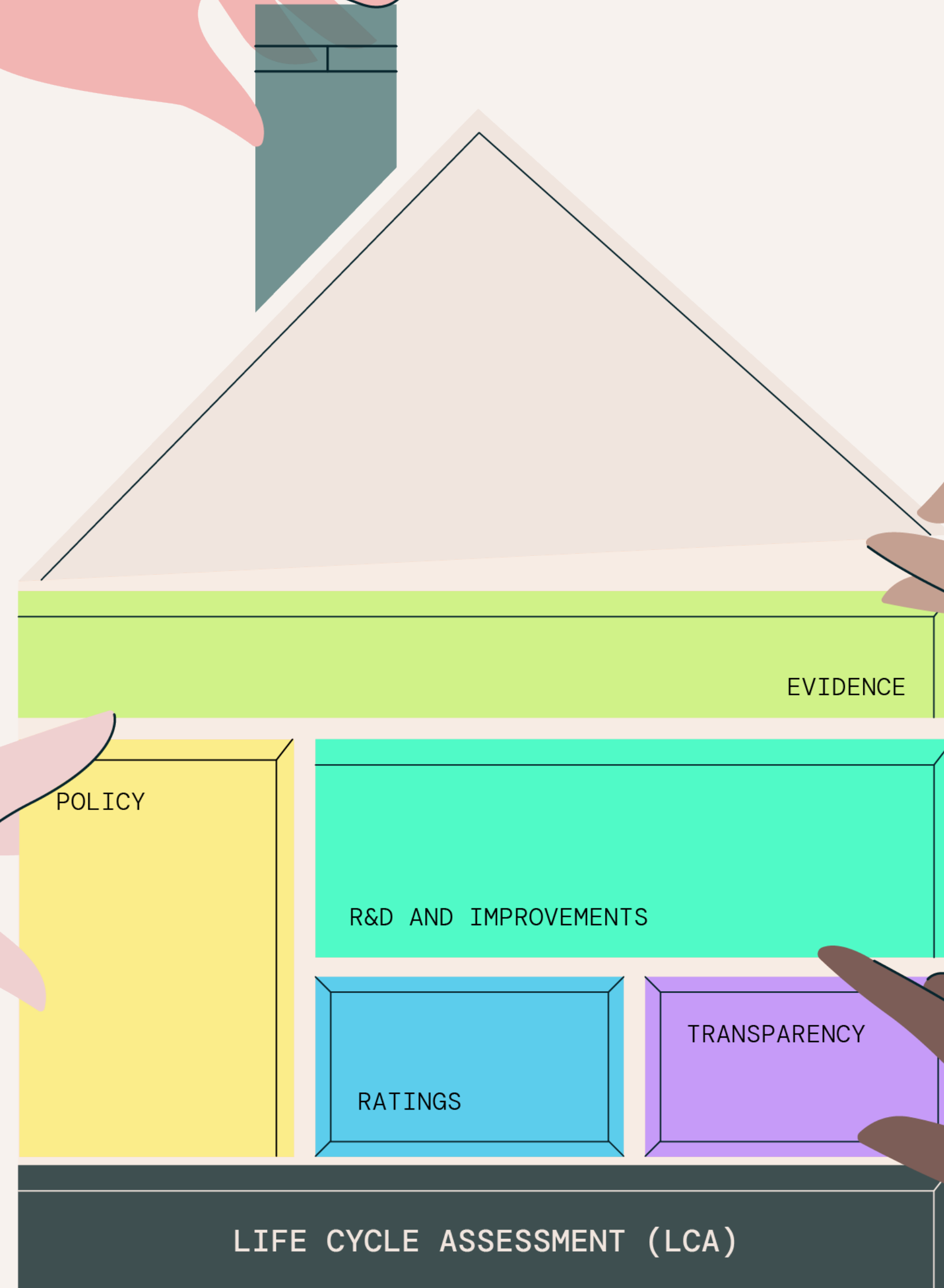


edge impact™

Life Cycle Assessment: The Pillar of Proof

How credible data, verified claims and life cycle intelligence is redefining sustainability leadership.



Executive Summary

Life Cycle Assessment (LCA) has evolved from a niche technical exercise into a strategic tool for business performance. Today, it underpins credible sustainability claims, strengthens market differentiation, and supports the shift from ambition to action.

LCA remains the gold standard because it measures environmental impact across the full cradle-to-grave lifecycle including climate, water, nature, toxicity, resource depletion and circularity. This provides a single, defensible foundation for reporting, product innovation, procurement, and marketing.

Most organisations already hold the data needed to unlock these insights. LCA brings it together, verifies it, and translates it into intelligence that drives clearer decisions, stronger claims, and faster progress across multiple frameworks and markets.



This whitepaper explores how leading organisations use LCA to:

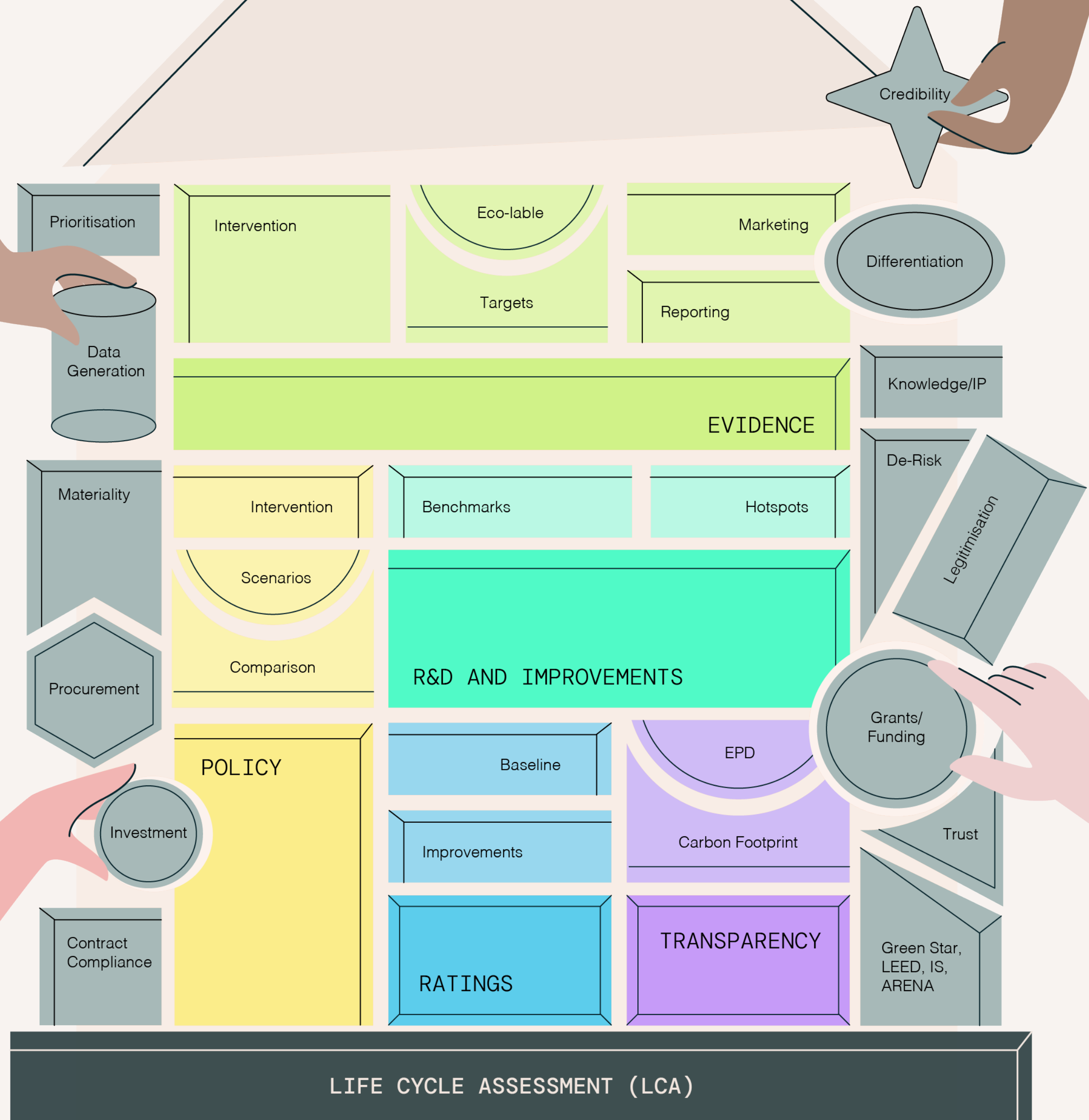
- streamline reporting and reduce duplication
- strengthen competitive positioning and tender performance
- accelerate product and sustainability strategy
- reduce exposure to greenwashing and regulatory risk

It outlines a practical, portfolio-wide approach to building an integrated LCA capability and includes a self-assessment to help organisations identify when and how to implement LCA most effectively.

LCA: Essential for Today's Business

By 2026, Australia's mandatory climate disclosure and intensifying greenwashing enforcement will make partial or single-issue sustainability approaches untenable.

Organisations that build LCA capability now will avoid rework, win tenders, and lead their industry as environmental data becomes currency across value chains.



Regulation vs Reputation

Three converging forces are making LCA the strategic foundation for business success.

1.

Mandatory disclosure

Today's focus is on carbon, but upcoming regulations are extending to nature and broader environmental and social impacts. Frameworks such as ASRS 2, TNFD and emerging due-diligence laws require auditable data across climate, nature and supply chains. LCA provides that data, enabling credible, multi-impact reporting within a single framework.

2.

Greenwash enforcement

Regulators such as the ACCC and ASIC are increasingly requiring substantiated environmental claims and responding to breaches with legal action and significant fines. LCA is the only recognised methodology that provides ISO-verified, cradle-to-grave evidence.

CASE STUDY

ECORR: Leading Circular Construction in NSW

ECORR worked with Edge to develop cradle-to-gate LCAs and three verified EPDs for recycled aggregates, bedding sand, and road base - a first in NSW for concrete-based recycled materials. This transparency helps ECORR's customers meet the IS Rating Tool and Green Building Council of Australia's Green Star requirements while making credible, circular procurement decisions.

3.

Scope 3 and value-chain visibility

Customer scrutiny around sustainability is intensifying. LCA delivers accurate product-level data your stakeholders can use in their own reporting, replacing estimates with accurate metrics.

Edge's Integrated LCA Approach

Traditional LCA services answer discrete questions like 'What's the footprint of this product?' and 'How does this material compare to that one?' Each question becomes a separate project. When the next question arises, you start largely from scratch.

With Edge's integrated approach we build the LCA foundation once, then extract ongoing strategic value across Scope 3, claims verification, EPD readiness, nature reporting preparation, and portfolio strategy. One dataset with multiple applications.

CASE STUDY

Holcim: On-Demand EPDs for Concrete

Holcim Australia partnered with Edge to build a custom LCA-based calculator that generates project-specific EPDs for any ready-mix concrete mix, using real-time mix inputs and regional manufacturing data.

With this tool, Holcim can now deliver verified environmental declarations on demand, giving specifiers and builders accurate, mix-specific impact data for design, procurement and reporting.

Here's how it works:

CHALLENGE	TRADITIONAL APPROACH	EDGE APPROACH
Fragmented ESG data	Separate assessments	Unified life cycle database powering all reporting frameworks
Greenwash risk	Unverified claims, cherry-picked data	Best practice data and claims substantiation guided by ISO standards
Repeated rework	One-off studies per product and purpose (e.g., GHG, waste, circular economy, nature, supply chain risk)	Reusable portfolio-wide foundation feeding disclosure, design and tender bids
Lack of decision clarity	Raw impact tables	One integrated Ecopoint score covering environmental and social impacts, delivering clarity for fast executive decisions

Edge **Ecopoints**

Edge developed Ecopoints, a normalisation and weighting methodology that converts multi-category LCA results into a single environmental performance score.

This means we can:

- Normalise impacts to planetary boundaries
- Apply business-specific weightings (e.g. 40% climate, 30% resources, 15% water, 10% biodiversity, 5% other)
- Produce a single environmental metric while retaining transparency behind the score

Which allows:

- Executives to track performance like a financial indicator
- Procurement to compare suppliers on a common scale
- R&D to prioritise redesigns that truly move the needle
- Marketing to communicate evidence-based superiority



Why LCA's are **worth their weight** in goals

Avoid shifting problems elsewhere

Focusing on a single impact, such as carbon, can inadvertently worsen others like water or toxicity. LCA captures all trade-offs across climate, water, resource use, and biodiversity, allowing organisations to prioritise actions that truly make a difference.

By revealing where effort delivers the biggest wins, LCA shows that supply chain interventions, product reformulation, and end-of-life strategies can reduce impacts by 40–60%, while operational improvements rarely exceed 10–15%.

EXAMPLE

Unilever partnered with Stanford researchers to assess bio-based HDPE using a more advanced LCA that accounted for land-use change. While the bio-based option reduced greenhouse gas emissions, the analysis showed higher impacts on soil health, water quality and biodiversity. This broader view avoided a climate-only decision and led to more informed material choices.

Source: Vira, B., et al. (2021), "LUCI-LCA: Integrating spatially explicit land-use change in LCA," Stanford Natural Capital Project.

CASE STUDY

Medibank Healthcare Services

Healthcare contributes over 5% of Australia's greenhouse gas emissions, from patient travel to surgical materials. Medibank partnered with Edge to quantify the environmental impact of different care models using LCA.

The analysis revealed that travel, energy use, and waste were the true hotspots. By exploring virtual care models, Medibank identified a clear path to reduce emissions and waste while continuing to deliver positive outcomes for patients.

Focus resources where they matter most

Hotspot analysis identifies which stages, materials or suppliers are driving your footprint.

This allows you to:

- Prioritise top-impact suppliers for engagement
- Target R&D where it delivers maximum reduction
- Avoid equal effort on small '2%' problems

WHY LCA'S ARE WORTH THEIR WEIGHT IN GOALS

Meet disclosure and assurance expectations

Mandatory disclosure frameworks increasingly demand quantifiable, verifiable environmental data.

LCA provides the robust, cradle-to-grave evidence needed to comply with reporting standards such as ISSB, ASRS, GHG Protocol, CDP and GRI, and to underpin credible SBTi-aligned targets. It also supports emerging nature-related disclosures (e.g. TNFD) and provides a solid foundation for third-party assurance of environmental claims.

Edge ensures audit-ready traceability through structured data systems, material-specific models, and transparent verification.



Applying LCA

Across Business Functions

Every team has its own definition of value, LCA connects them. Applied across functions, LCA becomes the common language linking proof and performance.

BUSINESS FUNCTION	Executive Leadership	Research & Development	Procurement	Marketing	Disclosure & Reporting	Sales
HOW LCA HELPS	Single index score for decision-making	Material selection guidance	Supplier comparison metrics	Verified sustainability claims	Audit-ready data, multiple impacts	Customer data requests
BENEFITS	Faster strategic decisions	Reduction in development time	Improvement in supply chain impacts	Price premium capability	Zero findings on sustainability data, future proofed for beyond carbon	Higher win rate on sustainability tenders

Your Practical Pathway Forward

HIGH URGENCY ACT IN NEXT 3-6 MONTHS IF:

- ✓ You're building or expanding mandatory disclosure systems (structure for product-level extension now vs rework later)
- ✓ You have tender opportunities requiring EPDs in next 12 months
- ✓ You're making environmental claims without robust substantiation (ACCC/legal risk)
- ✓ You're planning Science Based Targets (LCA foundation makes Scope 3 achievable)
- ✓ You're in sectors where nature reporting will become mandatory (build multi-impact foundation before deadline)

MEDIUM URGENCY CONSIDER IN NEXT 6-12 MONTHS IF:

- ✓ You've completed carbon footprinting but stakeholders are asking for product-level data
- ✓ Your competitors have EPDs and you don't (losing competitive positioning)
- ✓ You're pursuing a circular economy strategy (need material flow and recyclability data)
- ✓ Your R&D team is making material/process decisions without environmental intelligence
- ✓ You have multiple sustainability initiatives that are not properly integrated across the business



SELF-ASSESSMENT: When Do You Need LCA?

LOW URGENCY BUT STRATEGICALLY VALUABLE:

- ✓ You want first-mover advantage before requirements become mandatory
- ✓ You're looking to differentiate on environmental performance credibly
- ✓ You want strategic intelligence on portfolio environmental profile



Three Steps to Strategic Life Cycle Assessment Implementation

Step 1: Assess Current State Month 1

Inventory existing data:

- Carbon footprints (corporate or product level)
- Energy audits
- Water assessments and waste audits
- Supplier sustainability data and modern slavery assessments
- Disclosure reports and materiality assessments
- Circular economy baseline data

Identify priorities:

- Upcoming regulatory requirements, including climate and nature disclosures
- Customer data requests
- Competitive pressures
- Innovation opportunities in circular design
- Risk areas including greenwashing and human rights

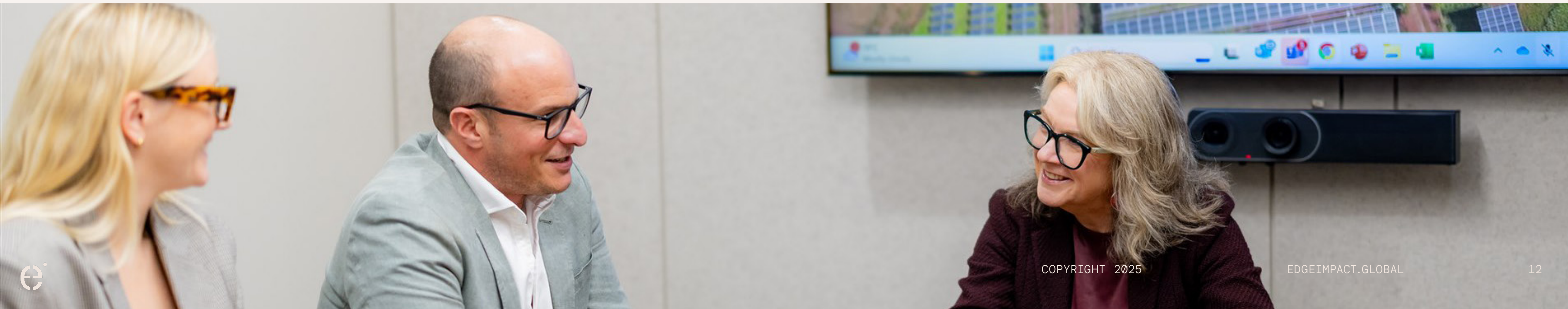
Step 2: Pilot and Extend Months 2 to 6

Choose pilot scope:

- Start with highest-value product or biggest-impact service
- Use existing carbon data as foundation
- Add impact categories aligned with priorities
- Integrate Material Flow Analysis for circular opportunities
- Develop normalisation and weighting for your context
- Connect to transition planning and nature-positive strategies

Build capability:

- Train internal teams on life cycle assessment fundamentals
- Partner with experts for technical rigour and methodology assurance
- Invest in appropriate software platform with digital integration
- Create templates for future assessments
- Begin with high-level screening for quick insights, then progress to detailed assessments
- Establish claims substantiation protocols



Step 3: Scale Strategically Months 6 to 12

Expand coverage:

- Extend to product portfolio systematically
- Integrate life cycle assessment into stage-gate processes
- Build supplier engagement programs addressing both environmental and social impacts
- Develop customer communication tools and collateral
- Connect to circular economy metrics and packaging strategy
- Enable nature-positive lifecycle impact assessment

Embed in decisions:

- Include life cycle assessment metrics in business cases
- Set targets based on hotspot analysis
- Track progress using consistent methodology
- Report performance with confidence across all frameworks
- Integrate with scenario analysis for strategic planning



SERVICE-LINE INTEGRATION CHECKLISTS

For Product Development Teams:

- Define environmental criteria for new products
- Integrate life cycle assessment at concept stage
- Use hotspot analysis to guide innovation
- Track improvements versus baselines
- Validate claims before launch

For Disclosure & Reporting Teams:

- Map life cycle assessment data to disclosure frameworks
- Establish data governance processes
- Build audit trails from source to report
- Create consistent narratives across channels
- Prepare for expanding requirements

For Circular Economy Initiatives:

- Identify material flows through life cycle assessment
- Quantify circularity improvements
- Validate end-of-life assumptions
- Compare linear versus circular models
- Track progress using consistent metrics

You're already halfway there

If you've conducted mandatory reporting, carbon footprinting, energy audits, water, waste or modern slavery assessments, you already possess much of the data needed for LCA.

Edge integrates these sources, fills the gaps, and builds a scalable database that supports:

- Multi-impact life cycle assessment
- EPD development
- Circular economy strategy
- Scope 3 and nature disclosures
- Verified product claims
- Customer-facing intelligence
- Reduction in future assessment costs
- Faster tender response times



Source: Holcim's Ready-Mix Concrete Environmental Product Declaration

Book Your Strategic Consultation

Book a 30-minute executive briefing with Edge's
LCA specialists to:

- Review your current sustainability initiatives
- Identify integration opportunities
- Estimate efficiency gains and return on investment
- Develop initial roadmap



CONTACT

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About **Edge**

Edge is the leading Asia-Pacific sustainability consultancy specialising in life cycle assessment, environmental product declarations, circular economy strategy, and climate disclosure.

Our Difference

- **Dual expertise:** Technical rigour meets strategic commercial insight
- **Technology:** A diverse toolset spanning all major LCA and sustainability platforms, complemented by innovative partnerships and bespoke in-house solutions
- **Industry depth:** Deep expertise across construction, retail, manufacturing, agriculture
- **Asia-Pacific focus:** Understanding regional markets, regulations, and opportunities
- **Outcome orientation:** From assessment to action to advantage

Our Team

- Over 70+ sustainability professionals across Asia-Pacific and Latin America
- Life cycle assessment practitioners certified to ISO 14040 standards
- Industry specialists in construction, retail, circular economy
- Former executives who understand commercial realities

Our Track Record

- 200+ life cycle assessments completed across industries
- 50+ Environmental Product Declarations published and verified
- First Science Based Targets initiative validations in multiple sectors

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