

Carbon Accounting: Design From Purpose to Data

The Carbon Accounting Problem: Why GHG Reporting Isn't Enough

Bottom Line: GHG Protocol treats carbon like an annual report. Not a daily decision. Companies need transactional carbon accounting (E-liabilities) that works like ERP systems - real-time data at decision points where change actually happens.

The Reporting Trap vs. Action Gap

The GHG Protocol revolutionized carbon reporting. No question. But here's the problem: it's backward-looking, like preparing annual 10K reports.

IBM found something shocking. Companies spend 43% more of their sustainability budgets for counting carbon. Reporting it. Filing it than on actual carbon innovation.

Think about that. We've built sophisticated systems to count emissions after they happen. But these systems? They don't talk usefully to the people making decisions. It's like managing a company using only year-end statements. No cash flow tools. No daily metrics. Just an annual surprise.

Static Inventories Can't Drive Dynamic Change

GHG Protocol creates static emissions inventories. Scope 1, 2, 3. Nice categories. Useless timing and aggregated corporate scale.

A procurement manager chooses suppliers today. A designer selects materials now. Logistics picks shipping routes this afternoon. These are the moments that matter. The carbon decisions.

But how does the data arrive and get managed and shared? Months later. In a corporate level sustainability report. After every decision has been made, every contract signed, every product shipped.

GHG level carbon means reporting Carbon remains abstract. A boardroom metric. Not an operational reality.

E-Liabilities: Making Carbon Operational

E-liabilities changes everything. Carbon becomes transactional. Like price. Like delivery dates.

Think Carbon Resource Management (CaRM). Remember when ERP systems revolutionized business? Same idea. Instead of guessing Scope 3 emissions with industry averages, imagine this: Every supplier includes actual emissions data on their invoice. Real numbers. Real time.

Carbon flows through supply chains with products. Visible at every decision point. Supplier selection. Product design. Customer pricing.

It's not reporting. It's managing.

From Compliance to Competition

GHG Protocol standardizes reporting to stakeholders. Important? Yes. Sufficient? No.

E-liabilities enables actual reduction through market forces. When carbon data flows with products, magic happens. Suppliers compete on emissions. Buyers make informed choices. Clean innovations gain immediate value.

This isn't about better annual reports. It's about transformation.

Carbon shifts from compliance cost to competitive advantage. Companies today can't imagine operating without ERP. Tomorrow? They won't imagine operating without transaction-level carbon accounting.

The future isn't counting carbon better. It's making carbon count where decisions happen. Every supplier. Every product. Every day.

That's how change happens. Not in boardrooms reviewing last year's emissions. But in thousands of daily decisions where carbon becomes visible and manageable, as real as money.

Better systems for better outcomes

All accounting systems are useful fictions. They are social conventions which mean a state of data and facts will be aggregated and presented in a standard way to suit some purpose.

By normalizing the data actors can compare systems, companies and products to take actions. It is vital to use the right tool (accounting system for the job to be done.)

Financial vs Transactional Carbon Accounting

Concept	Financial Accounting	Carbon E-Accounting
Liabilities	Debts, obligations to pay	Carbon emissions attached to products
Assets	Cash, property, investments	Carbon removals, offsets
Transactions	Buying, selling, investments	Transfer of carbon with products
Balance	Assets = Liabilities + Equity	E-Assets = E-Liabilities
Value Creation	Profits, return on investment	Carbon removal, reduced emissions

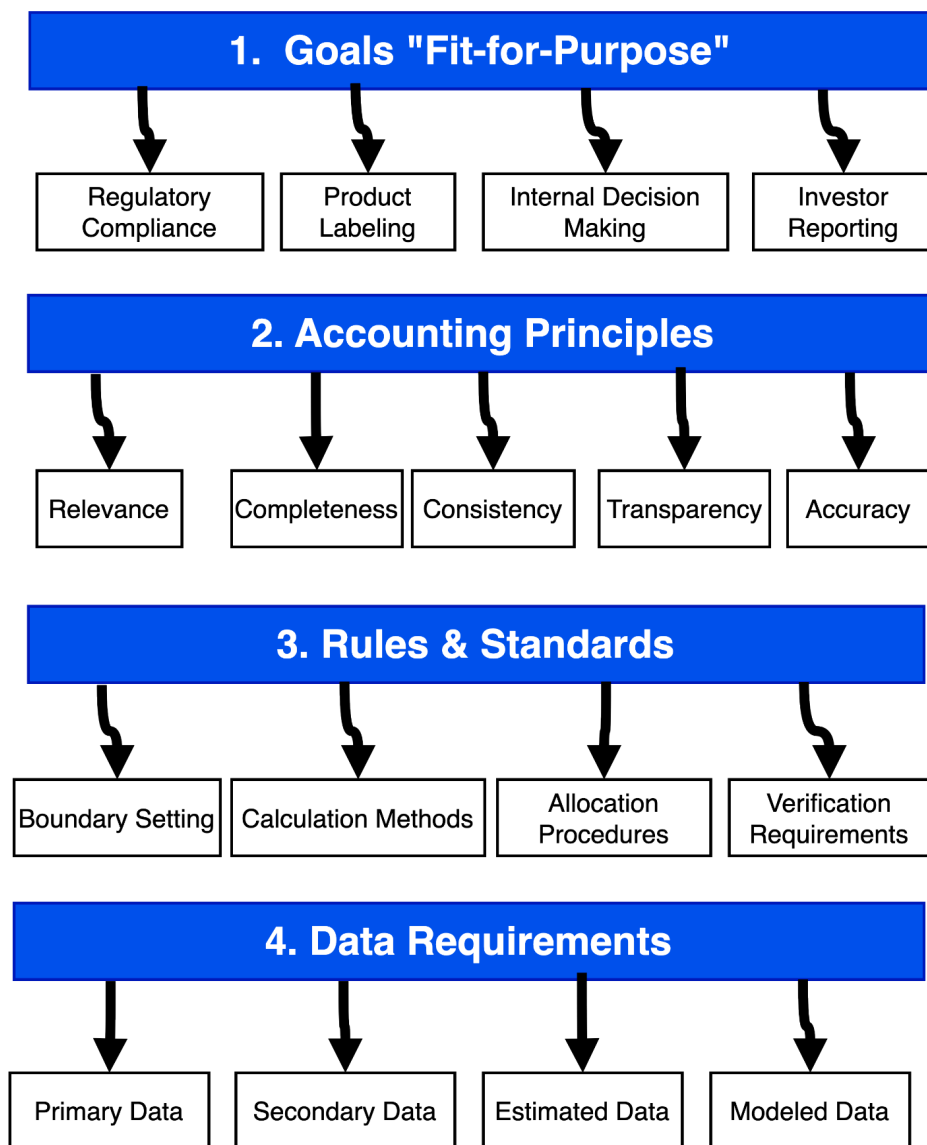
1. Carbon Accounting Framework Hierarchy

- **Start with goals:** What are you trying to accomplish? Regulatory compliance? Product labeling? Internal decisions?
- **Define principles:** Based on your goals, what core principles matter most (accuracy, transparency, etc.)?
- **Establish rules:** These are the specific calculations, boundaries, and methods you'll use
- **Set data requirements:** The type, quality, and sources of data needed to satisfy your rules

A goal focused "top-down" approach ensures an accounting system is fit-for-purpose.

Accounting cascading design

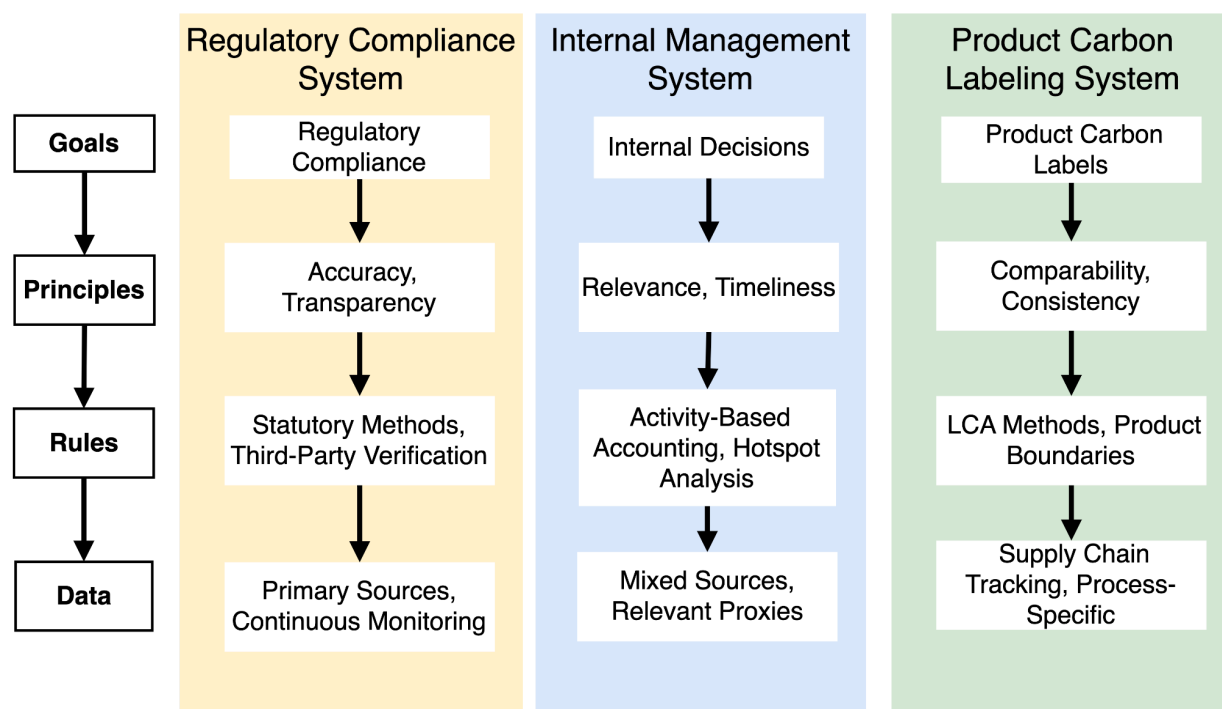
(inherit from tier above)



2. Fit-for-Purpose Carbon Accounting Systems Flow

This diagram shows how different goals lead to different systems:

- **Regulatory Compliance System:** When you need to satisfy legal requirements, your principles emphasize accuracy and transparency, leading to strict rules and high-quality data needs
- **Product Carbon Labeling System:** For consumer-facing labels, you prioritize comparability and consistency, with rules focused on product life cycles
- **Internal Management System:** For decision-making, you value relevance and timeliness, with more flexible data requirements



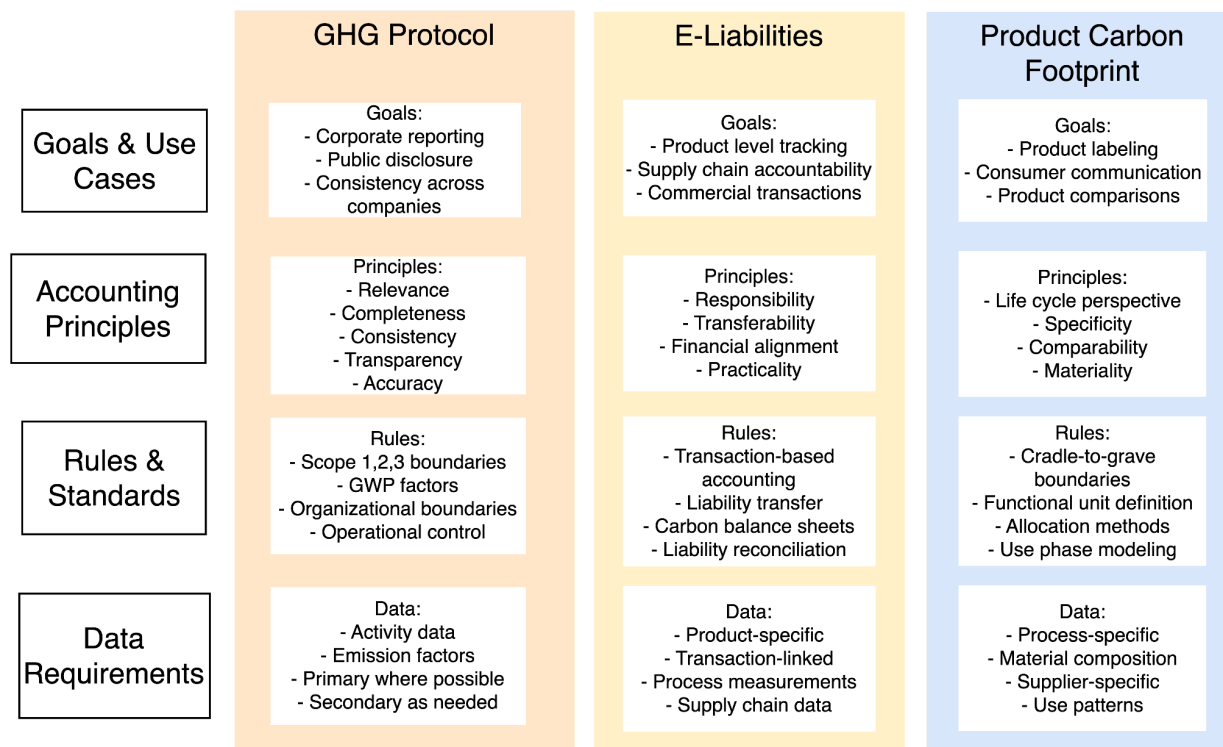
Why the one-size-fits-all accounting approaches often fail - different purposes need different systems. Cash and accrual based accounting are both “good” but fit for different purposes.

3. Comparison of Carbon Accounting Systems

The third diagram compares three common systems:

¹

- **GHG Protocol:** Corporate-focused, with scope boundaries and organizational control
- **E-Liabilities:** Transaction-based, focused on carbon transfer through supply chains
- **Product Carbon Footprint:** Product-specific with life cycle perspective

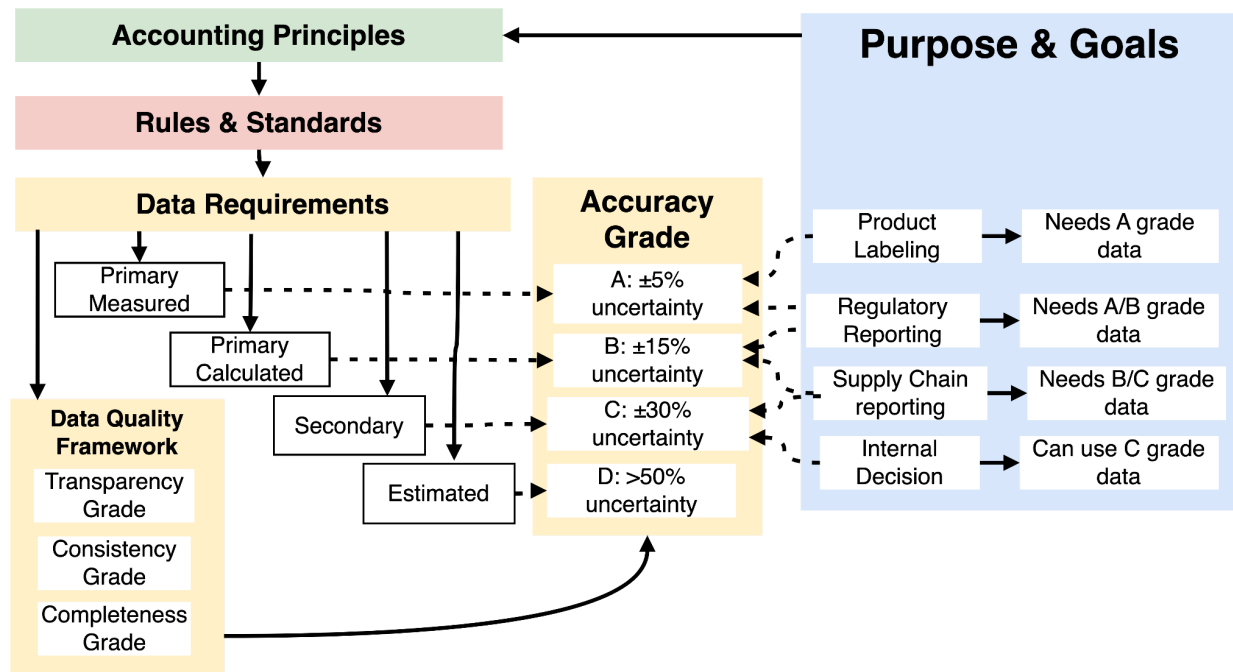


This highlights how each system has its own coherent framework from goals to data requirements.

¹ These accounting systems may comply with ISO 14064-1 and SBTi and other reporting standards depending on principles, rules (methodologies) and DQI (data quality standards)

4. Data Quality Framework

This diagram connects purpose to data quality:



- Different goals require different data quality levels
- Data sources (primary, secondary, etc.) yield different quality grades
- Higher quality requirements generally mean more effort and cost

This is especially important because it shows that "perfect data" isn't always necessary - the right data quality depends on your purpose.

Key Takeaways for Practical Application

1. **Start with your purpose** - don't just copy a system that wasn't designed for your needs
2. **Align principles to purpose** - what matters most for your specific goals?
3. **Create consistent rules** - they should flow logically from your principles
4. **Match data quality to needs** - don't waste resources on unnecessarily precise data

Carbon Accounting Systems Compared: GHG Protocol vs. E-Liabilities²

Carbon accounting systems need to be "fit for purpose,". The GHG Protocol has limitations for product-level accounting across supply chains.

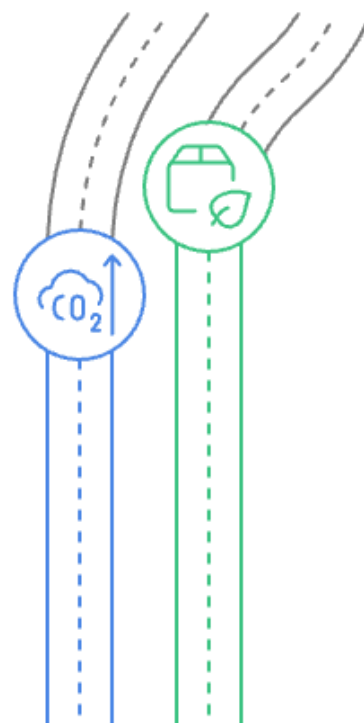
Which carbon accounting system should be used?

GHG Protocol

Focuses on organizational emissions and static inventory with scope boundaries.

E-Liability v0.5

Emphasizes transaction-based accounting and dynamic carbon transfers.



² Ramanna, K. et al. A proto-standard for carbon accounting and auditing using the E-liability method v. 1.5.4, The E-liability Institute, 2024.

Gap Analysis: GHG Protocol vs. E-Liability v0.5

Dimension	GHG Protocol	E-Liability v0.5	Gap & Opportunity
Primary Focus	Corporate/organizational emissions inventory	Product-level transaction-based accounting	E-Liability fills product-level gap. GHG Protocol excels at organizational reporting
Accounting Structure	Scope-based (1, 2, 3) static inventory	Transaction-based with carbon liability transfer	E-Liability aligns with business transactions, more intuitive for operations
Supply Chain Integration	Challenging to implement across supply chain; often requires estimations	Built for supply chain; focuses on carbon passing with products	E-Liability provides clearer responsibility transfer across company boundaries
Data Quality Requirements	Relatively rigid; high burdens for comprehensive accounting	Flexible tiered approach; focus on material emissions first	E-Liability's practical approach lowers barriers to entry while allowing progressive improvement
Economic Incentives	Primarily driven by compliance & reporting; limited connection to business operations	Directly ties carbon to products; enables carbon-based pricing and supplier selection	E-Liability creates stronger economic motivation by connecting carbon to product costs
Implementation Complexity	Complex for full scope 3 implementation; often requires consultants	Tiered approach allows starting small with highest impact areas	E-Liability offers more accessible entry points for smaller businesses
Verification & Auditability	Well-established verification standards but often complex /costly	Pragmatic verification focus on material emissions; scales w/ business size	E-Liability introduces more practical verification that can expand as capabilities grow
Network Effects	Strong for corporate reporting; limited for product-level integration	Creates strong positive feedback loops as supply chain adoption grows	E-Liability has stronger network effects for driving systemic improvement
Allocation of Responsibility	Focus on "who caused emissions"; can lead to double-counting	Focus on "who's responsible now"; follows ownership transfer	E-Liability provides clearer accountability and reduces double-counting
Business Process Integration	Often separate from core business processes; annual reporting focus	Directly integrates with invoicing, purchasing, and product management	E-Liability brings carbon accounting into everyday business decisions

GHG Protocol Basics

GHG Protocol is like the "GAAP accounting" of carbon - it's widely used but has some gaps:

What it does well:

- Corporate-level emissions (your company's footprint)
- Organizing emissions into scopes (1, 2, 3)
- Setting consistent boundaries

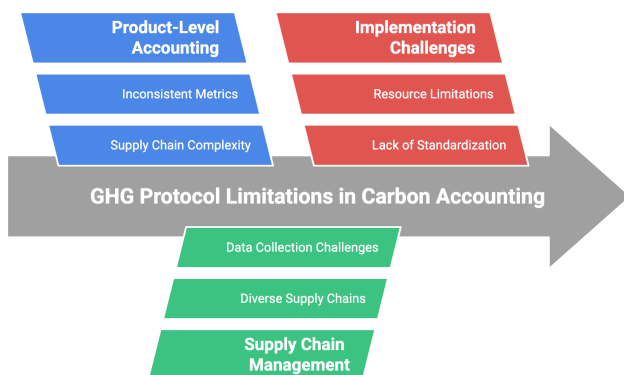
Where it struggles:

- Product-level accounting across supply chains
- Handling complex supply chains
- Practical implementation at scale

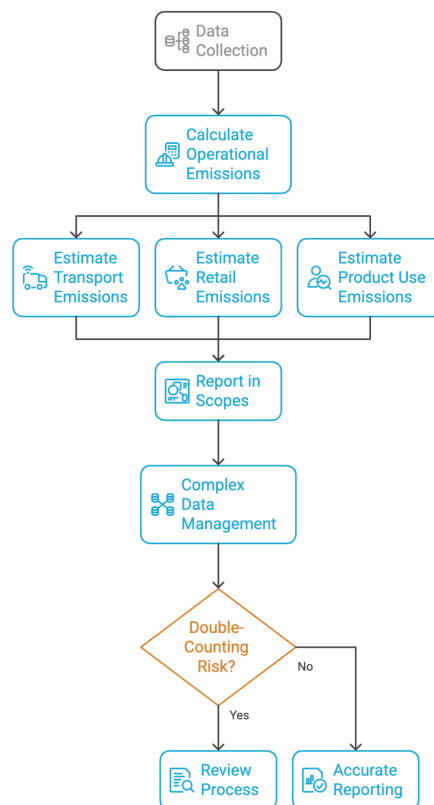
The Protocol divides emissions into:

- **Scope 1:** Direct emissions you control (your vehicles, facilities)
- **Scope 2:** Indirect energy (electricity you buy)
- **Scope 3:** Everything else in your value chain (suppliers, use of products)

Analyzing GHG Protocol Limitations



Emissions Data Management Process



E-Liabilities Approach

E-Liabilities takes a different approach:

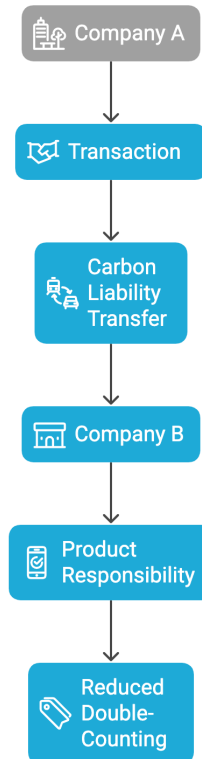
Key differences:

- Treats carbon like financial accounting (as actual liabilities)
- Focuses on passing carbon responsibility through supply chains
- Uses a transaction-based system rather than inventory-based
- Can be used across supply chain

Core concept: When Company A sells to Company B, the carbon "liability" transfers with the transaction. This means:

1. Carbon gets assigned to actual products/transactions
2. Responsibility moves with the products
3. Double-counting is reduced

E-Liabilities Carbon Responsibility Flowchart



Practical Comparison Example

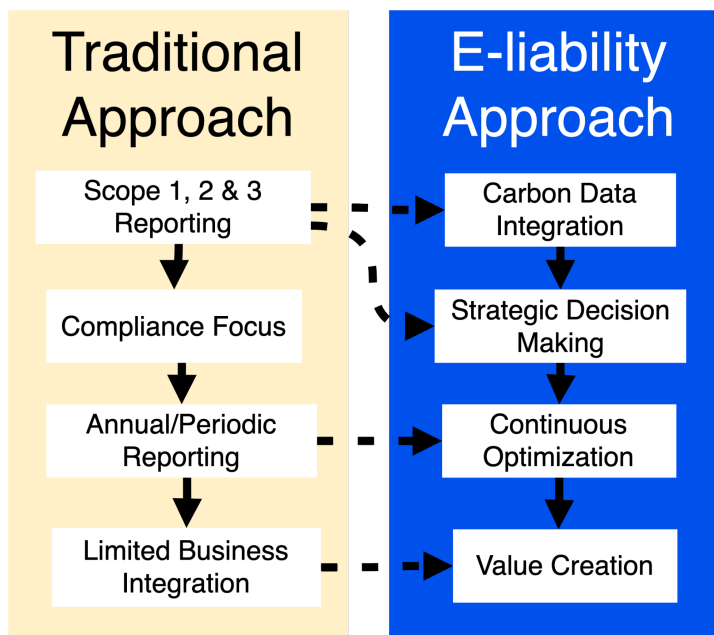
Let's look at a simple example - manufacturing a chair:

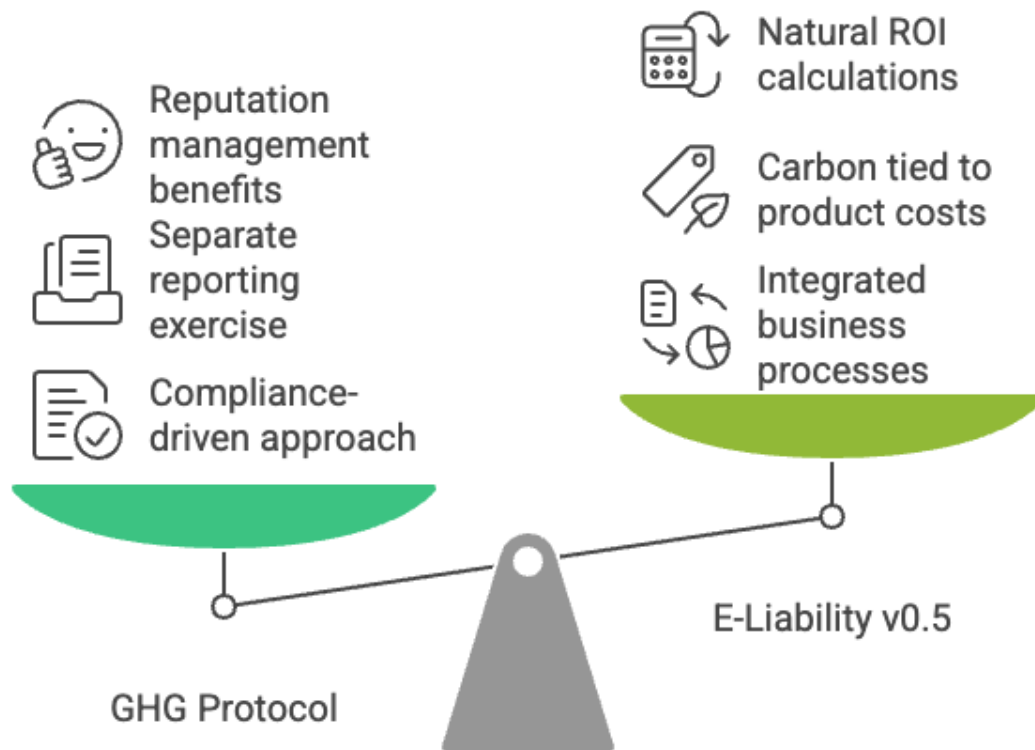
Business Reality Example

Let's say you run a furniture company:

Under GHG Protocol:

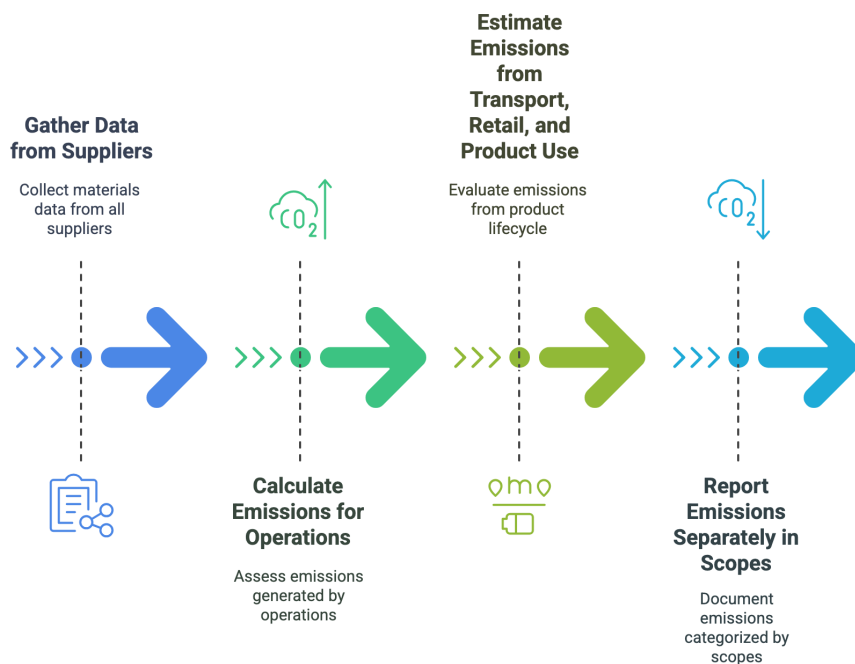
- You gather data from all suppliers (wood, fabric, metal, etc.)
- You calculate emissions for your operations
- You estimate emissions from transport, retail, and product use
- You report everything separately in scopes
- Result: Complex data collection, estimation challenges, potential double-counting





Comparing GHG Protocol and E-Liability v0.5

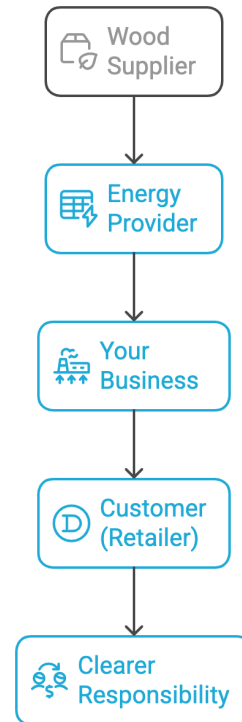
Emission Calculation and Reporting Process



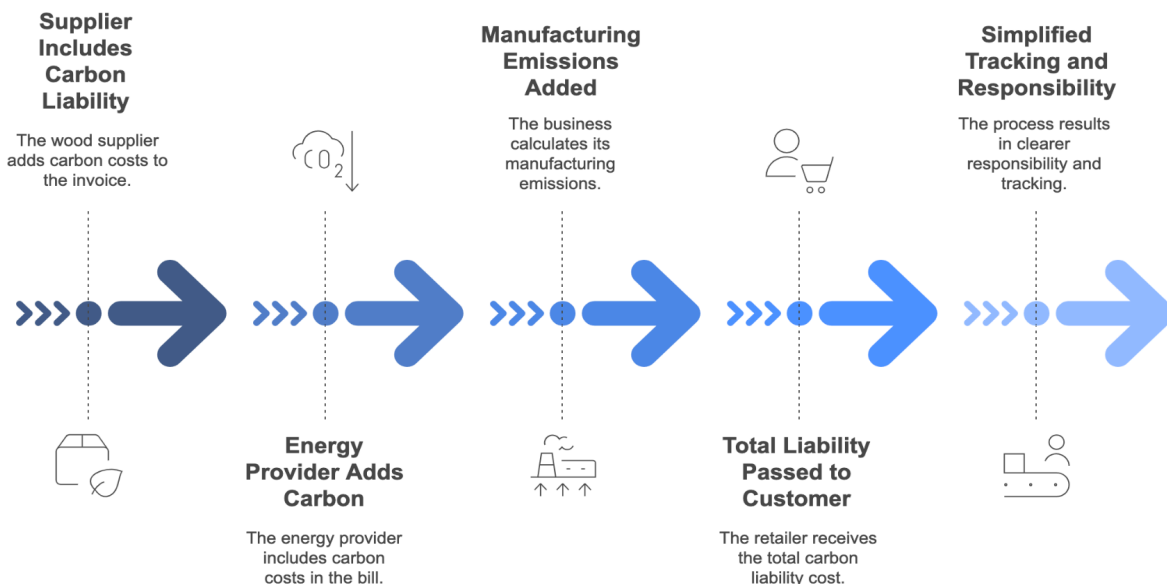
Under E-Liabilities:

- Your wood supplier includes carbon liability on their invoice to you
- Your energy provider includes carbon on their bill
- You add your manufacturing emissions
- You pass the total liability to your customer (retailer)
- Result: Clearer chain of responsibility, simplified tracking, better alignment with business transactions

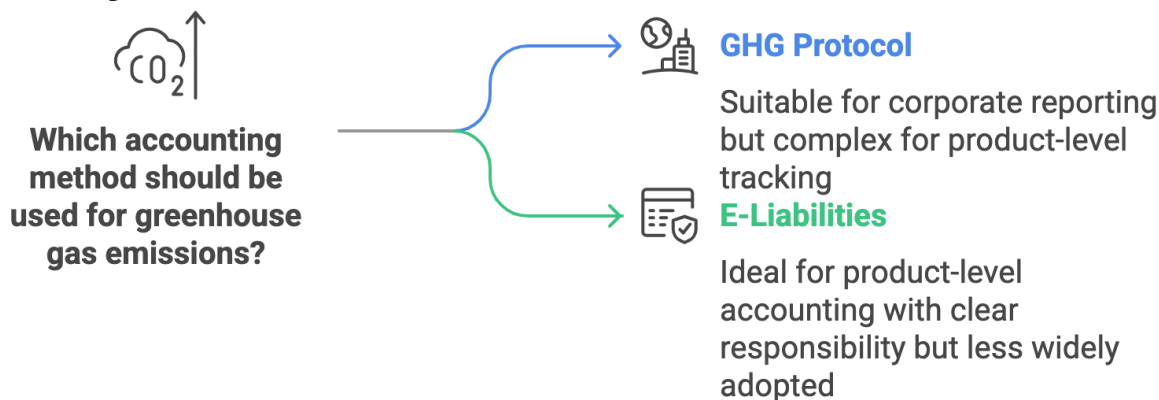
Carbon Liability Management Flowchart



Carbon Liability Integration in Business



The Key Trade-offs



GHG Protocol:

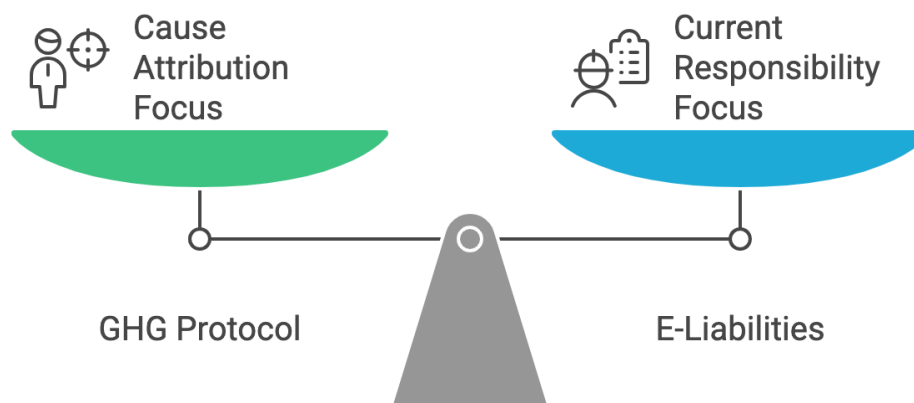
- ✓ Widely recognized standard
- ✓ Good for corporate reporting
- ✗ Complex for product-level tracking
- ✗ Practical challenges in data collection

E-Liabilities:

- ✓ Better for product-level accounting
- ✓ Follows business transactions
- ✓ Clearer responsibility assignment
- ✗ Less widely adopted
- ✗ Requires system-wide implementation

Bottom Line

The basic difference is that **GHG Protocol** asks "who caused these emissions?" while **E-Liabilities** asks "who's responsible for these emissions now?"



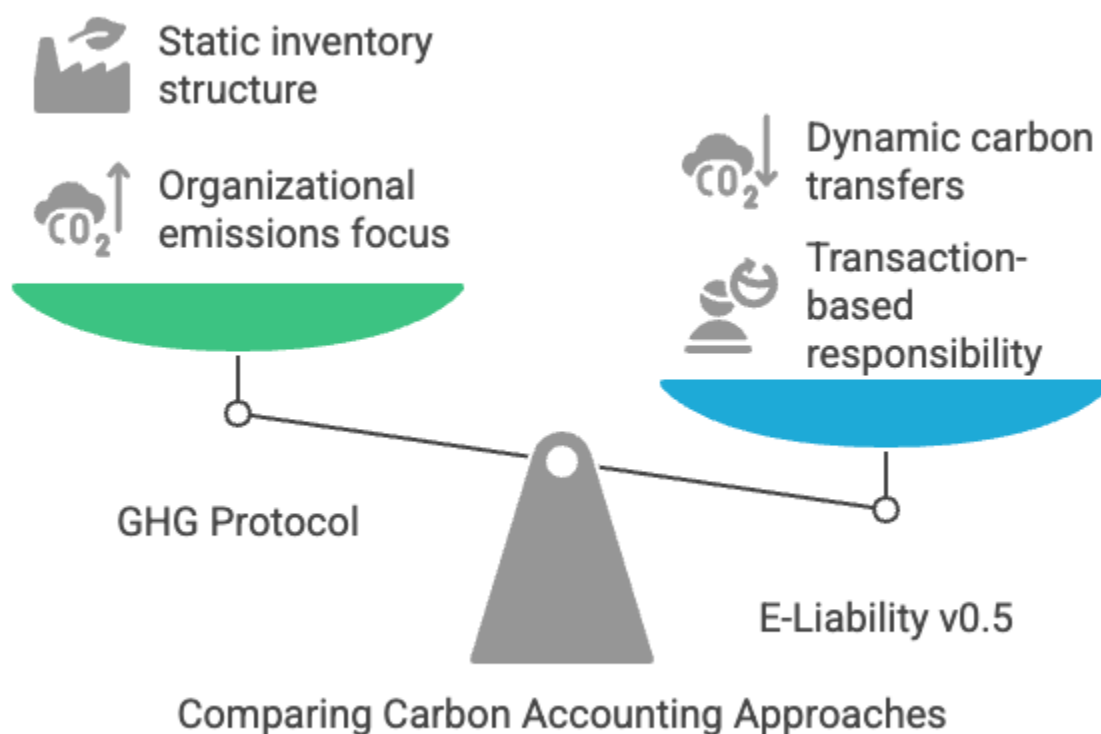
Comparing Emissions Accountability Approaches

For many businesses, especially those with complex supply chains, the E-Liabilities approach might better reflect how carbon actually moves through your business - attached to products and transactions rather than abstract corporate inventories.

Comprehensive Gap Analysis: GHG Protocol vs. E-Liability v0.5

Core Differences in Approach

Based on the documents provided, I can identify several key differences between these two carbon accounting systems:



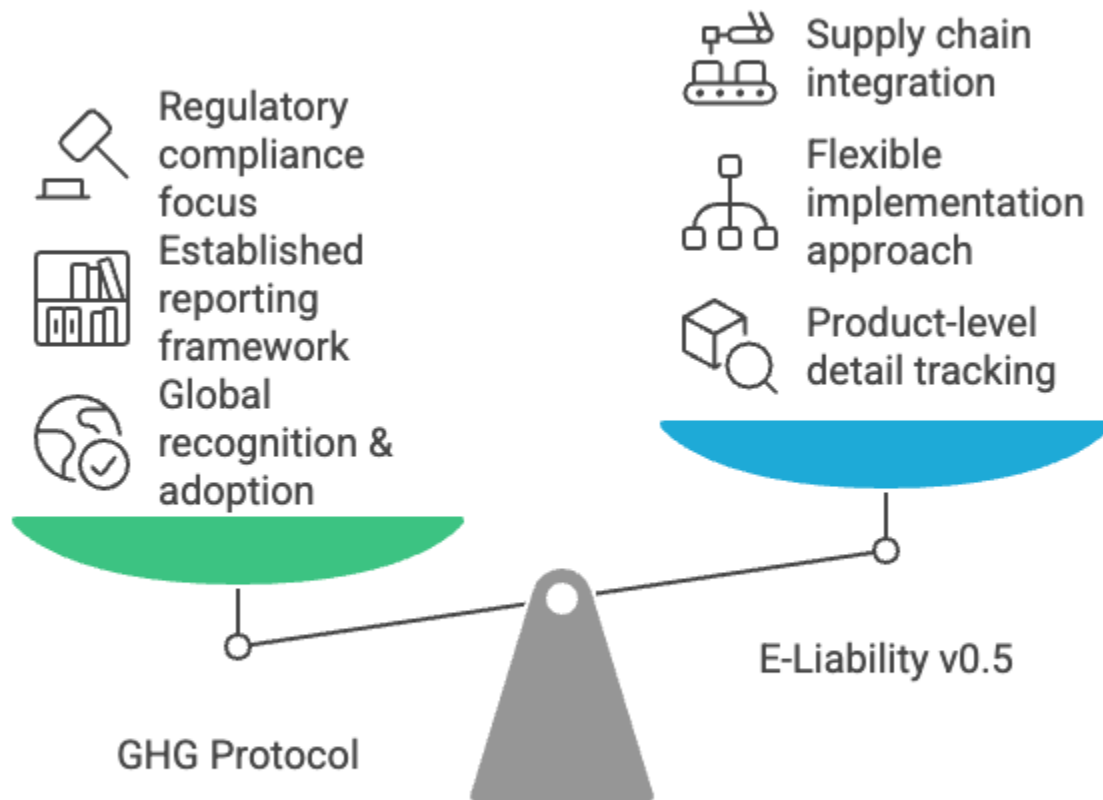
1. Focus and Purpose

- GHG Protocol: Corp/organizational emissions inventory focus on "who caused emissions"
- E-Liability v0.5: Transaction-based accounting focus on "who's responsible now"

2. Structure

- GHG Protocol: Static inventory w/ scope boundaries (1, 2, 3)
- E-Liability v0.5: Dynamic transaction-based carbon transfers that follow business flows

Feature Comparison



Comparing GHG Protocol and E-Liability v0.5

Strengths of GHG Protocol:

- Global recognition & widespread adoption
- Established corporate reporting framework
- Clear organizational boundaries
- Strong for regulatory compliance & disclosure

Strengths of E-Liability v0.5:

- Product-level detail and tracking
- Supply chain integration through transaction-based approach
- Flexible implementation w/ tiered approach
- Pragmatic data quality requirements
- Aligned w/ existing business transactions

Impact Analysis: Change Through Economic Motivation

The most significant gap between the systems is how they create economic incentives for reducing carbon emissions:

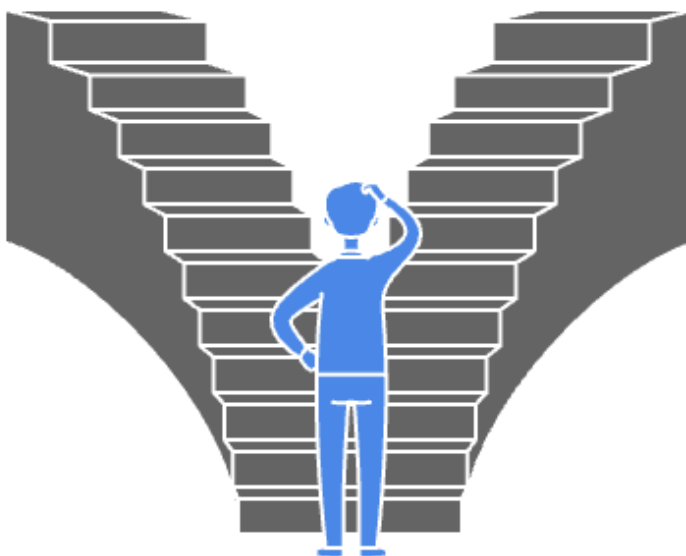
Which system should be used for economic incentives to reduce carbon emissions?

GHG Protocol

Focuses on compliance and reputation but lacks integration with business processes.

E-Liability v0.5

Directly ties carbon to costs and integrates with business processes.



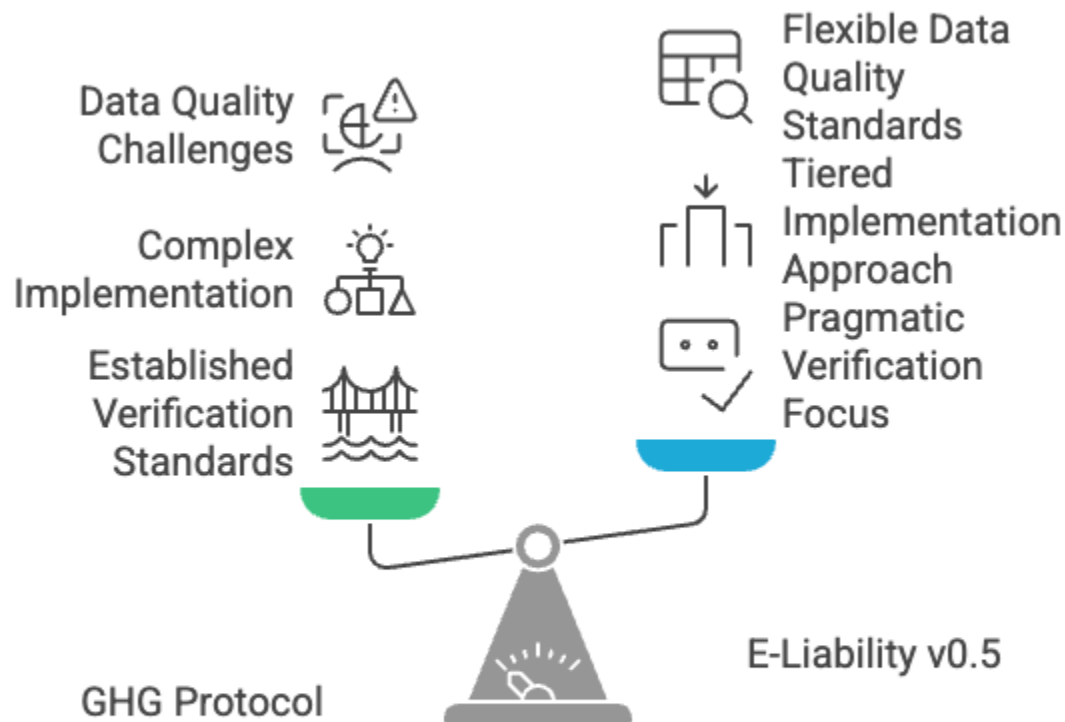
GHG Protocol Economic Drivers:

- Primarily driven by compliance requirements
- Reputation management benefits
- Limited connection to day-to-day business decisions
- Carbon often treated as a separate reporting exercise

E-Liability v0.5 Economic Drivers:

- Directly ties carbon to product costs
- Creates clearer supplier selection criteria
- Enables carbon-based pricing differentiation
- Integrates with existing business processes (invoicing, purchasing)
- Creates natural ROI calculations for carbon reduction initiatives

Transparency and Auditability Comparison



Compare GHG Protocol and E-Liability for emissions management.

GHG Protocol:

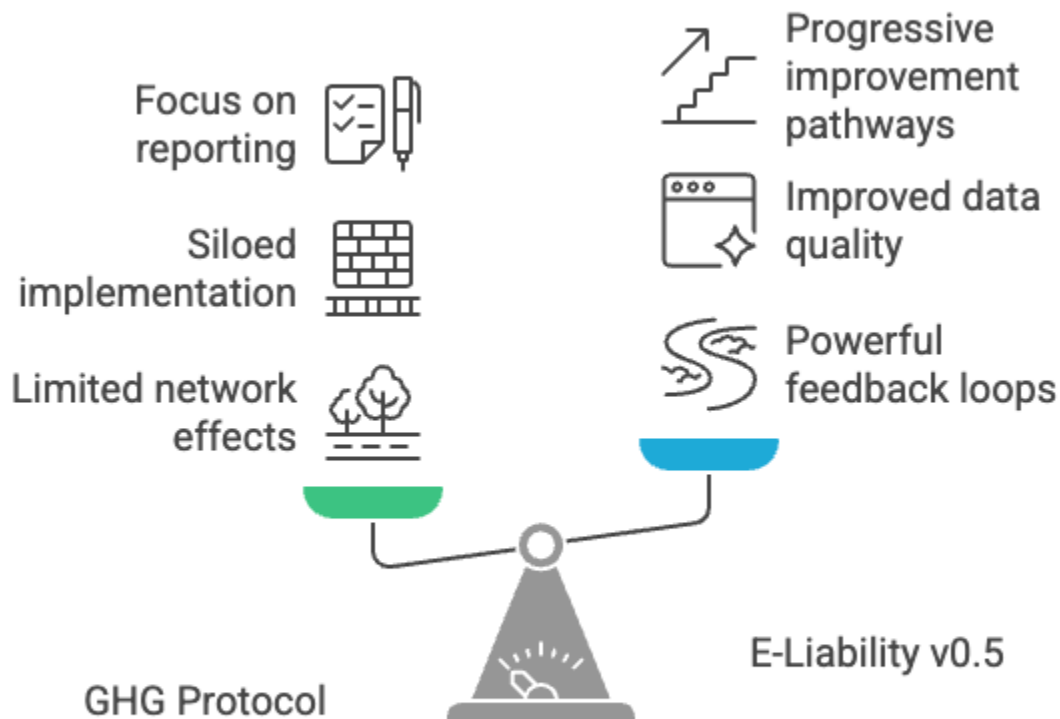
- Well-established verification standards
- Often requires specialized consultants
- Complex and costly full implementation
- Challenges w/ data quality for Scope 3 emissions

E-Liability v0.5:

- Pragmatic verification focus on material emissions
- Tiered approach allows start w/ critical areas
- Clear improvement pathways over time
- More closely follows financial audit trails (aligned w/ transactions)
- Flexible data quality standards improve w/ network adoption

Network Effects Analysis

One of the most compelling aspects of E-Liability v0.5 is its potential to leverage network effects to drive system-wide improvements:



Comparing GHG Protocol and E-Liability v0.5

GHG Protocol Network Dynamics:

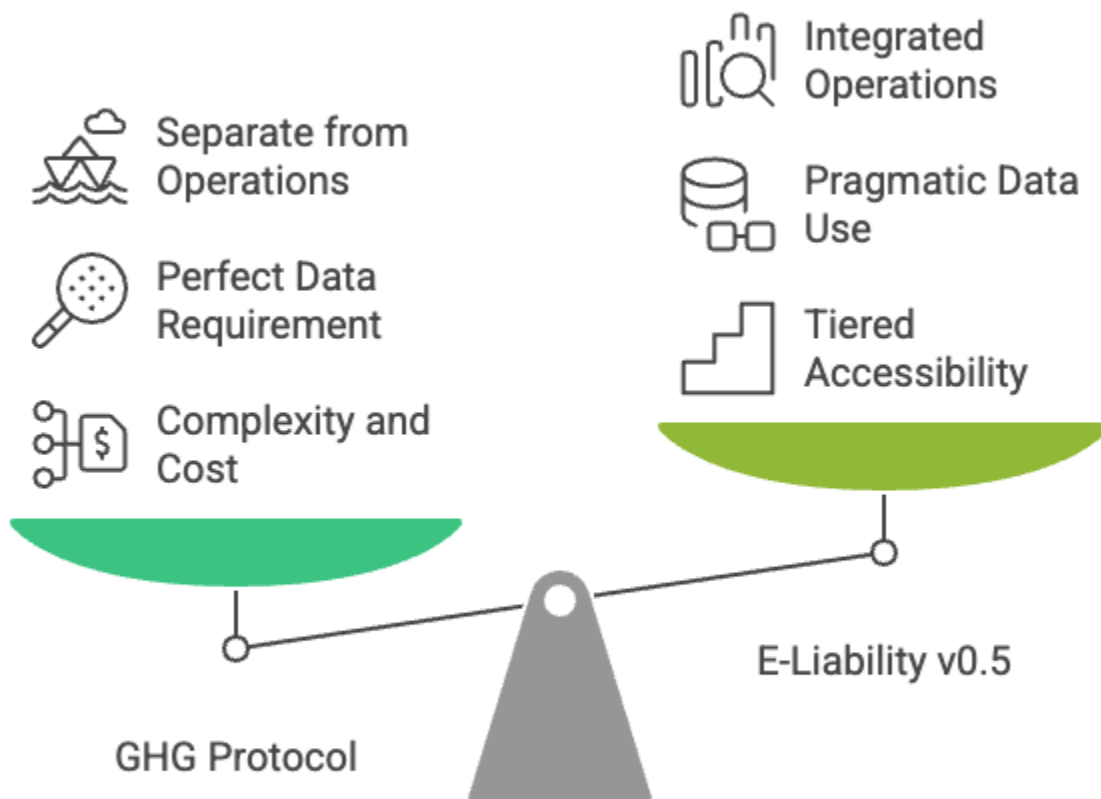
- Strong for corporate reporting frameworks
- Limited network effects for driving supplier improvements
- Individual company implementation often siloed

E-Liability v0.5 Network Dynamics:

- Creates powerful feedback loops as supply chain adoption grows
- Suppliers improve data quality to meet customer demands
- Progressive improvement pathways as network expands
- Focuses resources on highest-impact categories first

Practical Implementation Gaps

The documents highlight several practical implementation challenges that E-Liability v0.5 specifically addresses:



E-Liability v0.5 offers practical solutions for small businesses.

- | | | |
|---|--|---|
| <p>1. Small Business Accessibility</p> <ul style="list-style-type: none"> ○ GHG Protocol: Often too complex and costly for small businesses ○ E-Liability v0.5: Tiered approach allows starting small and growing capabilities | <p>2. Data Quality Pragmatism</p> <ul style="list-style-type: none"> ○ GHG Protocol: Can be stalled by perfect data requirements ○ E-Liability v0.5: "Start with what you have" approach with clear improvement paths | <p>3. Integration w/ Business Operations</p> <ul style="list-style-type: none"> ○ GHG Protocol: Often separate from core business processes ○ E-Liability v0.5: Directly integrates with invoicing, purchasing, and product management |
|---|--|---|

Complementary Potential

The analysis reveals that these systems can be highly complementary:

- GHG Protocol provides the strong foundation and organizational framework
- E-Liability v0.5 extends this to practical product-level implementation
- Together they create a complete corporate-to-product carbon accounting system

The "soft launch" approach described in the documents provides a pathway for adoption that leverages the strengths of both systems while addressing the practical implementation challenges that have limited carbon accounting effectiveness to date.

Key Lever for Change: Data Quality Evolution

A critical insight from the documents is the importance of flexible data quality requirements:

- GHG Protocol's rigid approach can create barriers to entry
- E-Liability v0.5's tiered approach allows starting with available data
- Focus on highest-impact categories (80/20 rule) delivers value more quickly
- Progressive improvement as capabilities grow

This pragmatic approach to data quality may be the key lever for accelerating meaningful carbon accounting and reduction across global supply chains.

Supply Chain RFI Reporting: Data Quality Considerations

When it comes to supply chain reporting for RFCs (Requests for Carbon information), the appropriate data quality grade depends on several factors.

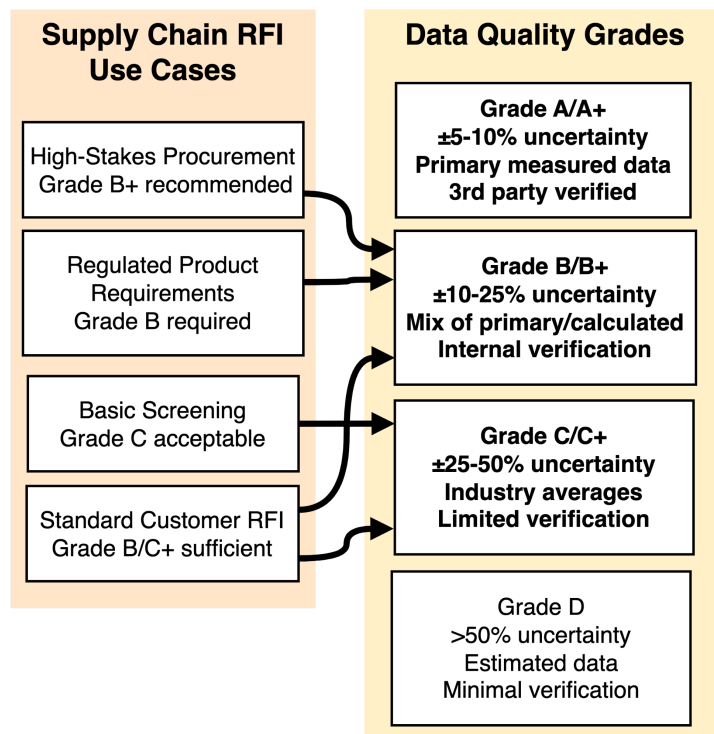
Product Carbon Data Quality Comparison

Different approaches to measuring product carbon footprints offer varying levels of accuracy and effort

Method	Description	Accuracy	Effort	Example
Economic Input/Output	Currency spent per product category multiplied by GHG conversion factor			Based on \$10,000 spent on aluminum materials
Economic I/O with Supplier Data	Reported corporate emissions divided by reported production units plus upstream emissions estimate			Based on supplier's overall emissions divided by total production
Industry Average LCI	Product unit of measurement multiplied by industry average life-cycle inventory			Using industry average of 8.5 kg CO ₂ e per kg of aluminum
LCI with Supplier PCF/EPD	Product unit LCI calculation with allocated suppliers' Product Carbon Footprint (PCF) and Environmental Product Declaration (EPD)			Based on specific supplier's verified EPD for aluminum production
Attested Certificates	Attested product units' life cycle inventory (LCI) across value chain in CarbonSig digital twin registry			Verified product-level data with CarbonSig's digital twin approach

Typical Data Quality Grade for Supply Chain RFIs

Usually Grade B to C+ range ($\pm 15\text{-}30\%$ uncertainty)



Why This Grade Range Makes Sense

For Standard RFIs:

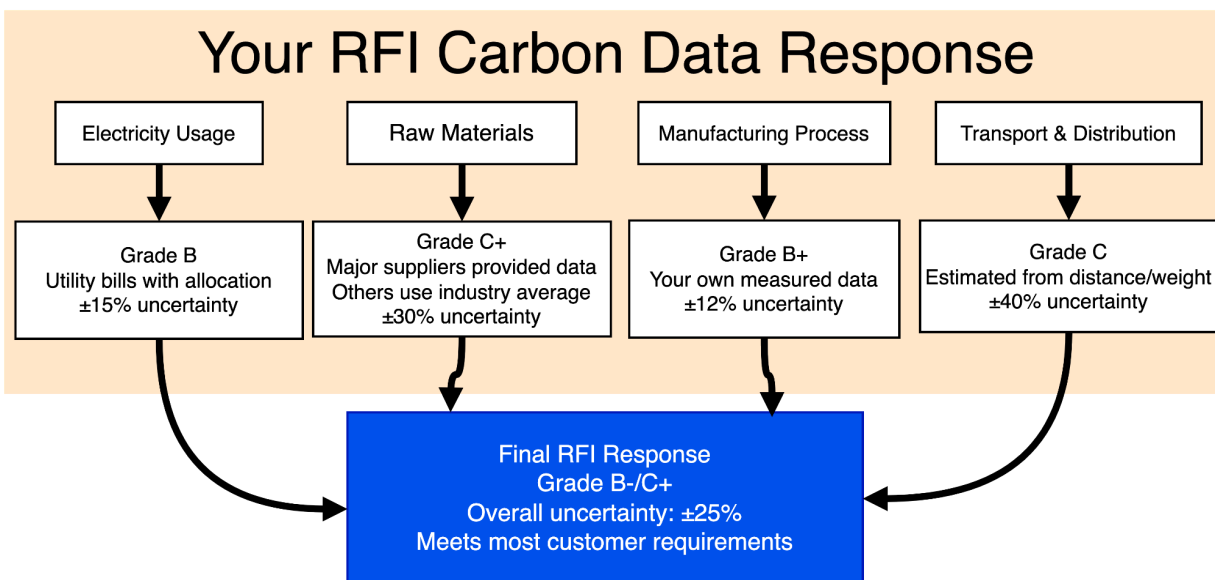
- **Too low (Grade D)** = data too unreliable for meaningful supplier decisions
- **Too high (Grade A)** = excessive burden on suppliers, slows response time, increases costs

Practical Realities:

1. **Supplier Capability:** Most suppliers don't have Grade A data collection systems
2. **Response Time:** Higher grade requirements mean longer response times
3. **Cost-Benefit:** The extra precision rarely justifies the extra cost
4. **Data Availability:** Complete primary data across all supply chain tiers is often unavailable

Real-World Example

Let's say you're a manufacturer responding to a customer's carbon RFI:



Key Considerations for Different Types of RFIs

Grade B Data (Recommended for):

- High-profile customer relationships
- Regulated product information (e.g., EU Digital Product Passport)
- Competitive differentiation on sustainability
- Carbon-intensive product categories

Grade C+ Data (Sufficient for):

- Standard supplier assessments
- Initial customer screening
- Non-regulated reporting
- Low-carbon-impact categories

Practical Tips for RFI Responses

1. **Be transparent about data quality** - Include your confidence levels and data sources
2. **Focus improvement on high-impact areas** - If 80% of emissions come from electricity, get better electricity data first
3. **Use a mix of data grades strategically** - Grade B for major inputs, Grade C for minor ones
4. **Clearly document your methodology** - How you calculated, what assumptions you made
5. **Have an improvement plan** - Show how you'll get better data over time

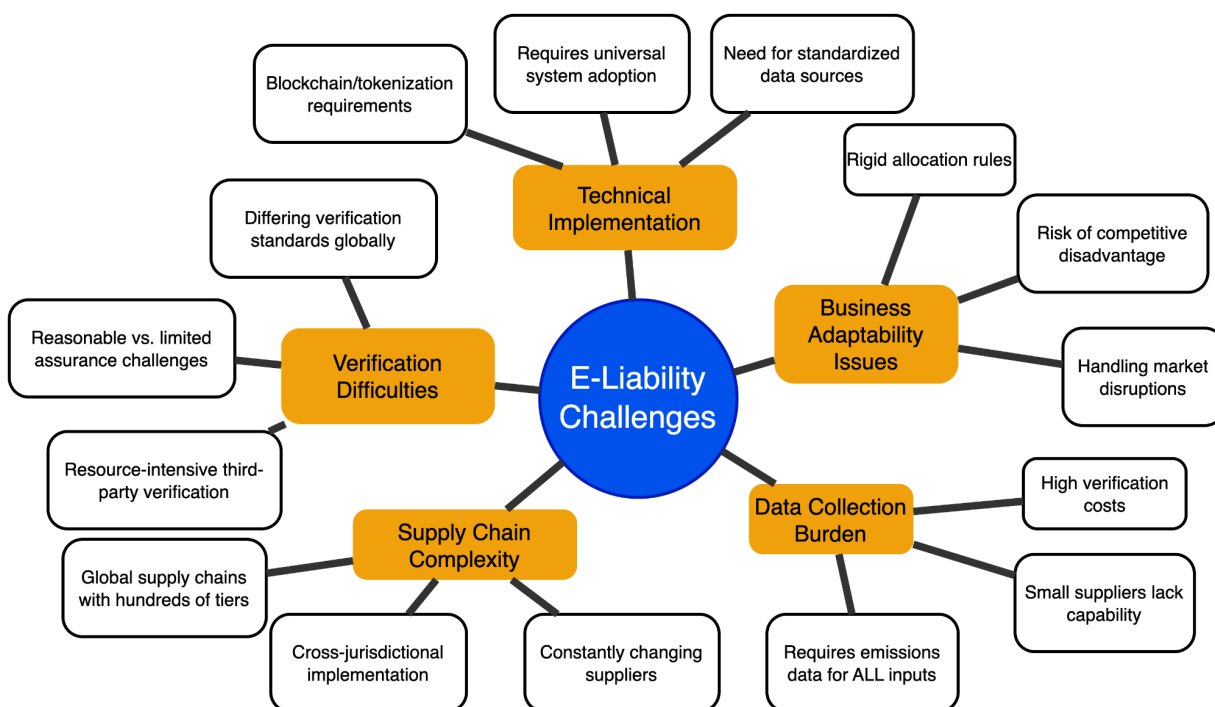
Bottom Line

For most supply chain RFIs, **aim for Grade B where feasible and Grade C+ where necessary**, with a clear understanding of the trade-offs. This approach balances practical business realities with the need for reliable carbon information.

E-Liabilities: Practical Challenges & V 0.5 as an e-liabilities onramp

The full E-liability system as described appears rigid and may face practical implementation challenges. Here are some limitations and thoughts on a more flexible approach that maintains the core benefits called **V 0.5**

Main Limitations of the Rigid E-Liability System



Practical Critiques

1. Universal Adoption Requirements

The system works best when everyone uses it, but achieving this globally is extremely difficult. Different countries have varying climate priorities and regulatory structures.

2. Small Business Burden

Small suppliers often lack the resources to implement sophisticated carbon accounting systems or pay for verification, creating a significant barrier to entry or requiring 3rd parties.

3. Data Quality Gaps

The approach requires very high-quality emissions data that simply doesn't exist in many product categories and geographies today or has high cost/ complexity burden.

4. Verification Costs

The requirement for "reasonableness

standard" verification by qualified third parties would be extremely expensive across entire supply chains.

5. Technical Infrastructure Gap

The blockchain/tokenization system required for true implementation doesn't yet exist at scale.

A More Flexible "Soft E-Liability" Approach V 0.5

Proposed a more practical version might work:

1. Tiered Implementation

Start with what matters most:

- Focus on highest-emission categories (typically 20% inputs create 80% of emissions)
- Begin with direct emissions (equivalent to Scope 1) that you control
- Phase in supplier emissions data over time

Business Benefit: Manageable starting point that still delivers meaningful insights

2. Flexible Data Standards

Accept multiple data quality levels:

- Primary data for critical/high-emission materials
- Industry averages/ EPD for secondary materials
- Simple estimates for minimal contributors under 1%
- Improve data quality over time

Business Benefit: Avoids "perfect is the enemy of good" problem

3. Practical Verification

Implement verification pragmatically:

- Third-party verification for material emissions categories
- Limited assurance instead of reasonable assurance where appropriate
- Industry-wide verification protocols reduce costs

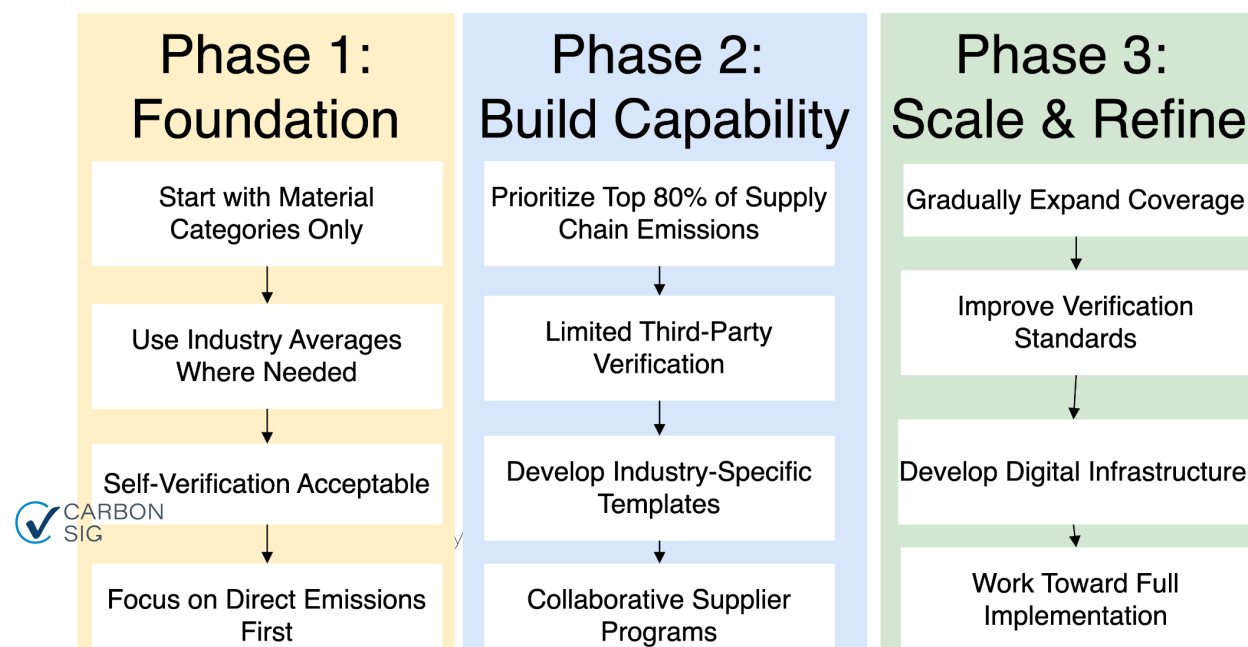
Business Benefit: Dramatically lower costs while maintaining credibility

4. Simplified Allocation Methods

Make allocation workable:

- Use established allocation methods from existing cost accounting
- simplified approaches for complex products
- Industry-specific templates rather than universal rules
- Longer timeframe to smooth balances during transition

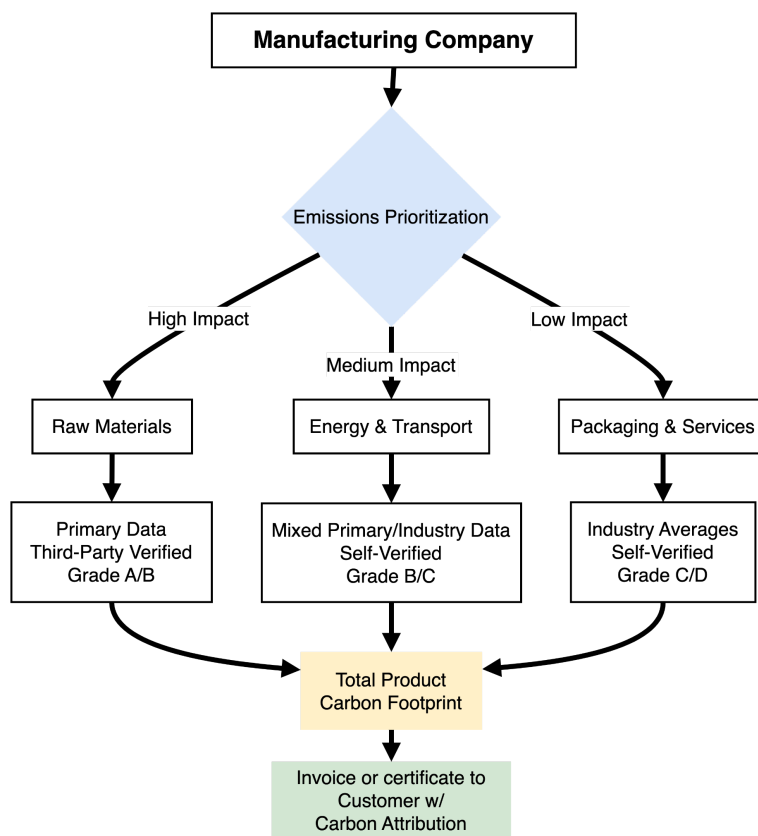
Business Benefit: Uses familiar business processes rather than completely new methods



Real-World Example: How a Soft Approach Works

Imagine a furniture manufacturer with the following approach:

1. **Start with direct emissions** from your factories & operations - accurately measure and track these (equivalent to Grade B)
2. **For major inputs like wood and steel:**
 - Request carbon data from large suppliers (Grade B)
 - Use industry averages for smaller suppliers (Grade C)
 - Implement a supplier engagement program to improve data over time
3. **For minor inputs like glue, hardware, and packaging:**
 - Use industry averages (Grade C/D)
 - Plan to improve only after handling the major categories
4. **Verification strategy:**
 - Self-verify with documented methodology for most items
 - Get third-party verification only for your direct emissions and largest material inputs
 - Implement internal quality checks for consistency
5. **Share with customers:**
 - Include carbon data on invoices with clear data quality indicators
 - Be transparent about limitations and improvement plans



Benefits of the Softer Approach

1. **Achievable implementation** that doesn't require perfect data from day one
2. **Scalable costs** that align with business value
3. **Gradual improvement** path that builds capability over time
4. **Works within current capabilities** of your supply chain
5. **Provides actionable insights** even without perfect data

Bottom Line

The E-liability approach offers a powerful conceptual framework, but a more flexible implementation is needed for practical business adoption. By focusing on material emissions, accepting varied data quality, implementing reasonable verification, and using familiar allocation methods, companies can start implementing a "soft E-liability" approach today while building toward more comprehensive implementation over time.

Carbon Accounting: E-Liabilities 0.5 Adoption Strategy

Executive Summary: E-Liabilities 0.5 as a GHG Protocol Enhancement

E-Liabilities 0.5 offers a practical, complementary approach to the GHG Protocol that addresses product-level and supply chain carbon accounting challenges while maintaining the Protocol's core strengths.

Key Benefits of E-Liabilities 0.5

For GHG Protocol Organization

- ✓ Expands relevance to product-level accounting
- ✓ Builds on existing GHG Protocol framework
- ✓ Leverages current network of practitioners
- ✓ Maintains leadership position in carbon accounting

For Businesses & Supply Chains

- ✓ Practical implementation path with tiered approach
- ✓ Flexible data quality standards reduce barriers
- ✓ Better alignment with existing business transactions
- ✓ Progressive improvement over time

GHG Protocol's Current Strengths & Challenges

Strengths:

- Global recognition as the "GAAP of carbon accounting"
- Strong corporate-level emissions framework
- Clear scope boundaries (1, 2, 3)

Challenges:

- Product-level accounting across supply chains
- Complex data collection requirements
- Potential double-counting issues

Why E-Liabilities 0.5 Makes Sense as a Complementary Approach

Selling Points for GHG Protocol Group: The Complementary Approach

1. E-Liabilities 0.5 Enhances, Not Replaces

"We love what GHG Protocol has built. E-Liabilities 0.5 builds on this foundation by adding a practical, transaction-based layer that helps businesses implement your standards at the product level."

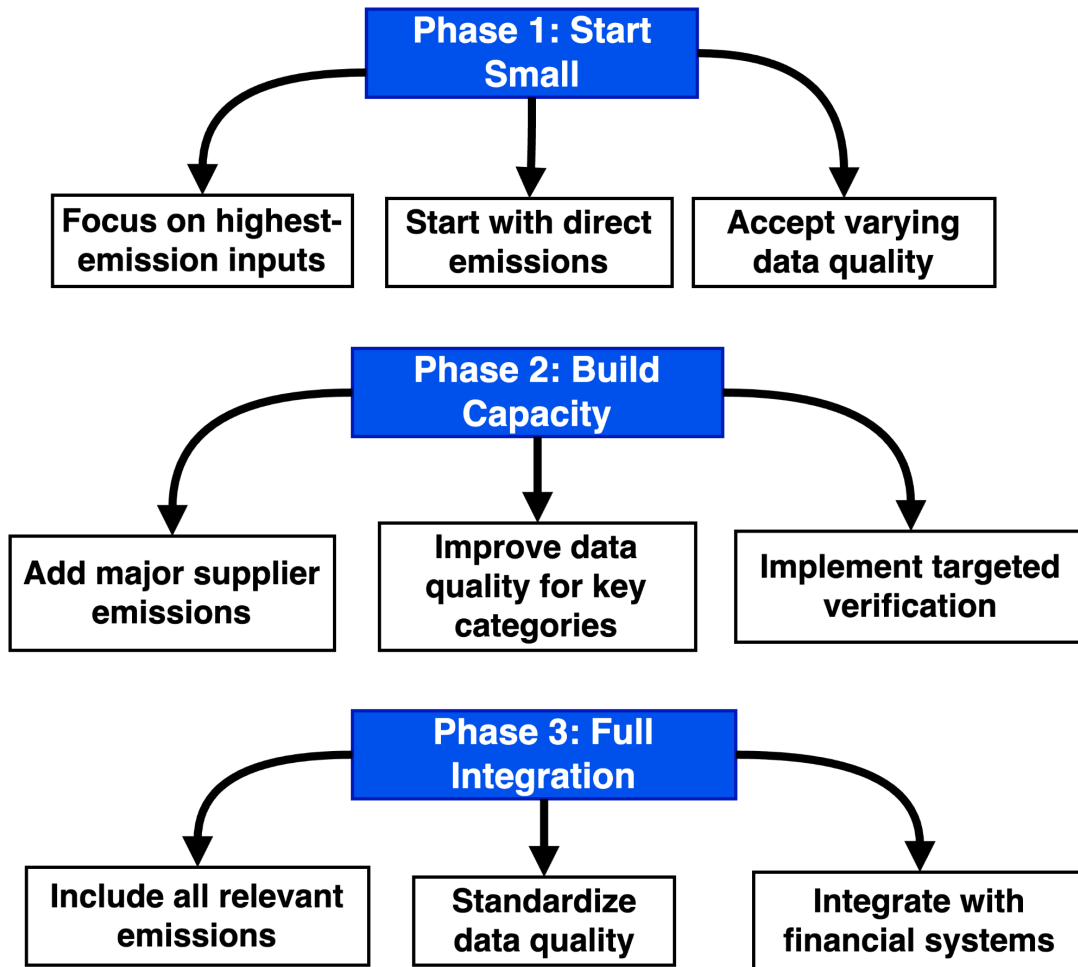
2. Addresses Known Pain Points

"Your corporate-level framework is excellent, but we've heard from your users that product-level tracking and supply chain implementation remains challenging. E-Liabilities 0.5 directly addresses these pain points."

3. Expands Market Reach

"By incorporating E-Liabilities 0.5, GHG Protocol extends its relevance to product-specific use cases and supply chain transactions, expanding your impact and user base."

Practical Implementation Strategy



The "Soft Launch" Approach

1. Begin with a pilot program:

- Select 3-5 industries with strong GHG Protocol adoption
- Develop industry-specific guides for E-Liabilities 0.5 implementation
- Start with high-impact categories (80/20 rule)

2. Create transition tools:

- Develop templates showing how current GHG Protocol data translates to E-Liabilities
- Provide data quality flexibility with improvement pathways
- Build on existing verification mechanisms

3. Target early adopters:

- Companies already succeeding with GHG Protocol

- Forward-thinking industry leaders
- Supply chains with strong sustainability commitments



Network Effects & Data Quality Evolution

E-Liabilities 0.5 creates powerful network effects that accelerate adoption:

Key Talking Points for Discussions with GHG Protocol

1. Mission Alignment

"Your mission to create practical, standardized carbon accounting aligns perfectly with E-Liabilities 0.5. This approach helps more businesses implement your standards effectively at the product level."

2. Response to User Feedback

"We've heard from your users that while corporate-level accounting works well, product-specific implementation remains challenging. E-Liabilities 0.5 directly addresses these pain points."

3. Preserves Your Leadership Position

"By incorporating E-Liabilities 0.5 as a complementary approach, GHG Protocol maintains and extends its leadership position in carbon accounting, particularly for product-level applications."

4. Practical Implementation Path

"The flexible, tiered implementation approach means businesses can start using E-Liabilities 0.5 today with available data, improving quality over time - which accelerates adoption of GHG Protocol principles."

Addressing Potential Concerns

Concern: "This might confuse our users"

E-Liabilities 0.5 uses the same fundamental concepts as GHG Protocol but extends them to product-level transactions. We'll create clear guidance showing how they work together, positioning E-Liabilities as an implementation approach for product-level accounting.

Concern: "Data quality requirements are too flexible"

The flexible approach acknowledges current data limitations while creating clear improvement pathways. Starting with available data and improving over time will drive faster adoption than waiting for perfect data, ultimately leading to better emissions management.

Concern: "This might undermine our standards"

E-Liabilities 0.5 reinforces GHG Protocol's importance by making it more practical to implement at the product level. It addresses known gaps while maintaining your core principles and framework. We'll position it as "GHG Protocol at the product level" rather than a competing standard.

Concern: "Our stakeholders might resist change"

The phased implementation approach means stakeholders can adopt gradually, starting with what matters most. We'll create case studies showing how E-Liabilities 0.5 helps solve real implementation challenges while maintaining compatibility with existing GHG Protocol reporting.

Action Plan: From Concept to Implementation

1. Initial Presentation & Discussion

- Present E-Liabilities 0.5 as a complementary implementation approach
- Focus on how it extends GHG Protocol's impact, not replaces it
- Highlight case studies where product-level accounting has been challenging

2. Co-Development Phase

- Form joint working group with GHG Protocol representatives
- Identify 2-3 priority industries for pilot implementation
- Develop industry-specific guidance documents

3. Pilot Program

- Select companies already succeeding with GHG Protocol
- Implement E-Liabilities 0.5 for selected product categories
- Document implementation challenges and solutions

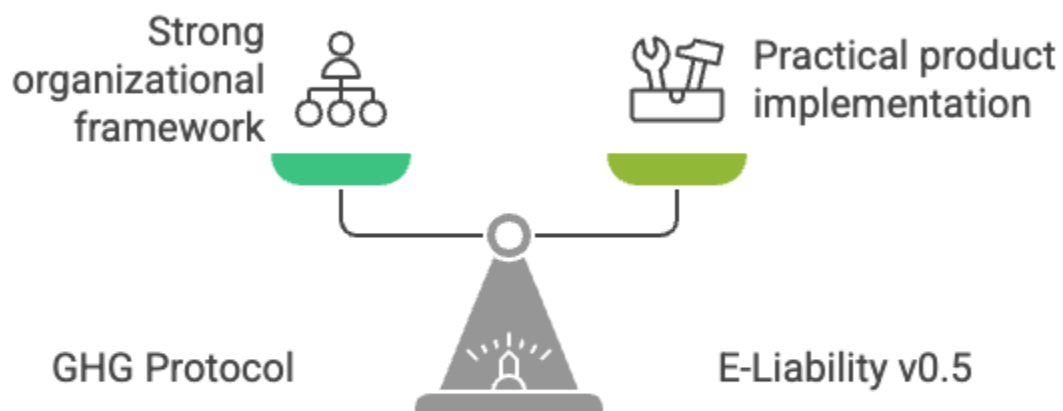
4. Feedback & Refinement

- Gather feedback from pilot companies
- Refine approach based on real-world implementation
- Develop comprehensive guidance materials

5. Formal Integration

- Position as "GHG Protocol Product-Level Implementation Guide"
- Create transition tools connecting corporate and product accounting
- Develop training for existing GHG Protocol practitioners

Conclusion: Win-Win Proposition



Balancing Framework and Implementation in Carbon Accounting

E-Liabilities 0.5 represents a pragmatic evolution of carbon accounting that builds on GHG Protocol's strengths while addressing its known challenges. By adopting this complementary approach, GHG Protocol can:

1. Extend its relevance to product-level accounting
2. Address practical implementation challenges
3. Accelerate meaningful carbon reductions
4. Maintain its leadership position in carbon accounting

The flexible, phased implementation approach means businesses can start today with available data, creating a pathway to improved quality over time and driving network effects that benefit the entire system.

Would you like me to expand on any specific aspect of this strategy?

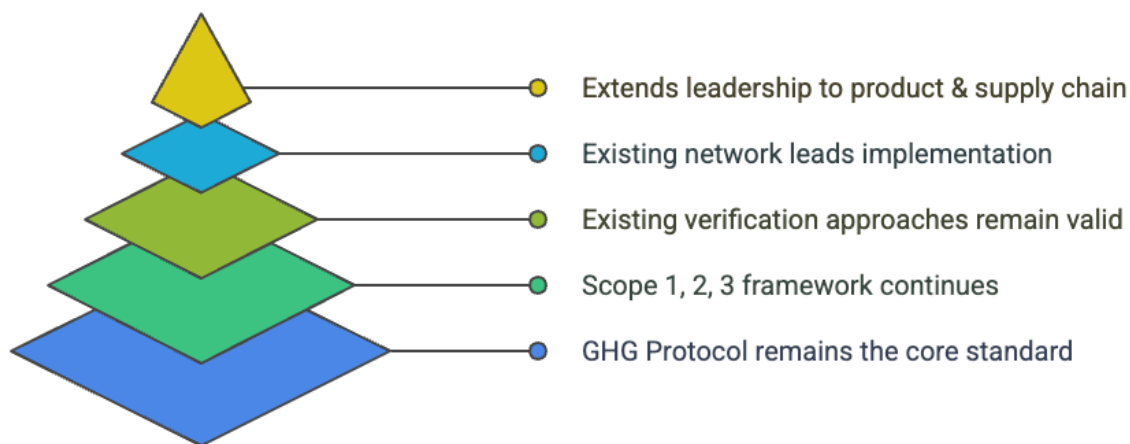
E-Liabilities v 0.5 Complements GHG Protocol

GHG Protocol's Mission Expansion Opportunity

GHG Protocol is the standard for corporate carbon accounting. Now, there's an opportunity to extend that leadership to product-level & supply chain accounting w/ E-Liabilities 0.5.

A Complementary Value Proposition

E-Liabilities 0.5 Integration



What E-Liabilities 0.5 adds:

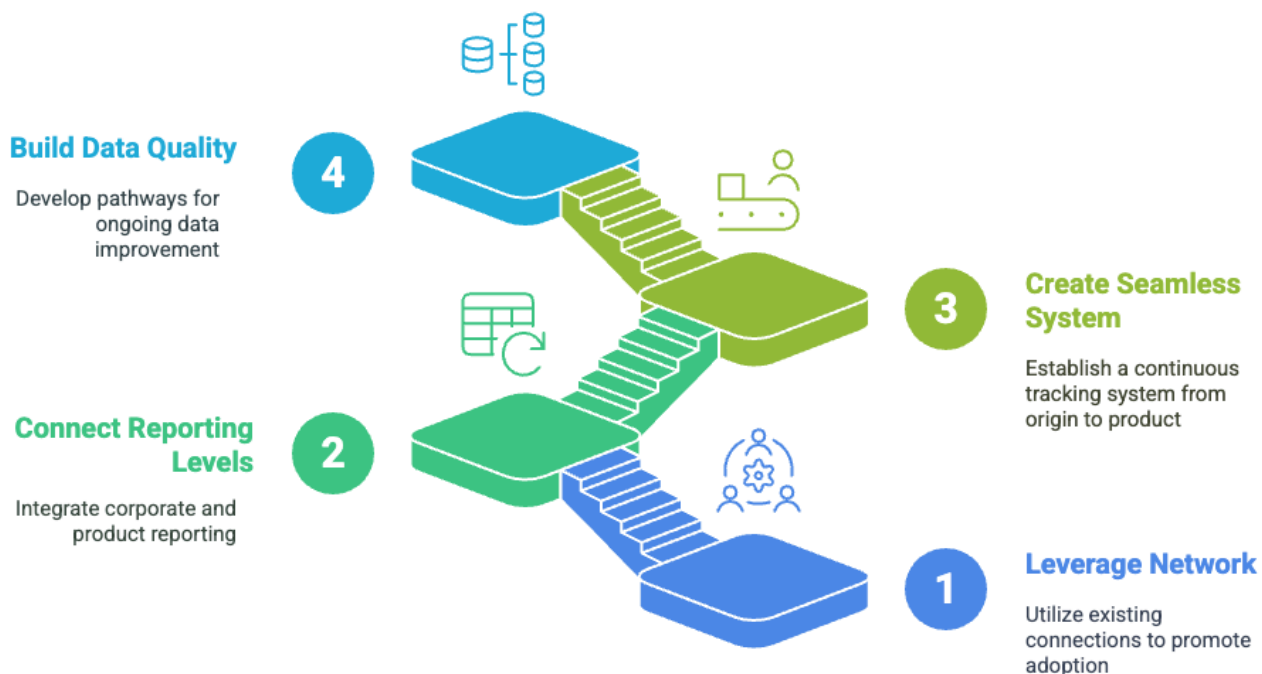
- Transaction-based carbon accounting follows business flows
- Product-level carbon tracking through entire supply chains
- Practical implementation paths for businesses of all sizes
- Flexible data quality framework that improves over time

What stays the same:

- GHG Protocol remains the foundational standard
- Scope 1, 2, 3 framework continues as organizing principle
- Your verification approaches and methods remain valid
- Your existing network of practitioners leads implementation

Network Effect Opportunity

Achieving Comprehensive Reporting



By incorporating E-Liabilities 0.5, GHG Protocol can:

1. Leverage your existing network of practitioners to drive adoption
2. Connect corporate-level reporting with product-level tracking
3. Create a seamless system from farm/mine to finished product
4. Build data quality improvement pathways over time

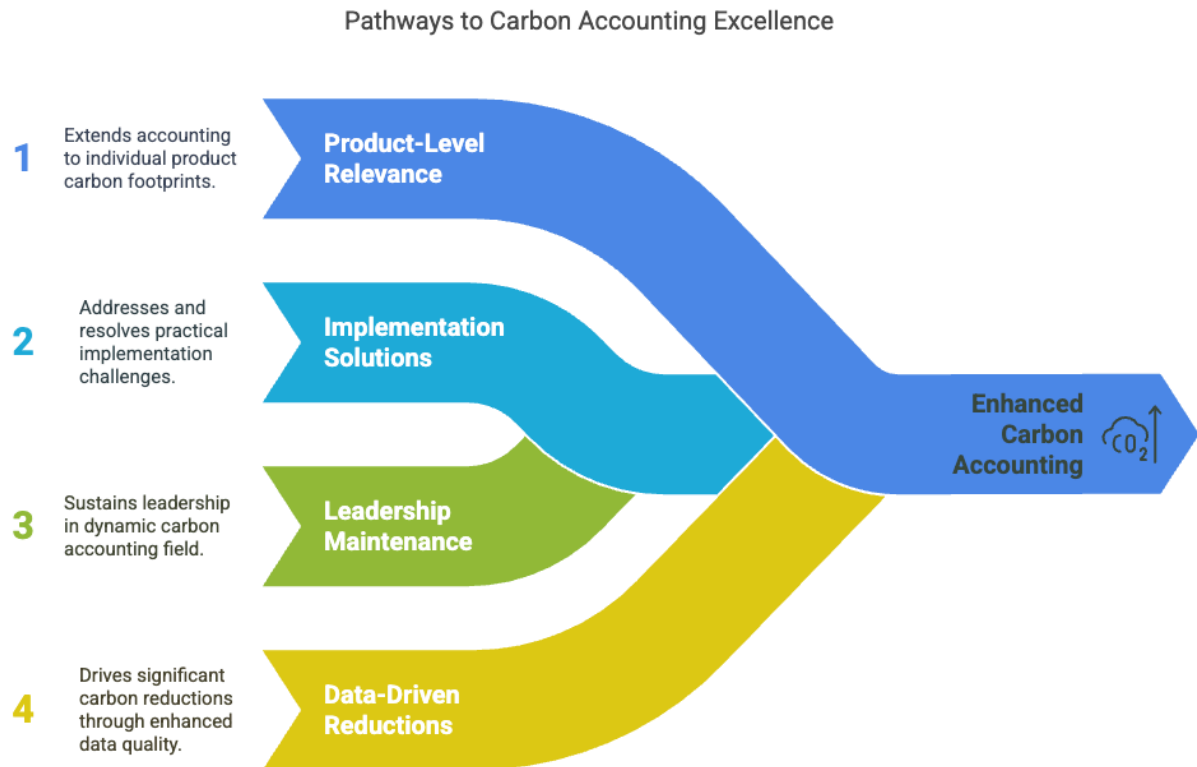
Real-World Benefits

For businesses:



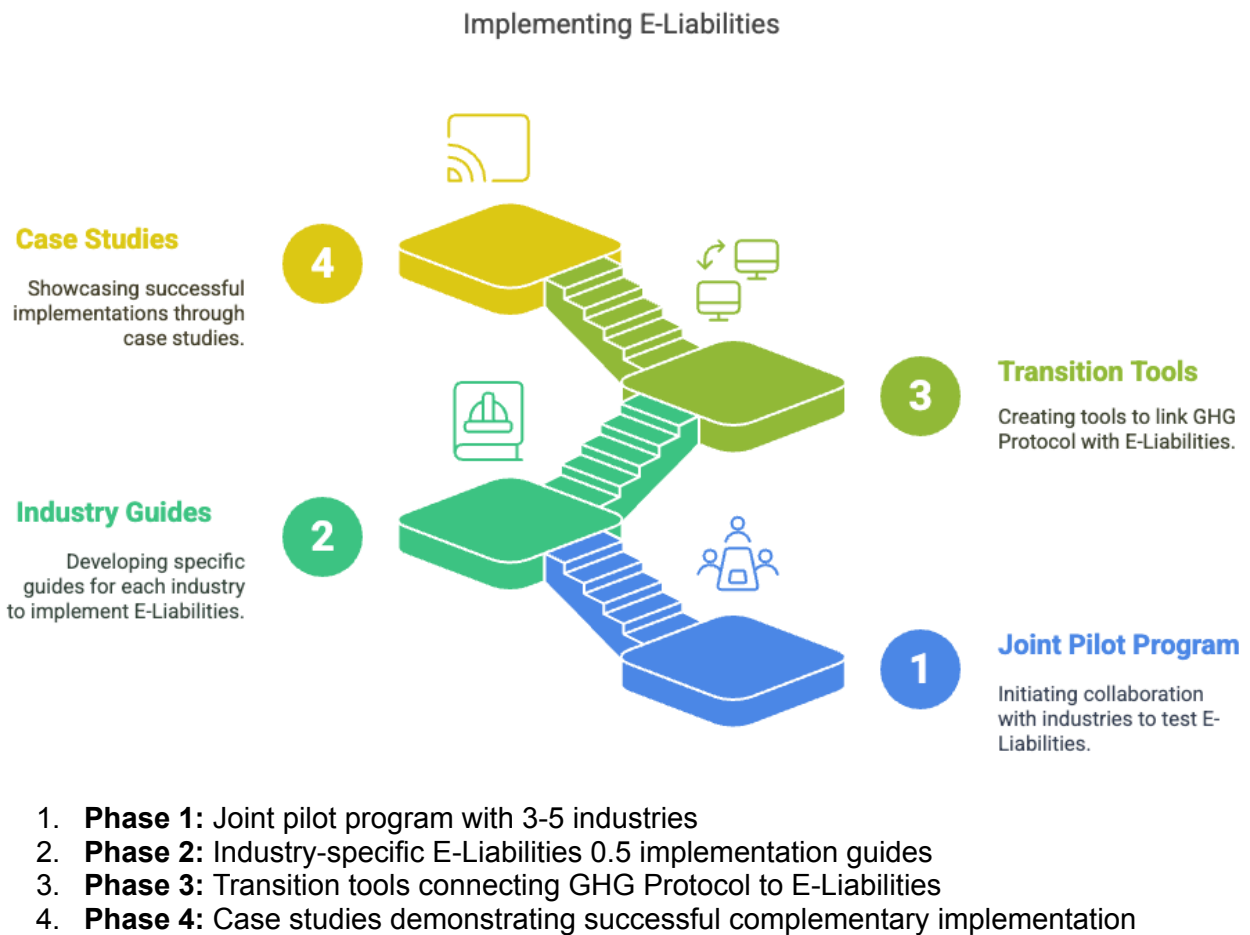
- Simple implementation path start w/ what matters most
- Clear allocation of carbon liabilities through supply chains
- Practical data quality standards for today
- Progressive improvement v "perfect or nothing"

For GHG Protocol:



- Extended relevance to product-level accounting
- Solution to known implementation challenges
- Maintains leadership position in evolving carbon accounting landscape
- Accelerates meaningful carbon reductions through better data

Moving Forward



"E-Liabilities 0.5 doesn't replace GHG Protocol - it helps your users implement it more effectively at the product level, extending your impact and leadership."

Comments or suggestions:

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