

## TOWARDS NET ZERO ENERGY SUSTAINABILITY CLASSIFICATION FOR THE NETWORKS OF TOMORROW

### THE CHALLENGE

Keeping networks running is non-negotiable, but energy costs are soaring, and sustainability targets aren't waiting. Telecom operators are caught between rising power bills and the push for Net Zero. The big challenges include:

#### Energy Costs Are Out of Control

Powering base stations (BSs) is expensive—and only getting worse. Operators need to cut consumption without killing performance.

#### Global Net Zero Commitments

With 107 countries covering 82% of global emissions committed to Net Zero, telecoms must act fast to reduce CO<sub>2</sub> across Scopes 1, 2, and 3<sup>1</sup>.

#### Rising Emissions & Stricter Regulations

5G base stations consume 3–6 kW, emitting up to 30 tons<sup>2</sup> of CO<sub>2</sub> yearly, driving operators to adopt energy-efficient solutions.

#### Old-School Optimization Isn't Cutting It

Traditional, load-based strategies don't balance spectral efficiency (SE) and energy efficiency (EE).

#### No Clear Visibility

Operators struggle to see where they're losing energy, how they compare to competitors, and what to fix first.

The answer? An AI-powered, data-driven energy strategy that makes networks leaner, greener, and future-ready.

### THE CYIENT SOLUTION

#### VISMON™ – Intelligent Network Automation

Introducing ESC—a breakthrough solution for energy efficiency. Powered by real 4G/5G network data, ESC gives operators a clear, data-backed roadmap to reduce power consumption, optimize performance, and stay ahead of sustainability goals.

#### What It Delivers



##### Simplified Energy Benchmarking

AI classifies BSs into four energy efficiency levels (A, B, C, D) for easy tracking



##### AI-Powered Energy Optimization

Identifies the real culprits behind energy waste—Performance, Energy, Network Topology, and Configuration



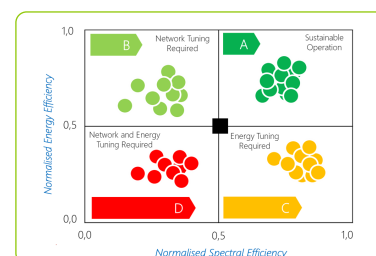
##### Clear CO<sub>2</sub> Reduction Strategies

Provides network-wide insights to maximize energy savings and sustainability

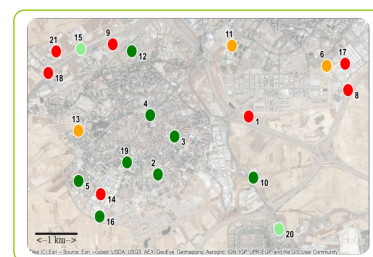


##### Scalable Across the Network

Works at site, cell, hardware, or full network scale for precise, targeted improvements



Energy Sustainability Class SE vs EE distribution (Each circle represents a BS location).



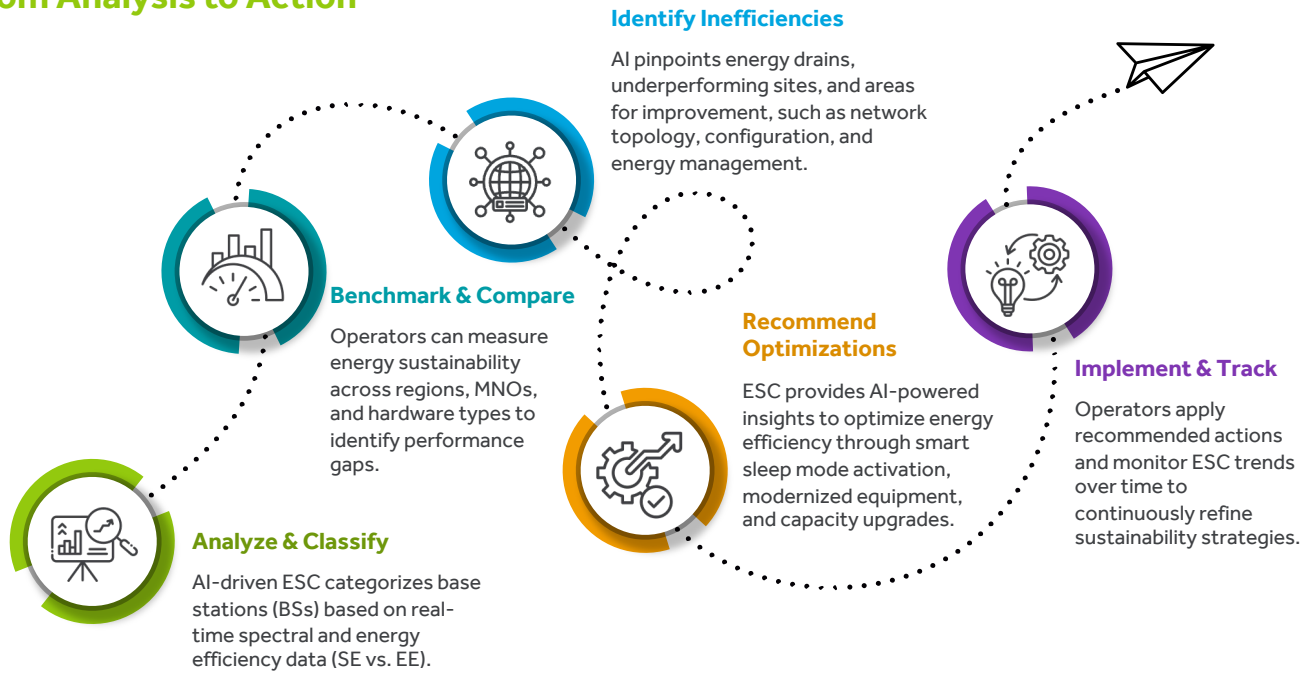
Energy Sustainability Class spatial distribution (Each circle represents a BS location).

<sup>1</sup> <https://www.un.org/en/climatechange/net-zero-coalition?>

<sup>2</sup> <https://fi.ee.tsinghua.edu.cn/public/publications/8a54f776-644f-11ee-84fe-0242ac120002.pdf?>

## HOW IT WORKS

### From Analysis to Action



## THE RESULTS

### VISMON™ – Intelligent Network Automation

Introducing ESC—a breakthrough solution for energy efficiency. Powered by real 4G/5G network data, ESC gives operators a clear, data-backed roadmap to reduce power consumption, optimize performance, and stay ahead of sustainability goals.

#### Regional Energy Benchmarking

Compare energy efficiency across different locations within your network.

#### Industry-Wide Benchmarking

Stack up against other MNOs and share insights through industry forums.

#### Smarter Equipment Upgrades

Pinpoint underperforming hardware that needs replacing to improve energy efficiency.

#### Next-Level Energy Optimization

Detect energy-hungry zones and activate AI-driven sleep modes to maximize savings.

#### Future-Ready Network Planning

Balance spectral efficiency (SE) and energy efficiency (EE) for sustainable growth.

#### Regulatory Compliance & Cost Savings

AI optimizes energy, cuts costs, meets regulations and drives sustainable operations.

### Why Cyient

With ESC, you're in control—less waste, lower costs, and a faster track to Net Zero. Because a high-performance network shouldn't come at the cost of the planet.

Optimize energy with AI—make your network smarter and greener! Contact us: [www.cyient.com/communication](https://www.cyient.com/communication)

Cyient (Estd: 1991, NSE: CYIENT) delivers intelligent engineering solutions across products, plants, and networks for over 300 global customers, including 30% of the top 100 global innovators. As a company, Cyient is committed to designing a culturally inclusive, socially responsible, and environmentally sustainable tomorrow together with our stakeholders.

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