

CHRONICLE

QUARTERLY NEWSLETTER | ISSUE 21 | DECEMBER 2022

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MESSAGE FROM OUR CEO

As South Africans, we continue to hope and work toward a bright and a well-lit country that is flourishing and provides opportunities for all and provides decent living by providing energy and water services.

Severe demands placed on South Africa's power grid and the real risk of a complete blackout if mitigating measures are not put in place, has seen South Africa dealing with ongoing load shedding. In an address by our President on 25 July 2022, he outlined the challenges, but more importantly what needs to be done now and in the future to achieve stability of our energy grid. The role of skilled and capable personnel in South Africa's energy sector will be the driving force to ensure that the energy plans materialise. This will require multiple stakeholders in the energy sector need to work together to find solutions and to capacitate the sector with the skills it needs.

It is evident that water still remains critical in job creation as the significant part of the global workforce is made up of jobs that are either moderately or heavily dependent on water. It is important that we do not neglect addressing water challenges in the country if we are to see the economic growth anticipated.

The planned reforms of South Africa's water sector that aim to increase investment in the maintenance and construction of water infrastructure and improve water quality bodes well for the sector that is too beset with a variety of challenges. The proposed National Water Resource Infrastructure Agency (NWRIA) aims to improve water-use licensing processes, implementation of a revised raw water pricing strategy, strengthening of regulation of water pricing and service standards, as well as institutional inefficiencies in municipal water and sanitation services. We look forward to these changes and commit to work with all the relevant structures to ensure that skills needs are factored in.

The President placed extensive emphasis on the role of renewable energy (RE) in addressing the country's energy needs and over the last few years a great deal has been done to boost the power grid with RE, it is also important that we remember the important role that fossil fuel based energy sources will continue to play in the country's energy mix. In delivering on its mandate to drive skills development in the energy sector, the EWSETA is required to take a holistic approach that will result in projects and programmes to capacitate the numerous sub-sectors we serve with the skills required.

This, and the fact that the EWSETA has a big mandate and limited resource, has necessitated that the EWSETA drive variety of partnerships with the relevant energy and water stakeholders to bolster efforts and realise maximum return on investment in skills development initiatives. Our robust partnership strategy is yielding results and our most recent discretionary grant window has seen some very exciting, impactful projects being awarded that will assist in driving our skills development mandate. Details on these exciting projects will be featured in upcoming editions of the EWSETA Chronicle.

I remain grateful to you, our valued stakeholders, for the partnership, support and dedication to drive skills development in our sectors and look forward to engaging with you in working on solutions to sector challenges where skills development is a key enabler.

Mpho Mookapele



NOTE FROM THE EDITOR

As South Africa winds down for the year, for the team at EWSETA we will be busy right up until midday on 21 December 2022 when we will close for our Festive Season break. When we return on 4 January 2023 it will be a case of 'all systems go' to finish the 2022/23 year strong.

This issue is jam packed with information on numerous industry events that the EWSETA has participated in over the last few months.

On pages 6 - 7 we have details on various events that took place during Women's Month. Unlike the last two years where we hosted our own EWSETA Women's Month event, this year we were inundated with requests to partner on a number of Women's events taking place within the Energy and Water sector. It was both incredibly humbling and exciting for our EWSETA team to sit on panels consisting of phenomenal female leaders in the sector and we will continue to work hard to ensure female representation and transformation of our sectors.

Staying on the topic of women, on page 8 we have some input from Board Members and Executives around the important role that women play in so many avenues of life.

In June 2022 I was privileged to serve as a judge for the Green Innovator's Pitch as part of the Green Youth Indaba covered on page 14. This really was a fulfilling experience as I got to experience first-hand just how creative and solutions-driven our young people are. I have no doubt that the passion exhibited by the presenters can only bode well for the future of the country.

SMME support continues to be a key strategic thrust for EWSETA and at the PEWA exhibition covered on pages 22 - 23, we were proud to host four SMMEs at our stand. Find out more about these SMMEs and how they benefited from their involvement in the event. A further ten SMMEs/entrepreneurs were given an opportunity to showcase products and services in the water and sanitation sectors at the WISA Conference from 28 - 30 September 2022.

The inaugural EWSETA Water Innovation Awards, held during the WISA event, proved to be an exciting

showcase of innovation within the sector and created quite the buzz at the Conference. At the pitches held on the final day of the Conference, we were, once again, heartened by the creativity and passion of the participants. Congratulations to the overall winner Paseka Lesolang from Water Hygiene Convenience who walked away with some amazing prizes courtesy of EWSETA and our partner The Innovation Hub. See pages 20 - 21 for more details.

EWSETA's CEO, Mpho Mookapele is a lady in demand and in her gracious way, she always strives to be present where she is needed the most. One of the highlight events at which our CEO was a keynote speaker, was the Hydrogen Africa Summit, where she also participated as a member of a panel discussion hosted by our sister SETA, CHIETA. There is a great deal of work being done in terms of SA's Hydrogen landscape and on pages 10 - 11 you can find out more.

Another event that had all of the Post-school and education stakeholders flocking to the Cape Town International Convention Centre was the TVET Summit which is covered in more detail on page 13

All these events highlight our participation and overall objective, which will always be to drive home the importance of skills development in the sectors we serve.

I was also fortunate enough to have been able to attend the Future Me - World of Work career guidance exhibition (see page 17) held in Cape Town in September 2022. On the subject of career guidance, see pages 16 to 17 for details on the career guidance activities undertaken by EWSETA during September 2022. We have also provided information on the Grade 12 Science and Maths capacitation sessions that took place in the Northern Cape during October.

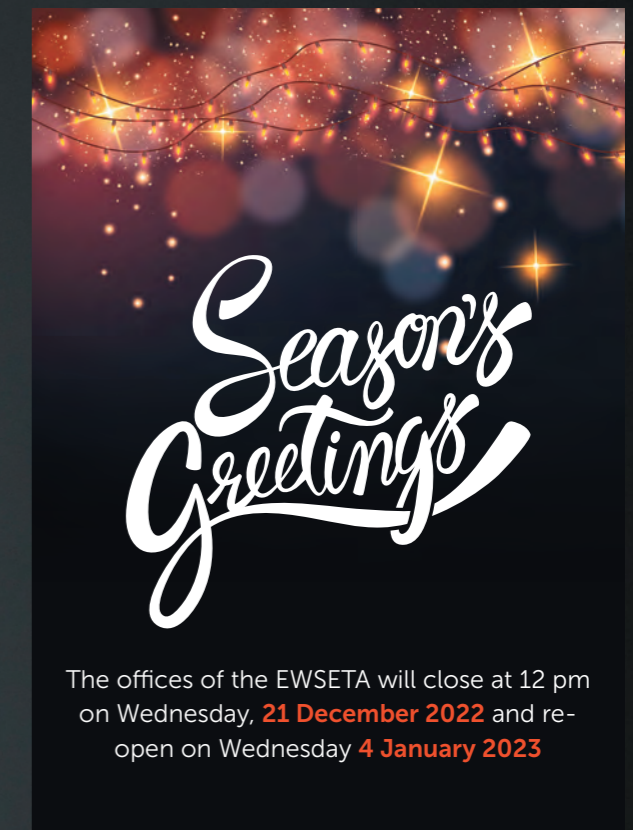
The EWSETA battery storage article on pages 24 - 25 appeared in the recently published VUKA Energy Storage Guide that unpacks the important role that battery storage has to play in securing the energy grid. Visit the EWSETA website www.ewseta.org.za to view and download a copy of this informative publication.

Amongst all the external events and projects, EWSETA ladies still find time to get together and celebrate our fabulousness and heritage. See some of the gorgeous EWSETA ladies on pages 26 - 27. I have to say, working at EWSETA I need to be on point with my fashion game because our ladies rock every time.

This edition of the EWSETA Chronicle was being finalised at the time we hosted our 2021/22 AGM as a hybrid event. More information on the AGM will be featured in the next edition of our newsletter.

With the Festive Season upon us, I am sure that many of us are looking forward to a much-needed break and time with loved ones after what has been an exciting and busy year in the energy and water sectors. If you are travelling, please do so safely and I look forward to engaging with you in 2023 again.

Candice Moodley



THE IMPORTANT ROLE OF WOMEN IN ENERGY AND WATER SECTORS

According to a 2017 BASA Women in Leadership Census, women comprise 51% of South Africa's population, yet they only make up 44% of the employed workforce, 29.4% of executive managers, 20.7% of directors and 11.8% of CEOs or Chairpersons in JSE-listed companies.

The McKinsey 2015 study titled: Why does Diversity Matter? revealed that a steady flow of talented women from entry-level to C-suite positions will enable companies to leverage the diversity dividend of women to increase financial returns.

At a time that the world and the energy industry are going through an unprecedented period of transition and upheaval, women are making their voices heard and redefining their purpose. Now is the time that women need to assume leading roles and to be a force for change as South Africa works towards achieving a Just Energy Transition.

In celebration of Women's Month and to demonstrate the importance of empowerment for women operating in our sector, EWSETA participated in the WISA Women's Webinar on 24 August, the Women in Energy Conference on 29 August, the Eskom

Women's Conference on 31 August and the Empowawomen in Energy Leadership Summit in September.



"We need to remain committed to having our voices heard over the cacophony of chaos. We need to be the voices of reason, reassurance, inspiration, encouragement and determination. We need to speak out loud and clear against the numerous injustices that are directed towards women throughout South Africa and the world. We need to be brave in the face of adversity and let our combined strength carry those that are weak and voiceless. We should no longer be fighting for a "seat at the table" but rather, inviting leaders to our table"

Candice Moodley,
EWSETA Corporate Services Executive



EMPOWAWOMEN IN ENERGY LEADERSHIP SUMMIT

Held on 10 September 2022, the Empowawomen in Energy Leadership Summit hosted politicians, senior government officials and top executives from across the country's energy spectrum to lead the conversation on the state of South Africa's energy and to identify the country's greatest opportunities.

EWSETA's CEO, Mpho Mookapele, who was out of the country at the time, joined the event virtually to focus on opportunities for women in renewable energy and the green hydrogen economy.

- Participation in these activities will, contribute towards the EWSETA itself as a skills authority in the energy sector
- EWSETA will get an opportunity to interact with students from universities across the country.
- Provide EWSETA access to important stakeholders in the energy and Oil & Gas sector

WOMEN IN ENERGY CONFERENCE

The Women in Energy Conference held on 29 August 2022 at the Indaba Hotel in Johannesburg was conceptualised by the Senamile Masango Foundation. The event brought together influential female energy players, including representatives of the South African government and local stakeholders.

In addition, the conference provided several opportunities for young people. It served as a forum where women working in the energy sector can address challenges for women in SA's energy sector; it provided a platform to showcase female researchers and their research initiatives that will aid in the development of a comprehensive energy solution; and it facilitated discussion on how

women, young people, people with disabilities, and primarily rural people can become involved and participate in the energy sector in the future.

The EWSETA was present at the event as a strategic partner and the CEO for the EWSETA, Mpho Mookapele, addressed conference delegates.



Seen here from left to right are: Mpho Mookapele - EWSETA CEO, Dr Nandi Malumbazo - EWSETA Board Member and an expert in clean coal technology, Honourable Pinky Kekana - Deputy Minister in the Presidency, Senamile Masango who is a nuclear scientist and the founder of the organisation in her name, and Candice Moodley - EWSETA Corporate Services Executive.



Celebrating FEARLESS WOMEN



MARIANA STRIJDOM
Chairperson: EWSETA Audit and Risk Committee
"In the words of Judy Garland: 'always be a first rate version of yourself and not a second rate version of someone else' and remember to stay positive and keep going"



LESTER GOLDMAN
EWSETA Board Member
"It is a pity that women are only celebrated one month of a year - thank you for all that you do"



ROBYN VILAKAZI
EWSETA Chief Financial Officer
"I am so proud to be a woman, because women are power and women are love – so let's bring everything we are to work every day"



ESME COETZER
EWSETA Board Member
"Remember! Be brave – be courageous – and leave a legacy. South African women have come a long way in society and in the economy"



NOMAVA NOBATANA
EWSETA Board Member
"Maya Angelou once said: 'people will forget what you said, people will forget what you did, but people will never forget how you made them feel' Happy Women's Month to all the wonderful and strong women"



SOLOMON BOKABA
EWSETA Board Member
"Women are energy! Women are water! Happy Women's Month"

HYDROGEN AFRICA

During her keynote address on Day 1 of the Hydrogen-Africa Conference & Expo that took place from 28 to 29 September 2022 at the Hilton Hotel in Sandton, EWSETA's CEO, Mpho Mookapele, addressed the critical importance of skills development in the establishment of a hydrogen economy.



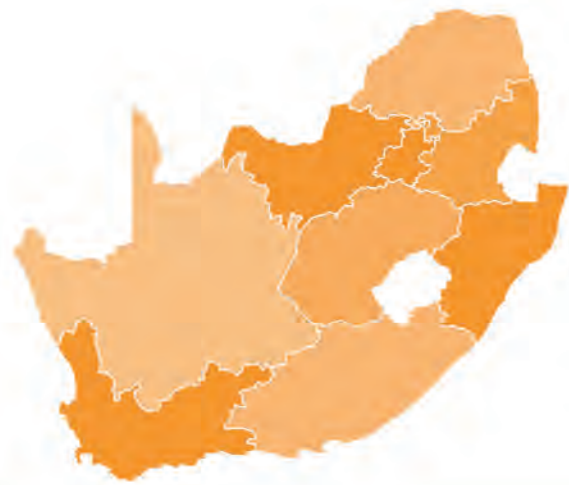
The Hydrogen-Africa Conference & Expo is an annual gathering of private-sector decision-makers, multinational executives, foreign investors, African governments, and a variety of other organisations to discuss implementation, investment, and technologies in the African hydrogen environment.

In addition to delivering a keynote address, Mpho Mookapele participated in a panel discussion titled: 'Investing in the hydrogen research economy and successful workforce planning for a hydrogen-ready South Africa'.

As part of its participation, the EWSETA produced an infographic overviewing the state of skills development in the hydrogen sector. This information appears on the facing page.



South Africa's Hydrogen Economy



- 14th largest** emitter of GHGs
- Energy crisis**
- Cost** of energy
- A need for **job creation** and **economic growth**



- **Zero emission output** at point of application
- Secure **domestic energy supply**
- **Export opportunities** will contribute to economic growth – SA could secure 10% of export market

RESEARCH FINDINGS

Estimated **1.6 million jobs** in energy sector transformation by 2050

Job opportunities in operations, maintenance, management of PGM mining, refining and beneficiation, transportation, construction, industrial manufacturing

Align TVET college system with **real industry needs** to drive hydrogen economy and a just energy transition – highlights **upskilling and retraining**

Analysis of the **role of TVET college system** in hydrogen economy

1/3 TVET graduates unemployed indicates gap between industry demands and public college offering

Skilled jobs needed that require university and TVET education

A Skills Perspective

SKILLS DEVELOPMENT ACTIONS



EWSETA/Bambili Energy/DSI/UP collaborated to **train unemployed TVET graduates** on installation, operation and maintenance of Hydrogen Fuel Cells



Multi-partner project implemented to boost capacity of TVET colleges to **train GHE workforce**



HySA programme support for research through funding of MSc and PhD students



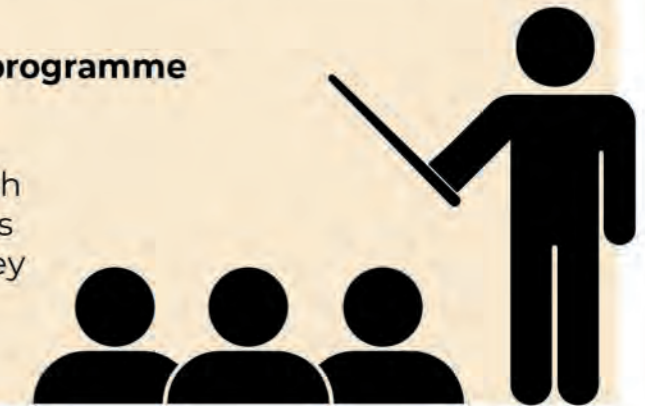
EWSETA funded hydrogen economy platform mapping exercise with **CUT Innovation Services**



Hydrogen fuel cell **technician skills programme** submitted to QCTO by EWSETA



EWSETA partnered in DSI-led research and funded by UKPACT into readiness of TVET colleges along hydrogen valley to deliver on **training required for hydrogen industry**



“**The NDP 2030** envisions a country that, over the long term, can manage the transition to a **low-carbon economy** at a pace consistent with Government’s public pledges, without impacting negatively on jobs or competitiveness. It is crucial to consider key guiding principles to ensure hydrogen can be harnessed to benefit all parts of society, now and in the future.”



“The importance of **aligning the country’s TVET college system with real industry needs and opportunities** to improve labour absorption in the future green economy cannot be overstated; specifically in offering the right qualifications and turning out enough graduates for every hydrogen fuel cell technology application and sector-specific skills requirement.”

SAIIA

ARTISAN TRAINING

The EWSETA's artisan training targets received a boost with the successful completion of artisan training programmes in both the Eastern and Western Cape provinces.

MSC Artisan Academy in East London put 26 learners through their paces for their electrical trade certification. To date, 20 of the learners have successfully completed their trade test and of these, 11 have secured employment.

In the Western Cape, Peninsula Plumbing Engineering Works has hosted two separate groups of learners for the plumbing trade. The 18 learners received their theoretical training at the College of Cape Town, an appointed Centre of Specialisation in the plumbing trade.

Nine learners underwent and passed their trade tests in the latter part of October 2022. At the time

this article was written, the remaining nine learners were awaiting trade test serial numbers and it is anticipated that by the end of the year this second group will have undergone trade tests.

Photographs from the graduation of the Western Cape learners will be featured in the next edition.



SUMMIT HIGHLIGHTS

IMPORTANCE OF STRATEGIC INDUSTRY PARTNERSHIPS WITH TVET COLLEGES

In response to the call made by the Minister of Higher Education, Science and Innovation, Dr Blade Nzimande, to encourage establishment and strengthening of partnerships with host and potential employers, a two-day summit was held from 27 – 28 July 2022 at the CTICC.

The Summit sought to strengthen industry relationships to expand workplace learning opportunities; create strong and open communication channels between the TVET colleges, SETAs, and Industry; develop an implementation plan with clear resourcing (funding of the workplace-based learning opportunities); encourage industry to make pledges to place students in their workplaces in an effort to reach the set placement target; and to strengthen implementation of the high-level implementation plan outlined in the GBV policy framework to address gender-based violence, and femicide in the TVET college sector.

The EWSETA participated in both the conference and EXPO.

"I also wish to upfront call upon all employers to open their workplaces for the placement of both TVET college students as well as to give workplace exposure to TVET college lecturers, so that what is taught is relevant and also needed by industry." Dr Blade Nzimande during his address at the event



Seen here is Lungile Chirwa, EWSETA's Administrator in the Cape Town office, with three learners who have recently completed plumbing trade qualifications.

GREEN YOUTH INDABA

The Green Youth Network, in partnership with EWSETA, FP&M SETA and the Department of Trade and Industry, hosted its 7th Annual Green Youth Indaba on 29 – 30 June 2022 at The Innovation Hub in Tshwane, Pretoria.

This year's Indaba sought to explore opportunities for youth within the green economy; unpack strategies that can create easy access to support and funding for green innovation and the transfer of skills needed to eradicate youth unemployment and poverty.

The event aspires to bridge the gap between the youth of South Africa and opportunities in the green economy, as well as to sensitize and empower young minds to participate in the green economy and the sustainable development sector.

Each year, young South African inventors, innovators, green entrepreneurs, green start-up companies, green small businesses, universities, students, and science councils are invited to showcase their Green Technology Businesses and green ideas during the Green Innovators Pitch. The pitch is designed to not only inspire South African youths to promote green business technology entrepreneurship, but also to provide them with exposure and access to green funders, mentors, experts, and advisors, to help these young entrepreneurs, boost their competitiveness

and contribute significantly to South Africa's economic growth.

Participants pitch their new business ideas to a panel of esteemed judges and experts for a chance to win up to R250, 000 in prizes or mentorships, in addition to networking with innovators and venture capital investors from across the country.

From over 200 applications, only seven incredible ideas and businesses made it to the Indaba. The winners were announced after the panel of judges gave comprehensive feedback that will benefit their future pitches. The top three were occupied by young black women who are doing pioneering work in the water and waste management sectors.



EWSETA CEO WOWS AT ESG AFRICA CONFERENCE



The ESG Africa conference that took place from 25 – 26 October 2022 at the Sandton Convention Centre, presented the ideal platform for industry leaders and experts across Africa to discuss, debate and find solutions to some of the common challenges faced in embedding ESG practices within organisations.

The main theme of the conference was a 'Sustainable Future Through Leadership' and placed focus on the significant role leaders can and should play in ensuring their organisations better integrate ESG principles into their value system and overall organisational strategy.

In an article penned by Sindy Peters, the group community editor at Bizcommunity.com on the Construction, CSI & Sustainability, and Property portals, she highlighted some key points raised by the EWSETA CEO, Mpho Mookapele, during the event.

#ESGAFRICA CONFERENCE: WHAT SHOULD ESG REPORTING LOOK LIKE IN AFRICA?

While global standards and measures exist, the ESG reports businesses on the continent churn out also need to take into account Africa's many challenges. This is according to Mpho Mookapele, CEO of the Energy & Water Seta (EWSETA), who participated in a panel discussion at the recently held inaugural ESG Africa Conference in Johannesburg.

These challenges, she noted, include access to clean water and sanitation, energy security, unemployment, food insecurity, and weak economic growth. Mookapele said that while these may sound like issues for governments to address, it is the reality in which companies operate in Africa and so this needs to be considered when compiling their ESG reports.

She referred to the results of PWC's 25th Annual Global CEO Survey released earlier this year which indicated that "73% of South African CEOs are very or extremely concerned about social inequality in the country impacting their company over the next 12 months". In comparison, only 13% of global leaders were concerned about social risk, she noted.

This is why ESG should not be considered in a vacuum, Mookapele emphasised, as global measures - often from an environmental perspective - are set by those who consider social risk as much less of a challenge.

She said that ESG considerations should also not be limited to reporting. "I think in 10 years' time if we've got all these beautiful reports but the social and environmental landscape in South Africa remains the same, we would have failed ourselves."

ALIGNING ESG AND FINANCIAL REPORTING

She said that just as companies start at the beginning of every year, focusing on ensuring a good-looking balance sheet, the same should be applied when it comes to ESG, and ethical leadership should be threaded throughout planning and reporting.

There should be greater alignment between ESG and financial reporting results - South Africa, for example, should not be plagued by issues related to acid mine drainage while the profits and reports of companies that create these challenges still look good.

Mookapele noted how ESG measures are impacting on policy setting in developing countries. "Fossil fuel is not financed by many financiers, yet it's a significant part of our energy mix," she said.

She asked whether it was ethical or fair to hold Africa back from driving its industrialisation using fossil fuels while, historically, many developed nations have taken this growth path. "How are we expecting certain countries to reach that stage of industrialisation and resolve their social issues when we are putting in place certain limitations because of ESG?"

DEFINING AFRICA-CENTRIC STANDARDS

"Do we continue to look at international benchmarks and global standards and enforce them in developing countries, or are we going to define it for ourselves?" asked Mookapele.

"I think South Africa is capable of leading the world, leading Africa, and developing measures that are relevant for a developing country. It's going to require us not only relying on international trends, but really to assess ourselves as Africa and ask what is it that is relevant for us from an ESG perspective," she said.

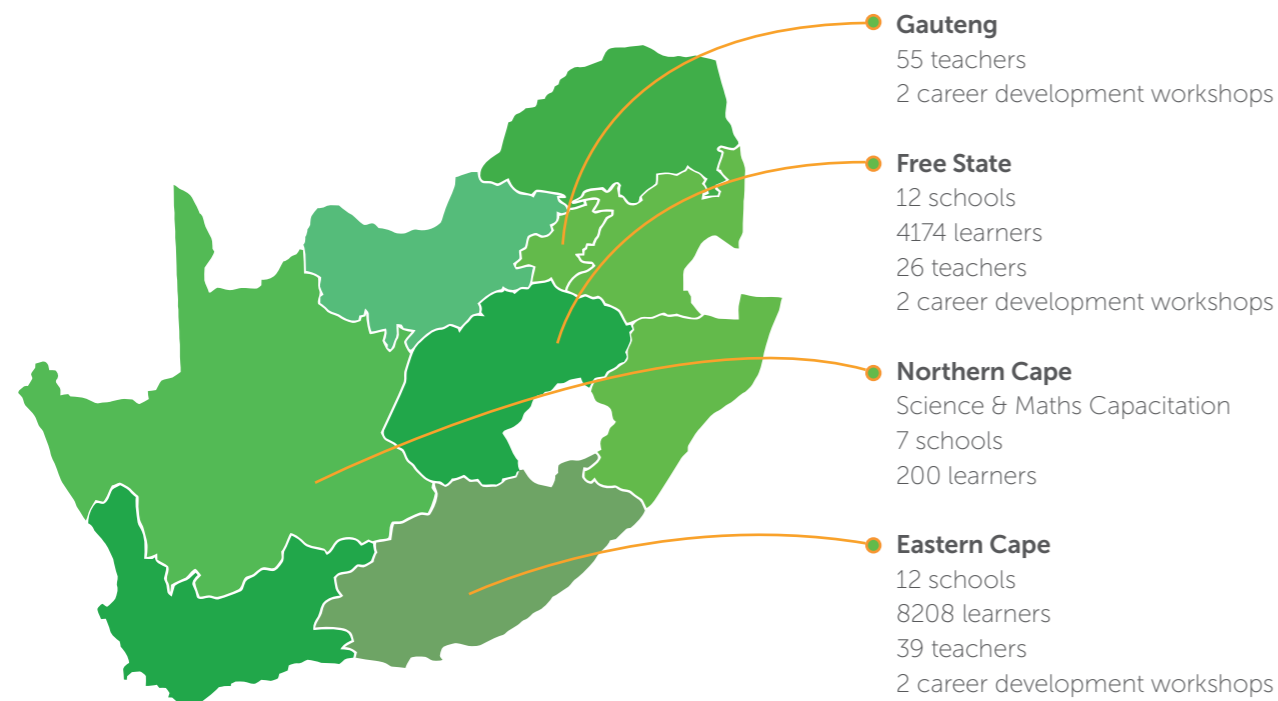
ROLL OUT OF CAREER GUIDANCE ACROSS SEVERAL PROVINCES

Without career guidance, young people are left to navigate their futures not knowing what is possible. During September 2022, the EWSETA travelled to the Eastern Cape, Free State and Gauteng to provide career guidance to high school learners and to capacitate life orientation educators on what opportunities exist in the energy and water sectors.

In October, 200 Grade 12 learners from the Francis Baard Municipal District in the Northern Cape were put through their paces and underwent science and maths capacitation to assist with preparation for the 2022 final exams.

important that we assist young people to perform better in these subjects," comments Candice Moodley, EWSETA Corporate Services Executive "we also hope to attract young people with an aptitude for these subjects to our sectors."

"A great number of the careers in the energy and water sectors require maths and/or science and it is



GREEN CAREERS HIGHLIGHTED AT THE WORLD OF WORK EXHIBITION



Futureme's annual flagship career festival that focused on green economy careers the took place at the Sun Exhibits venue at Grandwest in Cape Town on 15 September 2022.

The event hosted a number of schools from in and around Cape Town and the learners who visited the exhibition were provided with extensive information on a variety of career options across a range of industries, with a focus on green jobs.

At the event, EWSETA publicised its poster competition that required high school learners to create a poster on one of the following occupations in the energy and water sectors:

- Electrician
- Plumber
- Hydrologist
- Electrical Engineer
- Water Process Controller
- Hydrogen Engineer
- Drone Pilot
- Robotics and Automation Technician

THE PRIZES UP FOR GRABS INCLUDE:

- 1ST PRIZE**
R3500 for the artist of the winning poster and R15 000 for the school that the learner comes from
- 2ND PRIZE**
R2500 for the artist and R7 500 for the learner's school
- 3RD PRIZE**
Two JoJo Tanks for school where the learner comes from

In the next edition of the EWSETA Chronicle, details on the winners and the prize giving event will be featured.

WISA CONFERENCE 2022 SETS OUT TO NAVIGATE THE COURSE



WISA's Biennial Conference & Exhibition hosts people from all spheres of the water sector to share expertise and knowledge, as well as discuss potential solutions to the country's ongoing water challenges. Well known as an important networking event, the conference, under the theme 'Navigating the Course', the sub-themes that ran throughout the programme included:

- Rethinking sanitation in a circular economy – reuse, resource and energy recovery, o-grid solutions and reinventing the toilet
- Running a tight ship: Improving water use efficiency and demand management across all sectors of water users; mining, agriculture, industry and municipal)
- Batten down the hatches: Responding to climate change
- Learning the ropes: Harnessing the technologies of the 4th industrial revolution

- Matters Ashore: Addressing environmental water quality and sustainable groundwater issues
- Stemming the tide: Management and regulatory issues

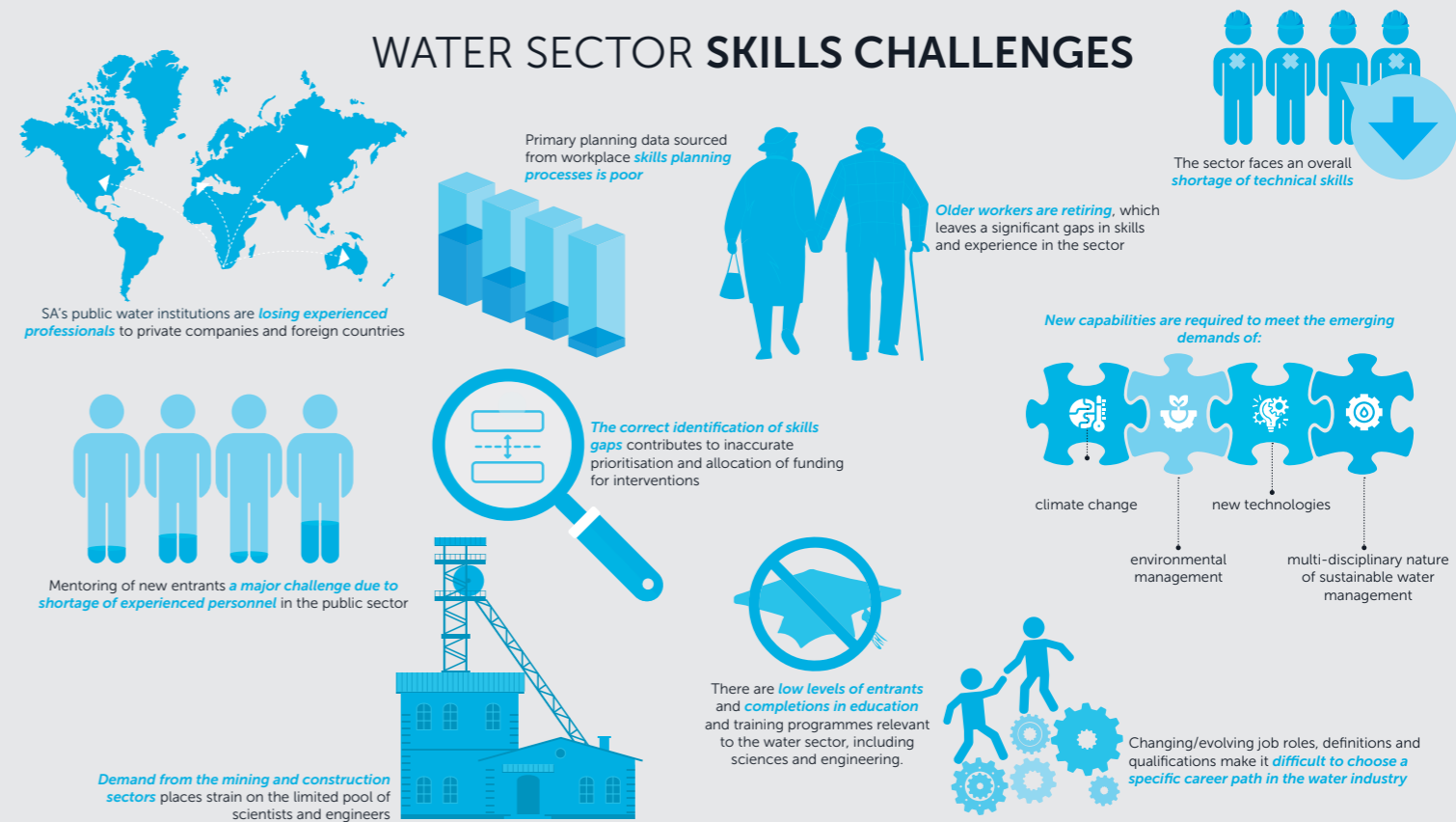
In addition, the event reviewed Blue and Green Drop, professionalisation of the sector, addressing skills shortages, managing stakeholders (regulators, elected political decision makers, trade unions, and civil society) and developing capable institutions.



SA'S WATER SECTOR: A STARK REALITY



WATER SECTOR SKILLS CHALLENGES



EWSETA WATER INNOVATION Awards

On the final day of the WISA Conference 2022, ten entrepreneurs/SMMs in the water sector pitched their innovations to a panel of judges. The EWSETA stand, that had been set up as a 'mini' theatre hosted the event.

Judges had a difficult time as the standard of the pitches delivered was very good and offered a variety of solutions to water sector challenges.

"It was heartening to see young people taking an innovative approach to challenges we face in the water sector and presenting relevant solutions," comments Mpho Mookapele, EWSETA CEO. The standard of the innovations presented were of a very high level and supports the importance that out the box thinking is what South Africa's water sector needs.

OUR THANKS TO THE JUDGES

- **BUHLE NGOMANE**, Business Development Officer Water and Waste Portfolio, The Innovation Hub Market Company
- **THOBANI MTHOMBENI**, Technology Transfer Manager from the WRC
- **MARONEL STEYN**, Senior Researcher at the CSIR
- **DR PATRICK HLABELA**, RG Leader for Integrated Water and Analytical Solutions at the CSIR

- **DR HARRISON PIENAAR**, Research Group Smart Water Use at the CSIR

Each of the three winners received an incubation opportunity from The Innovation Hub comprising mentorship to the value of R100 000, seed funding of R 70 000 to cover product development activities such as IP protection, testing and technology demonstrations, training sessions, the opportunity to attend events and exhibit for free in relevant conferences and the opportunity to utilise TIHMC equipment to build or improve prototypes.

In addition, the overall winner received a laptop and printer and the second place winner a laptop.

- ▶ **Overall Winner**
Paseka Lesolang from Water Hygiene Convenience
App for leak reporting and fixing
- ▶ **2nd Place**
Abednico Maphanga from Sefako Makgatho Health Sciences University
The removal of pharmaceutical contaminants in wastewater
- ▶ **3rd Place**
Calvin Nkgweng and Peter Matjila
Drinking water disinfection

Note on the winner – his company has already been extensively involved in capacitating young people with plumbing skills

MEET THE CONTESTANTS

- **ABEDNICO MAPHANGA**: Sefako Makgatho Health Sciences University – *Removal of pharmaceutical contaminants in wastewater*
- **NTSWAKI TSOTETSI**: Bohlokoane – *Containment of pollution at river level*
- **CARIN BOSMAN**: *Demonstrate apps for data collection and resource management*
- **FRANK RADEBE**: *Decentralised wastewater treatment*
- **DASHNEE NAIDOO**: EDC – *Rainwater harvesting solutions*
- **NONHLANHLA MHLONGO AND SINAKEKELO BUTHELEZI**: Khwezi Innovations – *Environmentally friendly gloves*
- **MARIUS JORDAAN**: Olgenstine Group of Companies – *Drinking water disinfection strategies*
- **NTOKOZO MAZIBUKO**: B Meters Metering Solutions – *Online monitoring of water use for efficient water management*
- **CALVIN NKGWENG AND PETER MATJILA**: *The important topic of drinking water disinfection*
- **PASEKA LESOLANG**: Water Hygiene Convenience – *Details on an app for leak reporting and fixing*



EWSETA HOSTS ENERGY SECTOR SMMES AT PEWA 2022

After a three-year absence, the 2022 edition of Power and Electricity World Africa (PEWA) was hosted at the Sandton Convention Centre from 23 – 24 August 2022. This year's multi-branded vibrant exhibition was intentionally designed to seamlessly represent the convergence between conventional generation, lower-carbon innovations, and renewable energy solutions.

A total of 14 241 attendees from 91 countries gathered for two days of discussion and debate on a host of topics pertaining to the continent's energy sector. 127 global speakers covered a wide range of topics including, among others: the energy transition, digitisation and disruption, emerging renewables, storage and batteries, solar technology, as well as energy efficiency.

EWSETA is proud to have hosted four South African SMMEs operating in the energy sector on its stand at the event.

LEAPER INNOVATE GREEN ENERGIES (LIGE)

Warwick Leaper and Magriet Leaper from Leaper Innovate Green Energies (Pty) Limited (LiGE) established their company in May 2012. LiGE's designed and patented Compressed Air Energy Storage System "Air Battery" is a storage system aimed at medium, large, and utility size enterprises and offers a range of system sizes.

Their system is designed to clean the air, produce water through the process used and store energy in pressure vessels above ground for later use. As an example, a 5Mwh Air Battery can produce a swimming pool full of clean water per day.

BENEFITS OF THE LIGE AIR BATTERY

- Stores energy
- Offers a 30-year lifespan
- Zero carbon
- Cleans the air
- Produces clean water.

CONTACT LIGE

www.lige.co.za
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0781392574 Magriet
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"Thank you EWSETA for hosting LiGE on your stand, it was well worth it, we had lots of exposure, with many important market leaders stopping at our stand, congratulating us on our Air Battery, stating it's exactly what the market needs"



SAKISA ENERGY AND TECHNOLOGY GROUP

Established four years ago, Sakisa Energy and Technology Group provides Solar PV solutions for residential and commercial clients.

www.sakisa.co.za
071 471 5089

"We were given the platform to meet many industry experts, as well as other exhibiting businesses and this was a great opportunity for us"

WETILITY

The team of visionaries, entrepreneurs, engineers and financial experts at Wetility believe that energy is everything and they are passionate about innovative energy solutions. The company offers a hybrid solution that works seamlessly and in tandem with a user's current power options.

Their PACE full stack solution, that includes financing, context-specific software and branded hardware stores solar energy and automatically releases enough electricity for a home or business, reducing energy costs by up to 65%. Using a lease financing program called Pay-at-PACE, Wetility is able to 'loan' products to its customers.

www.wetility.energy
086 101 7427

"PEWA gave us the opportunity to exhibit alongside both multinational and local companies in our industry, to engage with potential customers and expand our network. It was a well-organized event with lots of information sharing and knowledge transfer opportunities. Thank you to EWSETA for hosting us on their stand, we really appreciate it!"

EWASTE AFRICA

Ewaste Africa is an environmentally friendly, legally ethical and fully compliant ISO 9001 & ISO 14001 light bulb and electronic waste recycler. For the past eight years, they have offered the collection, transport and safe recycling of a variety of waste categories including light bulbs and lighting waste, electronic waste, solar panels, batteries and cables. In addition, Ewaste Africa also provides various storage box solutions for the storage of each waste type.

www.ewasteafrica.net
066 391 2090

"PEWA was a well planned event and our participation was highly motivating and encouraging"



THE FUTURE OF BATTERY STORAGE IN SA: A SKILLS PERSPECTIVE

South Africa has a long history of skills development in the battery sector and there are many opportunities for exploitation of this knowledge and experience going forward. It is also the case that South Africa has many of the minerals required for battery production depending on the materials utilised.

The skills required to develop the battery sector will depend on a number of factors.

The first of these is the type of battery where focus is placed. Battery storage is increasing in both small and large applications from cell phone batteries to large scale utility electricity storage. If the focus is on rechargeable batteries then there are definite synergies.

The second factor to consider is in which part of the value chain can South Africa and the region be competitive.

And finally, does South Africa have the right enabling environment to support large scale investment in battery storage and enter the market in time to establish itself?

If the upstream section of the value chain is considered, then the Trade and Industrial Policy Strategies (TIPS) organisation has identified that lithium ion batteries are a good prospect, given the fact that there is existing activity in South Africa.

If a regional perspective is taken, then many of the required minerals are produced within SADC. TIPS are of the view that South Africa can compete in both mineral beneficiation and battery manufacturing (using imported cells). Battery cell manufacturing is happening in the country but on a small scale and the sector has international competitors. Should the market develop further however, investing in this part of the value chain may prove commercially viable for large export markets, but significant investment will be required as well as an enabling policy environment.

In the downstream market, the big growth areas are where storage is needed to support the roll of out renewable energy, smart grids and electric vehicles. The very big utility scale battery storage is beginning to emerge in South Africa with major projects announced recently including from Eskom (343MW, 1,440MWh to support solar PV plant) and Ambri (300MW, 1,200MWh to support wind and solar plants). The utility scale storage required globally is a significant market given the ramp up of renewable energy in response to the net zero ambitions from the Paris agreement.

Electrification is also a significant trend with many systems converting from solid or liquid energy fuels to electric systems and in particular

transportation. The electric car market is going from strength to strength on the back of policy shifts around the world. The IEA reported that in 2021 global electric vehicle sales doubled from 2020 and estimated in 2022 that 13% of sales of passenger and other smaller vehicles would be electrically powered.

Given South Africa's investment in car manufacturing this is a significant shift. Even further down the value chain there is also the issue of battery recycling and how to deal with the waste and reuse it as much as possible as well as reduce the use of materials.

This bears the question. What does all this mean from a skills perspective?

There is no doubt the market is growing in battery storage and fast. However, where and how South Africa will be able to play in that market remains to be seen. South Africa certainly has existing skills in this area, the question will be which skills and when are they needed to really ramp up activity in South Africa and become a global player?

Skills will be needed across the entire value chain as detailed above, including operations and maintenance. On the operational side, this will include knowledge about how to integrate the growing number of large scale storage facilities, as well as smaller electric vehicle batteries into the grid and ensure grid stability. Engineering, technician and artisan technical skills and occupations for electrical

and chemical engineers will be needed and a number of universities and colleges around the world are offering post graduate degrees in battery storage as well as shorter online courses.

In Europe a recent study estimated that the EU would need "800 000 qualified workers along the value chain to operate in this new battery industry by 2025". The same study also endorses the approach of learning pathways rather than isolated interventions.

As with most sectors today, getting this workforce ready will require both formal education, vocation and upskilling initiatives and enabling policy skills. Other skills like problem solving abilities, systemic thinking and complexity analysis will also be needed. The Clean Energy Council in Australia states that skills are easily transferred from the existing energy sector but it is not necessarily new qualifications that are needed, but experience in specific areas of the value chain. As in other areas of the energy transition, the related supporting skills such as financial, procurement, environmental assessment, community interactions etc will also be required and are important enablers.

South Africa does however need to decide where in the value chain to play as specialised engineering and technical skills like design, manufacturing, operations and recycling will be needed. It is also critical to ensure that the pipeline is sufficient to meet the demand and that the policy environment is aligned.

CALL FOR SECTOR CONTRIBUTIONS TO DEVELOPMENT OF BATTERY ENERGY STORAGE SKILLS PROGRAMME

Battery storage of energy generated from renewable energy sources including wind, solar, hydrogen, among a host of others, is set to play an important role in the much-needed stabilisation of the country's energy grid. Battery energy storage skills will therefore become increasingly important. The EWSETA is currently at the initial phases in the process of developing a skills programme that will capacitate this important sub-sector with the skills required.

An important aspect of effective skills programme development is input from sector stakeholders to ensure that the programme developed meets the intended purpose.

Sector stakeholders who wish to be involved in the development of the learning programme are requested to send their details to Thandiwe Shashu at EWSETA on Thandiwes@ewseta.org.za





**COMBINED
WOMEN'S AND
HERITAGE MONTH
CELEBRATION FOR
THE LADIES AT
EWSETA**

Having been unable to arrange a Women's Month event in August due to busy schedules, on 19 September 2022, the ladies from EWSETA brought out their best traditional clothing and celebrated a combination of Women's and Heritage Months.

The event was themed 'Work Life Rhythm' and guests enjoyed a variety of motivational and thought provoking presentations.

Joanna Seabi, who retired from the EWSETA in September spoke of her personal journey with the organisation and what it has meant to her to play

a role in developing skills in the sectors we serve, as well as capacitating young people in the country.

Nathalie Vereen, JET Education Services COO shared her thoughts on the power of collaboration for future business success amongst women. Tsholofelo Mokotedi, who left EWSETA earlier this year unpacked why being brave is easier said than done.

It was a thought provoking and team building session that saw the ladies who attended walk away with new insights on balancing one's home and work lives.





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