Carbon Accounting

Carbon accounting is the systematic tracking of greenhouse gas emissions produced by human activity. It is essential for managing environmental impact, developing climate strategies, and meeting regulatory and voluntary reporting obligations.



Carbon Valuation

- Social cost of carbon (SCC) is estimated at $85 per ton under current projections
- Internal carbon pricing should be around $100 per ton for strategic decisions
- Global average carbon price is $3 per ton with minimal decarbonization impact
- Marginal abatement cost curves illustrate which reductions offer low or negative net cost
- Effective carbon pricing must be high enough to change behavior but economically feasible



Carbon Offsets

- Used to fund external reductions rather than reduce emissions at the source
- Divided into voluntary and compliance-based mechanisms
- Quality depends on additionality, permanence, and preventing leakage or double counting
- Examples include reforestation, renewable energy projects, and efficient cookstoves
- Market challenges include overpromising, lack of verification, and low credibility
- Offsets should supplement direct action, not replace it



Lifecycle Emissions

- Total footprint includes operational and embodied emissions
- Example: A typical car emits 28 tons from use and 7 tons from production
- Lifecycle Assessment (LCA) is critical for full emissions accounting and Scope 3 data
- Helps companies design low-impact products and improve sustainability claims



ESG Reporting Trends

- Over 99 percent of S&P 500 companies now disclose ESG data
- Common standards include SASB and TCFD
- Reports include emissions targets, risks, and forward-looking climate strategies
- Regulators are pushing for mandatory reporting aligned with climate goals
- Climate disclosure affects investor decisions, insurance, and supplier relations



Carbon Accounting Frameworks

- The Greenhouse Gas Protocol is the most widely used standard, defining Scope 1, Scope 2, and Scope 3 emissions
- ISO 14064 provides guidance for emissions quantification, verification, and reporting
- Accurate accounting supports compliance, risk management, and investment decisions
- Scope 3 emissions, though hardest to track, often represent the majority of a firm's carbon footprint



Strategic Relevance

- Carbon cost management integrates emissions data into operational and financial planning
- Companies use this data to set internal prices, adjust supply chains, and avoid regulatory risk
- Strong carbon accounting boosts ESG scores, investor confidence, and competitive positioning