EvoVinyl

The Future of Sustainable Music

A comprehensive analysis of Evolution Music's ground breaking bio-based vinyl alternative and its position in the sustainable materials landscape.

Evolution Music

evovinyl

THE INNOVATION BEHIND EVOVINYL

Origin Story

EvoVinyl emerged from an R&D partnership at Roulette Records, led by its founders, to create a sustainable PVC alternative. It is currently in year 3 of a 5-year patent-pending process.

100% Organic
High-yield crops with minimal water requirements.

Low Water Use
High-yield crops with minimal water requirements.

Zero Waste
Residual fibre reused as fertilizer or animal feed.

Fossil Fuel Free
Entirely plant-derived; no petroleum-based materials.

COMPARATIVE MATERIAL ANALYSIS

Using how EvoVinyl compared to PVC and other bio-vinyl alternatives across key performance metrics reveal its unique market position.

KEY DISTINCTION: EvoVinyl's single-process supply chain from purpose-grown crops avoids the double carbon impacts inherent in recycled plant oil alternatives.

Feature	EvoVinyl	Traditional PVC	Other Bio-Vinyls
Feedstock	Purpose-grown sugar beet/cane	Fossil Fuel (oil)	Recycled plant oils
Carbon Impact	Single process, crop carbon sink	High fossil fuel footprint	Double footprint (growth + recycling)
Toxicity	100% non-toxic, organic	Contained plasticizers	Variable blends
Manufacturing	~33% less energy, 6-8s cycles	High heat/ pressure, 10-14s cycles	Similar to PVC
Cost Position	2x material cost currently, parity expected in 2 years as economies of scale impact	Low cost, established scale, but cost track the price of oil, from which its derived	Volatile food-crop dependent, 2X material cost with unlikely future price parity

ENVIRONMENTAL IMPACT: THE CARBON STORY

Comprehensive Life Cycle Assessment

Circular Ecology conducted a rigorous cradle-to-grave carbon footprint study on May 28, 2025, comparing a 140g EvoVinyl record against standard PVC vinyl across the entire product lifecycle.

1. Raw Material Extraction

Carbon sequestration during crop growth offsets extraction emissions.

2. Manufacturing Process

Green electricity tariffs significantly reduce production emissions.

3. Distribution Phase

UK-average transport rates applied for realistic assessment.

4. Use Phase

No emissions during normal playback and storage.

5. End of Life

Incineration remains major carbon release for both materials.

CARBON FOOTPRINT RESULTS

Key Findings

The lifecycle assessment revealed compelling environmental advantages for EvoVinyl across multiple scenarios and measurement frameworks.

Excluding biogenic carbon: EvoVinyl shows a slightly lower footprint than PVC.

Including biogenic carbon: Notably lower footprint due to CO_2 sequestration during crop growth.

Manufacturing emissions: Significantly reduced through green electricity use as no fossil-fuel heat energy is required.

Primary hotspot: Raw material extraction and processing for both materials

Study Status: Currently suitable for internal communication. ISO 14067 certification recommended before external marketing use to ensure full compliance with international standards.

AUDIO PERFORMANCE TESTING AND METHODOLOGY

Multiple rigorous analysis were conducted on full-side WAV recordings of both EvoVinyl and PVC pressings of identical audio content, ensuring objective audio comparison.

1. Power Spectral Density

Frequency response analysis across entire audible spectrum.

2. RMS Amplitude

Overall loudness and noise-floor measurement.

3. Spectrogram Analysis

Visual frequency representation using iZotope RX 10.

4. Banded Noise Testing

Low (10-150 Hz), Mid (150-3 kHz), High (3-20 kHz) frequency bands.

AUDIO QUALITY: LISTENING RESULTS

Overall Character

When level-matched, both formats perform extremely similarly. Most listeners would perceive them as nearly identical in blind testing.

PVC recordings averaged 0.4 dB louder—a negligible difference imperceptible to most ears.

Full-Audio Playback

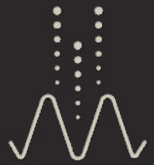
EvoVinyl displayed smoother high-frequency response with fewer sharp noise spikes during musical content.

Cleaner behaviour under modulation suggests reduced groove friction.

Silent Groove Analysis

PVC measured 6-7 dB quieter in mid and high frequency bands during silence.

Lower inherent material noise floor in absolute quiet, though EvoVinyl excels during playback.



Reduced Friction

Softer compound creates smoother stylus tracking.

Lower Static

Less dust attraction and surface crackle.

No Plasticizer Migration

Prevents long-term surface degradation.

MANUFACTURING EFFICIENCY ADVANTAGES

33%

Energy Reduction

Less energy required compared to traditional PVC pressing.

6-8s

Press Cycle Time

Faster production versus PVC's 10-14 second cycles.

2X

Current Material Cost

Premium pricing model offsets higher input costs today.

2yrs

Cost Parity Timeline

Expected timeframe to reach competitive pricing with PVC.

FARM TO FACTORY VISION

Evolution Music's long-term strategy focuses on localized production.

By establishing regional facilities near agricultural sources, the company aims to reduce its carbon footprint, enhance supply chain resilience, and serve local markets sustainably, transforming vinyl production from a globalized to a regionally sustainable practice.

By setting up regional 'full-stack' chains of production that link the growing of the raw materials/crops through the initial processing of the sugar beet or sugar cane, to the manufacture of the resin and then the compounding of the final material; we can significantly reduce the global shipping of plastics materials and the unseen carbon footprint that this would otherwise cause.

MARKET POSITION AND COMPETITIVE LANDSCAPE

Unique Value Proposition

EvoVinyl stands alone as the only 100% organic, non-toxic, fossil-fuel-free vinyl alternative currently available at commercial scale.

Unlike competing bio-vinyl products dependent on volatile food-crop markets and recycling infrastructure, EvoVinyl's purpose-grown feedstock ensures supply stability and predictable scaling economics.

Environmental Leadership

Verifiably superior lifecycle carbon performance compared to both PVC and bio-vinyl competitors.

Audio Equivalence

Competitive fidelity with cleaner high-frequency playback during musical content.

Manufacturing Innovation

Faster production cycles with significantly reduced energy consumption

Supply Chain Advantage

Single-process pathway from crop to pressing plant avoids complexity

THE PATH FORWARD

Key Challenges and Opportunities.

Value Communication

Articulating unique positioning vs PVC and bio-vinyl alternatives to diverse stakeholder audiences

Production Scaling

Expanding manufacturing capacity to achieve cost parity within 2-year timeline.

ISO Certification

Securing ISO 14067 certification to enable full external marketing of environmental claims

Final Verdict

Evolution Music's EvoVinyl delivers a verifiably superior environmental profile compared to both traditional PVC and competing bio-vinyl alternatives. Its audio performance is highly competitive, offering clean high-frequency playback without sacrificing durability or fidelity.

The primary opportunities lie in effectively communicating its unique value proposition and scaling production to achieve cost parity—both achievable milestones on a clear timeline.