



*Driving **Sustainability**  
through **Environmental Management.***

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*Compliant. Secure. Sustainable.*

[www.mmcentury.com](http://www.mmcentury.com)

# About | The Speaker

## Jayasilen Sivapragasam

Marketing Manager at MM Century  
Leading sustainability and ESG initiatives.



- ✔ Trained in **environmental biotechnology** and **data analytics**.
- ✔ Pioneered the integration of **blockchain** and **Scope 3 Cat 5 & 12** emissions data into Malaysian e-waste reporting.
- ✔ Transforming routine disposal records into an efficient **audit-grade carbon intelligence**.



Our Presence at DCCI



# Three Years | In A Row

## 2024

### Carbon Neutrality

Embracing Carbon Neutrality: Mitigating the Environmental Impacts of Data Centre E-wastes



## 2025

### Circular E-Waste

Sustainable Data Centres: Minimising Footprint through Circular E-Waste Management



## 2026

### Carbon Intelligence

The Audit-Ready Rack: Bridging NSRF & GBI mandates with traceable carbon intelligence.

#DCCIMalaysia

# Are Data Centres The Next Superpowers?

# The Audit-Ready Rack

Bridging NSRF & GBI mandates with traceable carbon intelligence.

# Two forces. One collision.

Record decommissioning volumes are arriving exactly as the disclosure regime tightens.



## FORCE 01 · HARDWARE

### The AI Upgrade Surge

Compressed refresh cycles. GPU retirements. Record volumes of decommissioned racks entering the waste stream — now.

## FORCE 02 · REGULATION

### The 2026 Compliance Wall

NSRF mandates begin. GBI V2 turns live. Estimations stop being acceptable. The disclosure regime tightens — now.

# Four Numbers Define The Collision

Record decommissioning volumes are arriving exactly as the disclosure regime tightens.

Invested  
**RM 184B**

in Malaysian data centers since 2021

Starting  
**JAN'26**

NSRF Group 2 mandatory reporting begins

A percentage of  
**65 - 95%**

Scope 3 share of carbon footprint

GBI MR Points  
**19 / 100**

Decommissioning category in DC Tool V2

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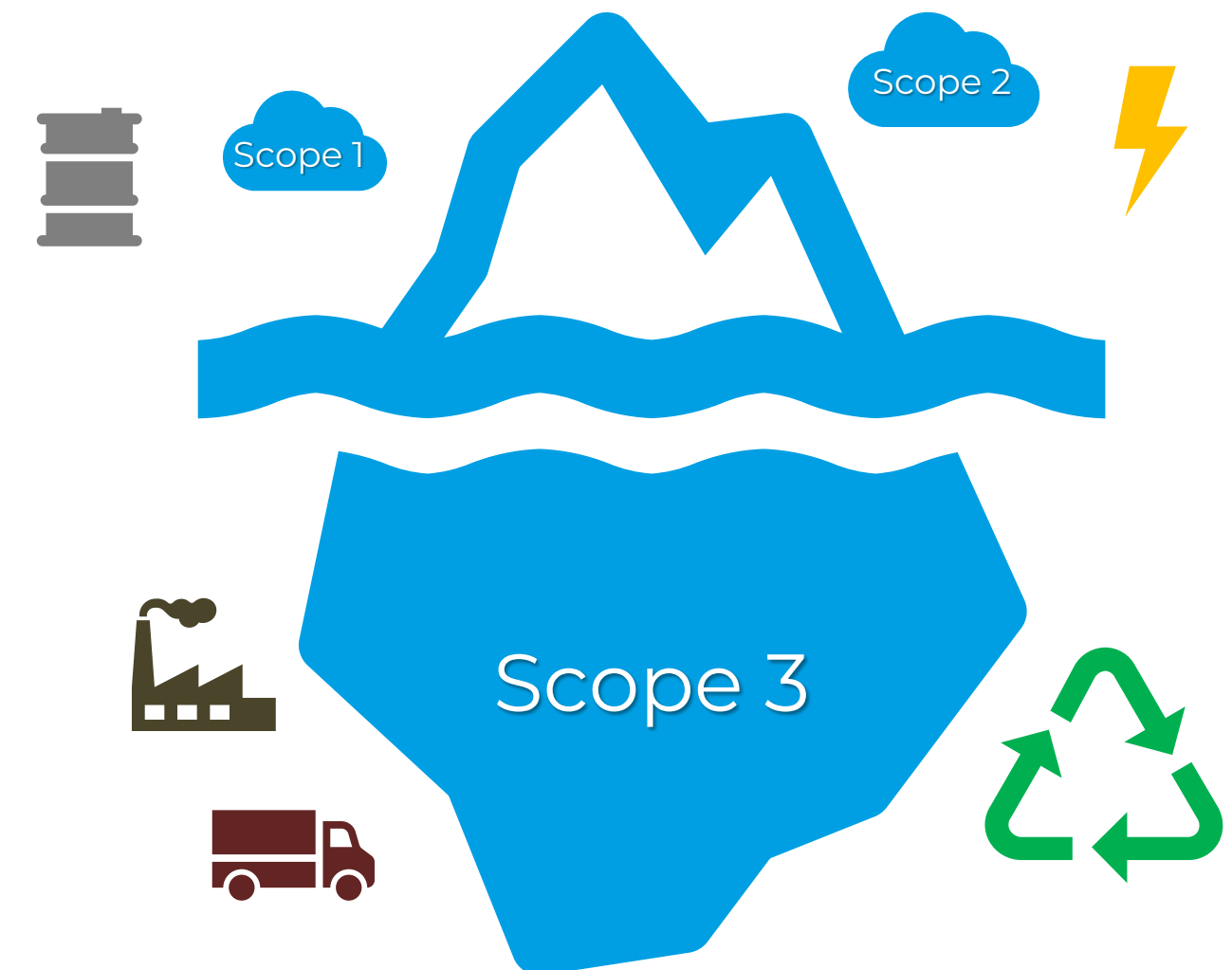
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Decommissioning category in DC Tool V2



# Why your stakeholders already care.

Three numbers from the asset-management side of the table.

# 92%

**OF EUROPEAN EMISSIONS**

of disclosed corporate emissions in Europe are Scope 3.

*CDP, 2022*

# 4x

**PORTFOLIO MULTIPLIER**

Scope 3 multiplies a portfolio's carbon intensity by four on average.

*Amundi / Trucost*

# 10%

**REPORTED, NOT ESTIMATED**

share of Scope 3 figures that are actually reported vs modelled.

*Amundi / S&P*

## THE TAKEAWAY

Your decommissioning data isn't just a compliance line. It's primary-data input your stakeholders are actively pricing.

# Two Mandates | One Rack

Sustainability disclosure and green building certification now meet at the same physical asset.

## NSRF

National Sustainability Reporting Framework

IFRS S1/S2 mandatory for Group 2 issuers,  
FY ending 31 Dec 2026.

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Sustainability now sits inside the  
financial statements.

## GBI V2

Green Building Index – Data Centre Tool

Mandatory for new data-centre projects  
from 1 Feb 2026.

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11 of 19 MR points across MR1 Embodied Carbon,  
MR2 Circularity, MR5 E-waste Management.

**BOTH MANDATES JUDGE THE SAME PHYSICAL RACK**

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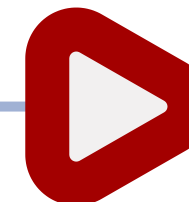
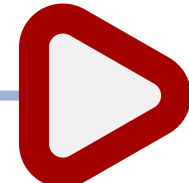
Where Your Rack Lands in the Disclosure Chain



# The | Compliance Runway

**FY 2025**  
**NSRF Group 1 Begins**

≥RM2B mkt cap  
>80% of market



**DEC 2025**  
**Bursa CSI Live**

Sole reporting  
channel

**FEB 2026**  
**GBI DC Tool V2**

Mandatory for  
new projects

**FY 2026**  
**NSRF Group 2**

Listed issuers  
FY ending 31 Dec

**FY 2027**  
**Reasonable assurance**

Scope 1 & 2  
verified

**FY 2028**  
**Group 1 full Scope 3**

All 15 categories

**FY 2029**  
**Group 2 full Scope 3**

Decommissioning  
non-negotiable

# A Disposal Certificate ~~≠~~ Scope 3 Disclosure

Standard

## The Disposal Certificate

- ✘ A signed PDF - "X assets destroyed."
- ✘ No Scope 3 category routing.
- ✘ No mass-balance recovery data.
- ✘ No emission factors.
- ✘ No avoided-emissions ledger.

*Proves disposal happened. Not what it cost the climate.*

Audit-Ready

## Traceable Carbon Intelligence

- ✔ Asset-level ledger, every kg routed.
- ✔ Scope 3 Cat 5 / Cat 12 categorisation.
- ✔ Mass-balance recovery streams logged.
- ✔ Established grid factors.
- ✔ Dual ledger - burden vs avoided.

*Reporting platform-ready. Every layer leaves a trail.*

### AND HARDWARE ROTS

A server in storage 12 months loses its reuse pathway — and its highest carbon credit. Timely decommissioning is a sustainability strategy.

The Innovation



# TRACE

*Traceable Residual Asset Carbon Emissions*

MM Century's End-of-Life Asset Environmental Impact Calculator — audit-grade carbon and material recovery reporting for retired IT and operational assets.

**GHG PROTOCOL**

Scope 3 Standard

**ISO 14064-3**

Verification-ready

**Sustainability Reporting**

Platform-ready output

In collaboration with



#DCCIMalaysia

# The Audit-Ready Rack | Defined

1

## Chain of Custody

- GPS-tracked logistics.
- Tamper-evident seals.
- Vetted personnel and live surveillance from rack to processing floor.

2

## Data Destruction

- NIST 800-88 / DIN 66399 sanitisation matched to media.
- Blockchain-backed certificate of destruction.
- Reuse-first hierarchy.

3

## Material Recovery

- Component-level decomposition, not unit count.
- Streams logged by mass: ferrous, copper, precious.
- Downstream vendor accountability.

4

## Carbon Ledger

- Scope 3 Cat 5 / Cat 12 routing.
- Dual-ledger separation.
- Established grid factors.
- ISO 14064-3 verifiable.
- Bursa CSI platform-ready.

### The Difference

Disposal-only model: one PDF, one number.

Traceable carbon intelligence: 4 audit-grade Scope 3 inputs, 8 equivalence statements, verified downstream trail.

#DCCIMalaysia

# Two Pathways | Two Carbon Outcomes

Every retired asset is routed down one of two paths. The calculator quantifies which.

## Scenario A

### Material Recovery

Recycle metals. Recover energy versus virgin mining.

- Mass-balance by stream: ferrous, copper, precious.
- Established grid emission factors.

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Emission: Higher

## Scenario B

### Life Extension

Refurbish and reuse. Avoid manufacturing emissions entirely.

- Avoided manufacturing carbon per asset class.
- Years of life extension verified by serial number.

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Emission: Lower

**A standard recycling report treats both pathways the same. The calculator does not.**

*#DCCIMalaysia*

# From Theory to Evidence



## Food & Beverage Retail Chain

**11.25** tonnes

of e-waste diverted from landfill

**A single 7-day project, ten asset categories, dual ledger.**

Generated four audit-grade Scope 3 inputs, eight equivalence statements, and a verifiable downstream trail.

# From Theory to Evidence

## Food & Beverage Retail Chain

### Key Performance Indicator

**11,250.00**

kilograms (kg)

Waste Diverted from Landfill

**39.168**

tCO<sub>2</sub>e

Net GHG Avoided

**336.012**

gigajoules (GJ)

Net Energy Avoided

**0.0466**

tCO<sub>2</sub>e

Scope 3 Cat 4 — Transport

**0.1189**

tCO<sub>2</sub>e

Scope 3 Cat 5 — Processing

**5,261.54**

kilograms (kg)

Base Metal Recovered

# From Theory to Evidence

## Food & Beverage Retail Chain

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### GHG Avoidance Equivalent



**30**

Household Electricity  
Month



**10**

Passenger Cars  
Per Year



**40**

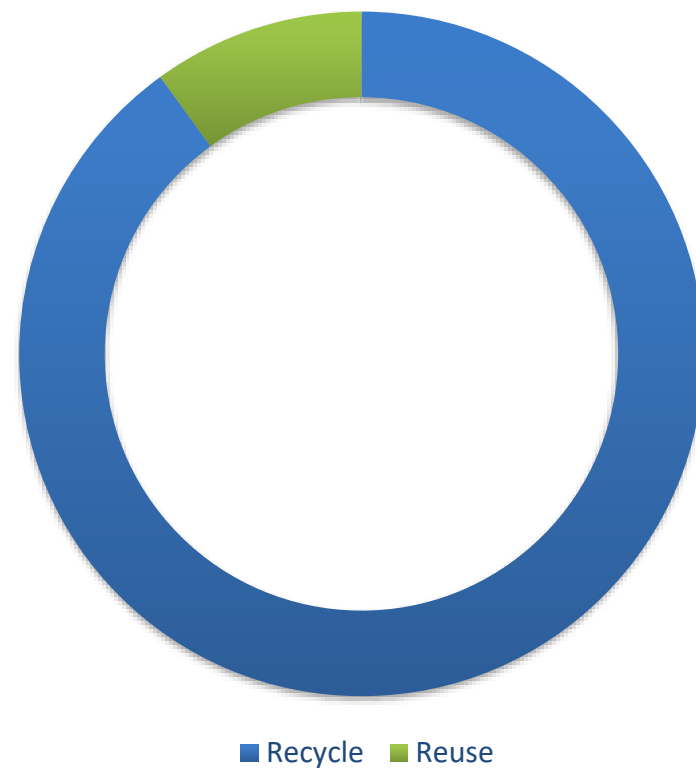
Short-haul  
Flights

# From Theory to Evidence

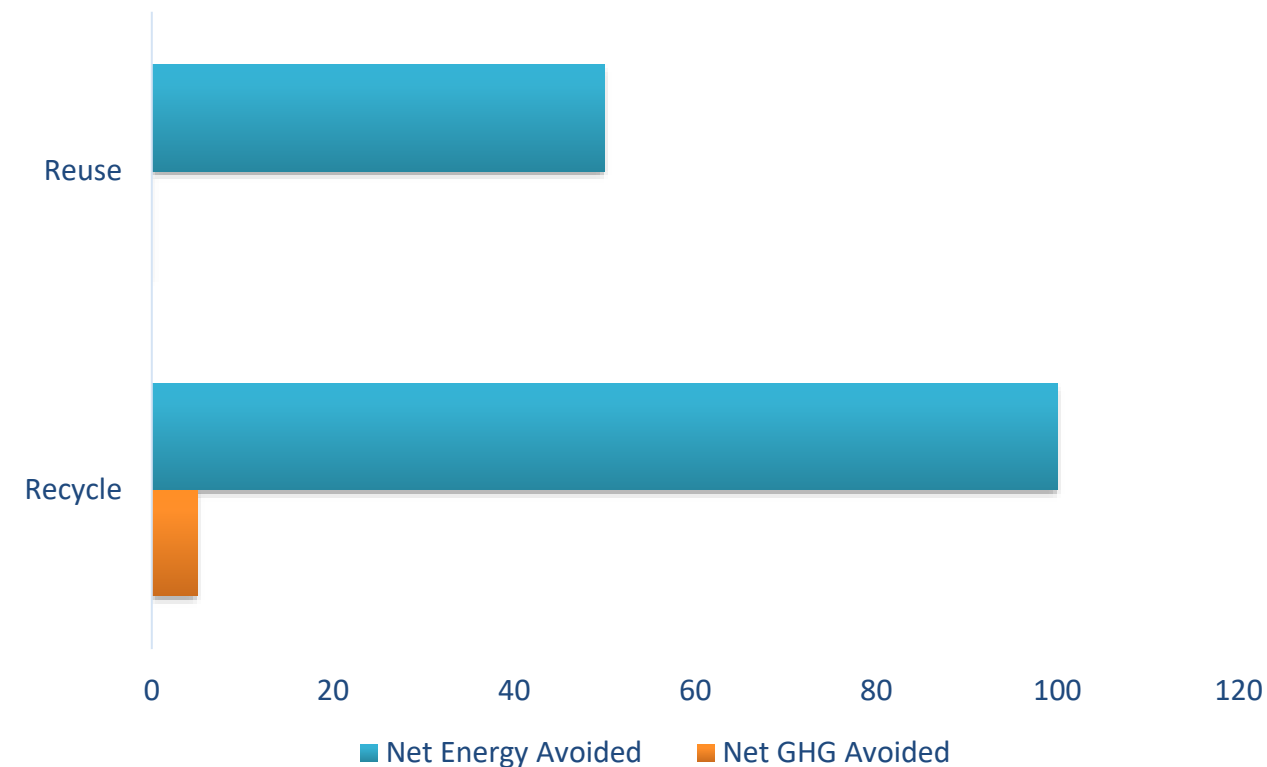
## Food & Beverage Retail Chain

### Visual Analytics

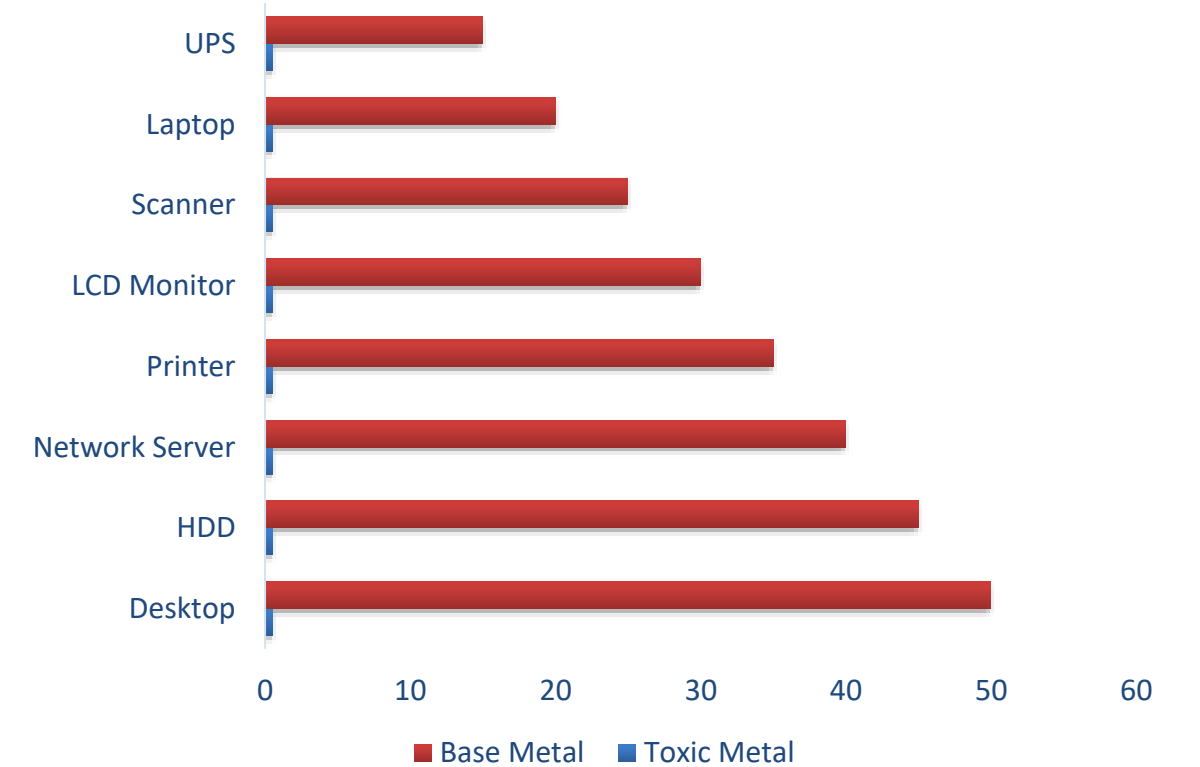
Waste Route Breakdown



GHG & Energy Avoided by Route



Material Recovery by Asset



# Why estimates won't survive.

Reasonable assurance begins FY 2027. Today's Scope 3 data does not pass that bar.

**96%**

**of Scope 3 data in Asia is estimated, not reported.**

Direct relevance for Malaysian disclosures. Asia has the lowest reporting rate of any region.

*Amundi / S&P, Dec 2022*

**≥30%**

**year-on-year volatility in over half of disclosed Scope 3 values.**

More than a third of disclosures swing 50% year-on-year. That is not assurance-grade data.

*Amundi / S&P, Dec 2022*

**25%**

**provider-to-provider correlation for Scope 3 downstream — vs 74% for Scope 1 + 2.**

Two reputable providers can disagree on the same company's Scope 3 by a factor of three.

*Trucost vs MSCI*

**ESTIMATES THAT MOVE 30% A YEAR DO NOT PASS REASONABLE ASSURANCE.**

# The Three-Question | Audit Test - Answer

## Which Is Scope 3 Category?

Cat 5 for operational assets retired in-house.  
Cat 12 for sold or leased products returned via take-back.

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The wrong category is a verification failure waiting for an auditor to find.

## Where is the avoided-emissions ledger?

Per GHG Protocol, avoided emissions never net against actual emissions. Two separate ledgers.

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A single combined number is a greenwashing risk.

## Which grid factor did you use?

Localised Malaysian factor, not a generic international default. Off-the-shelf factors can drift 30–50%.

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That gap will not survive reasonable assurance.

## If any answer is unclear...

You have a disposal certificate  
**NOT** an audit-ready rack.

# The rack you retire this year

will appear in a Scope 3 disclosure  
within

**24 MONTHS**



Are You  
**Ready?**



**Let's Make Sure You Are**



Great power comes with  
great responsibility

# Thank you.

## Interested to know more about TRACE?

### Connect with us!

#### CERTIFICATIONS & STANDARDS

##### Integrated Management System

ISO 9001, 14001, 27001 & 45001.

##### Department of Environment

SW 110, 104, 108 & 325.

##### SERI R2v3

Global standard for electronics recycling.

##### EcoVadis

Bronze – 62/100 (72nd percentile).

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