Pieter Beckers	Telephone no: 061 400877, Fax no: 061 400870, 10 Diehl Street, Southern Industrial, Windhoek
7	Terrasol	Photovoltaic, Energy efficient stoves, Solar borehole pumps	Schultz Werner	Telephone no: 061 233608/239454, Fax no: 061 239454, 9 Nobel Street, Southern Industrial, Windhoek
8	Engineering Centre cc	Photovoltaic	Greiter Joern	Telephone no: 061 220696/221069, Fax no: 061 220703, 21 Schafer Street, Windhoek
9	Suntank Namibia	SWH	Kutz Udo	Telephone no: 064 401009, Fax no: 064 400009, 83 Strand Street, Swakopmund
10	Jonny Auto Elektries	Photovoltaic, SHS	Jan Hendrik Hanekom	Telephone no: 063 222442, Fax no: 063 223897, 83 Cathedra Street, Keetmanshoop
11	HPS Engineering	SWH, Photovoltaic, SHS, Energy Efficient appliance	Eduard C. Drotsche	Telephone no: 063 223399, Fax no: 063 223366, 101 Stapelia street, Keetmanshoop
12	ConServ Engineering Services CC	SWH, Photovoltaic, SHS, Energy Efficient appliance	Mark Riehmer	Telephone no: 061 236336, Fax no: 061 256726, 24 Parson Street, Southern Industrial Area, Windhoek, Email: info@conservcc.com
13	LED Lighting and Solar Warehouse	SWH, Photovoltaic, SHS, Energy Efficient appliance	Mark Anthony Walsh	Telephone no: 061 302516, 3 Mathem Street, Hochland Park Windhoek
14	SolTec	SWH, Photovoltaic, SHS, Energy Efficient appliance	Heinrich steuber	Telephone no: 061 235646, Fax no: 061 250460, 51 Marconi Str, South Industrial, Windhoek
15	Solar Plus Renewable. E	SWH, Photovoltaic, SHS, Energy Efficient Appliances, gas stoves, solar freezer	Leonard S. Sakaria	Cell: 0812809497, Fax: 065-260038, Onekwaya East, Ohangwena- Main Road, P. O. Box 449, Ohangwena.
16	Temako Green Energy (TGE)	SWH, Photovoltaic, SHS, Energy Efficient Appliances, streetlights & accessories	Ndilula Mwahafar	Tel: 220743, Fax: 255660, No. 2 Ruhr St, Northern Industrial Area, P. O. Box 24749 Windhoek.
17	Khomash Equipment & Appliances cc	SWH, Photovoltaics, SHS, EE appliances, torches, lanterns, chargers.	Sitali Stanley	Tel: 061 271590, Fax: 061 271591, 1264 Goudsnip St. Hochland Park, Windhoek.
18	Namibia Solar Solutions (Prop.) Ltd	SWH, Photovoltaics, SHS, EE appliances,	Letisia Shikokola	Tel: 065 230097, Fax: 065 230094, P.O. Box 90142, Ongwediva. Oshakati
19	FLA Trading cc	Photovoltaics, SHS, EE appliances	Lucky Namupolo	Tel: 061 222092 Cell: 0811290045 or 0811240882; P.O. Box 11554 Windhoek
20	SkyPower Namibia cc	All listed products, plus fridges and wind except stoves.	Chris King	Tel: 064-209952, cell: 0812720508, Fax: 064-209952, P.O.Box 1861 Walvis Bay.
21	Orujaveze Solar cc	SWH, Photovoltaics, SHS, solar	Mr. Rolf P. Seiferth	Tel: 061-260338; Fax: 061-260338. P.O. Box 2409, Windhoek.
22	Nanec Trading Enterprises cc	Photovoltaic and Solar Home Systems	Regina Shiimi	Tel: 065-244135 (Omuthiya), 065-260189 (Ohangwena), and 065-288504 (Okongo) Cell: 0816100111 or 0814684118, fax 088640669, e-mail: nanectradingcc@gmail.com, P.O. Box 23592 Windhoek.
23	REMI Solar Energy cc	Solar Water Heaters, Photovoltaic & Solar Home Systems	Remengius Shikongo	Cell: 0812535285. Erf 1248 Beta Street Khomasdal. P.O Box 24591 Windhoek. Email: shikongorem@yahoo.com
24	Etameko Marketing & Sales cc	Solar Cookers/box	Johannes Nekundi	Tel 061-263694/210682. Cell 0812596195. P.O Box 280 Windhoek; Fax 061-263614. Nordland Street No 38 Lafrenz Township. Email: jrnetameko@iway.na

25	NATWE Electric & Solar	Solar Water Heaters, Photovoltaic, solar Home Systems, Solar cookers/box, Energy Efficient Stoves, Solar pumps, Wind Turbines, Fridges & Freezers	Adriaan Olivier	Tel: 066 25635. Cell: 0811286018. P.O Box 1730 Rundu. Erf 536 Nkarapamwe Rundu. Email: mawa@iway.na / adriaan@mweb.com.na
26	Andjamba Construction cc	Solar Water Heaters, Solar Home Systems, Solar Cookers/box, Cellphone Charger	Mr. J T Andjamba	Tel: 065 251049. Cell: 0811286992. Fax: 065 251049. P.O Box 304, Outapi. Erf 435, Outapi. Email: temeipojohannes@yahoo.com
27	Multi Engineering and Training Services cc	Solar Water Heaters, Photovoltaic, Solar Home Systems, Solar cookers/box, Energy Efficient stoves, solar Water Pumps	Jansen Uaundja Mieze	Tel: 061 303003. Cell: 0812801545. Fax: 061 303003. P.O Box 62190 Katutura. Erf 7 Adler Street. Email: uaundjamieze@yahoo.com
28	Be Prepared Investments 56 cc	Solar Water Heaters, Photovoltaic, Solar Home Systems, Solar cookers/box, Energy Efficient stoves, Wind Turbines, Fridges and Freezers, Solar Pumps	Adriaan Olivier	Tel: 061 301334. Cell: 0811286018. Fax: 061 301334. 6 Karin Muir Street Olympia. Email: adriaan@mweb.com.na
29	Döbra Solar Development Project	Solar cookers/box	Mr. Willem Hans	Cell: 081 4216347. Fax: 061 239791. RC Mission Döbra, Plot 46 Döbra, Windhoek. Email: solarcookernamibia@gmail.com
30	Central Technical Supplies	Solar Water Heaters, Photovoltaic, Solar Home Systems	Mr. Erik Lund	Cell: 0811276771; Tel: 061 224238, Fax: 061 233254, E-mail: sales@ctsnam.com, P.O Box 6751 Windhoek, 13 Walter Street, Windhoek, Namibia
31	Maltahöhe Auto & Electric cc	Solar Water Heaters, Solar Home Systems, Solar Cookers/box, Energy Efficient stoves	Mr. Verwey Hendrikus Jacobus	Cell: 0811483062. Tel: 063 293313. P. O Box 62 Maltahohe Namibia. Email: PoDnpo3@mweb.com.na
32	Aqua Conservation Services cc	Solar Water Heaters, Solar Cookers, Dry Sanitation	Mr. Manfred Fortsch	Cell: 0813666441. Fax: 0886517324. P. O Box 6915, Ausspannplatz, Windhoek, Namibia. Email: info@ aqua-conservation.com
33	Forever Electrical	Solar Water Heaters, Photovoltaic, Solar Home Systems, Solar cookers/box, Energy Efficient stoves, Grid and Off-Grid Power	Mr. Abisai Shiyagaya	Cell: 0811246969. Fax: 088 615676. P.O Box 2674, Oshakati, Namibia. Email: foreverelectrical@mweb.com.na
34	M. Engineering and Solar Power Contractors cc	Solar Water Heaters, Solar Home Systems, Solar cooker/box, Energy Efficient stoves	Mr. Moses Tomas	Cell: 0813711122. P.O Box 6164 Ausspannplatz, Namibia. Erf 698 Mozambique Street, Katutura, Windhoek, Namibia. Email: twmoses02@gmail.com
35	Electro Centre cc	Solar Water Heaters, Photovoltaic, Solar Home Systems, Electrical Refrigerators	Mr. Stephen Sserwada	Cell: 0812986218. P.O Box 1879 Ondangwa, Namibia. Onethidi Main Road, Ondangwa, Namibia. Email: electrocentre@iway.na
36	Cedar Solar cc	Photovoltaic, Solar Water Pumps	Mr. Christiaan Ackermann	Cell: 0816638839. P.O Box 90433, Windhoek, Namibia. Erf 21 Nachtigal Street, Ausspannplatz, Windhoek. Email: christiaan@cedarsolar.com
37	Blits Electrical cc	Solar Water Heaters, Photovoltaic, Solar Home	Mr. Francois Johannes Binneman	Cell: 0817239312. P.O Box 70, Aranos, Namibia. Erf 83 Hospitaal Street Aranos, Namibia. Email: fransbinneman@iway.na
38	Hopsol Africa (Pty) Ltd	Photovoltaic, Solar Home Systems	Mr. Bjoern Wilschke	Cell: 0811792969, Email: bjoern.wilschke@hopsol.com , P.O Box 9150, 5 von Braun Street, Windhoek, Namibia
39	Generation Resources cc	Solar Water Heaters, Photovoltaic, Solar Home Systems, Sola cookers/box, Energy efficient stoves, Wind energy	Mr. Timoteus Waendama	Cell: 0812446633. P.O Box 23603 Windhoek, Namibia. Erf 7276 Papaja Street, Windhoek, Namibia. Email: timwaen@gmail.com
40	Unity Mining & Energy Resources (Pty) Ltd	Solar Water Heaters, Solar Home Systems	Mr. Matthew Pengeyo	Cell: 081202055. Email: mathew.unityenergy@gmail.com , 12 Scheppman Street, Pionierspark, Windhoek Namibia
41	Asense Investments	Solar Water Heaters	Mr. Sahabo Emery	Cell: 0814459621. P. O Box 9993 Windhoek, Namibia. Email: asense.service@gmail.com , Parson Street Southern Industry, Windhoek Namibia
42	New Era Investments	Solar Water Heaters, Photovoltaic, Solar Home Systems, Solar Water Pumps	Mr. Flyer Huang	Cell: +264 81 124 1899, P O Box 90323 Windhoek, Namibia. Email: exclusive-sales@hotmail.com , 74 Frans Indongo Street, Windhoek West, Windhoek Namibia
43	Shwepo Investment cc	Solar Water Heaters, Photovoltaic, Solar Home Systems	Ms Leticia Amushila	Cell: 0818291315, 0811481490, P O Box 30540 Pioneerspark, Windhoek, Namibia. Email: shwepoinvestments@gmail.com , 552 Rocky Crest
44	EMG Investments cc	Solar Water Heaters, Photovoltaic, Solar Home Systems, Streetlights and Fridges	Ms Grasiona Berasius	Cell: 0813672755, P O Box 878 Oshakati, Namibia. Email: emginvestmentscc2014@gmail.com, Erf 82 Oshikongo, Namibia
45	RID Solar (Pty) Ltd	Photovoltaic, Solar Home Systems	Mr Gerson Murorua	Cell: 0812440332, P O Box 2181 Tsumeb. Email: info@ridsolar.de , 122 Halali Street, Nomtsoub, Tsumeb, Namibia
46	Transtech Distribution (Pty) Ltd	Solar Water Heaters, Photovoltaic, Solar Home Systems, Energy efficient stoves	Mr Gerhardt Jessen	Cell: 085 1290965, Tel: 061 253274, P O Box 97309 Maerua Mall Windhoek, Email: gerd@transtech.com.na , 22 Palladium Street, Prosperita, Windhoek Office
47	DIS Engineering cc	Solar Water Heaters, Photovoltaic, Solar Home Systems	Mr Gero Bjoern Bajorat	Cell: 0811242610 Tel: 067 303337, Email: disengineering@iway.na P O Box 555, Otjiwarongo, West Street 17, Erf 147 Otjiwarongo
48	TEllies Elsat	Photovoltaic, Solar Home Systems	Mr Clinton Olckers	Tel: 061 248425, Fax: 061 248424, Email: natalie@elliesnam.com, P O Box 80650, Windhoek, 14 Joule Street Windhoek.
49	Proska Investment CC	Solar Water Heaters, Photovoltaic, Solar Home	Martin Nambundunga	Cell: 0813719449, Fax: 264886556132, martin@proska.com.na, P.O Box 22924, Windhoek, 3 Peter Mweshinge, Avis, Windhoek.

KEY

SWH	Solar Water Heaters	SHS	Solar Home Systems	PVP	Photovoltaic Water pumping
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THE POWER OF KNOWING



There is a thin line between what you use and what we are able to supply.

Use less electricity during peak times



6 - 9 AM

and



6 - 9 PM

Please avoid using washing machines, dishwashers, pool pumps, irons, air conditioners and all other appliances you do not need to use during these times.

Let's work together and use electricity sparingly.



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