# Zevero Case Study Key Insights

AI and Sustainability: How Tech Is Transforming Carbon Accounting

---

## 1. Traditional Carbon Accounting – Key Challenges

- **Scope 3 Complexity**: Difficult to measure due to data inconsistencies, lack of supplier transparency, and over-reliance on average estimates.
- **Poor Data Quality**: Emissions data is fragmented, inconsistent, and often incomplete; spend-based methods yield low-precision estimates.
- **Lack of Real-Time Insights**: Periodic, delayed reporting limits timely decision-making and response to emissions spikes.

---

## 2. AI Transformations in Carbon Accounting

| Capability | Impact |
|---|---|
| Data Integration | Consolidates data from suppliers, internal systems, and external sources, reducing errors. |
| Automated Analytics | Identifies emissions hotspots and calculates $CO_2e$ more accurately. |
| Predictive Modelling | Forecasts future emissions and evaluates the impact of planned decarbonisation strategies. |
| Real-Time Monitoring | Uses AI and IoT for continuous emissions tracking and operational optimisation. |

---

## 3. Benefits of Using AI in Carbon Management

- **Improved Accuracy**: Enables precision in emissions measurement and regulatory compliance.

- **Reduced Costs**: Automates manual tasks, making carbon accounting viable even for SMEs.
- **Scalability**: AI systems scale with organisational growth and complexity.
- **Proactive Planning**: Supports forward-looking strategy and goal-setting through predictive insights.

---

## 4. Implementation Risks and Considerations

- **Data Bias**: Inaccurate or biased training data can distort results; mitigated by using validated sources and human oversight.
- **AI's Own Emissions**: High computational load may increase carbon emissions; mitigated by using energy-efficient, renewable-powered infrastructure.

---

## 5. Strategic Implications

- Transitions carbon accounting from static compliance to real-time, strategic sustainability management.
- Supports standardised, transparent reporting under frameworks like GHG Protocol and CSRD.
- Enables scenario modelling for evaluating cost-effective, long-term decarbonisation options.

---

## 6. Future Outlook

- Shift from annual reports to live, AI-powered dashboards.
- Enhanced collaboration across supply chains through unified and automated data reporting.

- Greater alignment of sustainability with business operations and long-term planning.