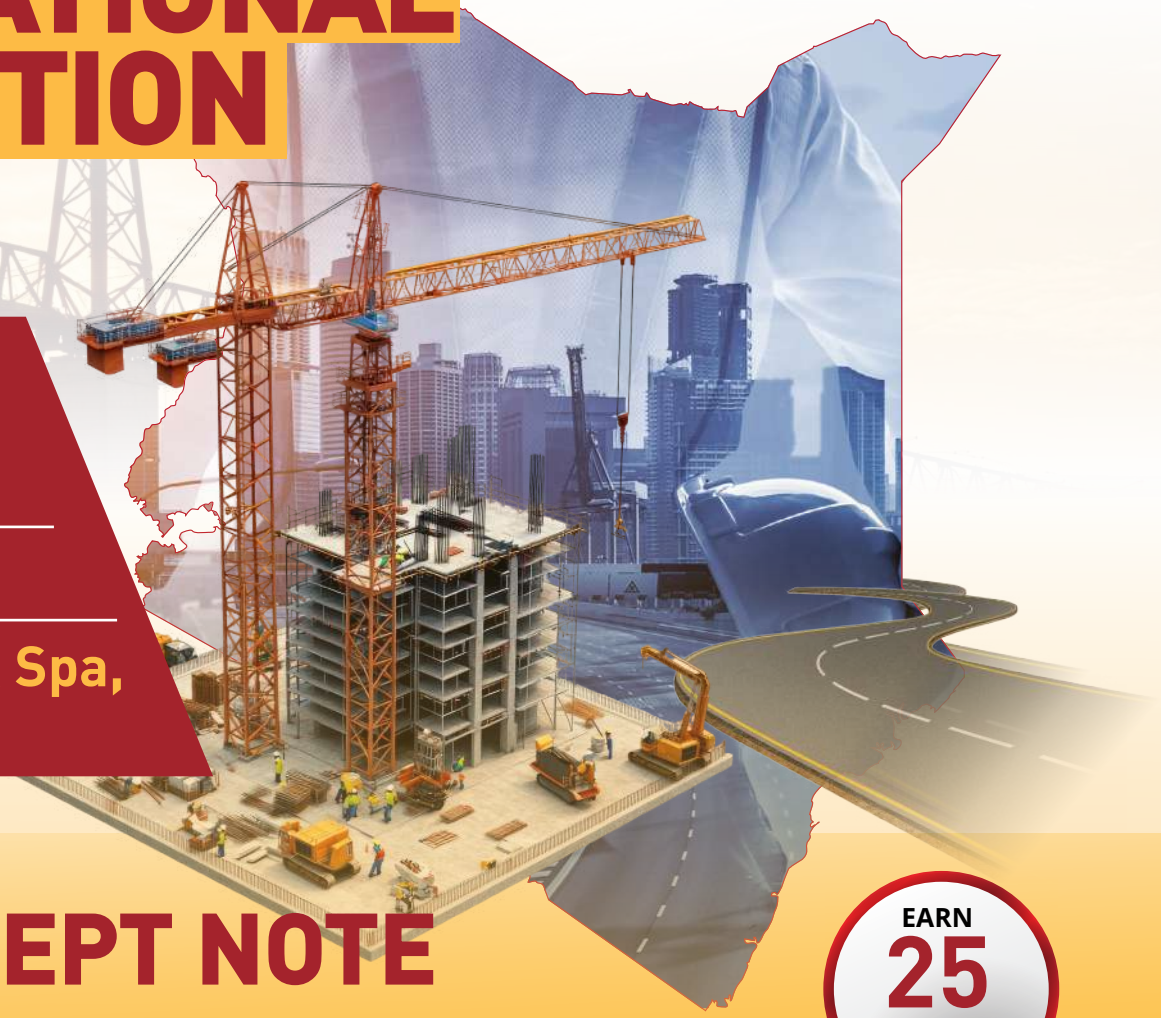
32ND IEK INTERNATIONAL CONVENTION

THEME:

Engineering the future: The Roadmap for Kenya

25th - 28th November 2025

PrideInn Paradise Beach Resort & Spa, Mombasa, Kenya



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CONCEPT NOTE

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EARN 25 PDUs

1. Introduction

Worldwide, economic transformation and improvement of human lives has majorly been driven by advancement and innovations in engineering. Engineering is the cornerstone of progress, driving continuous improvement in how we live and interact. Behind this evolution are the Engineers who transform ideas into practical solutions that improve the quality of human lives. From Energy to Industrialization, Transport to healthcare, Communications to Agriculture, engineering has continued to shape our modern world.

In Africa, engineering has inter-connected Countries; improved education, brought cross-border energy exchange, created economic opportunities, supported trade in services together with providing a core platform for the enhancement of economic and geo-political frameworks.

Engineering remains central to unlocking a country's full potential. In Kenya, engineering has powered the rollout of the Standard Gauge Railway, last-mile electricity connections, affordable housing programs, water and sanitation projects, and large-scale infrastructure such as the Nairobi Expressway and Lake Turkana Wind Power Project. These interventions are directly aligned with the Bottom-Up Economic Transformation Agenda (BETA), Kenya Vision 2030, the African Union Agenda 2063, and the United Nations Sustainable Development Goals (SDGs).

As Kenya navigates critical transitions—shaped by climate change, rapid urbanization, demographic shifts, and digital disruption—the role of engineers in planning, designing and delivering resilient systems is more important than ever. Their ability to integrate innovation with practicality makes them indispensable in shaping the country's response to both immediate needs and long-term ambitions.

Locally, the engineering profession remains central to unlocking Kenya's full potential in alignment with the Bottom-Up Economic Transformation Agenda (BETA), the African Union Agenda 2063, and the UN Sustainable Development Goals (SDGs).

As Kenya navigates complex socio-economic transitions—driven by technology, climate change, demographic shifts, and infrastructure gaps—the role of engineers as transformative leaders is now more critical than ever.

The 32nd IEK International Convention provides a premier platform to ***reflect, reimagine, and realign*** engineering practices and policy with Kenya's development trajectory under the bold theme: ***"Engineering the Future: The road map for Kenya"***

This Convention will examine how engineers and policy makers can provide lasting solutions across all sectors through interdisciplinary collaboration, smart technologies, infrastructure resilience, industrial growth, and inclusive human capital development.

2. Institution of Engineers of Kenya (IEK)

The IEK was founded in 1972 as the learned society of the engineering profession in Kenya. The function of IEK is to promote the engineering profession and contribute to the sustainable development of the country by cooperating with national, regional and other international institutions in developing engineering to the benefit of humanity. Its membership currently stands at over 13,000 members spread across the country in the seven (8) branches that have been established in the country so far.

3. THEME:

Engineering the Future: *The road map for Kenya*

This theme reflects the urgent need to position engineering as the strategic cornerstone in realizing Kenya's vision of a digital, green, inclusive, climate-resilient, and globally competitive future. The convention will unpack what the future demands of engineers and policymakers, and how the profession must evolve to lead transformative change. As demand surges for critical minerals essential to green technologies and industrialization, mining engineering has emerged at the heart of strategic economic planning, national security, and regional influence. Countries are increasingly asserting control over their mineral resources, reshaping trade relations and investment flows — making it imperative for engineers to lead not only in innovation, but also in policy, sustainability, and global competitiveness.

This theme is deeply rooted in Kenya's national development agenda, directly supporting the Bottom-Up Economic Transformation Agenda (BETA) through inclusive growth and community empowerment. It also aligns with Kenya Vision 2030's goal of transforming the nation into a newly industrialized, middle-income country with a high quality of life for all. Furthermore, it inherently contributes to several Sustainable Development Goals (SDGs), particularly those focused on poverty eradication, decent work, resilient infrastructure, and sustainable communities, while upholding the National Building Code for safe and durable development.

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4. THEMATIC AREAS

This theme reflects the urgent need to position engineering as the strategic cornerstone in realizing Kenya's vision of a digital, green, inclusive, climate resilient and globally competitive future. The convention will unpack what the future demands of engineers and policy makers on how the profession must evolve to lead transformative change.

Subtheme 1: *Innovation and Technology for National Transformation*

Rationale

Innovation and the adoption of frontier technologies are catalysts for socio-economic transformation. From Artificial Intelligence (AI), robotics, and Internet of Things (IoT) to 3D printing and green technologies, engineers must harness innovation to design efficient, cost-effective, and sustainable solutions.

Focus Area

- Digital transformation and the Fourth Industrial Revolution (4IR)
- Smart cities, smart grids, and intelligent transport systems
- Research, development, and commercialization of engineering solutions
- Engineering entrepreneurship and startups
- Cybersecurity in critical infrastructure
- Indigenous knowledge and local innovations

Expected Outcomes

- Recommendations for embedding innovation ecosystems within Kenya's engineering landscape
- Policy and investment proposals for R&D and tech adoption
- Strategies for integrating innovation into public service delivery

Subtheme 2: *Sustainable Infrastructure and Industrialization*

Rationale

Kenya's growth hinges on the development of resilient infrastructure and inclusive industrialization. Engineering must respond to the demands of climate resilience, resource efficiency, and social equity while facilitating job creation, trade, and economic competitiveness.

Focus Area

- Climate-resilient infrastructure and green buildings
- Sustainable transportation and energy systems (e.g., renewable energy, mini-grids)
- Affordable housing and urban development
- Waste management and circular economy practices
- Smart manufacturing and automation in industry
- Engineering solutions for agriculture, water, and sanitation
- Mining Engineering in the geopolitical, social and economic framework

Expected Outcomes

- A blueprint for engineering-led sustainable infrastructure projects
- Action plans for sustainable industrial parks and green factories
- Case studies and lessons learned from existing public infrastructure

Subtheme 3: *Policy, Governance, and Financing the National Agenda*

Rationale

A robust policy, governance, and financing environment is essential to move from road map to implementation. Engineers must engage not only as technical experts but as strategic influencers in shaping and executing public policy and development finance mechanisms.

Focus Area

- National engineering policy frameworks and regulatory reforms
- Public-private partnerships and infrastructure finance models
- Engineering codes and standards: localization and enforcement
- The role of professional bodies in accountability and governance
- Engineering ethics and anti-corruption frameworks
- Project delivery models (Design-Build, EPC, Concessions, etc.)

Expected Outcomes

- Policy recommendations to strengthen engineering governance
- Models for mobilizing domestic and international funding for projects
- Practical frameworks for ethical engineering practices and regulatory compliance

Subtheme 4: *Engineering Talent and Capacity for the Future*

Rationale

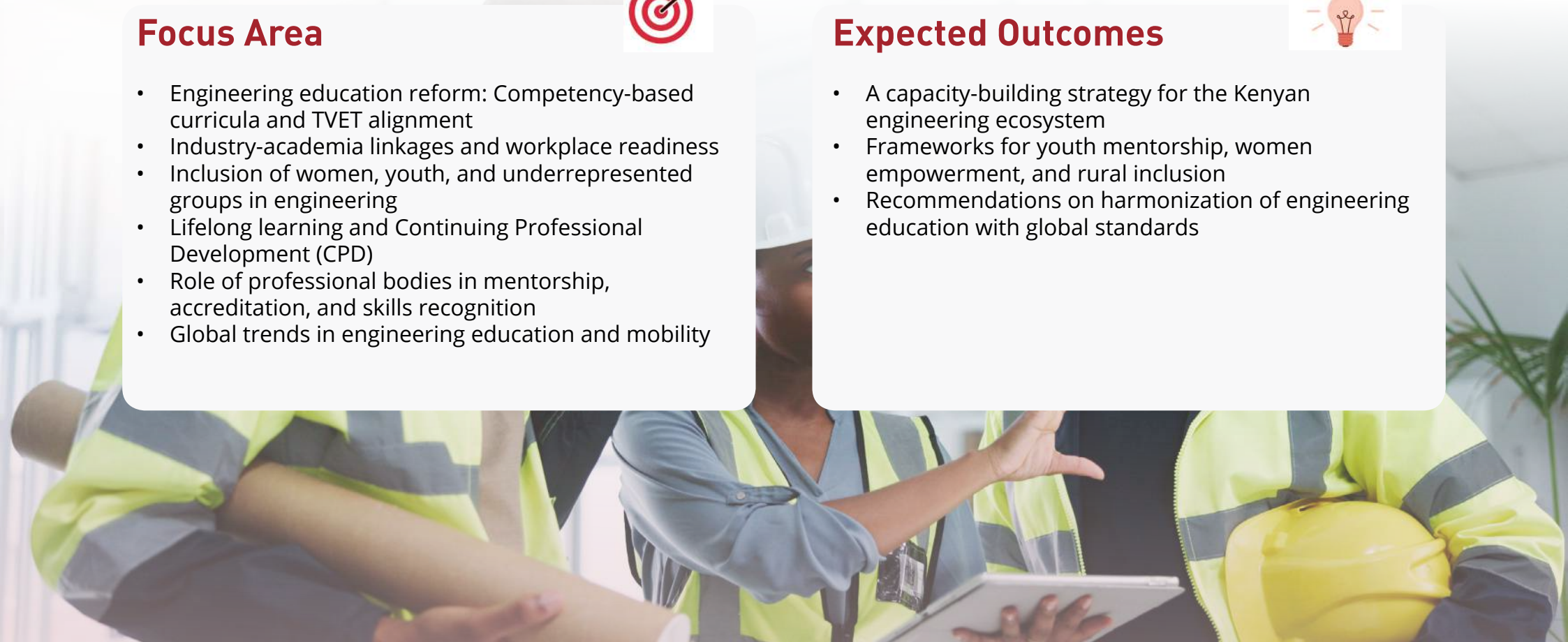
The future of Kenya's development lies in the capacity of its people. Developing a pipeline of competent, ethical, and forward-looking engineers is critical. This sub-theme focuses on education, training, mentorship, and inclusion to future-proof the profession.

Focus Area

- Engineering education reform: Competency-based curricula and TVET alignment
- Industry-academia linkages and workplace readiness
- Inclusion of women, youth, and underrepresented groups in engineering
- Lifelong learning and Continuing Professional Development (CPD)
- Role of professional bodies in mentorship, accreditation, and skills recognition
- Global trends in engineering education and mobility

Expected Outcomes

- A capacity-building strategy for the Kenyan engineering ecosystem
- Frameworks for youth mentorship, women empowerment, and rural inclusion
- Recommendations on harmonization of engineering education with global standards



Subtheme 5: *Engineering Sectors as Catalysts of National Advancement and Transformation*

Rationale

Kenya's engineering sectors are central to national advancement, playing a vital role in infrastructure development, technological innovation, and industrial growth. From transport and energy to ICT and manufacturing, engineers are driving transformative projects that enhance connectivity, productivity, and the overall quality of life.

Focus Area

- Transport: Roads, Railways, and Aviation
- Energy Sector (Renewable and Conventional)
- Manufacturing and Industrialization
- Information, Communication, and Technology (ICT)
- Agriculture and Agribusiness Technologies
- Chemical and Process Engineering
- Biomedical and Health Systems Engineering
- Mining and Extractive Industry
- Engineering Education and Skills Development

Expected Outcomes

- Sector-specific **policy recommendations** to inform national planning and development.
- Insights into **industry trends**, market forecasts, and opportunities for growth.
- Identification of **emerging technologies** and strategies for adoption and localization.
- Proposals for **regulatory reforms** to enhance efficiency, sustainability, and compliance.
- Documentation of **best practices, success stories, and innovations** for cross-sector learning.
- Strengthened collaboration between public and private sectors to drive national transformation.
- Strategies for enhancing **engineering education,** upskilling, and alignment with industry needs.
- Actionable resolutions and frameworks to guide implementation of engineering-led solutions.

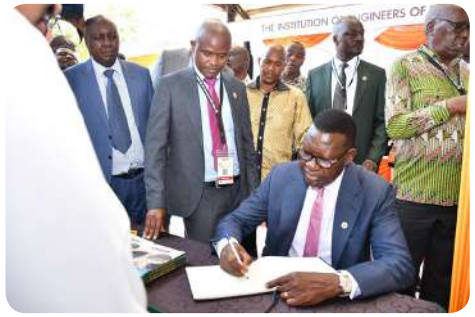
5. FORMAT

The convention will be conducted in a hybrid format, accommodating both in-person and virtual participants to widen reach and inclusivity. Key components include:

- **Plenary Sessions:** Keynotes by national leaders, global engineering experts, and tech innovators.
- **Panel Discussions:** High-level forums for cross-sector dialogue on Kenya's engineering roadmap.
- **Technical Sessions:** Peer-reviewed presentations on emerging engineering solutions and academic research.
- **Poster Presentations:** Interactive displays of applied projects and case studies.
- **Innovation Expo and Exhibitions:** Showcasing digital tools, sustainable solutions, and start-up technologies.
- **Student Innovation Challenge:** Competitive platform for young engineers to pitch transformative ideas.
- **Networking Events:** Sector-specific meet-ups, investor roundtables, and mentorship lounges.
- **Industrial Visits and Tours:** On-site exposure to engineering-led projects and innovations.

Highlights of the

31st IEK International Convention (2024)



6. THE 4TH FUTURE LEADERS SUMMIT

The 4th Future Leaders Summit and Expo themed ***"Engineering the Future: The role of emerging engineers"***, will be held on the **25th of November 2025** during the first day of the convention.

Three Sub-thematic areas will shape the Future Leaders summit. Namely

Subtheme 1: *Leadership, Entrepreneurship and Innovation*

Rationale

- Strategic thinking and Visionary Leadership
- To prepare young engineers to become proactive leaders who can influence societal transformation.
- To nurture entrepreneurial thinking as a driver of sustainable economic growth.
- To encourage innovative solutions that will address emerging engineering challenges.
- To empower young engineers to transition from job seekers to job creators.

Focus Area

- Leadership skills in engineering practice and project management.
- Start-up incubation, funding opportunities, and scaling innovation.
- Design thinking and disruptive technologies in engineering.
- Ethical leadership and sustainability in innovation.

Expected Outcomes

- Enhanced leadership capacity among young engineers.
- Increased number of entrepreneurial ventures initiated by engineers.
- Greater adoption of innovation in engineering solutions.
- Strengthened mentorship networks connecting young and seasoned professionals.

Subtheme 2: *Multiskilling and talent development*

Rationale

- To address the evolving demands of the engineering job market.
- To promote adaptability and lifelong learning among young engineers.
- To enhance employability through diverse and transferable skills.
- To encourage cross-disciplinary collaboration for complex problem-solving.

Focus Area

- Technical certifications and digital literacy (e.g., CAD, data analytics, AI).
- Soft skills training: communication, teamwork, and negotiation.
- Cross-sector exposure: energy, infrastructure, ICT, manufacturing, etc.
- Mentorship, coaching, and continuous professional development pathways.

Expected Outcomes

- Diversified skill sets and competencies among young engineers.
- Improved transition from academia to industry.
- Increased competitiveness in regional and global job markets.
- Broader participation of engineers in interdisciplinary projects.

Subtheme 3: *A Paradigm Shift from the Conventional methods*

Rationale

- To challenge traditional engineering mindsets and embrace modern solutions.
- To foster innovation by encouraging experimentation and non-linear thinking.
- To align engineering practice with the Fourth Industrial Revolution.
- To reimagine education, design, and construction in light of sustainability and resilience.

Focus Area

- Embracing digital transformation (e.g., BIM, IoT, AI).
- Circular economy and green engineering practices.
- Agile project delivery and lean construction principles.
- Rethinking engineering education and problem-solving frameworks.

Expected Outcomes

- Adoption of innovative methodologies in engineering projects.
- Integration of technology and sustainability into engineering practice.
- Shift in mindset from rigid processes to adaptive, client-centered approaches.
- Engineers positioned as forward-thinking solution providers.

Highlights of the

6th Women Engineers Summit and 3rd Future Leaders Summit 2024









7. CONVENTION OBJECTIVES

- Map a national roadmap on the future of engineering as a driver of inclusive development and economic transformation.
- Showcase innovations and emerging technologies across all engineering disciplines with real-world applications.
- Build professional capacity and digital literacy among engineers to adapt to future trends and global standards.
- Facilitate public-private-academia collaboration for scalable and sustainable engineering solutions.
- Position youth and women engineers as leaders and innovators for tomorrow.
- Engage with policy makers on reforms to strengthen engineering regulation, ethics, and training.
- Promote a Pan-African engineering agenda to scale regional development through knowledge exchange.

8. EXPECTED OUTCOME

- A published national engineering roadmap for 2025–2035 with actionable recommendations.
- Strengthened collaborative frameworks between IEK, government, universities, industry, and international partners.
- Greater adoption of emerging technologies across engineering disciplines and sectors.
- A compendium of research papers, case studies, and policy briefs to guide practice and policymaking.
- Structured support mechanisms for young engineers, including innovation incubation and mentoring.
- Identification of skills gaps and training needs to inform curriculum reform and continuing professional development.
- Formation of strategic partnerships to commercialize local innovations and fund engineering R&D.

9. DELEGATES WILL INCLUDE:

a) Engineers across the globe
b) Engineering students
c) Prominent national and county leaders
d) Policy makers
e) Academicians
f) Manufacturers
g) Affiliate members of FAEO, WFEO & WCCE
h) Industry experts
i) Researchers
j) Development Partners
k) Financial Institutions

10. CONVENTION CHARGES

	IEK Member in good standing	IEK Member not in good standing*	Non-Members
Physical Attendance			
Early Registration (before 10th Sept)	**Kshs. 55,000**	**Kshs. 60,000**	**Kshs. 60,000**
Late Registration (after 10th Sept)	**Kshs. 60,000**	**Kshs. 65,000**	**Kshs. 65,000**
Virtual Attendance			
Early Registration (before 10th Sept)	**Kshs. 15,000**	**Kshs. 20,000**	**Kshs. 20,000**
Late Registration (after 10th Sept)	**Kshs. 20,000**	**Kshs. 25,000**	**Kshs. 25,000**

** By the date of registering for the Convention*

	Physical Attendance	Virtual Attendance
International Delegate	**USD550**	**USD250**

Undergraduate student (Virtual Attendance)	Early Registration **Kshs. 10,000**

11. CONCLUSION

As Kenya stands at the crossroads of technological disruption, environmental pressures, and demographic transformation, engineers must lead from the front. The 32nd IEK International Convention will serve as the launchpad for a bold engineering future—anchored in innovation, inclusivity, and sustainability. We invite all stakeholders—government, industry, academia, financiers, and engineers—to join us in co-creating a roadmap that not only serves Kenya's aspirations but sets a benchmark for the African continent and beyond. Together, let us engineer a sustainable, digital, and prosperous Kenya.

CONTACT

For any further inquiries on participation, partnership or sponsorship please contact us through the following addresses:

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