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SOLTRAIN

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[Namibia] SOLTRAIN at International Conference on Solar Power Systems

Fenni Shidhika, Helvi Ileka and Zivayi Chiguvare

The Namibia Energy Institute presented recent Southern African Solar Thermal Training and Demonstration Initiative (SOLTRAIN) activities and promoted solar thermal energy at the International Conference on Solar Power Systems for Namibia (SPSN18) organized by the University of Namibia (UNAM), earlier this year.

The international conference took place in mid May at the Greta Conference Centre, just outside of Windhoek.

It was attended by more than 100 participants, 90 % of whom were science school teachers from various regions in the country. The remainder of the participants were academic staff, both lecturers and senior students, from local and international universities, private industry representatives and some government officials.



The Honourable Minister of Mines and Energy, Tom Alweendo, examines the solar thermal systems presented at the conference

The main objectives of the conference were to:

- Create awareness, share and gain the latest knowledge and development trends on solar energy systems
- Discuss the implementation of cost recovery systems
- Educate high school teachers on the use

of solar energy systems for economic and social development, and

- Design, construct and test simple solar thermal systems.

The conference emphasised the role that solar lighting and simple solar thermal systems can play in providing access to basic energy services.

Other important topics included energy access and development of communities, environmental impact of energy extraction, transport and usage, as well as regional energy usage in Africa as a whole, SADC and Namibia, in relation to global energy usage.

The impact of energy access on health, education, and societal well-being was also discussed, along with various other options for its provision.

Staff from the Namibia Energy Institute (NEI), which is the Namibian implementation partner for the SOLTRAIN, demonstrated various types of solar cooker, including solar box cookers, the parabolic cooker and the solar bakery.



Participants at the conference amazed by the solar box cookers

Ms. Helvi Ileka presented NEI activities including key outputs from the SOLTRAIN Project such as the Solar Thermal Roadmap, the Center of Competence activities and the results from the monitoring systems.

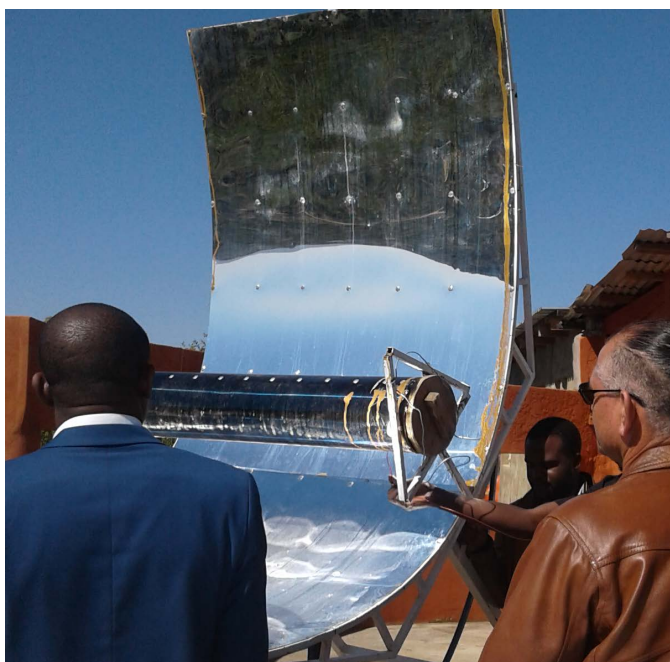
The Honorable Minister of Mines and Energy, Tom Alweendo, attended the last day of the conference and gave his words of encouragement towards energy access for all in the country. He emphasized the value of cooperation between all the various energy

stakeholders including government, the private sector and academia, and encouraged them to work together in order to overcome access challenges.

The Minister, school teachers and all participants at the conference, were impressed with how the solar cookers cooked delicious meals and the effectiveness of the solar bakery, with the school teachers showing interest in knowing more about the design and manufacture of the solar cookers and bakery in order for them to introduce the concepts to their students. Lecturers from UNAM also indicated their interest in introducing the solar bakery concept at UNAM for student research for those studying towards a Master's of Science in Renewable Energy.

Participants at the conference had the opportunity to taste the delicious chicken wings and potatoes cooked from solar cookers, as well as bread baked from the solar bakery.

Below are some pictures of the participants attended the conference and NEI staff explaining the solar cookers and the solar bakery to the participants and to the Honorable Minister of Mines and Energy, Tom Alweendo.



Senior Shimhanda, an intern student from NEI, explaining the solar bakery to the participants

[Botswana] Solar Thermal Technology Platform will present challenges, but CERC and stakeholders are up to the task

Prof. E. Matlotse

The Botswana Solar Thermal Technology Platform (BSTTP) Meeting, held at the end of May, aimed to pave way for the implementation of the Botswana Solar Thermal Technology Roadmap (BSTTR) which was formulated through the SOLTRAIN project. For this meeting, various stakeholders from different establishments, led by the Department of Energy (DoE), convened to deliberate on how best to achieve the huge tasks which lie ahead as part of the roadmap.

The proceedings started with the Clean Energy Research Centre (CERC) Director who is also the Chairman of the Botswana Solar Thermal Technology Platform (BSTTP), Prof. E. Matlotse, giving a welcome address to participants. He emphasised that the implementation of the BSTTR is a huge task which needs stakeholders to all work together towards achieving it.



CERC Director and BSTTP Chairman, Prof. E. Matlotse, giving the welcoming address

Also, he also urged DoE to play an active and leading role to ensure that the government offers the required support, without which the roadmap will not succeed.

The CERC Director then went on to recap the SOLTRAIN project milestones so far, giving more detail about the formulation of the BSTTR and its implementation plan. He

emphasised that the formulation process was a rigorous consultative process which involved stakeholders from beginning to end.

He also emphasised the level of international and regional cooperation, in particular, the SOLTRAIN Conference in Namibia last year and the conference in Gaborone earlier this year. In both of these conferences, SOLTRAIN partner representatives from Botswana, Lesotho, Mozambique, Namibia, South Africa and Zimbabwe presented their respective country roadmaps which allowed for a sharing of ideas and experiences, and the opportunity to fine tune the countries' respective roadmaps.

Prof. A. Obok Opok was also on hand to present the BSTTR to the participants, resulting in some robust engagement on how best to implement the roadmap. The following was agreed with respect to the roadmap implementation:

- Clean Energy Research Centre (CERC) is to coordinate the entire process encompassing implementation, monitoring and control.
- In two weeks following the meeting, the CERC Director was to constitute a National Task Force drawn from the key stakeholders which would be responsible for implementation, monitoring and control of the BSTTR.
- After constituting the National Task Force, the CERC Director would inform the BSTTP.
- The NTF would then start work by drawing up the terms of reference and scope of work.



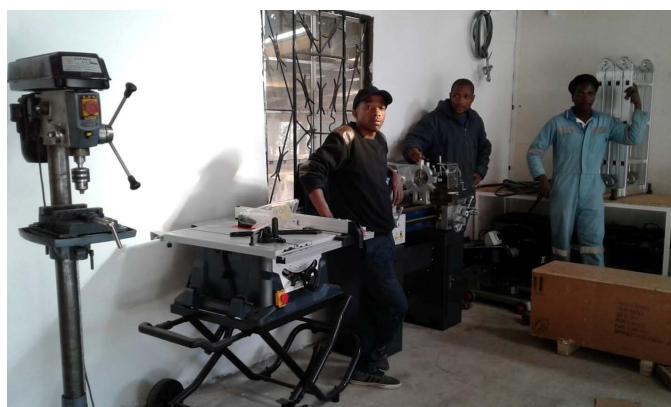
Dr. K. N. Nwaigwe, member of CERC Management Committee, gave the closing address

[Lesotho] Workshop expansion for BBCDC's new solar thermal venture

In order to create income and ensure future sustainability, the Bethal Business and Community Development Centre (BBCDC), with funding and support from SOLTRAIN, has established a solar thermal company in Mohale's Hoek and has extended its existing workshop.

The workshop is equipped with the necessary tools for the local assembly of solar thermal systems and the welding of stands.

After a diligent procurement exercise, Adendorff Machinery Mart in Bloemfontein was selected as the preferred supplier of the tools and equipment needed for the new venture due to its wide range of stock and proximity to BBCDC.



The workshop team with some of the new tools

[Zimbabwe] University of Zimbabwe re-launches Master of Science Renewable Energy

Tawanda Mushiri and Samson Mhlanga

First launched in 1996 and then suspended, University of Zimbabwe's Faculty of Engineering has relaunched its Master of Science Renewable Energy (MRE).

Energy is essential to economic growth and poverty reduction in Zimbabwe and the national drive to eradicate poverty and achieve the

Sustainable Development Goals (SDGs) requires skilled professionals to manage and implement energy development projects. While basic knowledge is imparted in the undergraduate program, there is need for specialization to successfully implement renewable energy projects.

The serious energy security challenges being faced by the country point to increased demand for renewable energy experts, preferably at postgraduate level, who would service all sectors related to demand and supply of energy in Zimbabwe.



The academic programme was suspended by the University in 2012 due to dwindling numbers of lecturers and supervisors who were qualified to offer MSc programmes. Recently however, the Department of Mechanical Engineering engaged partners in the region and beyond, to provide qualified complementary personnel as a short-term measure to allow the programme to run while staff development efforts are intensified to support the training of academics in order to attain PhD qualifications in the renewable energy field.

The partners include:

- Africa EU Renewable Energy Co-operation Programme (RECP).
- European Union Energy Initiative
- University of Dar es Salaam
- Technical University of Munich (TUM)
- Makerere University
- SADC-WaterNet

The purpose of the MSc is to provide high quality postgraduate education in the field of renewable energy so that participants develop proficiency in renewable energy project design, implementation, operation and maintenance, as well as in crucial phases of policy generation. There is also scope for focussed research on renewable energy-related topics.

The re-launched masters degree builds on the Mechanical Engineering Department's other efforts towards the achievement of the 2030 Sustainable Development Goals, in particular, its participation in the Solar Thermal Training and Development Initiative (SOLTRAIN). Through the initiative, the department will be able to capitalise on the programme's regional knowledge network, as well as have the use of the SOLTRAIN solar thermal demonstration trailer as well as access to various solar thermal demonstration sites. This will contribute immensely to solar thermal-related learning and research.

The Permanent Secretary of Ministry of Energy and Power Development was the guest of Honour where more than 120 participants attended the launch earlier this year.



[South Africa] SOLTRAIN at African Utility Week

By Khothatso Mpheqeke and Karen Surridge

The 18th annual African Utility Week hosted 6 411 attendees over 3 days from 84 countries and 300 exhibitors from 30 different countries. The South African National Energy Development Institute (SANEDI) was one of the exhibitors for the 2018 African Utility week showcasing various projects implemented through SANEDI, including the SOLTRAIN programme.

The African Utility week is an international conference hosted annually, providing the largest gathering of energy and water professionals focused on all aspects of provision of energy services to the African market, where attendees can source solutions, generate business and connect with new and existing energy markets. SANEDI participates at this conference annually, through speaking and/or exhibiting.

This year, various stakeholders approached the SANEDI exhibition stand, many of whom were aware of the SOLTRAIN programme and had benefited from it since the first phase through training, knowledge sharing and networking and system installations. SOLTRAIN promotional material was widely distributed and the project received great interest.



Ms. Khothatso Mpheqeke explains the SOLTRAIN programme to an interested delegate at African Utility Week 2018

[Lesotho] Malealea Lodge: Building on solar thermal successes

Submitted by Malealea Lodge

In 2016, Bethel Business Community and Development Centre (BBCDC) installed five 150 litre solar water heaters as a pilot project at Malealea Lodge. After monitoring and evaluating the project for 6 months, a decision was taken by the lodge to install another five systems in 2017, again with BBCDC'S help.

Through monitoring, it was found that the geysers were effective for at least 300 days of the year, and during this time, produced a wholly adequate amount of hot water for the establishment's guests.



During the rainy season, when a lot of overcast conditions occur, the output of the solar geysers needs to be carefully monitored. When the solar output is not sufficient, staff at the lodge switch back to the original gas geysers as a backup. The system was designed so that the change over is extremely simple.

The savings on gas has been significant due to the ample amount solar radiation the lodge receives for much of the year, and plans are afoot to install another 10 systems in the not too distant future.

[Botswana] SOLTRAIN's Second Dissemination Training Course

Prof. E. Matlotse

The University of Botswana Clean Energy Research Centre (CERC) held the Southern African Solar Thermal Training and Demonstration Initiative (SOLTRAIN) project's second dissemination training course at the end of May, 2018

Ten individuals were trained, including four from the Department of Energy (DoE). Two of the DoE participants were permanent staff members and two were attached students from the Botswana International University of Science and Technology. Another two participants were technicians from the Maruapula Secondary School and, with an additional two individuals from Pumping Fuel company. The remaining two participants were private individuals.



Group photo of the participants in front of the solar trailer

In the opening address, Prof. E. Matlotse restated that this was the second of the five training courses which are planned for SOLTRAIN III

The first training course was held in the third quarter of 2017 in which 20 Ministry of Basic Education technicians coming from all the 9 national districts were trained. The next training

course will be held in Maun.

Prof. E. Matlotse added that the project is intended to position the country to be able to implement the Botswana Solar Thermal Technology Roadmap (BSTTP) which is one of the key outputs of SOLTRAIN. In turn, the country would make gains in the reduction of greenhouse-gas emissions, thereby contributing to climate mitigation.

The second training course was three-days in duration, with participants being awarded certificates upon completion.

The training was administered by the UB team under the CERC and included the efforts of were Prof. E. Matlotse, Prof. A. Obok Opok, Mr. O. T. Masoso, Mr. O. Seretse and Mr. M. Lethapa.



Course participants in one of the lectures

[South Africa] SOLTRAIN at Sustainability Week

By Khothatso Mphegeke and Karen Surridge

Sustainability Week has taken place each year since 2015 and is hosted by the City of Tshwane, South Africa's capital city and a pioneer of green urban development.

The African Capital Cities Sustainability Forum is the premier Sustainability Week event for city leaders on the African continent and key challenges threatening growth and development in Africa are addressed, including issues such as rapid urbanisation, energy and water access and stresses, sanitation, the global

economic slowdown, rising unemployment and social inequities, trade facilitation, connectivity, land and biodiversity degradation, amongst others, as well as the significant and growing impacts of climate change.

The conference and exhibition has a broad audience base with the exhibition not only visited by professional delegates within the sustainability space, but also by the public and students, and is thus an important means of spreading information to a wider audience.

Due to the profile of this event, SANEDI often fields requests from the media for interviews, and Dr Karen Surridge, SOLTRAIN programme lead for South Africa in Gauteng, was approached to do an interview about Sustainability as a broad concept.

She utilised the platform to speak about the SOLTRAIN programme and used solar water heating as an example of sustainable renewable energy-based technology.

The link for the interview is provided on the SOLTRAIN website and/or can be accessed here (<https://www.youtube.com/watch?v=6VfZP2U7MuE>).



[Zimbabwe] International environment day commemorations

Samson Mhlanga

The National University of Science and Technology, Zimbabwe's SOLTRAIN country partner, exhibited and presented at the International Environmental Day's

commemoration held in late March at Milton Primary School, Bulawayo.

Other organisations present included the Ministry of Primary and Secondary Education represented by the Provincial Education Director - Bulawayo Province, Bulawayo City Council Parks, Alliance Française de Bulawayo, Environmental Management Agency, Forestry Commission, Zimbabwe Climate Change Coalition, Zimbabwe Water Authority, Meteorological Department, National Parks and Wildlife Department, Zimbabwe Tree Ambassador and various Primary and Secondary Schools.



Group photo with the primary school learners

The objective was to use a single day to commemorate a number of significant global environment events occurring in March, including Africa Environmental Day, World Wildlife Day, International Forest Day, World Water Day, World Meteorological Day and Earth Hour Day. The commemoration involved raising awareness of the different days and their importance through presentations, followed by Quiz Time for the students.

These sessions were then followed by a practical demonstration by Mr G Munhuwamambo and Eng A. Mnkandla of the Solar Thermal Technology which offered practical solutions to challenges common to all the environmental days.

The gathering was concluded with a symbolic tree-planting ceremony. The event was

sponsored by Alliance Française de Bulawayo represented by their Director, Mr Durand-Massé. Mr J Zvaita (Programme Director of Zimbabwe Climate Change Coalition), Mrs S B Ncube (Deputy Provincial Education Director), Eng S Mhlanga (SOLTRAIN-NUST Representatives), Mr D. Ndlovu (EMA) and Mr S Dube (BCC) also presented at the event.



Symbolic tree-planting by Mrs. S. B. Ncube

[Botswana] Energy stakeholders conduct tour of Maruapula Secondary School's solar thermal installations

Prof. E. Matlotse

Various stakeholders from different entities, led by the Department of Energy (DoE), converged on the Maruapula Secondary School to conduct a site visit of the school's solar thermal installations which were 50% sponsored by the Solar Thermal Training and Development Initiative (SOLTRAIN).

Also in attendance was Ms. Helvi Ileka from the Namibia Energy Institute, SOLTRAIN's Namibian country partner.

The installations at the school involved the refurbishing the existing solar heating system at the boys' hostel and installing new solar thermal systems at the girls' hostel.

The proceedings started with the principal of the school, Mr. A. Taylor giving a welcoming address. In his address, he thanked the Clean Energy Research Centre (CERC) and the SOLTRAIN project sponsors (Austrian Development Agency and OPEC) for their support.



Symbolic tree-planting by Mrs. S. B. Ncube

He added that the support had come at an opportune time when his school is positioning itself to tackle some of the challenges of climate change.

CERC Director, Prof. E. Matlotse, outlined the SOLTRAIN project achievements to date and thanked the school and the SO SOLAR (Pty) Ltd for partnering in the project.

Ms. K. Giffard of SO SOLAR (Pty) Ltd, took the attendees through how they, as a company, executed the installations from start to finish. She emphasised that an important thing to note was that they had been beneficiaries of the SOLTRAIN training programme, and had thus become eligible to apply for SOLTRAIN funding to kickstart the project. They then approach the school after consulting its respective management and they were successful. Finally, they executed the installations. She also took time to thank the school management, CECR and the project sponsors.

After the speeches, attendees conducted a tour of the installations. Proceedings were closed by Mr. H. Ngwenya of Capricon Solar (Pty) Ltd. In his closing address, he thanked everyone who came to this important occasion and encouraged all stakeholders in the solar thermal technology space nationally to work towards realising the Botswana Solar Thermal Technology Roadmap (BSTTR). He added that even though it will be challenging, it is still achievable!



Attendees took time to tour the installations

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The Southern African Solar Thermal Training & Demonstration Initiative is a regional initiative on capacity building & demonstration of solar thermal systems in the SADC region. It is funded by the Austrian Development Agency & co-funded by the Opec Fund for International Development.

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www.soltrain.org**



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