



THE ZIMBABWE INSTITUTION OF ENGINEERS NEWSLETTER

FEBRUARY 2024

INSIDE THIS ISSUE:

PPPS, AN ALTERNATIVE TO FUNDING INFRASTRUCTURE: FROM COLONIAL SHADOWS TO MODERN PARTNERSHIPS 1

ICT LESSONS FROM 2

INFRASTRUCTURE IN ZIMBABWE: CURRENT STATUS, MAINTENANCE, AND DEVELOPMENT EFFORTS 8

MEMO TO MEMBERS 12

FOR POLITICIANS, AI WILL BRING SALVATION OR DAMNATION—BUT NOTHING IN 13

EXECUTIVE APPOINTMENT: PROFESSOR TAWANDA MUSHIRI AT SCIENTIFIC & INDUSTRIAL RESEARCH & DEVELOPMENT (SIRDC) 14

LIST OF NEW REGISTERED MEMBERS 2023 15

WORLD ENGINEERING DAY

World Engineering Day is a global celebration that recognizes and promotes the contributions of Engineers in addressing societal challenges and promoting sustainable development. It involves various activities and events, such as conferences, workshops, and exhibitions, where Engineers come together to share knowledge and collaborate on innovative solutions. The celebrations highlight different themes each year, focusing on areas such as sustainable development, infrastructure, renewable energy, and digital innovation. The goal is to raise awareness about the importance of engineering in solving global issues and inspire future generations to pursue careers in the field. Overall, World Engineering Day celebrates the achievements of

engineers and their crucial role in shaping a better future for all.

UPCOMING WED ACTIVITIES

- ◇ HIT Annual WED celebrations
- ◇ ZIE Mashonaland WED career fair
- ◇ WIE WED celebrations.



“The ideal engineer is a composite ... He is not a scientist, he is not a mathematician, he is not a sociologist or a writer, he may use the knowledge and techniques of any or all of these disciplines in solving engineering problems.”— Nathan W. Dougherty, American civil engineer

UPCOMING CPD COURSES

- C L Robertson Lecture
- Water
- Electrical
- Mechanical
- ICT

PPPS, AN ALTERNATIVE TO FUNDING INFRASTRUCTURE: FROM COLONIAL SHADOWS TO MODERN PARTNERSHIPS

Infrastructure, the arteries and veins of a nation, plays a crucial role in economic growth and development. The story of infrastructure funding in Africa, and Zimbabwe specifically, is complex and nuanced. In colonial times, infrastructure develop-

ment served primarily to facilitate resource extraction and trade, administrative control, often neglecting local needs. Funding came from a mix of taxes, forced labor, and loans from European metropolises, with little transparency or accountabil-

ity. This often placed a heavy burden on local communities, hindering their own development. This created a skewed system, leaving a legacy of inadequate and poorly maintained infrastructure. Post-independence, the need for

ICT LESSONS FROM INDIA

The Zimbabwean ICT sector can learn several valuable lessons from the Indian ICT sector in terms of development. India has made significant advancements in the ICT field, becoming a global leader in technology and innovation. Some key areas where Zimbabwe can draw insights from India :

3. Start-up Ecosystem: India has a thriving start-up ecosystem, with numerous success stories in technology and innovation. By studying India's start-up ecosystem, Zimbabwe can gain insights into fostering entrepreneurship, providing mentorship and funding opportunities, and creating an ecosystem conducive to

marginalized communities. **6. Collaboration and Partnerships:** India has actively fostered collaborations and partnerships with international organizations, academia, and industry players to drive ICT innovation and research. Zimbabwe can learn from India's collabo-

1. Government Support: The Indian government has played a crucial role in fostering ICT development through supportive policies, incentives, and initiatives. Zimbabwe can learn from India's approach and implement similar measures to create an enabling environment for the growth of the ICT sector.

nurturing tech start-ups. **4. Digital Infrastructure:** India has made significant investments in digital infrastructure, including broadband connectivity, data centers, and e-governance platforms. Zimbabwe can learn from India's experience in building robust and reliable digital infrastructure to support the growth of the

rative approach to leverage external expertise, attract investments, and promote knowledge exchange.

7. E-Government Services: India has made significant progress in delivering e-government services to citizens, improving efficiency, transparency, and

2. Skilled Workforce: India has a large pool of skilled IT professionals who have contributed to the country's success in the global ICT arena. Zimbabwe can focus on developing its own talent pool through investments in education, training programs, and initiatives to bridge the skills gap.

ICT sector. **5. Digital Inclusion:** India has implemented various initiatives to promote digital inclusion, such as the Aadhaar system for digital identity and the Digital India program. Zimbabwe can explore similar strategies to ensure that ICT services and benefits reach all segments of society, including rural and

accessibility. Zimbabwe can study India's successful e-governance models and adapt them to enhance public service delivery and citizen engagement.

8. Digital Skills Development: India has implemented various initiatives to promote digital literacy



Eng. J.K. Mutisi

CEO—Hansole Investments
Chairperson—ZIE ICT
Division

“Zimbabwe can learn from India's approach and implement similar measures to create an enabling environment for the growth of the ICT sector.” Eng. Mutisi



Cont. from page 2....

and skill development, such as the National Digital Literacy Mission. Zimbabwe can explore similar programs to equip its citizens with the necessary digital skills to participate in the digital economy.

By studying and adapting successful strategies and best practices from India's



ICT sector, Zimbabwe can accelerate its own ICT development, promote innovation, drive economic growth, and improve the overall quality of life for its

Cont. from page 1...

inclusive and widespread infrastructure exploded. Education, healthcare, and economic development all demanded robust transportation, communication, and energy networks. However, newly independent nations faced limited resources and competing priorities. Traditional funding meth-

ods proved insufficient, leading to infrastructure deficiencies that continue to hamper growth today.

Enter Public-Private Partnerships (PPPs), a potential game-changer in infrastructure financing. By partnering private investors with public entities, PPPs aim to leverage private capital and expertise for infrastructure develop-

ment and maintenance. This can accelerate project completion, improve efficiency, and inject innovation. Why are PPPs crucial? Cost-effectiveness: With limited public funds, PPPs offer a way to tap into private capital for much-needed infrastructure. Modernization: Private sector expertise can ensure projects are built

and managed efficiently, utilizing advanced technologies and best practices. Global competitiveness: Efficient infrastructure is vital for businesses to compete effectively in the global market. PPPs can create a "low-cost path" for economic participation. But PPPs are not a magic bullet. Transparency and accountability are crucial:

Clear contracts, fair competition, and robust oversight are essential to avoid exploitation and ensure benefits reach all stakeholders. Concession and monopoly considerations: Careful structuring is needed to balance incentives for private investment with fair returns and

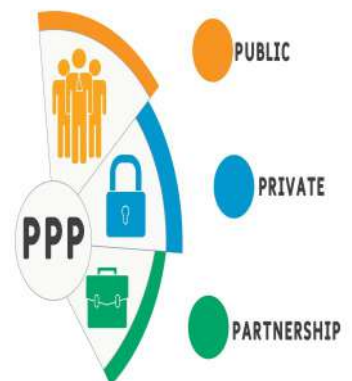
affordable services for users. Social and environmental impact: PPPs must be designed to minimize negative impacts on communities and the environment. Zimbabwe's opportunity: Decades of underinvestment had left Zimbabwe's infrastructure in dire need of rehabilitation

and expansion. PPPs, if carefully implemented, can help unlock this potential. However, it's critical to learn from other countries' experiences and ensure these partnerships are truly equitable and sustainable. By attracting private capital, promoting innovation, and ensuring



Eng. T. N .H . Kapumha
ZIE Past President (2015-2017)

“Public-Private Partnerships (PPP), a potential game changer in infrastructure financing.” Eng. Kapumha



Cont. from page 3...

transparency, PPPs can play a key role in building the modern, inclusive infrastructure Zimbabwe needs to thrive in the 21st century. Remember, it's not just about funding, but about building partnerships that benefit all. Post-Independence Growth and Funding Challenges: After gaining independ-

ence, many African countries faced a significant infrastructure deficit. Decades of neglect, coupled with rapid population growth and economic aspirations, created a pressing need for: Improved transportation networks: Roads, bridges, and railways were crucial for connecting markets, facilitating trade, and promoting

access to education, healthcare, and other services necessitated infrastructure investments. However, traditional funding methods faced limitations: Limited government revenue: Tax collection and resource profits often fell short of the vast infrastructure needs. Debt constraints: Heavy reliance on foreign loans exacerbated

debt burdens. PPPs offer a potential solution by: Mobilizing private capital: PPPs attract private investment, which can supplement limited government funds, accelerating infrastructure development. Sharing risks and rewards, expertise and efficiency: Risks and prof-

its are shared between the public and private sector, promoting efficiency and accountability. Private sector involvement can bring efficiency and innovation to project development and management. Faster project delivery: Private sector involvement can expedite project com-

pletion compared to solely public funded initiatives. Competitive Advantage: Improved infrastructure enhances a nation's attractiveness to investors and facilitates trade, improving global competitiveness. Structuring PPPs for Zimbabwe's Benefit: While PPPs hold promise, care—



DATE & VENUE TBA

Remember to register on the new ZIE Portal. Kindly follow the link below

<https://member.zie.co.zw/auth/login?returnUrl=%2F>

You may use your ZIE number as the initial USERNAME, written in the format, e.g., ZIE150483



ZIE BOARD 2024



Right to left: Dr Eng. S Diarra — ZIE CEO

Eng. T. Mpala — ZIE Immediate Past President

Dr Eng. F. Mavhiya-Bhiza — ZIE President

Dr Eng. W. Goriwondo 'Absent'— Deputy President

Dr Eng. T. M. Stevenson — ZIE Senior Vice President

Dr Eng. M. Sibanda — Vice President

Eng. C. Mhuka — Treasurer

Eng. C.C. Chigwada — Board Member

Eng. S. Gomo — Board Member

Eng. I. Maponga — Board Member

Eng. K. S. Mutete — ZIE Areas Representative
ZIE Mashonaland Chairman

Dr Eng. A. Mamuse — Institutional
Representative Universities

Dr. Eng. E. S. Maputi — Institutional
Representative Universities

Eng. T. Zvavashe — Institutional Representative
for Research Institutions

Eng. C. Muzongondi — Institutional
Representative Polytechnics

Eng. F. Mukonoweshuro 'Absent'— ZIE Chapters'
Representative UK Branch Chairman

Eng. B. Nyakutsikwa 'Absent' — ZIE WIE
representative ZIE WIE Chairman

ZIE AREAS

The Institution has Seven Areas countrywide, which have the autonomy to coordinate institutional initiatives. Named below are the designated Areas, whose boundaries are determined by the ZIE Board from time to time: Hwange, Kariba, Manicaland, Mashonaland, Masvingo, Matabeleland and Midlands.

ZIE BRANCHES

The Institution has high concentration of its members in different countries both regionally and internationally and these have been constituted into ZIE Chapters/Branches.

The active branches are the United Kingdom Branch, South Africa, Australia and New Zealand, Botswana, Namibia and the USA Branch. The branches follow the governance similar to those of ZIE Areas.

ZIE DIVISIONS

ZIE members also congregate from time to time under Discipline Specific Divisions or Special Interest Groups (SIGs). The recently active Divisions are : Women in Engineering, Geotechnical Division, Large Dams, Building Services, Energy, Agricultural, Chemical, Structural, ZIE ICT (ZICT), Mining and Metallurgy, and Urban Council Engineers' Division.

**TO BECOME AN ACTIVE MEMBER OF ANY
ZIE AREA, BRANCH, OR DIVISION VISIT
WWW.ZIE.CO.ZW/CALL: 0242746821**

Cont. .. from page 4 ...

ful structuring is crucial: Transparency and Accountability: Robust governance structures are essential to ensure fair and transparent partnerships, preventing exploitation and corruption. Clear contract terms: Define risk allocation, revenue sharing, and performance expectations clearly. Social

transparently, these can lead to higher costs for users and reduced competition. Social and environmental impact: Projects must be assessed for potential negative impacts on communities and the environment, with mitigation measures implemented. Return on investment: Ensuring fair returns for private investors while

ing infrastructure: Upgrading roads, railways, and power grids is crucial for economic revival and competitiveness. Investing in new infrastructure: Expanding access to clean water, sanitation, and renewable energy is essential for improving public health and environmental

Impact and environmental safeguards: Careful consideration must be given to the social and environmental impact of projects, ensuring inclusivity and sustainability. Return on Investment: Balancing private sector profit motives with public service needs is crucial. Concession agreements and pricing structures require

protecting public interests requires careful contract design and monitoring. Zimbabwe's Infrastructure Deficit: An Opportunity: Zimbabwe's infrastructure gap presents an opportunity for: Attracting private investment: By addressing concerns and structuring attractive PPPs, Zimbabwe can attract much-needed capi-

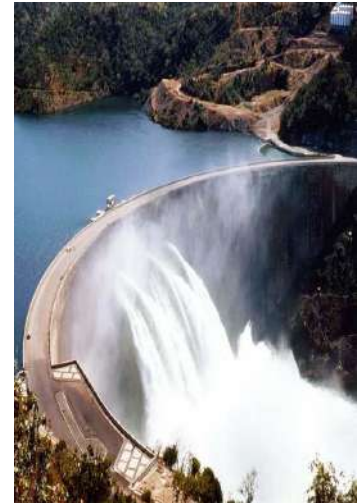
sustainability. Promoting digital inclusion: Investing in broadband internet access can bridge the digital divide and empower communities.

Conclusion: PPPs are not a magic bullet, but a carefully designed and implemented approach can help bridge Zimbabwe's

careful crafting. Regulation and oversight: Establish robust mechanisms to monitor project implementation and address concerns. Ensuring Fairness and Sustainability in PPPs While PPPs offer advantages, potential drawbacks need careful consideration: Concessionary agreements and monopolies: If not structured

tal. Modernizing infrastructure: PPPs can help build modern, efficient infrastructure crucial for competitiveness. Job creation and economic growth: Infrastructure projects create jobs and stimulate economic activity. Regional integration: Improved infrastructure facilitates regional trade and cooperation. Rehabilitating exist-

infrastructure gap. By attracting private capital, ensuring transparency, and prioritizing social and environmental safeguards, Zimbabwe can harness PPPs to build a more prosperous and inclusive future. Remember: This is a general overview, and specific details and considera-



“Zimbabwe infrastructure gap presents an opportunity for attracting private investment.” Dr. Stevenson

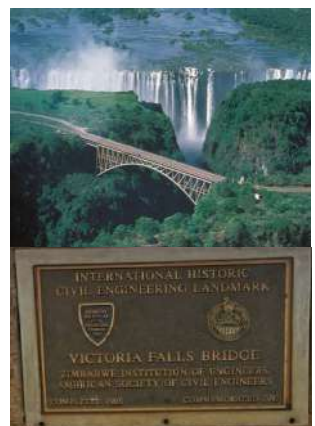


PHOTO GALLERY 2023 ACTIVITIES



ZIE MASHONALAND GOLF TOURNAMENT



BINDURA UNIVERSITY INNOVATION HUB AND FACULTY OF ENGINEERING TECHNICAL TOUR BEFORE INAUGURAL GRADUATION OF ENGINEERING STUDENTS FROM THE UNIVERSITY



ROBERT GABRIEL MUGABE INTERNATIONAL AIRPORT TECHNICAL TOUR BEFORE OFFICIAL OPENING

Cont. .. from page 6 ...

on individual projects and contexts. It's crucial to involve diverse stakeholders in discussions and decision-making around PPPs. Continuous evaluation and improvement of PPP frameworks are essential for maximizing their benefits and mitigating potential risks.

ZIE ANNUAL DINNER & AWARDS CEREMONY 2024

Use link below

<https://forms.gle/z5YZQgK2T5hsBbvA7>

For details of registration.



INFRASTRUCTURE IN ZIMBABWE: CURRENT STATUS, MAINTENANCE, AND DEVELOPMENT EFFORTS- DR ENG. T. M. STEVENSON

The infrastructure in Zimbabwe has faced significant challenges over the years, impacting its stability and functionality. The critical issues include:

Water and sanitation Infrastructure: The water distribution system is aged and corroding leading to leakages and water shortages. This is a direct result of inadequate maintenance.

provide safe drinking water to all citizens and reduce the prevalence of waterborne diseases.

Digital Infrastructure: The economic challenges, regulatory pressures, and the need to enhance service quality while expanding coverage and affordability for all citizens is a challenge for ICT and telecommunications sector. The scarcity of foreign currency hinders the acquisition

of essential ICT infrastructure. Without adequate funding, the sector struggles to invest in modern technologies and upgrades. Zimbabwe's high inflation rates erode disposable income for users. Affordability becomes a challenge, affecting access to ICT services and devices. Despite available infrastructure, there is a lack of adequate

healthy, filthy raw sewage at some instances.

Zimbabwe has made efforts to improve water and sanitation infrastructure in both urban and rural areas. Projects have been undertaken to rehabilitate water treatment plants, upgrade sewage systems, and promote efficient water management practices. These initiatives aim to

knowledge and skills to utilize ICT productively. Brain drain (emigration of skilled professionals) further exacerbates the knowledge gap. Frequent power cuts (load shedding) disrupt ICT services, affecting connectivity and reliability. Rural areas suffer from inadequate ICT infrastructure.

Cont..to page 10



Dr. Eng. T. M. Stevenson

ZIE Senior Vice President

"The scarcity of foreign currency hinders the acquisition of essential ICT Infrastructure."
Dr. Stevenson

CHINHOYI UNIVERSITY OF TECHNOLOGY GRADUATE INDABA(2023)



Left – Right: Eng. T. Mpala, Hon. Minister M. Chombo, Eng. K. Mutete



The Zimbabwe Institution of Engineers Graduate Career Indaba was held at the Chinhoyi University of Technology in November 2023 as it's 3rd edition. It was held under the theme: "Thought Leadership", and it attracted over 300 participants. The event was graced by Hon. Minister Mirian Chombo (Mashonaland West Province) as Guest of Honour who urged industry

to open up in the engagement of deserving and talented young engineers so that the country retains a competent and skilled workforce. Member of Parliament for Chinhoyi, Hon. Eng. Leslie Mhangwa was also present and delivered a motivating speech for the graduate engineers. The Graduate Engineers Indaba continues to gain momentum as it seeks to

close the gap between recent graduates and seasoned/mature engineers in industry. "We are grateful to all our sponsors and the Mashonaland Area as well as the ZIE Secretariat. We are playing our part to ensure relevant information and placement of graduates is delivered for the benefit of graduates and the country at large.

In the digital age, robust information and communication technology (ICT) infrastructure is critical for economic competitiveness. Zimbabwe has been working towards expanding its digital infrastructure to enhance internet connectivity and promote e-commerce, e-government services, and digital innovation. Investments have been made to improve broadband coverage, establish data centres, and develop policies conducive to the growth of the digital economy. The country

is expanding high-speed internet connectivity which is crucial for digital inclusion and economic growth.

Transport Infrastructure: Border posts, such as Beitbridge, experience delays due to bureaucratic processes, inspections, and paperwork. Corruption at border posts contributes to lost business opportunities as traders seek alternative routes. Zimbabwe's road network suffers from aging infrastructure, inadequate maintenance, and lack of investment. Chronic underinvestment

in infrastructure leads to inefficiencies and delays. The bridges in Zimbabwe are in a state of disrepair due to lack of maintenance and attention.

In Zimbabwe, road infrastructure has seen significant improvements in recent years. The government has focused on rehabilitating roads through the emergency road rehabilitation program and upgrading major highways, such as the Harare-Bulawayo

and Harare-Mutare routes, to enhance connectivity and reduce travel times. Maintenance efforts have also been underway to address potholes and ensure road safety.

Zimbabwe boasts an extensive railway network that serves both domestic and regional trade. The government has recognized the importance of revitalizing this sector and

has engaged in efforts to rehabilitate existing railway lines, improve rolling stock, and enhance operational efficiency. By investing in the railway infrastructure, Zimbabwe aims to promote trade, reduce congestion on roads, and stimulate economic growth.

Overall, Zimbabwe's bridges need continuous attention, investment, and rehabilitation to ensure safe

and efficient transportation for its citizens and trade routes. Roads and railways require significant upgrades to enhance connectivity, trade, and transportation efficiency.

Energy Infrastructure: As of 2023, Zimbabwe's installed electricity generation capacity stands at approximately 2,540 megawatts (MW). However, due to factors such as

climate change, aging infrastructure, and equipment breakdowns, actual electricity generation often falls below this capacity. Zimbabwe faces challenges in maintaining and upgrading its energy infrastructure. Balancing renewable sources, addressing aging facilities, and ensuring reli-

able power supply are critical for sustainable development. Consequently, the country faces power cuts and load shedding.

To address energy issues, the government has initiated a National Power Grid Rehabilitation program. This includes the expansion of existing power plants and the exploration of renewable energy sources such as solar and hydroelectric power. These initiatives aim to increase the

country's energy generation capacity and ensure a stable power supply for industries and households. Rehabilitation of the power grid to improve transmission and reduce power cuts.

Development efforts to address infrastructure challenges are essential for Zimbabwe's development and resilience. Long-term plans should focus on infrastructure revitalization, institutional reforms, and sustainable management. The adoption of the Sustainable Development Goals (SDGs) and the

“By investing in the railway infrastructure, Zimbabwe aims to promote trade, reduce congestion on roads and stimulate economic growth.” Dr. Stevenson

PHOTO GALLERY 2023 ACTIVITIES (NESARI)



On the 27th of October 2023, The Zimbabwe Institution of Engineers (ZIE) held the first edition of its annual National Engineering Students Awards for Research and Innovation (NESARI) at the ZIE Offices, CONQUENAR House in Harare. The National Engineering Students Awards Competition (NESAC) which was initiated in 2014 rebranded to NESARI and began in January 2023. NESARI aims to achieve several key objectives which are:

1. Fostering University-Industry Collaborations. This collaboration is expected to stimulate research and development initiatives between both industry and academia.

2. NESARI allows industry and academia to mutually engage and interact on specific projects identified by either of the two for the industrial development of Zimbabwe.



3. NESARI plays a pivotal role in promoting teamwork in the research and innovation arena on the one hand between universities students and staff, and on the other hand, between universities and industry in research and development activities
4. NESARI also is an enabling platform for identifying opportunities for graduate employment (it helps bridge the gap between academia and industry, ensuring that students are career prospects well oriented in their chosen fields of interest.

The event started with the ZIE CEO Dr Eng. Sanzan Diarra giving the opening remarks, followed by Dr Eng. Z. J. Chihambakwe the NESARI Chairman. Universities offering engineering discipline were

afforded opportunities to jointly carry out research and innovation with industry with the participation of academics and students.

The closing remarks of the event were delivered by ZIE President Eng. Farai Mavhiya, who thanked the participants, sponsors who made NESARI possible as their support is instrumental in advancing the shared vision for engineering excellence in Zimbabwe.

The day's events were both educational and inspiring. The main focus was on how

academia and industry can collaborate to improve student representation in industry and, more importantly, encourage students to be more confident. ZIE are grateful to both the students and their respectful academic supervisors and industry representatives who made this event so successful and memorable. ZIE acknowledges all the sponsors and partners (PPC, ZENT, Techhold, Ndarama industrial supplies, Contec civil lab, Tea in 60, Vavaki consultants, Madevone Engineering, Spooky development group) and Firstlink Insurance Brokers.

Cont...from page 10

Paris agreement on climate action, additionally, present a unique opportunity to set Zimbabwe on a path towards better and more sustainable development outcomes. Infrastructure is a major driver of economic growth and inclusive development. It leads to increase in productivity, diversification of the economy and development of new markets, enhanced labour productivity and skills, and promotion of partnerships with the private sector and funders.

Despite the progress made, Zimbabwe faces several challenges in infrastructure development. Limited financial resources, bureaucratic hurdles, and the need for technical expertise pose

significant obstacles to implementation. However, the government, in collaboration with international partners and private investors, continues to pursue infrastructure projects to overcome these challenges and unlock the country's economic potential.

Conclusion:

Infrastructure development and maintenance are critical for Zimbabwe's socio-economic progress. The government's focus on upgrading transportation networks, expanding energy generation capacity, improving water and sanitation facilities, and enhancing digital infrastructure demonstrates its commitment to addressing infrastructure gaps.

With sustained efforts and strategic investments, Zimbabwe aims to create a solid foundation for sustainable development and improve the quality of life for its citizens.

Memo to all Members

To be part of any ZIE events or divisions, you can contact ZIE Secretariat at 0242746821/events@zie.co.zw

ZIE wishes to advise all its Members to be proactive in nation building initiatives for the betterment of our communities and nation at large. All activities organised at area or division level are meant to benefit membership affiliated to those areas and divisions.

ZIE Membership officer

Dr W Banda

UPCOMING

ZIE INFRASTRUCTURE INVESTMENT CONFERENCE

Date: 27-30 August 2024
Venue: Victoria Falls

RE-IMAGINING SUSTAINABLE INFRASTRUCTURE INVESTMENTS IN ZIMBABWE

FOR POLITICIANS, AI WILL BRING SALVATION OR DAMNATION — BUT NOTHING IN BETWEEN- THOMAS MACAULAY

Is AI a panacea or a Pandora's box? It's a question that divides the British government.

Ask the deputy prime minister, Oliver Dowden, and he'll fill your ears with promises about a glorious future.

AI is a "game-changer" that can "revolutionise public services," Dowden gushed yesterday. Healthcare, education, and crime prevention are all prime targets for the technological transformation — and that's just the start.

"I could go on nearly forever to cover all areas of public administration," Dowden threatened. "Because there are very few areas of the public sector that don't have the potential to be enhanced by these tools."

Naturally, those tools can also reduce the need for pesky human employees. As part of this grand plan, the government will spend £110mn on AI tools and technical staff to automate "dogsbody work" — and eliminate boatloads of civil service jobs.

"We need to really embrace this stuff to drive the numbers down," Dowden said.

And that's merely one of the deputy PM's automation dreams. "AI is potentially — and I don't say this lightly," he claimed, "— a silver bullet."

His colleagues, however, don't all share his unbridled faith. Just days before Dowden shared his sublime vision, the home secretary, James Cleverly, delivered a very different message. In an interview with the London Times, Cleverly warned that criminals and "malign actors" working for rival states could use AI to fix this year's general election.

"The era of deepfake and AI-generated content to mislead and disrupt is already in play," he said.

Such anxieties add a sad note to Dowden's rhapsody. But the contrasting tones are unsurprising even from within the same government.

Whether they're positive or negative, politicians have become enraptured by AI extremes. They provide the powerful solutions, the petrifying problems, and the pithy slogans that every government desires. Any ambiguities or middle grounds, by contrast, are undesirable distractions.

In reality, of course, AI is neither good nor bad; what matters is how it's deployed. Unfortunately, the guardrails for deployment are being built by the likes of Dowden and Cleverly.

S T O R Y B Y
Thomas Macaulay
a Senior reporter at TNW. He covers European tech, with a focus on deeptech, startups, and government policy.



EXECUTIVE APPOINTMENT: PROFESSOR TAWANDA MUSHIRI AT SCIENTIFIC & INDUSTRIAL RESEARCH & DEVELOPMENT (SIRDC)



Prof Dr Eng. Tawanda Mushiri

The Scientific and Industrial Research and Development Centre (SIRDC) is pleased to announce the appointment of Professor Tawanda Mushiri as the Executive Director - Technical with effect from 1 March 2024. Professor Mushiri succeeds Dr Leonard Madzingaidzo who was appointed the Chief Executive Officer in July 2023.

Professor Mushiri has a strong technical background which will be valuable to the Centre. His working history includes lecturership at the University of Zimbabwe and Chinhoyi University of Technology and a stint with the National Oil Company of Zimbabwe. Over the years, he has gained valuable experience in Robotics, Artificial Intelligence, Biomedical Engineering, Manufacturing, Research and Development, and Commercialisation.

Professor Mushiri is an accomplished academic, researcher and leader. He holds a Bachelor of Science (Honours) Degree in Mechanical Engineering (Upper Second Division) and a Master of Science Degree in Manufacturing Systems and Operations Management (Merit) both obtained from the University of Zimbabwe in 2008 and 2012, respectively. He acquired a Doctor of Engineering (D.Eng.) Management (Suma Cum Laude) from the University of Johannesburg majoring in Artificial Intelligence and Robotics (Fuzzy Logic Systems) in 2017. Professor Mushiri has done a number of certifications in Artificial intelligence, Machine Learning and Deep Learning. He has supervised a number of students at BSc, MSc and PhD levels in related areas of research.

Professor Mushiri is currently a Council Member of the Medical Rehabilitation Practitioners Council of Zimbabwe (MRPCZ). He is a former Board Member of the Zimbabwe Standards Association (SAZ)'s Tariff Code

Classification for Solar Products and Solar Photovoltaic Systems Technical Committee, Zimbabwe Standard. Professor Mushiri is also a former Board Member of the ISolutions SAZ Zimbabwe Standard. He is a qualified and licenced Mechanical Engineer from the Zimbabwe Institution of Engineers (ZIE) and Engineering Council of Zimbabwe (ECZ).

His notable achievements include the design and installation of:

- automated vehicle number plate plant,
- automated bread making plant,
- stock-feed and cooking oil plant,
- automated sanitiser production plant.

He has done some work supported by international grants which include:

- Developing a Two -Sided Artificial Intelligence Risk Predictive Model for early identification of High Risk Antenatal Mothers: Enhancing Maternal and Women's Health Outcomes in Zambia, Malawi and Zimbabwe.

- Digital Challenge-Driven Circular Energy Transition Learning Collaboration between EU and Zimbabwe (EU-ZW).
- Coal Beneficiation for the Metallurgical Industry for Zimbabwe and Botswana.

The SIRDC Board, Management and Staff welcome Professor Tawanda Mushiri and wish him success as he helps SIRDC to provide the nation with technological interventions that support the National Development Strategy I and Zimbabwe's Vision to attain an Upper Middle income Society Status by 2030.

STORY FROM SIRDC DESK

**THE ZIMBABWE
INSTITUTION OF ENGINEERS**

Conquenar House
256 Samora Machel
Eastlea
Harare

“There is no limit to the amount of good you can do if you don’t care who gets the credit.” Ronald Reagan

The Zimbabwe Institution of Engineers is registered under section 23 of Private Act of Parliament.

If you want to be part of the ZIE Newsletter

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Prisca 0242746821
or doreebhebe24@gmail.com.

For adverts kindly contact
Orlean 0242746716
or accounts@zie.co.zw



E N G I N E E R I N G F O R E X C E L L E N C E

**ZIE-ECZ NEW REGISTERED MEMBERS—JAN—DEC 2023
TECHNICIAN, TECHNOLOGIST, CORPORATE MEMBER AND FELLOW**

TECHNICIAN

1. Chizengwe Simon P.
2. Dube Simon G.
3. Goba Takudzwa
4. Gutu Enetta
5. Kalenge Daniel
6. Kwashira Phillip
7. Makamure Trymore T.
8. Makombe Teddy
9. Mapuvire Andrew
10. Marufu Kudzai
11. Matanda Tawanda
12. Mhone Saidi
13. Mugomba Prisca
14. Mutasa Chokwadi W.
15. Nyakudya Tariro F.
16. Sibanda Robert
17. Siyanwi Mercy N.
18. Zulu Dickson

TECHNOLOGIST

1. Fundira Clive
2. Janjazi Lemont M.
3. Landelani Henry
4. Mafika Charmaine Avril
5. Muguti Tafadzwa
6. Munangarwa Arthur
7. Mwoyoweshumba Neville
8. Njeere Emerald F.
9. Shepherd Peter John
10. Tazvigwira Esrom
11. Tomu Shingirai
12. Zvaba Esmael

CORPORATE MEMBER

1. Bimha Artwell
2. Chakaamba Faith T.
3. Chakara Simbarashe
4. Chanakira Tawanda
5. Chapwanya Blessing
6. Chawawa Wisdom N.
7. Cheziya Onwell T.
8. Chihanya Troy N.
9. Chihumba Farai
10. Chikomwe Panashe
11. Chikumbirike Kudzai C.
12. Chirwa Fortune

FELLOW

1. Chizura Zomunoda
2. Dube Ikhupuleng
3. Goriwondo William M.
4. Katsa-Madziya Dorothy
5. Mafurutu Gabriel N.
6. Maputi Edmund S.
7. Nyandoro Tafumaneyi W.

HONARARY-FELLOW

1. Murwira Amon



**VOLUME 1, ISSUE 1****THE ZIMBABWE INSTITUTION OF ENGINEERS****ZIE-ECZ NEW REGISTERED MEMBERS—JAN—DEC 2023 CONT...****CORPORATE MEMBER**

13. Chiswo Sherma M.
14. Chivese Thomas
15. Chuma Paidamoyo F.
16. Dembure Tatenda
17. Devera Talent
18. Dumbura Raphael
19. Dzvetta Kudzai A.
20. Funi Macdonald
21. Ganyani Simbisai M.
22. Gondo Amazia S.
23. Gutu Thomas
24. Gwetu Dhumani
25. Hove Moffat T.
26. Hweju Zvikomborero
27. Isaac Isaac
28. Janjazi Lemont M.
29. Jeme Anold
30. Jeremia Trymore
31. Kahondo Vincent
32. Kamwendo Alexander
33. Kamwendo Caspur
34. Kapenzi Amos
35. Kasirori Tatenda
36. Khumalo Lucky
37. Leman Rutendo S.
38. Luke Pardon
39. Madzima Kudakwashe
40. Madzinga Jabulani
41. Madzivadondo William
42. Mafohla Talent
43. Mafume Tadios
44. Magaisa Tinavo

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46. Makamure Takudzwa
47. Makonese Emelda F.
48. Makwaza Ashlyn
49. Mandeya Trevor
50. Maphosa Michael. T
51. Mariwi Talent
52. Maseko Marvin T. M.
53. Mashayahanya Thandiwe
54. Mashingaidze Linda T.
55. Mashumba Peter
56. Masimba Oliver
57. Masunga Brian Z.
58. Masvingise Lovemore
59. Matanhire Enos
60. Mataya Kudzai B.
61. Mateza Prosper
62. Matsika Munyaradzi
63. Mavhondo Edson
64. Mawarire Ashley K.
65. Mawere Tanaka T.
66. Mayeni Kemalia
67. Mdege Sylvester
68. Mguni Jacob
69. Mhlanga Leopld Z.
70. Motsi Shephard T.
71. Moyo Collert
72. Moyo Moses
73. Moyo Victor
74. Mpofo Professor H.
75. Mpofo Vanessa R.
76. Mtambo Mercy

CORPORATE MEMBER

78. Mudzviti Phillip
79. Mugaramanja Rayman
80. Mugweni Terence
81. Mukazi Isaiah
82. Mukotsanjera Edmore
83. Mukurunge Lyon T.
84. Munako Nyasha B.
85. Mundoringisa Tendai
86. Munodawafa Michael
87. Munotengwa Shiringinyai
88. Murevesi Courage
89. Muringani Evans
90. Mushandu Ngonidzashe
91. Mushonga Bradshaw S.
92. Musiyi Stephen
93. Musona Bernard
94. Musonza Keith T.
95. Mutemaringa Luckmore
96. Mutsatsa James
97. Mutungwazi Anold
98. Mutusva Blessing
99. Muzamhindo Phillimon
100. N'andu Tambirai
101. Ncube Progress
102. Ndlovu Joseph I.
103. Nduna Magareth
104. Ngara Tafadzwa
105. Nhidza Moses
106. Njenda Takwira.
107. Nkonde Faith T.

CORPORATE MEMBER

108. Nyakudya Tariro F.
109. Nyakutsikwa Berverly
110. Nyama Owen
111. Nyambiya Tawanda
112. Nyandimu Mellisa C.
113. Nyazaya Talent
114. Nyereyemhuka Tafadzwa
115. Nyirenda Lesley
116. Purazeni Takudzwanashe
117. Razawu Joseph K.
118. Rudongo Blessing R.
119. Rufai Takudzwa W.
120. Sakupwanyana Kennedy S.
121. Share Sharon-rose I.
122. Shereni Brian A.
123. Shoko Humphrey
124. Shumba Prosper
125. Sibanda Anele
126. Simoyi Kudzaishe
127. Situmbeko Wamunyima
128. Tafirei Tinashe
129. Tagwira Brian J. M
130. Takurukura Nicholas O.
131. Tandakufa Evaristo
132. Tendaupenyu Wesley
133. Tichivangani Elisha
134. Zhoya Cleopas
135. Zvabva Jesmael M.
136. Zvomuya Valentine T.

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VOLUME 1, ISSUE 1

THE ZIMBABWE INSTITUTION OF ENGINEERS

ZIE-ECZ NEW REGISTERED MEMBERS—JAN—DEC 2023 CONT...

CORPORATE MEMBER

92. Khumalo Lucky
93. Takurukura Nicholas O.
94. Nduna Magareth
95. Chawawa Wisdom N.
96. Mandeya Trevor
97. Mariwi Talent
98. Nyama Owen
99. Madzivadondo William
100. Isaac Isaac
101. Rufai Takudzwa W.
102. Razawu Joseph K.
103. Muchuweni Webster
104. Tendaupenyu Wesley
105. Chihumba Farai
106. Chakara Simbarashe F.
107. Nyandimu Mellisa C.
108. Mhlanga Leopld Z.
109. Dembure Tatenda
110. Leman Rutendo S.
111. Ngara Tafadzwa
112. Mawarire Ashley K.

CORPORATE MEMBER

113. Janjazi Lemont M.
114. Chivese Thomas
115. Mafume Tadios
116. Chihanya Troy N.
117. Chuma Paidamoyo F.
118. Mukazi Isaiiah
119. Tandakufa Evaristo
120. Cheziya Onwell T.
121. Mtambo Mercy
122. Muringani Evans
123. Kamwendo Alexander T.
124. Nyandimu Melissa
125. Makonese Emelda F.
126. Mashingaidze Linda T.
127. Mudzviti Phillip
128. Musiyo Stephen
129. Mushonga Bradshaw S.
130. Share Sharon-rose I.
131. Nyakutsikwa Berverly F.
132. Kasirori Tatenda
132. Zhoya Cleopas
133. Mutungwazi Anold
134. N'andu Tambirai
135. Musona Bernard

CORPORATE MEMBER

136. Masvingise Lovemore
137. Nyazaya Talent
138. Mushandu Ngonidzashe E
139. Mavhondo Edson
140. Nyambiya Tawanda L.
141. Mukurunge Lyon T.
142. Tagwira Brian J. M
143. Masunga Brian Z.

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