SAFHE 2026
SOUTHERN AFRICAN HEALTHCARE CONFERENCE
SYNERGY IN ACTION: SHAPING THE FUTURE OF HEALTHCARE TOGETHER

9 – 10 JUNE 2026
CTICC 2 CAPE TOWN

Healthcare partnerships provide employment opportunities

Yolanda de Lange
Institute of Energy Professionals Africa NPC

WHO IS IEPA?

Institute of Energy Professionals Africa – a non-profit company

- Energy related training, examinations, assessments, certification and certification renewals, course development
- International accreditation from the Association of Energy Engineers (AEE) and other countries
- Local accreditation from QCTO and many others
- 24 years experience on the African continent
- BBBEE Level 1, all female permanent staff run

Turnkey projects for youth, industry and governments across Sub-Saharan Africa to support all organisations, including governments, in planning their skills roadmaps, reskill their employees, to enable implementation of energy efficiency and sustainability

INFRASTRUCTURE

Conference aim on building infrastructure in healthcare industry

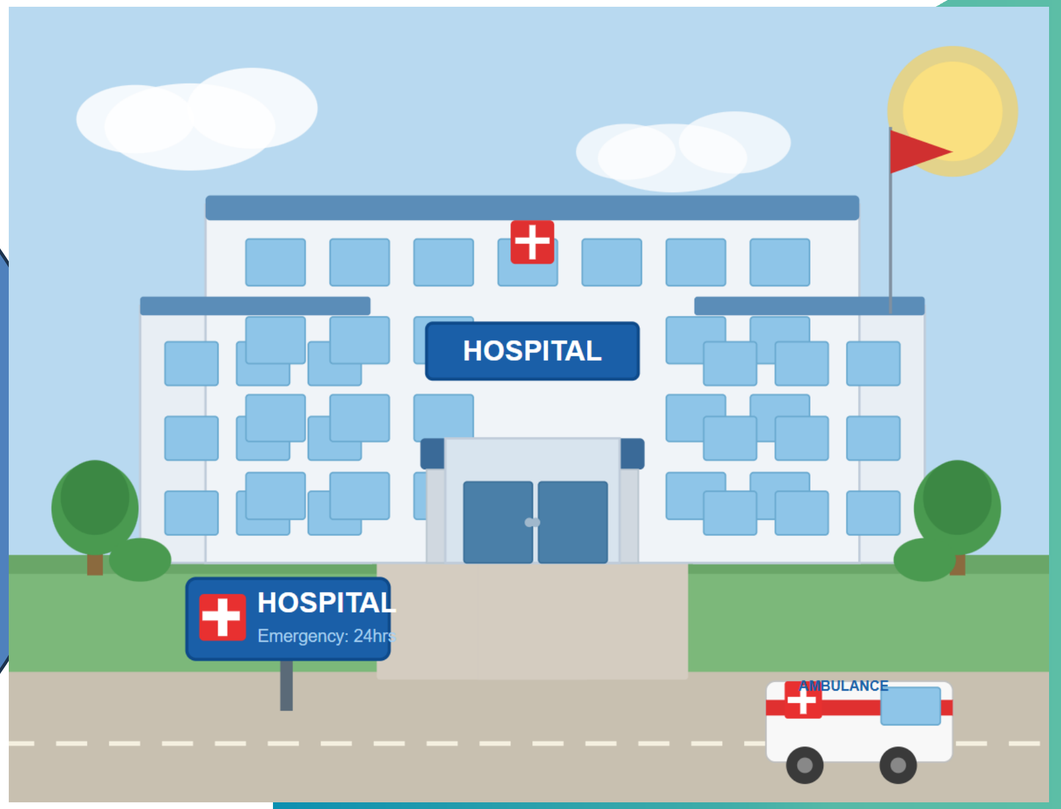
- Dr Harry Seftol, Physician & Wits Professionals – “Engineers have done more for the medical industry than Doctors have”
  Clean running water, proper sanitation networks, safe housing and developing technologies
- Where are we in SA with the infrastructure requirement?
- Are there engineering teams that can manage and implement this?
- Is energy efficiency being considered in the hospital industry, and is it done properly with an energy management system?

The old lady that put her health at risk swimming in a pothole full of untreated water, but that is the state of all infrastructure in South Africa.

ENERGY EFFICIENCY

Hospitals are part of the energy challenge

Hospitals are among the most energy-intensive facilities in any economy — running 24 hours a day, seven days a week, with critical HVAC, water, lighting, and medical equipment loads.

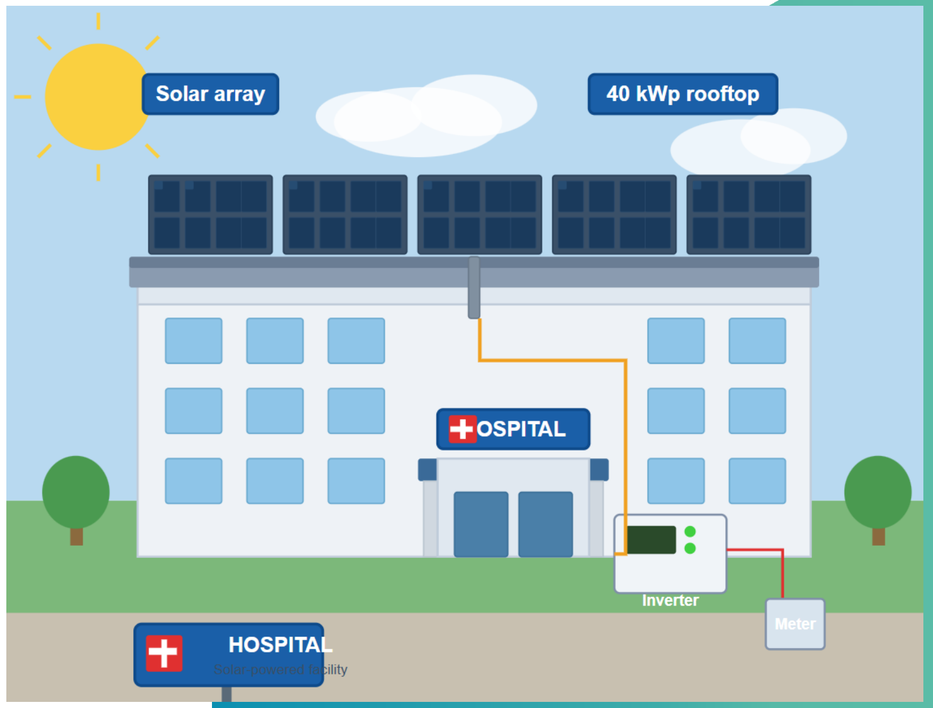


IMPORTANCE OF ENERGY EFFICIENCY

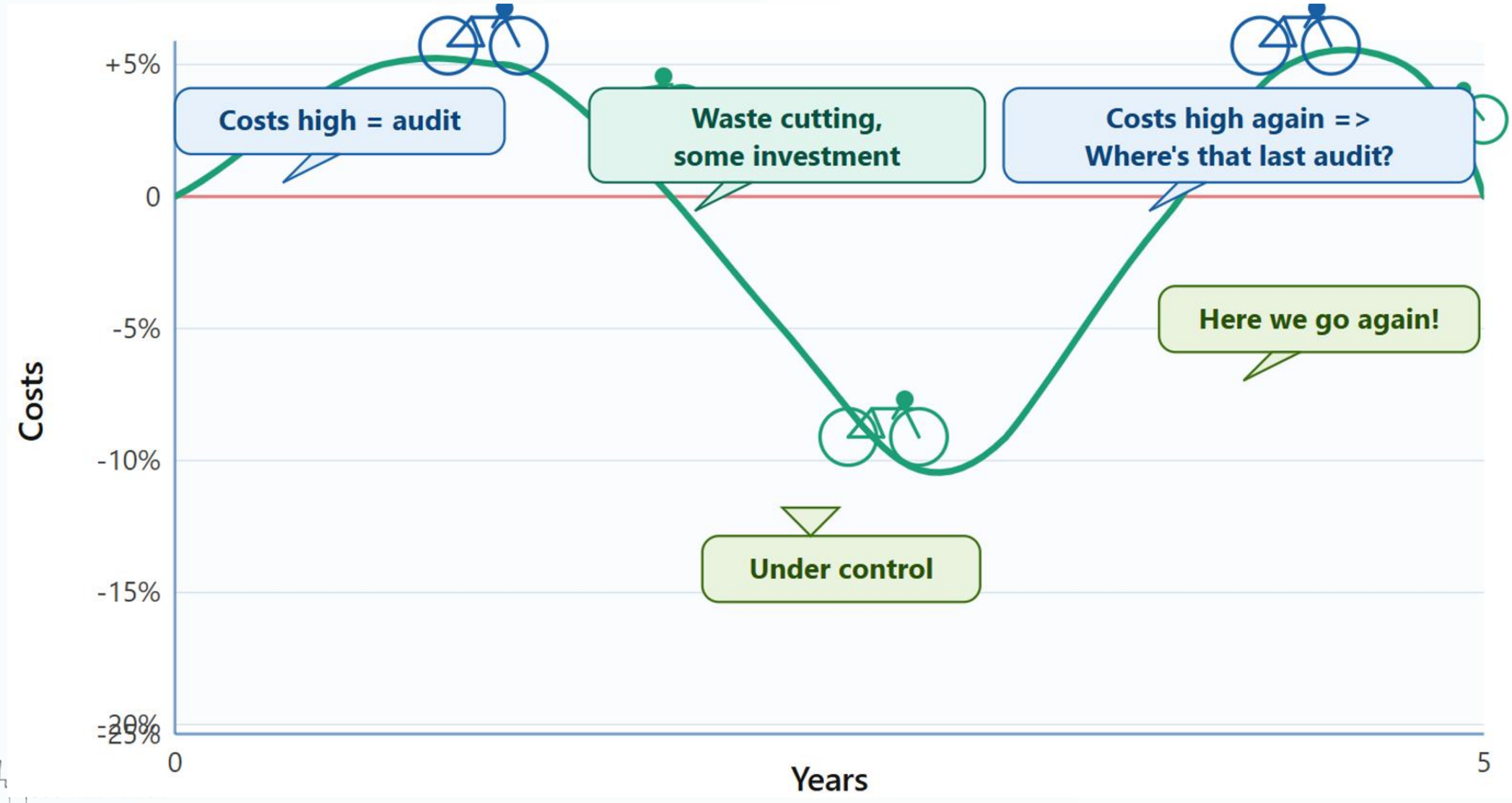
- World energy consumption has more than doubled in the last 40 years; another 30% increase is predicted by 2040
- 60% of Green House Gass (GHG) emissions are due to the energy consumption
- USD3.2 trillion in the world can be achieved in public health-related savings, if more was done with energy efficiency in buildings, industry and decent infrastructure
- Over 60% of energy in the world is used in buildings – both commercial and residential
- In 60% of buildings' fan systems are oversized
- Most chillers are oversized by 50–200% (EPA 2010)
- South Africa uses the most energy in Africa and is ranked the 20th user of energy in the World out of 195 recognized countries (globalelectricity.org.)
- Most buildings are not energy efficient!

FOCUS IS ON RENEWABLES

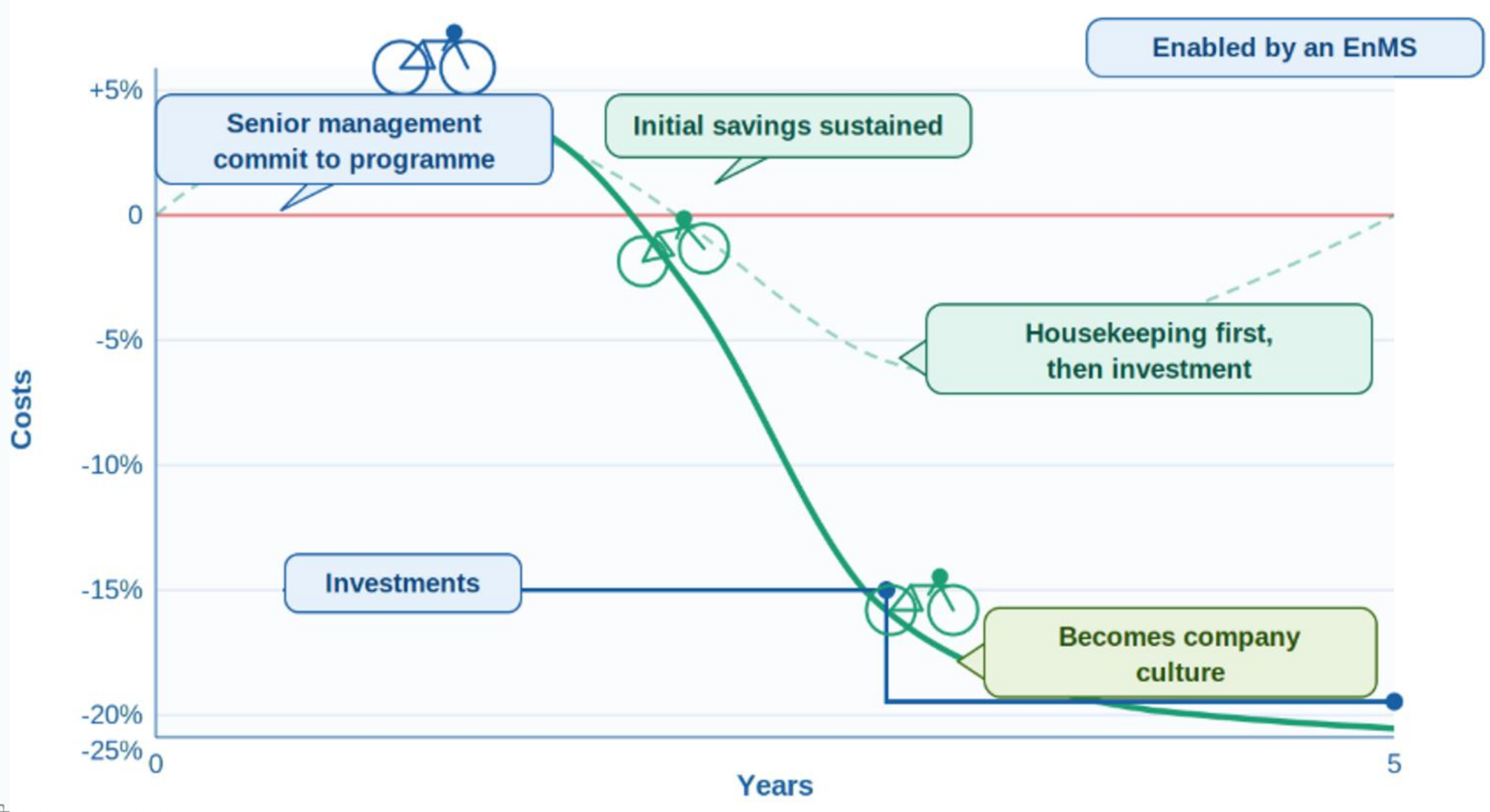
- Most organisations focus on renewable energy installations first – because they can see it
- **Energy efficiency is more important to make sure you need less renewable energy solutions**
- An **SANS50001 Energy Management System (EnMS)** is key to ensure energy efficiency and any renewable energy projects achieve the ultimate requirements, year-on-year, to resolve high costs and energy availability challenges
- Remember too: energy efficiency does not only benefit less use of energy, it also contributes many other benefits which include reductions in maintenance costs, GHG reduction, water efficiency, as well as



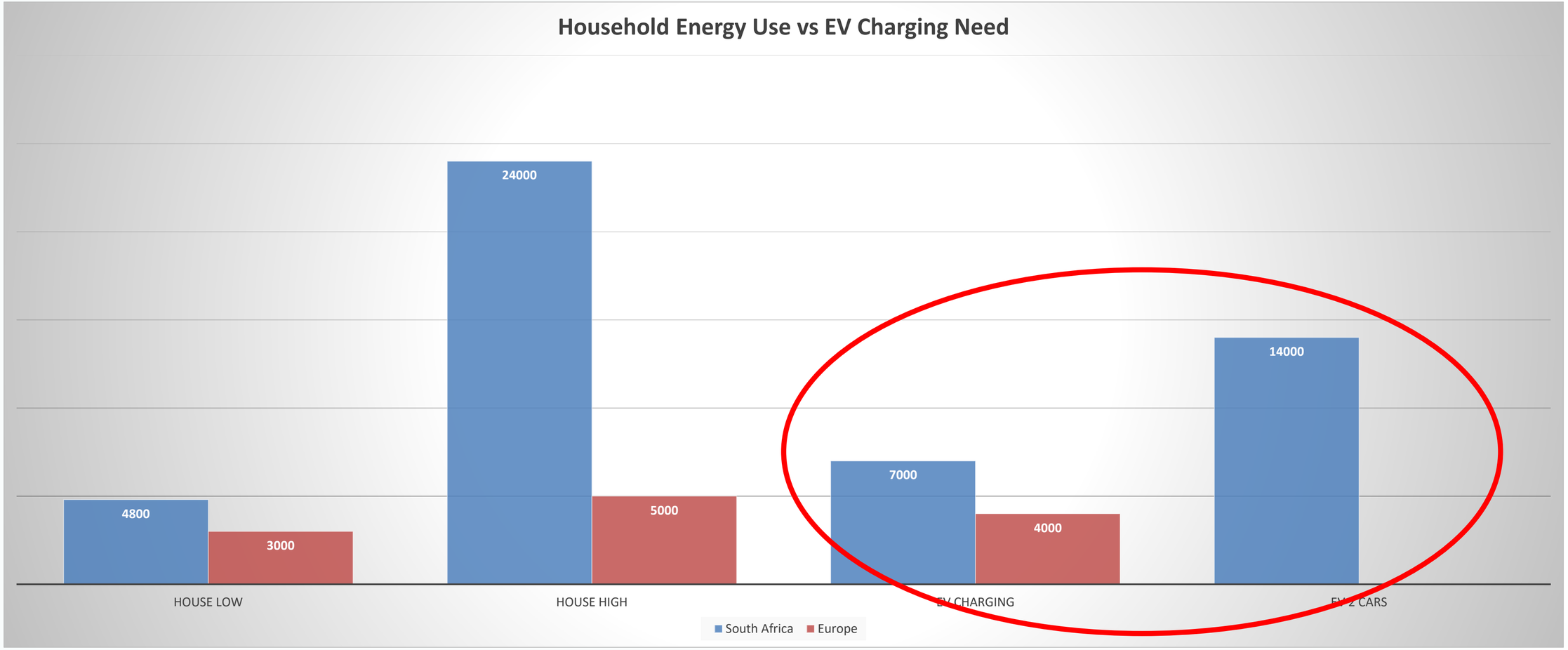
THE AD-HOC APPROACH TO ENERGY EFFICIENCY



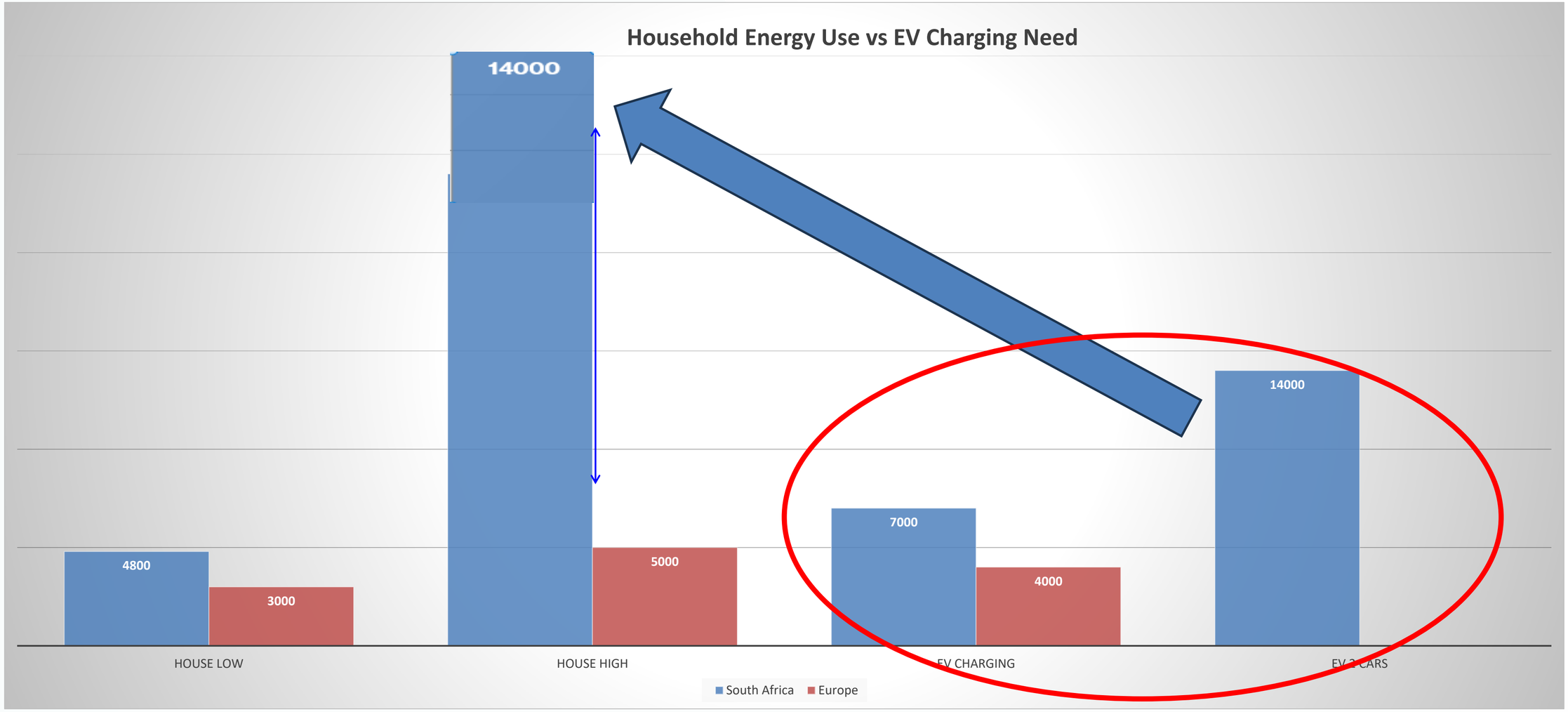
SUSTAINABLE ENERGY MANAGEMENT



LET’s LOOK AT WHERE SA WANTS TO GO



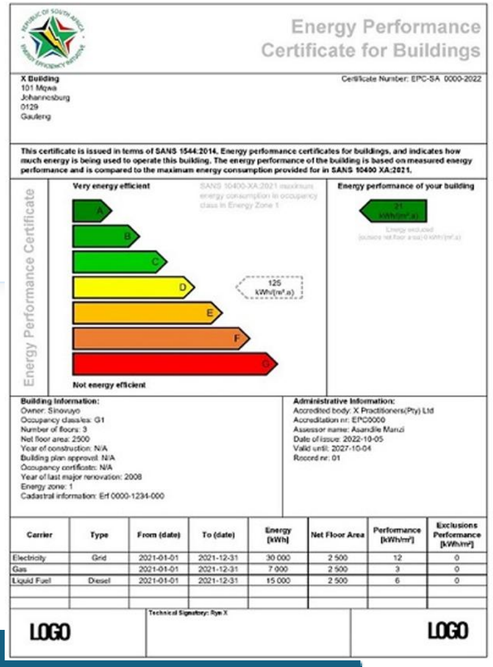
WE CAN’T EVEN SUPPLY ALL BASIC HOUSING YET!



EE & EnMS IS A NO-BRAINER

Like appointing skills to implement it

And energy regulation for energy efficiency considered at DEE



Energy Performance Certificate for Buildings

X Building
101 Mqwa
Johannesburg
0129
Gauteng

Certificate Number: EPC-SA 0000-2022

This certificate is issued in terms of SANS 1544:2014, Energy performance certificates for buildings, and indicates how much energy is being used to operate this building. The energy performance of the building is based on measured energy performance and is compared to the maximum energy consumption provided for in SANS 10400 XA:2021.

Energy Performance Certificate

Very energy efficient

SANS 10400-XA:2021 maximum energy consumption in occupancy class in Energy Zone 1

A
B
C
D
E
F
125 kWh/(m²·a)

Not energy efficient

Energy performance of your building

Building information:
Owner: Sinoruyo
Occupancy class/es: G1
Number of floors: 3
Net floor area: 2500
Year of construction: N/A
Building plan approval: N/A
Occupancy certificate: N/A
Year of last major renovation: 2008
Energy zone: 1
Cadastral information: Erf 0000-1234-000

Administrative Information:
Accredited body: X Practitioners(Pty) Ltd
Accreditation nr: EPC0009
Assessor name: Asanda Manzi
Date of issue: 2022-10-05
Valid until: 2027-10-04
Record nr: 01

Carrier	Type	From (date)	To (date)	Energy [kWh]	Net Floor Area	Performance [kWh/m²]	Exclusions Performance [kWh/m²]
Electricity	Grid	2021-01-01	2021-12-31	30 000	2 500	12	0
Gas		2021-01-01	2021-12-31	7 000	2 500	3	0
Liquid Fuel	Diesel	2021-01-01	2021-12-31	15 000	2 500	6	0

LOGO

Technical Signatory: Rye X

LOGO

If 250,000 buildings each reduce demand by 30% whilst doing the same work

Then

- We will avoid building a power station
- OR better put 750 million solar panels saved from the scrapyard in 15 years
- OR even better 7.5 million small houses can get connected to the grid
- Never mind the economic growth of industries and the money the building owners and tenants will save

PARTNERSHIPS

Alone they may work, combined they can deliver so much more

PPP often are a lot of talk and paperwork without PEOPLE

SKILLS shortage?

- **2008 research gave us a warning we going backwards badly**

- The 2008 HSRC report showed that over 55% of engineers were 35–39, very few below 35 or above 50, and the 40-49 bracket was thin due to emigration or left engineering for better paying industries
- Mentorship was collapsing, graduate training programmes had been cut, and young engineers were either emigrating or drifting out of engineering entirely

Human Sciences Research Council
Development Policy Research Unit
Sociology of Work Unit

RESEARCH CONSORTIUM

ENGINEERING PROFESSIONALS: CRUCIAL KEY TO DEVELOPMENT AND GROWTH IN SOUTH AFRICA

Scarce and critical skills Research Project

MARCH 2008

RESEARCH COMMISSIONED BY DEPARTMENT OF LABOUR SOUTH AFRICA

SAIIE32 STEPS

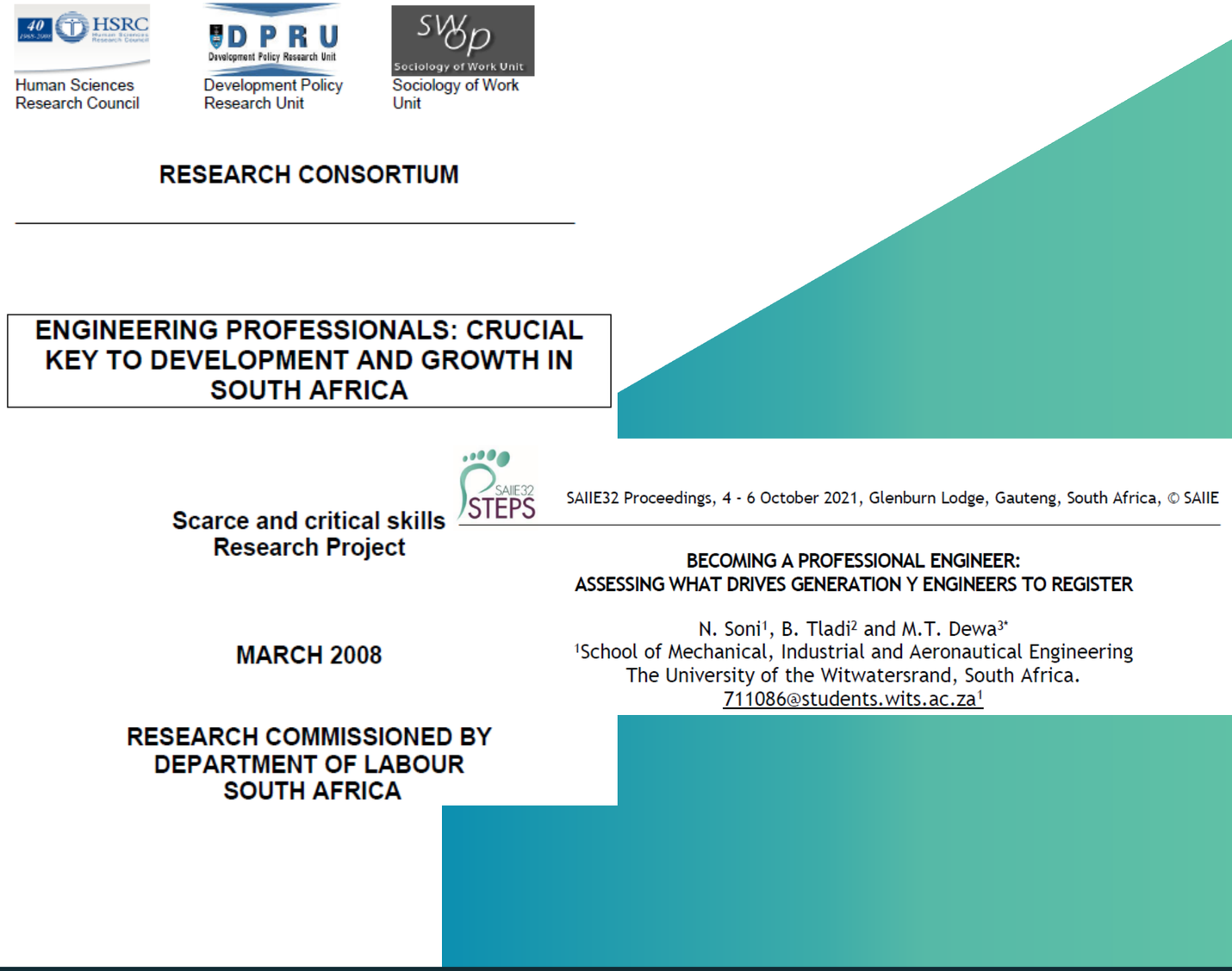
SAIIE32 Proceedings, 4 - 6 October 2021, Glenburn Lodge, Gauteng, South Africa, © SAIIE

BECOMING A PROFESSIONAL ENGINEER: ASSESSING WHAT DRIVES GENERATION Y ENGINEERS TO REGISTER

N. Soni[1], B. Tladi[2] and M.T. Dewa[3*]
[1]School of Mechanical, Industrial and Aeronautical Engineering
The University of the Witwatersrand, South Africa.
711086@students.wits.ac.za[1]

➢ 2021 paper shows it is even worse

- By 2021 confirmed the 2008 large cohort had aged to their early 50s
- More than half of all registered professional engineers on the 2021 paper shows they are close to or over 60 heading for retirement
- Young candidate engineers that was supposed to be skilled and mentored to replace them has largely failed to register with ECSA, or didn't finish studies, emigrated, or took on different careers
- Gen Y/Mil don't want to stay in one engineering lane for life - formal training, further studies, and flexible career progression – where energy engineering can impact all industries in line with global requirements



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DO WE ONLY NEED ENGINEERS?

The ratio of a team to implement technical projects according to the research documents:

- **The ideal is 1 engineer: 2 technologists: 4 technicians: 16 artisans**
- **In 2008 we were already running at 1 : 0.4 : 1, meaning engineers were doing technician work because there were no trained technicians below them!**
- **In green skills, such teams are crucial for successful infrastructure projects and not only engineers**

- According to IMD latest world competitiveness book we are short 60,000 engineers and with a lot more technologists, technicians and artisans
- Yet, most engineers, technicians and artisans are still unemployed (under 34 age now 45%, and under 24 age 60% because these don't have the 3-5 years experience)

In the industry where IEPA provides services, green skills are perfect to provide additional skills for youth to better their CV for job applications, and through QCTO processes and international Certification we support some of the solutions.

CALL FOR ACTION TO COMPANIES

We need youngsters to enter the industry, the 2008 report warns about it, the 2021 paper confirms it is worse

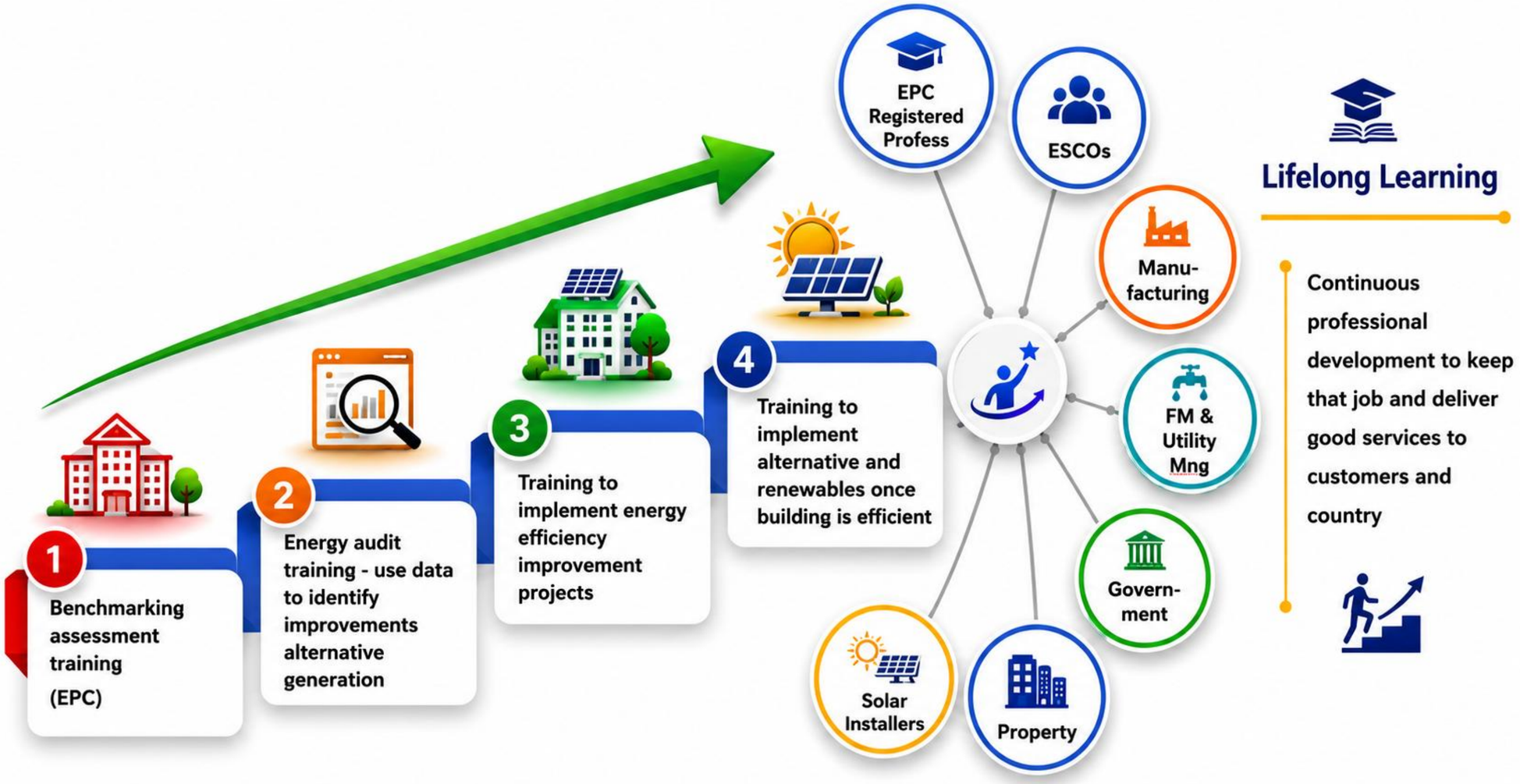
- Run structured graduate training and mentorship programmes (not just expect graduates to "add value immediately")
- Assist students with experiential training placements, which remain the single biggest barrier to qualification
- Offer bursaries tied to employment agreements, which historically changed demographics and built the workforce pipeline
- Retain experienced engineers past retirement age specifically to mentor younger staff
- Assist youth to develop enough experience and establish their own employment to provide services to all industries
- And contribute to the various green skills necessary to achieve the better healthcare services, public infrastructure improvement to support health in individuals, reduce GHG etc

Everyone complains about the shortage — while the solution is sitting unemployed.

CAREER PATH

From PPPP programs to lifelong learning for infrastructure, services and job continuation

People focused: students, trainers, mentors, organisations and persons willing to support internship.



GREEN SKILLS PPPP DIFFERENCE

- Give a youngster an immediately deployable economic value proposition that does not require years of prior experience to deliver
- A company does not need to wait 5 years for a youngster well trained in energy efficiency to add value — they can walk in on day one and identify savings
- Energy and water costs are line items on every company's balance sheet and their reduction has immediate, measurable financial impact
- This is a business case that justifies hiring someone now, not after they've been seasoned elsewhere first

An engineering team with green skills in energy and sustainability environment is not a nice-to-have. They are a cost-saving asset from the moment they arrive.

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Thank you / Q&A

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