HERTZWAVE

TerraCAP · Carbon Accounting Platform

YOUR BUSINESS · YOUR FUTURE

Why your factory's *carbon footprint* is now your business problem.

A plain-language guide for MSME owners navigating ESG, carbon accounting, and why it matters for growth.

READING TIME
12 Minutes

AUDIENCE
MSME Owners & Finance Teams

STANDARDS
GHG Protocol / BRSR / CBAM

6.3 Cr+
MSMEs in India

BRSR CBAM
Key frameworks covered

Net Zero Readiness
Built-in pathway tools

6.3Cr+	70%	2027	18%
MSMEs in India — a growing share facing ESG pressure from buyers	of India's Scope 3 emissions from supply chains	SEBI BRSR Core — listed companies & their suppliers	lower energy costs with carbon mo

CHAPTER 01

Meet Ravi — and the letter that changed his Monday morning.

Ravi runs a mid-size auto components manufacturing unit in Pune. 60 employees, two shifts, fifteen years of hard work. His biggest client — a Tier-1 OEM — accounts for 40% of his revenue. Then one Tuesday, an email arrives from their procurement head:

EMAIL — RECEIVED MONDAY, 9:14 AM

"Dear Ravi-ji, as part of our 2025 sustainability commitments, we are now requesting all Tier-2 suppliers to submit a Carbon Emissions Report by Q3. Suppliers unable to provide verified GHG data will be reviewed for continued partnership. Please confirm receipt."

— Procurement Lead, Major OEM (fictional composite)

Ravi stares at the screen. GHG data? Carbon Emissions Report? He makes high-quality brackets. He has always filed his GST on time, maintained ISO 9001, paid his PF. What is this now?

He is not alone. Across India — in Coimbatore, Surat, Ludhiana, Hyderabad — thousands of MSME owners like Ravi are receiving similar signals. From their large buyers. From their export customers. From their banks. The message is the same: sustainability is no longer optional.

> *"The rules of business haven't changed — what you make, how cheaply, how reliably. But a new rule has quietly been added: and what it costs the planet."*

CHAPTER 02

What exactly is ESG? And why does everyone keep saying Carbon?

ESG stands for **Environmental, Social, and Governance**. It is a framework used to measure how a business impacts the world beyond its balance sheet. Environmental covers climate, water, and waste. Social covers workers, community, and safety. Governance covers ethics, transparency, and leadership.

Of the three, **Carbon** has become the loudest conversation because climate change is the most measurable global crisis — and because regulators, investors, and customers now have common frameworks to track it.

PLAIN LANGUAGE DEFINITION

Carbon Accounting is exactly like your financial accounting — but for emissions.

Just as your accountant tracks every rupee that comes in and goes out, carbon accounting tracks every unit of greenhouse gas your business produces — from the diesel in your generator, to the electricity you use, to the trucks that deliver your goods.

The unit of measurement is **tonne of CO_2 equivalent (tCO_2e)** — a scale that converts all greenhouse gases into one comparable number.

And just like a P&L; statement helps you understand profitability, a **GHG Inventory** helps you understand your carbon liability — and your opportunity to reduce costs.

THE THREE SCOPES — WHERE YOUR EMISSIONS COME FROM

The GHG Protocol organises all emissions into three "Scopes." Think of it like organising your cost structure into direct costs, overheads, and supply chain costs.

SCOPE 1 — DIRECT

What you burn yourself

Diesel for generators, furnace fuel, company vehicles, on-site welding gas, industrial processes that release gases directly.

■ **Your boiler, your forklift, your DG set**

SCOPE 2 — INDIRECT

The power you buy

Electricity purchased from the grid or a power company. You don't burn it, but the power plant does — on your behalf.

■ **Your MSEB / BESCOM electricity bill**

SCOPE 3 — VALUE CHAIN

Everything upstream & downstream

Business travel, raw materials, logistics partners, employee commuting, waste disposal, and product end-of-life.

■ **Your raw material supplier, your logistics partner**

For most MSMEs starting out, **Scope 1 and Scope 2 are the immediate priority**. Scope 3 becomes relevant as your large customers begin asking questions about their own supply chain footprint — which, for them, includes you.

SIX REASONS THIS MATTERS TO YOUR BUSINESS

Beyond compliance — the real business case for MSMEs.

Stay in the Supply Chain

Large manufacturers — Tata, Mahindra, L&T, Bosch — are under pressure from global clients to report Scope 3 emissions. That means your data. MSMEs who cannot provide emissions data are

■ **Vendor retention & preference**

Cut Energy Costs by 15–25%

You cannot reduce what you don't measure. Companies that begin carbon accounting almost always discover hidden energy inefficiencies — idle machines, compressor leaks, lights

■ **Direct bottom-line impact**

Access Green Finance & Better Rates

RBI's green lending framework and development banks (IFC, ADB) are allocating billions to sustainable businesses. Banks like SBI, HDFC, and SIDBI offer sustainability-linked loans at

■ **Lower cost of capital**

Unlock Export Markets

The EU's Carbon Border Adjustment Mechanism (CBAM) is live for steel, cement, aluminium, fertilisers, and electricity. If you export to Europe, you'll soon need to declare embedded

■ **EU, UK, US market access**

BRSR & Regulatory Readiness

SEBI's BRSR is mandatory for India's top 1,000 listed companies — and their supply chains are next. State governments are also introducing green procurement criteria. Being ahead of

■ **SEBI BRSR, GreenCo, BEE compliance**

Brand, Talent & Future-Proofing

The next generation of employees and customers cares about who they work for and buy from. Sustainability credentials attract better talent, win government contracts that score ESG,

■ **Competitive differentiation**

Ravi decides to act. Here's exactly how he starts.

After the email, Ravi calls his accountant and his plant manager. He doesn't hire an expensive consultant. He doesn't buy any software yet. He starts with what he already has.

01

Set your boundary — what operations are you measuring?

Define which factory, which processes, which vehicles are inside your carbon boundary. You don't need to measure everything on day one. Start with your main manufacturing unit.

Ravi's approach: He drew a boundary around his Pune plant. One location. All machines. No warehouses yet.

02

Collect your existing data — it's mostly already there

Pull together 12 months of: electricity bills (Scope 2), diesel/LPG/furnace fuel invoices (Scope 1), refrigerant records (Scope 1), and vehicle fuel logs (Scope 1). That's the majority of most MSMEs' footprint — in documents you already have.

Ravi's approach: His accountant pulled all EB bills. Plant manager found diesel purchase records. Two hours of work — one year of Scope 1 & 2 data.

03

Apply emission factors — convert consumption to CO2

Every unit of electricity, diesel, or gas has an 'emission factor' that converts it to CO2 equivalent. India's CEA publishes annual grid emission factors. TerraCAP — Hertzwave's carbon accounting platform — has all factors built in and kept current. Enter your bills; TerraCAP calculates your emissions automatically.

Good news: No manual lookups. No spreadsheet formulas. Enter your source data and TerraCAP calculates your carbon inventory automatically.

04

Generate your GHG Inventory report

Your first year's report becomes your baseline — total tCO_2e/year, broken down by scope and source. This is what your large customer wants. This is what a bank wants to see. This is what an auditor will verify.

Ravi's result:	187 tCO_2e/year. Scope 2 (electricity) was 68% of it. He immediately saw where to focus reduction efforts.

05

Identify reduction opportunities — and act on them

The highest-emission sources are your highest-cost sources. Switching to renewable energy, fixing compressed air leaks, replacing old motors with BEE 5-star rated ones — each action reduces both your carbon footprint and your energy bill. Set annual targets. Track monthly.

Ravi's first action:	Installed 40 kW rooftop solar. Cost: Rs. 18 lakhs. Payback: 3.8 years. Annual carbon reduction: 35 tCO_2e.

06

Get verified and share with stakeholders

For internal use, your own report is sufficient. For submissions to large buyers or BRSR compliance, third-party verification adds credibility. Verification bodies check your data sources, calculations, and methodology — similar to a financial audit.

Ravi's outcome:	Submitted verified report to OEM. Retained vendor status. Applied for a green loan for equipment upgrade — approved at a preferential interest rate.

Ravi, twelve months later.

■ **RAVI'S STORY — ONE YEAR ON**	What happened after that Monday morning email.

Month 1

Baseline report submitted

Ravi's team collected 12 months of utility and fuel data through TerraCAP and generated the first GHG Inventory. Result: 187 tCO_2e baseline. Submitted to OEM on time. Vendor status retained.

Month 3

Energy audit reveals Rs. 8 lakh annual waste

The carbon data pointed to three compressed air leaks and four lighting zones running 24x7. Fixed within two months. Annual savings: Rs. 8.2 lakhs. No capital expenditure needed.

Month 6

Green loan approved for solar installation

Applied for a sustainability-linked loan using the GHG inventory as evidence. Approved at a preferential rate. 40 kW rooftop solar installed — reducing electricity bill by Rs. 4.8 lakhs/year.

Month 9

New export customer from Germany

A German distributor searching for CBAM-compliant Tier-2 suppliers shortlisted Ravi's unit. The GHG inventory was a key criterion. New annual contract: Rs. 1.2 crores.

Month 12

Carbon footprint reduced by 22%

Second GHG report: 187 to 146 tCO_2e. Total energy cost savings: Rs. 13 lakhs. New ESG-driven revenue: Rs. 1.2 crore. The maths of carbon accounting had become unmistakably clear.

CHAPTER 05

Questions you're probably thinking.

My business is small. Does this really apply to me?

If you supply to any listed company, export to EU/UK, or take loans from scheduled banks — yes, and increasingly so. Even if none of these apply today, your cost of energy is your biggest variable cost. Tracking it makes pure business sense on its own.

Is this going to cost me a lot?

Data collection costs nothing — the bills already exist. TerraCAP starts at a few thousand rupees per month. The question is not what it costs. The question is what it costs you to not do it — in lost vendor contracts, missed financing, and tariff exposure.

Do I need to hire an ESG consultant?

For getting started — no. TerraCAP guides you through the process. Consultants become valuable when you need third-party verification, BRSR reporting, or a strategic Net Zero pathway. Start with data. Expertise follows.

What if my numbers are bad?

Every company starts with bad numbers. The baseline is not a judgement — it is a starting line. A company showing a consistent annual reduction is more credible to buyers and lenders than one with no data at all.

Is this just another regulation or does it actually help my business?

Both — and you should plan for both. Regulation is coming regardless. But companies that treat this as a business tool, not a compliance checkbox, are the ones finding cost savings, new customers, and better financing.

Ravi started with one electricity bill.

Where will you start?

TerraCAP by Hertzwave is built for Indian businesses — structured for GHG Protocol, BRSR, GreenCo, and CBAM. No jargon. No consultants needed to begin.

Discover your ESG Journey at hertzwave.in

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