

Sust-Enablers

Empowering Sustainable Investment Decisions

A Python-powered fintech platform designed to support impact driven funds and ESG oriented investors in identifying and directing their capital toward responsible, high-performing, and sustainable investment opportunities.

Our Solution

Sust-Enablers gives decision-makers precise information to find, assess, and take action on sustainable investment opportunities by combining carbon analytics, machine learning, and carbon credit trading simulations. The goal is to allow funds to maintain high financial returns while coordinating their investment strategy with the mandate's sustainability goals.

Key features of our platform:

1. **Automated carbon emission calculation** for each company using financial and operational data.
2. **Threshold detection** to determine whether a firm's emissions are above or below industry standards or regulatory limits.
3. A simulation of **carbon credit trading** that projects possible expenses or income from compensating for excess emissions.
4. **Portfolio optimization tools** to balance returns with carbon footprint targets.

What is a Carbon Credit?

A carbon credit is like a permission slip for pollution: it gives a company the right to emit one ton of carbon dioxide (CO₂) or an equivalent amount of another greenhouse gas.

Companies that produce less pollution than their limit can sell their unused credits to others, while those that exceed their limit must buy credits to make up for it.

This establishes a market-based framework that incentivizes companies to reduce emissions and promotes environmentally friendly practices in all sectors of the economy.

How does the Emission Trading Scheme work?

The UK Emissions Trading Scheme (UK ETS) operates under a *cap-and-trade* principle.

The scheme places a cap on the total amount of greenhouse gas emissions that can be produced by industries like heavy industry, aviation, and power generation. Allowances, which are tradable units that represent the right to emit one tonne of CO₂ equivalent, make up this cap.

Operators under regulation are required to give up enough allowances annually to cover their verified emissions. To reduce carbon leakage for industries subject to global competition, these allowances can be acquired through government auctions, traded on the secondary market, or given away for free. The system tightens the supply of allowances by gradually lowering the cap, which raises the price of carbon and promotes investment in low-carbon technologies.

As a result, the UK ETS creates a market-based mechanism for reducing emissions, rewarding businesses that effectively reduce their carbon footprint while maintaining the country's overall emissions within the range of net zero.

Methodology

Sust-Enablers' analytical engine integrates environmental, financial, and operational metrics into a unified sustainability framework.

1. **Data Collection and Integration**

- **Sources:** corporate sustainability reports, CDP, EU ETS.
- **Automation:** Python's *pandas* and *requests* libraries are used for ingestion, cleaning, and transformation.
- **Standardisation:** normalization of emissions data per revenue or production unit to enable comparability.

2. Emission Estimation Model

For companies lacking full disclosure, emissions are estimated using a bottom-up model:

$$\text{Emissions} = \sum_i (E_i \times EF_i)$$

Where E_i = energy consumption and EF_i = emission factor.

- **NumPy** performs numerical operations.

3. Benchmarking and Threshold Analysis

Emission intensities are compared to sectoral or regulatory thresholds, derived from:

- Industry averages
- Historical performance benchmarks

Classification:

- **Exceeding threshold** → must buy credits.
- **Within limit** → can sell credits or claim offsets.

4. Carbon Credit Trading Simulation

A simplified trading model evaluates the financial implications of emission performance.

The outputs from this phase represent:

- **Credit cost or sale potential** per company
- **Portfolio sensitivity** to carbon pricing scenarios
- **Net-zero alignment scores** for funds

The Impact of Python Tools on Performance

Python's open-source ecosystem provides a robust foundation for sustainability analytics:

1. European Carbon Credit Trading (10 companies)

This subsection introduces the dataset used to simulate the European carbon credit trading environment. It includes ten representative companies from diverse industries, each characterized by distinct emission profiles and revenue scales. The dataset provides the foundation for comparing carbon intensity levels across sectors and for testing how variations in carbon pricing could impact financial performance.

company	sector	intensity	revenue_million
Nordwind Energy (DE)	Utilities	24.50	1250
Iberica Foods (ES)	Consumer	12.20	540
Alpen Steel (AT)	Materials	41.80	680
Seine Logistics (FR)	Transport	26.10	420
Baltic Tech (LT)	Technology	6.80	1050
Vistula Pharma (PL)	Healthcare	8.90	760
Adriatic Cement (HR)	Materials	47.60	390
Skandia Retail (SE)	Consumer	9.70	1420
Danube Shipping (RO)	Transport	21.30	310
Apennine Hotels (IT)	Services	14.90	330

This script calculates company-level emissions and intensity ratios using Pandas and NumPy.

2. Threshold Detection

This section translates emission intensities into measurable financial outcomes. By combining the emission thresholds with current carbon pricing levels, the model identifies whether each company operates above or below its regulatory benchmark and quantifies the corresponding credit cost or potential revenue. The results below summarise the overall distribution of carbon positions across the analysed firms.

Table 1: Company Results (sorted by net position)

company	sector	intensity	revenue_m	emiss_tCO2	target_tCO2	excess_tCO2	credits_tCO2	status	buy_eur	sell_eur	net_eur
Alpen Steel (AT)	Materials	41.80	680	28424.00	13600.00	14824.00	0.00	Excess	741200.00	0.00	-
Adriatic Cement (HR)	Materials	47.60	390	18564.00	7800.00	10764.00	0.00	Excess	538200.00	0.00	-
Nordwind Energy (DE)	Utilities	24.50	1250	30625.00	25000.00	5625.00	0.00	Excess	281250.00	0.00	-
Seine Logistics (FR)	Transport	26.10	420	10962.00	8400.00	2562.00	0.00	Excess	128100.00	0.00	-
Danube Shipping (RO)	Transport	21.30	310	6603.00	6200.00	403.00	0.00	Excess	20150.00	0.00	-
Apennine Hotels (IT)	Services	14.90	330	4917.00	6600.00	0.00	1683.00	Below Threshold	0.00	84150.00	84150.00
Iberica Foods (ES)	Consumer	12.20	540	6588.00	10800.00	0.00	4212.00	Below Threshold	0.00	210600.00	210600.00
Vistula Pharma (PL)	Healthcare	8.90	760	6764.00	15200.00	0.00	8436.00	Below Threshold	0.00	421800.00	421800.00
Baltic Tech (LT)	Technology	6.80	1050	7140.00	21000.00	0.00	13860.00	Below Threshold	0.00	693000.00	693000.00
Skandia Retail (SE)	Consumer	9.70	1420	13774.00	28400.00	0.00	14626.00	Below Threshold	0.00	731300.00	731300.00

company	available_credits_tCO2	sell_revenue_eur
Apennine Hotels (IT)	1683.00	84150.00
Iberica Foods (ES)	4212.00	210600.00
Vistula Pharma (PL)	8436.00	421800.00
Baltic Tech (LT)	13860.00	693000.00
Skandia Retail (SE)	14626.00	731300.00

company	excess_emissions_tCO2	buy_cost_eur
Alpen Steel (AT)	14824.00	741200.00
Adriatic Cement (HR)	10764.00	538200.00
Nordwind Energy (DE)	5625.00	281250.00
Seine Logistics (FR)	2562.00	128100.00
Danube Shipping (RO)	403.00	20150.00

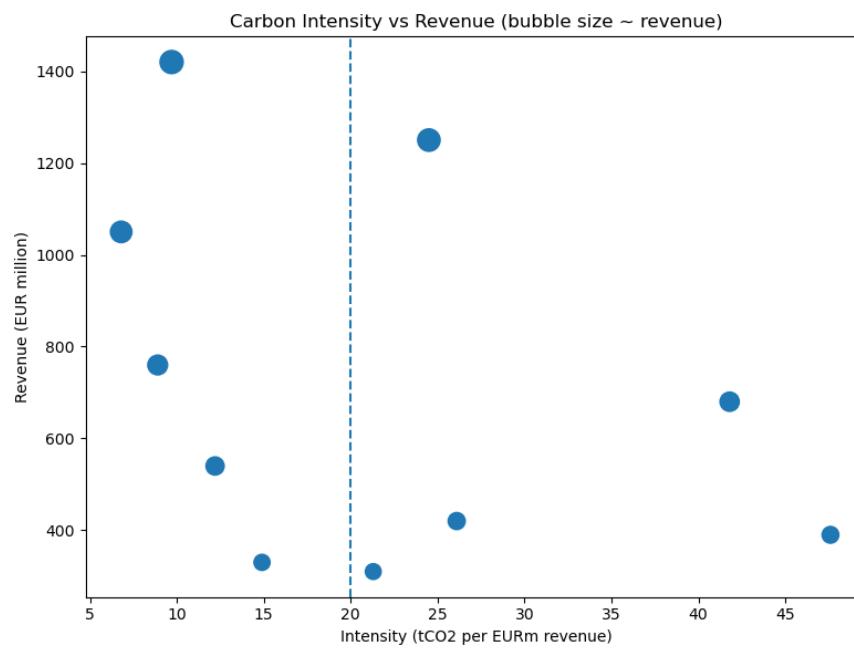


Figure 1: Carbon Intensity vs Revenue (bubble size ~ revenue)

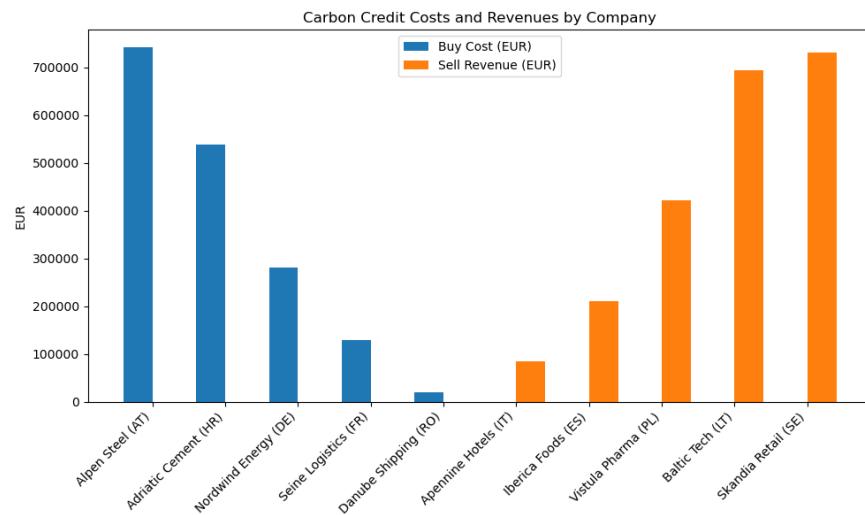


Figure 2: Carbon Credit Costs and Revenues by Company

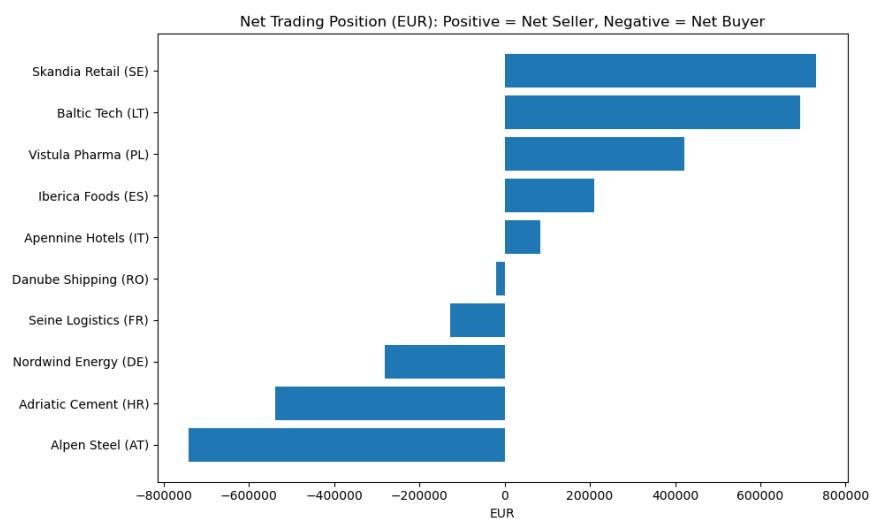


Figure 3: Net Trading Position (EUR): Positive = Net Seller, Negative = Net Buyer

Outcome

The simulation demonstrates the practical value of integrating carbon metrics with financial analytics. By quantifying both emission performance and its direct monetary impact, the framework bridges environmental and economic dimensions that are often analysed separately. The resulting dataset highlights how even small variations in emission intensity can translate into significant differences in carbon credit exposure, directly affecting the cost structure, investment risk, and profitability of the firms involved.

From an investor's perspective, these results provide an actionable layer of intelligence: carbon performance becomes a measurable driver of value creation rather than a compliance burden. Asset managers can now assess how efficiently each portfolio company aligns with emission thresholds and how these dynamics influence overall fund performance in a tightening regulatory environment.

The outcome of this analysis therefore goes beyond compliance monitoring: it quantifies the strategic advantage of early decarbonisation and the financial opportunities available to those positioned as net sellers of carbon credits. In this sense, the Sust-Enablers model transforms sustainability from a reporting exercise into a proactive investment instrument.

The Target Market

Sust-Enablers is designed for Asset Management firms to have a better understanding of implementation of sustainable solutions into its practices, enabling to run the impact driven funds that generate ESG compliant revenues. The platform allows to access the latest carbon market data and analytics, providing actionable trading insights ready for execution. Through the accurate estimation of carbon credit usage, Asset Managers can leverage their existing corporate client relationships, deepening the further engagement and transforming the carbon credits into the real financial and environmental practices.

Our Value Proposition for Asset Managers explained

1. Subscription & Data Access

Asset Managers and ESG Funds can use our cutting-edge data analytics to access exclusive company-level emission data, and automated matching mechanisms that identify the trading potential within the range of different companies' portfolio.

2. Network Activation

Sust-Enablers enables the Asset Managers to expand their corporate client relationships by providing carbon profiles of over 1 Million firms and their profiles and positions within the ecosystem.

3. Clearing House Matching System

Companies over their emission limitations that must purchase credits and those below limits that can sell are identified by the platform's algorithm as complementing profiles. Afterwards, verified trade possibilities are created between them by Sust-Enablers.

4. Trade Facilitation

Asset managers act as *intermediaries*, connecting matched companies and facilitating credit transactions in a transparent, compliant, and profitable environment.

5. Additional Revenue Generation

Each transaction creates a value chain, where the Asset Managers generate revenue for their impact-driven funds; expand its network of the clients and strengthen its reputation in the market.

Pricing Model for Asset Managers

In accordance with the size and complexity of each asset manager's portfolio, we will implement a usage-based subscription model. Pricing is set up to be transparent and to represent the value created by compliance insights and carbon-credit optimization.

1. Platform Subscription (Annual Licence)

Complete access to the analytics dashboard, carbon-credit computation engine, reporting suite, and compliance monitoring tools is available for a set annual cost. starting at GBP 15,000 annually per asset manager.

2. Assets Under Management (AUM) Module

An extra variable fee is assessed dependent on the quantity of assets or funds linked to the platform in order to account for portfolio size and data processing volume. EUR 300 per fund annually (discounts applied over 50 funds).

3. Carbon Credit Transaction Fee (Optional)

We impose a performance-aligned transaction fee on customers who opt to complete carbon-credit purchases or sales via the platform's integrated marketplace. Each carbon-credit transaction is subject to a 1.0% fee.

4. Enterprise Tier (Custom)

Custom pricing is available for major institutions that need complex integrations (API, ESG data pipelines, third-party systems), white labelling, or improved compliance modules.

Conclusion

Sust-Enablers uses machine learning, data science, and carbon market information to close the gap between sustainability and profitability. We enable carbon trading insights, benchmark performance, and quantify emissions to enable investors to make profitable, responsible, and well informed decisions. Sust-Enablers is aimed to establish itself as the leading platform for sustainable asset management that generates quantifiable environmental benefit and financial gain through transparent analytics and scalable technology.