ECS Eminence Corporate Solutions

Environmental Sustainability of Carbon Credits & Smart Cities

Carbon Markets, Smart Infrastructure, Kinetic Energy & Sustainable Urban Transformation

Dates: **27 – 28 August 2026**
Venue: **CSIR International Convention Centre, Pretoria**

2-Day CPD Accredited Workshop

R8 999.99 In Person | **R7 999.99** Virtual

Brought to you by Eminence Corporate Solutions: +27 10 023 3985 | info@ec-s.co.za | www.ec-s.co.za
Block F, Ground Floor, The Palms Office Park, 391 Main Avenue, Ferndale, Randburg
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Programme Overview

Cities and industrial centres are responsible for a significant proportion of global greenhouse gas emissions, energy consumption, and environmental degradation. As governments, industries, and municipalities accelerate efforts towards achieving net-zero targets and sustainable development objectives, there is growing demand for innovative solutions that integrate environmental sustainability, smart technologies, and alternative financing mechanisms.

According to the United Nations and the World Bank, **urban areas account for more than 70% of global carbon emissions,** while rapid urbanisation continues to place pressure on infrastructure, transport systems, energy networks, and public services. At the same time, global carbon markets are expanding rapidly as organisations seek practical mechanisms to reduce emissions, offset environmental impacts, and finance sustainable development projects.

The growth of carbon credit systems, combined with advancements in smart city technologies, artificial intelligence (AI), Internet of Things (IoT), data analytics, and decentralised energy systems, is reshaping how modern cities and infrastructure are planned, managed, and financed. Emerging technologies such as kinetic energy harvesting systems, smart grids, and digital monitoring platforms are enabling cities to become more energy-efficient, data-driven, and environmentally sustainable.

In Southern Africa, the urgency for sustainable urban development is further intensified by:

- Rapid urbanisation and infrastructure expansion
- Energy security challenges and rising electricity costs
- Increasing climate change risks
- Growing regulatory pressure around carbon emissions and ESG reporting
- Commitments under the Paris Agreement and regional sustainability frameworks

South Africa's evolving regulatory environment — including the Carbon Tax Act, Climate Change Act, and mandatory sustainability reporting requirements — is compelling both public and private sector organisations to rethink how infrastructure and sustainability projects are developed, financed, and managed.

This advanced 2-day programme provides participants with a practical and strategic understanding of how carbon markets, smart city technologies, digital systems, and kinetic energy solutions can be integrated to drive environmental sustainability and economic performance across urban and industrial environments.

The programme combines:

- Environmental sustainability frameworks
- Carbon credit project development
- Smart city infrastructure concepts
- Energy efficiency and emission reduction strategies
- Digital transformation technologies
- Decentralised and hybrid energy systems
- ESG and sustainability compliance requirements

Participants will further explore how carbon finance mechanisms can be used to support smart infrastructure projects and how technologies such as AI, blockchain, IoT, and kinetic energy systems can contribute to creating intelligent, low-carbon, and self-sustaining urban ecosystems.

"The future city will not only consume energy — it will generate, optimise, and intelligently manage it."

Through practical case studies, implementation frameworks, and real-world examples, delegates will gain the knowledge required to design, finance, implement, and manage sustainable smart city and carbon reduction initiatives within the Southern African context.

Key Learning Outcomes

By attending this programme, participants will be able to:

01 Understand **carbon credit systems** and market structures

02 **Develop and manage** carbon reduction projects

03 **Integrate smart technologies** into urban sustainability initiatives

04 Apply **IoT, AI, and data analytics** in energy management systems

05 Evaluate **kinetic energy harvesting** technologies and applications

06 Align **sustainability projects with ESG** and regulatory requirements

07 Design **smart city implementation** strategies

08 Improve **environmental and financial performance** of infrastructure projects

Benefits of Attending

Strategic Benefits

- Understand how to monetise sustainability through carbon credits
- Align projects with ESG and sustainability requirements
- Develop future-focused smart city implementation strategies

Technical Benefits

- Apply AI, IoT, and smart infrastructure technologies
- Understand decentralised energy systems and hybrid energy solutions
- Integrate carbon finance into infrastructure and sustainability projects

Financial Benefits

- Identify new revenue streams through carbon credits
- Improve return on investment (ROI) for sustainability projects
- Reduce operational and energy-related costs

Operational Benefits

- Improve urban resource efficiency
- Enhance infrastructure performance and resilience
- Support data-driven operational decision-making

Who Should Attend?

This programme is ideal for professionals involved in sustainability, infrastructure development, energy systems, and smart city planning.

Government & Public Sector

- Municipal Managers
- Urban Planners
- Infrastructure & Smart City Managers
- Environmental Policy Makers

Engineering & Technical Professionals

- Energy Engineers
- Environmental Engineers
- Sustainability Engineers
- Smart Infrastructure Specialists

Corporate & Industry

- ESG / Sustainability Managers
- Carbon Credit Project Developers
- Energy & Utilities Managers
- Property and Real Estate Developers

Specialist & Advisory Roles

- Climate Change Analysts
- Carbon Market Consultants
- IoT & Data Specialists
- Renewable Energy Professionals

Programme Structure

Day 1: Carbon Markets, Sustainability Frameworks & Smart Cities

Session 1: Introduction to Environmental Sustainability & Climate Challenges

- Climate change fundamentals
- Urbanisation and environmental pressures
- Global sustainability targets and frameworks
- Role of cities in emission reduction

01

Session 2: Carbon Credits & Carbon Markets

- Compliance vs voluntary carbon markets
- Carbon credit lifecycle and certification
- Carbon offset project structures
- Global carbon market developments

02

Session 3: Carbon Tax, ESG & Regulatory Compliance

- South African Carbon Tax Act
- Climate Change legislation and reporting requirements
- ESG disclosure and sustainability reporting
- Regional SADC developments and policy trends

03

Session 4: Smart Cities & Digital Urban Transformation

- Smart city frameworks and architecture
- Intelligent infrastructure systems
- AI, IoT, and big data applications
- Smart transport and smart buildings

04

Session 5: Smart Energy Systems & Urban Efficiency

- Energy-efficient urban infrastructure
- Smart grids and digital energy management
- Decentralised energy systems
- Emission reduction strategies

05

Session 6: Integrating Carbon Finance with Smart Infrastructure

- Funding smart city projects through carbon credits
- Green financing models and climate finance
- Sustainability investment strategies
- Economic and environmental impact analysis

06

Day 2: Kinetic Energy, Emerging Technologies & Implementation

Session 7: Introduction to Kinetic Energy Harvesting

- Principles of kinetic energy conversion
- Energy harvesting technologies and systems
- Applications in urban environments
- Future potential of kinetic infrastructure

07

Session 8: Kinetic Energy Technologies & Applications

- Piezoelectric systems and smart flooring
- Kinetic Energy Recovery Systems (KERS)
- Transport and road energy harvesting systems
- Smart lighting and charging infrastructure

08

Session 9: Hybrid Energy Systems & Smart Grids

- Integration of kinetic, solar, and grid systems
- Energy storage technologies
- Smart grid management systems
- Urban energy resilience and autonomy

09

Session 10: Digital Monitoring, Blockchain & Smart Analytics

- IoT-enabled monitoring systems
- Digital MRV (Monitoring, Reporting & Verification)
- Blockchain applications in carbon markets
- Data analytics and AI-driven optimisation

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Session 11: Implementation Strategies & Project Development

- Urban infrastructure retrofitting strategies
- Smart transport system integration
- Policy integration and governance frameworks
- Project feasibility and investment considerations

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Session 12: Case Studies, Future Trends & Industry Outlook

- Smart city deployment case studies
- Carbon credit project structuring examples
- Net-zero city development strategies
- AI-driven sustainability systems
- Green infrastructure investment trends
- Southern African sustainability outlook (2026 and beyond)

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Industry Trends & Emerging Technologies

The programme explores emerging developments including:

- Net-zero infrastructure development
- Smart city digital ecosystems
- AI-driven sustainability systems
- Blockchain-enabled carbon verification
- Smart mobility and transport systems
- Decentralised and hybrid renewable energy systems
- Intelligent environmental monitoring platforms

Business Impact

Organisations attending this programme will benefit from:

- Improved sustainability strategy development
- Enhanced ESG and regulatory compliance
- Better integration of technology and environmental performance
- Increased access to carbon finance opportunities
- Improved infrastructure efficiency and resilience
- Stronger long-term sustainability and investment outcomes

What's Included

- Expert-led facilitation
- Comprehensive digital training material
- Practical case studies and implementation examples
- Certificate of attendance
- Refreshments and lunch (in-person delegates)

DELEGATE REGISTRATION FORM

Environmental Sustainability of Carbon Credits & Smart Cities

Dates: **27 – 28 August 2026** | **Venue: CSIR Convention Centre, Pretoria Gauteng**

FIRST NAME _____ LAST NAME _____

ORGANIZATION _____ VAT NUMBER _____

ADDRESS _____ CITY _____

COUNTRY _____ TEL / WORK NUMBER _____

PHONE NUMBER _____ EMAIL ADDRESS _____

TICK WHERE APPLICABLE

R8 999.99 In Person ☐

R7 999.99 Online ☐

EFT ☐ Direct Deposit Payment ☐ Cheque payable to ECS ☐ Cash Payment ☐ Card Payment ☐

TITLE	DELEGATE NAME & SURNAME	POSITION	EMAIL

BANK: **FIRST NATIONAL BANK** | ACCOUNT NAME: **EMINENCE CORPORATE SOLUTIONS**
ACCOUNT NUMBER: **62870215673** | BRANCH CODE: **250655**

SIGNATURE_____ DATE_____

TERMS & CONDITIONS APPLY

A substitute delegate is always welcome with written notification. No substitution fees will be charged provided notification is provided at least one week prior to the event. For standard registrations, in the event you wish to cancel your registration more than 30 days prior to commencement of the event, you agree to pay a cancellation fee of 10% of the event fee.

CANCELLATION MADE 7 DAYS BEFORE THE EVENT IS LIABLE TO 100% PAYMENT.
If you cancel your program registration less than 30 days before commencement of the Program, you agree to pay a cancellation fee of 30%. Registrations made at an "early bird" or otherwise discounted rate are non-refundable.

If you wish to cancel your registration more than 30 days prior to the event, you will be provided credit towards an alternative event. Due to circumstances outside of our control, it is possible we may need to cancel, reschedule, or change the venue of an event. We will make all reasonable efforts to inform attendees of any such changes with as much notice as possible.

Should your program be rescheduled or cancelled by us, all fees you have paid will be credited towards an alternative event or refunded to you.

You acknowledge and agree that, to the extent the law allows, our liability is limited to the event fee and we will not be liable for any costs, damages or expenses incurred by you as a result of a cancellation, deferral, reschedule or change of venue.