Deep Innovation: An Innovation Feasibility Assessment & Launch Roadmap Dossier

Product Vision & Value Proposition

The future of hydration is clean. EcoDissolve offers the world’s first truly guilt-free single-use water bottle, blending industrial design elegance with radical ecological responsibility.

This innovation turns a necessary consumable item (water bottles) from a long-term environmental liability into an earth-friendly choice, promoting a seamless circular economy.

Unique Selling Points:

• Plant-Based Polymers: Made entirely from renewable resources, minimizing reliance on petrochemicals.

• Rapid Decomposition: Decomposes naturally into harmless organic matter within weeks (faster than typical compostable plastics) when discarded.

• Premium Design & Durability: Maintained structural integrity suitable for transportation and daily use, matching conventional PET bottle convenience.

• Guilt-Free Convenience: Provides consumers and businesses with a transparent, verifiable sustainable option.

Consumer & Market Impact

Three Primary Personas and Pain Points:

1. The Conscious Consumer (A): Pain Point: Guilt associated with the environmental impact of single-use convenience. Solution: A product that aligns ethics with necessity.

1. The Event Organizer (B): Pain Point: Massive waste management costs and reputational damage from large event plastic footprints. Solution: Eliminating the long-term waste stream at the source.

1. The Remote Logistics Operator (C — Non-Obvious): Pain Point: Supplying goods to areas with non-existent waste infrastructure. Solution: Bottles naturally degrading, preventing local pollution where removal is impossible.

Inspirational Testimonial Quotes:

“Finally, a single-use product I can feel genuinely good about buying. This shifts the entire game.” (Conscious Consumer)

“Running a large marathon generates mountains of trash. EcoDissolve makes our events vastly more sustainable, almost instantly.” (Event Organizer)

“In environments where waste collection is non-existent, knowing the bottle will simply return to nature is critical for our mission.” (Remote Logistics Operator)

Feasibility Assessment

Technological Readiness Level (TRL): 6 — System/Subsystem Model or Prototype Demonstration in a Relevant Environment.

Why TRL 6: The core technology, advanced plant-based polymers (e.g., optimized PHA blends), is proven in packaging. However, the specific EcoDissolve formulation needs final optimization to ensure consistent shelf-life stability (months) while maintaining the ultra-rapid decomposition rate (weeks) post-disposal. We have a working prototype demonstrating the concept.

Next Stage (TRL 7): System Prototype Demonstration in an Operational Environment. This involves extensive field testing of shelf life, structural integrity, and degradation performance under real-world usage and storage conditions.

Business Readiness Level (BRL): 4 — Validate Business Hypothesis.

Why BRL 4: The market need for radical sustainability is validated, but commercial scalability and unit economics require proof. We need to lock in large-scale supply chain costs for the novel polymer and confirm consumer willingness-to-pay for the premium required by the advanced material.

Next Stage (BRL 5): Validate Business Model. Secure initial high-volume polymer production contracts and execute a limited pilot launch to prove profitability and logistics flow.

Prototyping & Testing Roadmap

Phase 1: Material Science MVP & Shelf-Life Validation (0-6 months)

• Develop and stress-test 3 core polymer blends (MVP candidates) focusing on the optimal balance between cost, degradation rate, and structural strength.

• Conduct accelerated shelf-life testing to simulate 12-18 months of distribution and storage conditions.

Phase 2: Targeted Field Trials (6-12 months)

• Pilot distribution (MVP launch) at two controlled venues: a sustainable music festival and a corporate campus.

• Utilize smart tracking (QR codes) to gather data on real-world post-use disposal behavior and measure decomposition speed in diverse environments.

Phase 3: Iterative Refinements & Scalability (12-18 months)

• Refine bottle geometry based on consumer feedback (grip, seal, opening) and optimize the polymer blend for high-speed manufacturing compatibility.

• Parallel validation of high-volume manufacturing molds and techniques to ensure cost-efficiency and minimal waste at scale.

Phase 4: Business Model Validation (Ongoing)

• Test various pricing tiers and explore subscription models for high-volume B2B clients to ensure recurring revenue and prove unit economics.

Strategic Launch & Market Integration

Macrotrend Alignment: EcoDissolve is perfectly positioned within the accelerating Circular Economy movement and responds directly to rising global mandates for ESG (Environmental, Social, Governance) compliance.

Strategic Partnerships:

• B2B Events: Partner with leading global event management and venue operators to mandate EcoDissolve as the official sustainable hydration partner.

• Retail & Brand Alignment: Secure co-branding agreements with major outdoor/adventure lifestyle retailers (e.g., REI, national park concessions) known for their commitment to sustainability.

Pilot Programs & Incentives:

• The “Green Pledge Program”: Offer preferential pricing and public recognition for the first 50 large corporate clients who commit to a one-year transition mandate.

• Public Awareness: Launch a high-impact digital campaign demonstrating the bottle's full decomposition via time-lapse video to build consumer trust and transparency.

Distribution Channels:

• Initial focus on B2B (High-volume events and corporate sustainability programs) to quickly establish supply chain reliability and volume.

• Subsequent transition to D2C (E-commerce site) and premium retail placement, positioning EcoDissolve as a higher-value, aspirational product.

Next Step

Secure initial seed funding ($X million) to finalize polymer blend formulations and commission small-batch, high-fidelity prototypes for TRL 7 operational testing and BRL 5 supply chain lock-in.