

**FILE UNDER:**

**CleanTech  
Innovation**



**We aim to  
replace the PVC  
with plants in  
records, serving  
as a global model**

**INTRODUCING THE WORLD'S FIRST  
ECO-FRIENDLY, GEOTHERMAL ENERGY-  
POWERED RECORD FACTORY IN ICELAND**

**LARRY JAFFEE • THERMAL BEET PRESSING DECK • MAY 2024**



# **START-UP STRATEGY**

## **Phase One: Proof of Concept**

- Get Iceland factory operational 3Q 2025 as a global model of circular, sustainable manufacturing***
- Launch Thermal Beets label, sign Iceland musicians***

## **Phase Two: Export local supply chain concept**

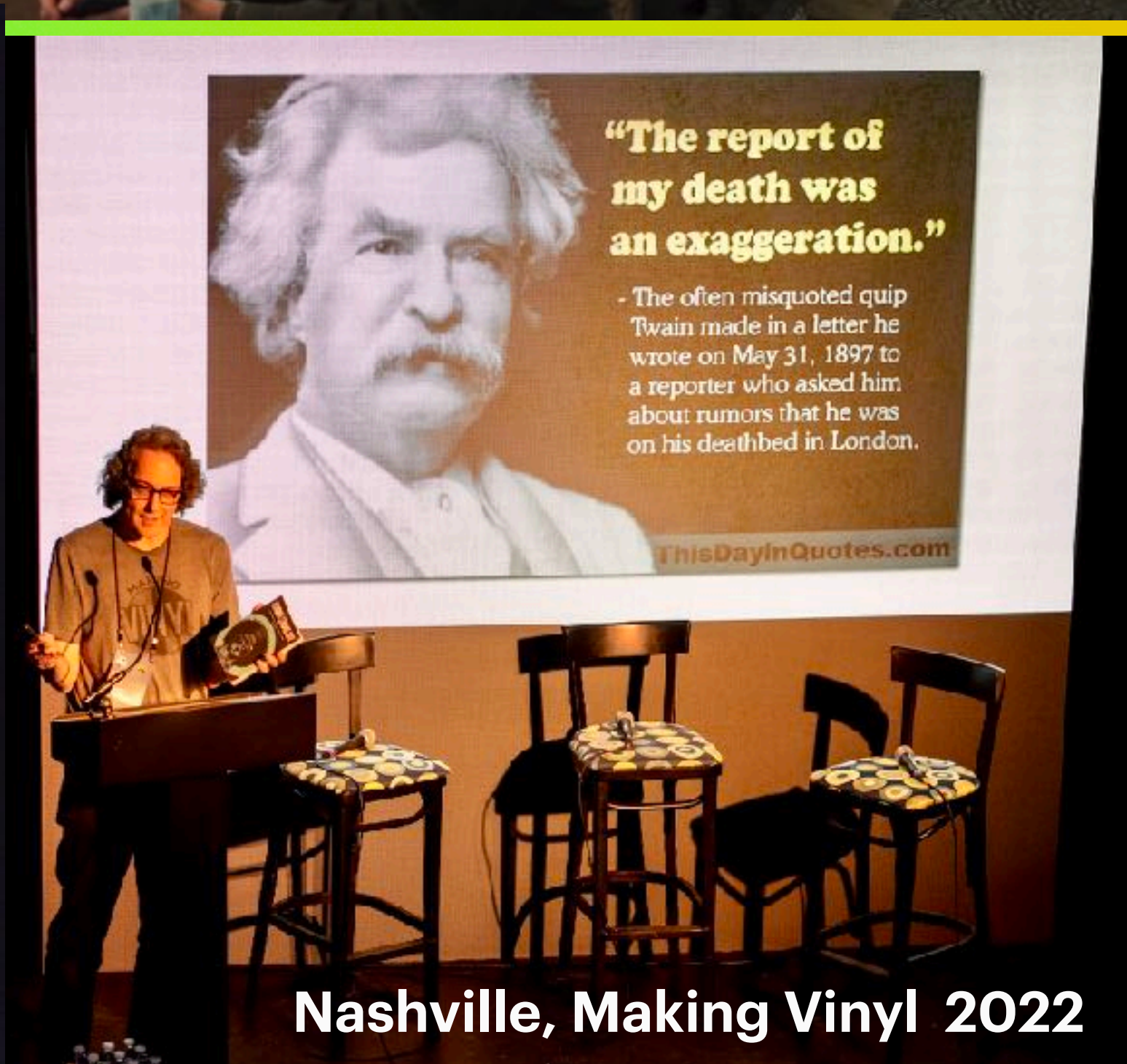
- Offer TBP consulting services to U.S. & Europe (2027)***

## **Phase Three: Grow & process sugar beets**

- EcoBusinessPark greenhouse/ plants into pellets (2029)***



**Co-Founded  
B2B  
conference  
'Making  
Vinyl' in 2017  
in Detroit;  
Jack White  
keynotes**



Nashville, Making Vinyl 2022



# Sustainability Emerges As Hot Topic in 2019

## In Berlin & Los Angeles

www.theguardian.com/music/2019/may/11/vinyl-revival-is-there-an-environmental-cost-to-record-sales

### Vinyl revival: is there an environmental cost to record sales?



Kate Connolly Berlin

Sat 11 May 2019 03.00 EDT

Share



Vinyl sales have a 3.6% share of the overall recorded music market, including streaming. Photograph by [unintelligible]

Many records - selling at their highest rate for decades - are PVC, which is to be banned in the EU

For an event dedicated to the vinyl revival, the setting couldn't be more appropriate. In the mid-70s David Bowie sat in the same wood panelled room of Berlin's Meistersaal, recording *Low* and *Heroes*.

"He'd look out on to the nearby GDR watchtower and the joke was that the

13th consecutive year, according to the International Federation of the Phonographic Industry (IFPI).

Vinyl sales now enjoy a 3.6% share of the overall recorded music market, including streaming. In the week ending 18 April, vinyl sales in the US were up 193% year-on-year, from 282,000 to 827,000.

Like millions of others, Larry Jaffee, co-founder of Making Vinyl, threw away his 4,000-piece vinyl collection. But in the past few years he has been trying to rebuild it, and believes the IFPI numbers are a gross underestimate, "because most independent shops selling vinyl these days do not report their sales, and the research - at best - relies on estimates."

Neither do the figures include the large number of second-hand sales.

Record Store Day has also helped. Starting in San Francisco in 2007, it is now a global phenomenon involving tens of thousands of independent record stores.

But the biggest threat to the industry's future may be one it has chosen to widely ignore. With production processes largely stuck in the late 70s, the production process is decidedly anti-green. It involves toxic acids, huge amounts of energy including steaming and cooling, and the records themselves are typically PVC, a plastic thought to be carcinogenic, which is due to be banned by the EU. **[Key paragraph]**

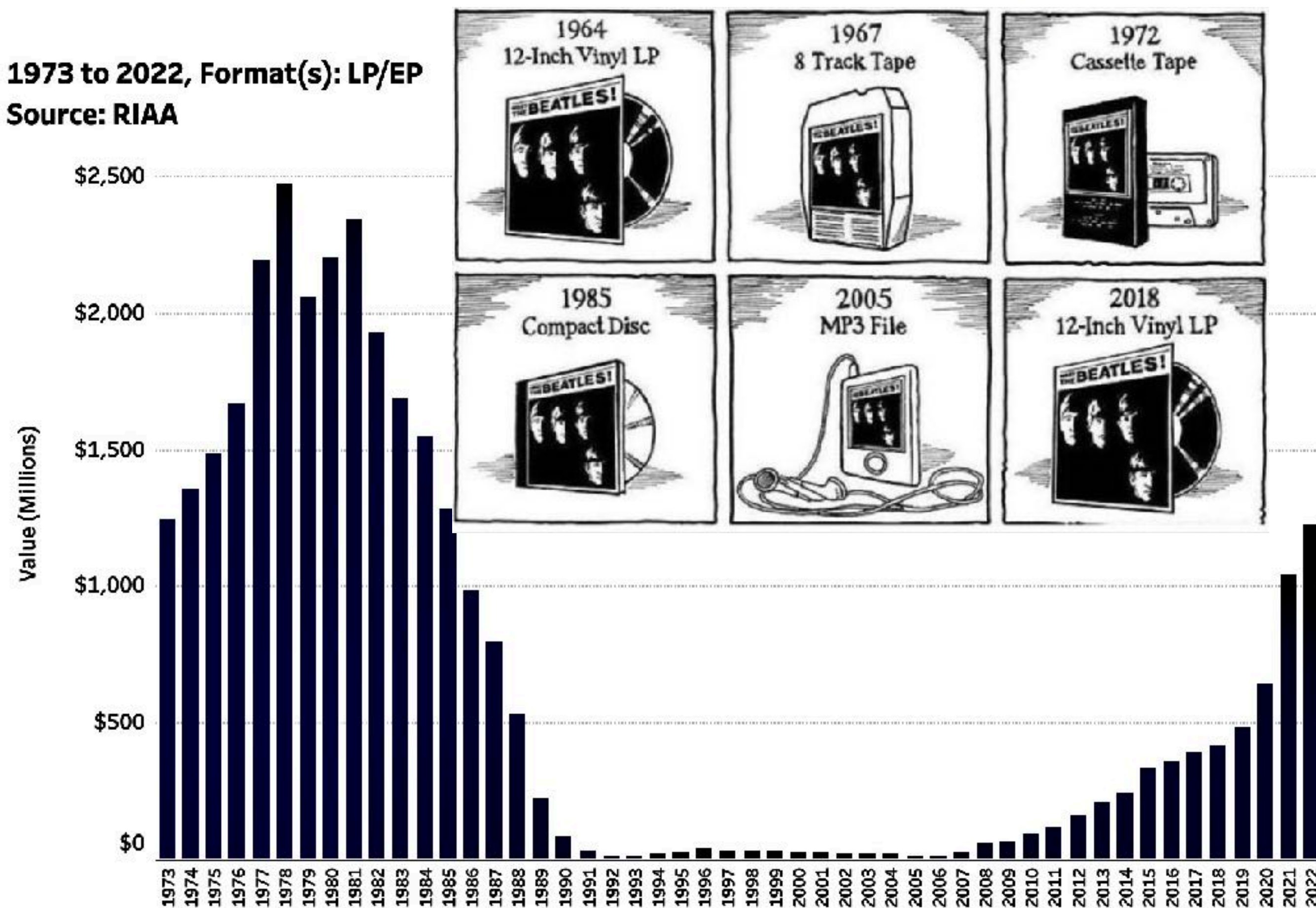


# The record revival is about to get modernized and far more ecological



## U.S. Recorded Music Revenues by Format

1973 to 2022, Format(s): LP/EP  
Source: RIAA



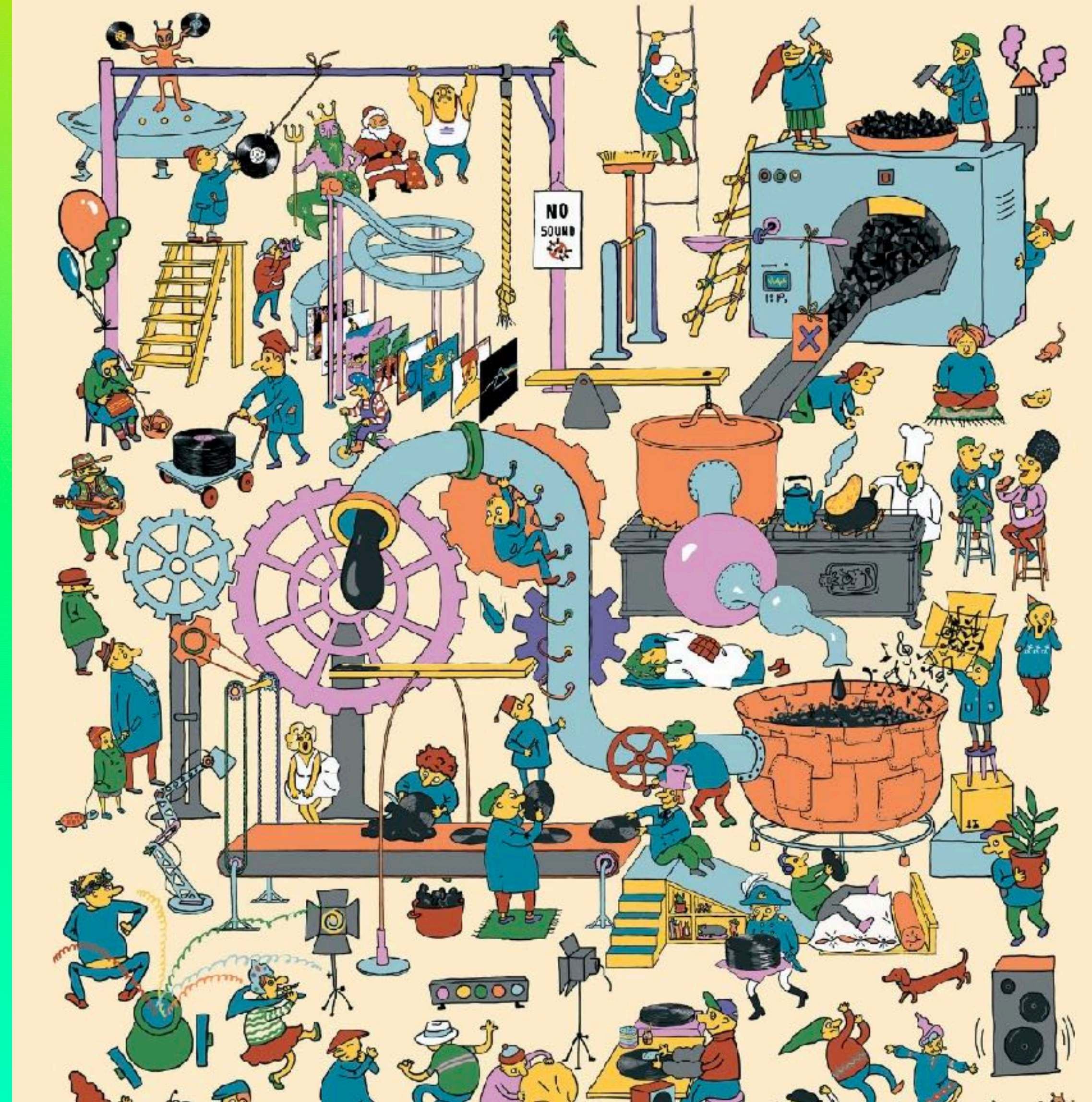
Today's vinyl buyers hit all demographics and future growth is projected through 2030.



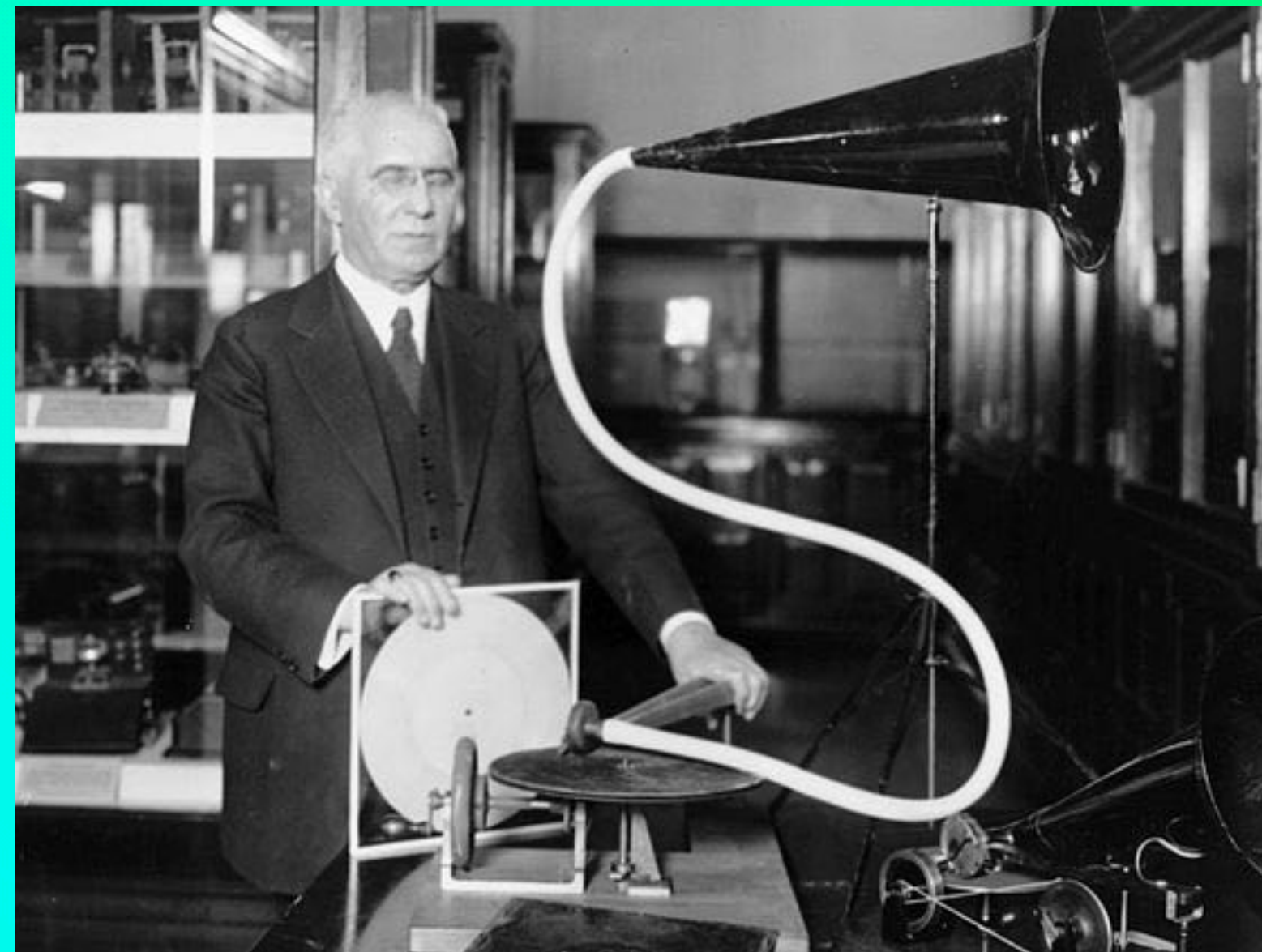
# Records Make People Happy But How They're Manufactured is Outdated, and Not Eco-Friendly



*The process of pressing vinyl records hasn't changed much since the LP debuted in 1948.*



*1960s TV cartoon 'The Flintstones' Stone-Age record player (above), while inventor Emile Berliner shows off his round disk prototype turntable in 1888.*





# We're Removing the Fossil Fuel from Records

*Vinyl LPs are made from PVC. Greenpeace calls it the "most environmentally damaging plastic." PVC records require toxic stabilizers. Our additives are biodegradable.*

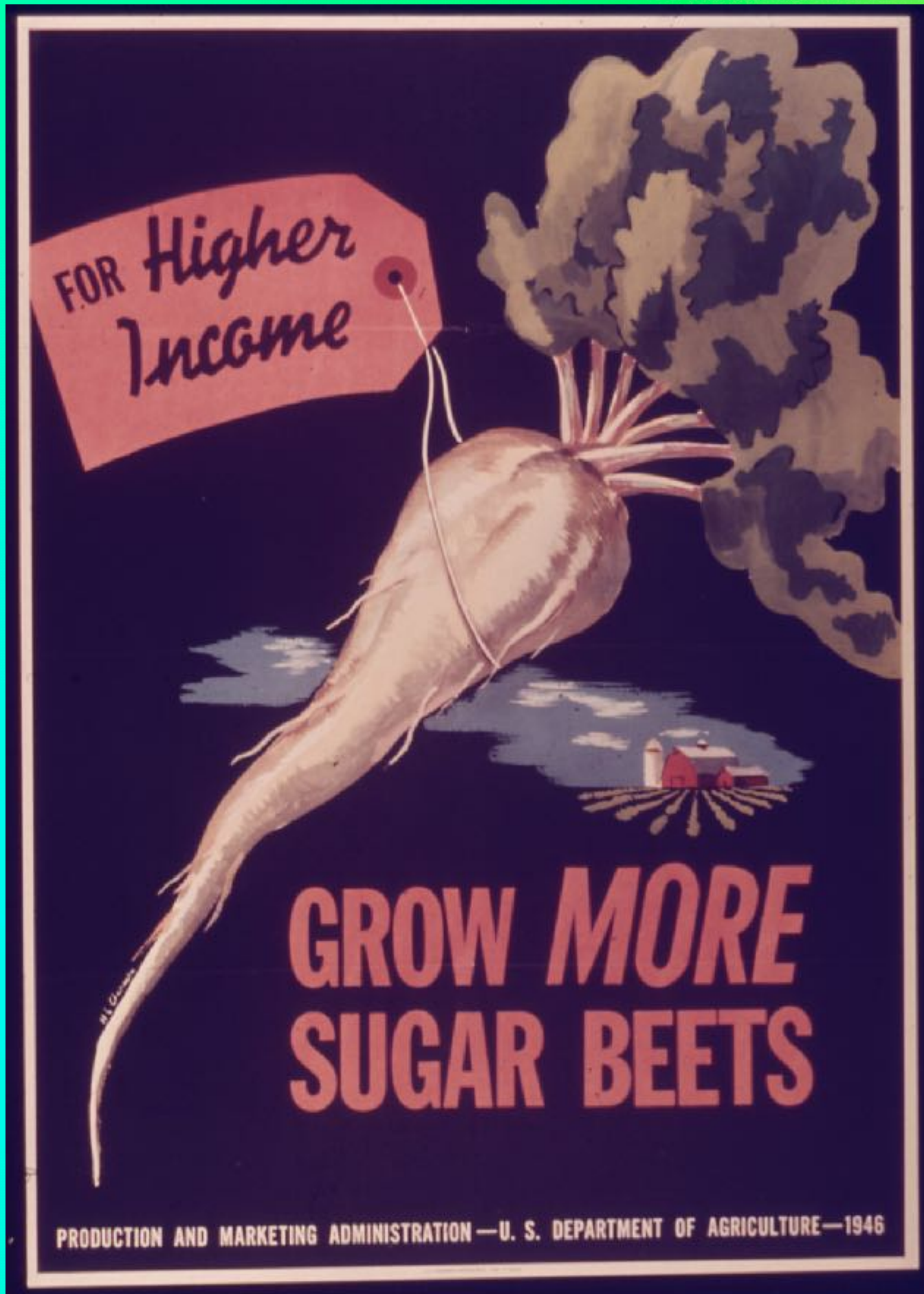


*will pioneer a more fully sustainable way to produce records locally for Iceland's unique and vibrant music market. Our strategy localizes the supply chain on the island and eliminates material imports wherever possible.*





# We Plan to Make Our Records Out of Sugar Beets



Our alternative to PVC is made from plant-based materials, with some natural mineral binders, and non-toxic additives.

Tested in the UK, this “Bio-plastic” was developed by Evolution Music pressed on LPs for Brian Eno’s Earth/Percent featuring music of Michael Stipe (REM), Nile Rodgers (Chic), Robert Smith (The Cure) and Coldplay.

We’re exploring the use of Hemp—legal in Iceland—for our record packaging.

More info: <https://www.bloomberg.com/news/videos/2021-01-10/iceland-s-hemp-revolution-video>





# WHY ICELAND TO LAUNCH OUR ECO-APPROACH?

## Far less energy costs, unique music scene

Takes advantage of Iceland's geothermal energy

Uses less electricity to run a steamless pressing machine

Removes the need for a fossil fuel-fed boiler

Embraces solar and hydro power to help run the factory

Uses recycled paper, plant-based inks for packaging



*Iceland July 2023 volcanic eruption near Grindavik*





# Government-Owned Agency Invited Our Thermal Beets Factory to Be Its First Cultural/Arts Tenant and Grow the Sugar Beets in a Greenhouse



*This uncompleted building was originally intended in 2008 for smelting & now being repurposed for ecological reasons.*

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**“I am convinced the Thermal Beets project has great potential.”**

**—Sigtryggur Baldursson, Export Manager, Iceland Music**



# In March, We Found Icelandic Partners to Help

## This Model Factory...

## That Can Be Replicated

## Elsewhere in the World

- Similarly-minded organizations, people who want to save the planet
- Music labels (EarthSonic); musicians; record stores; recording studios; Iceland University of the Arts
- **Next**: recycled paper producers; eco-farmers with greenhouses
- Activists and influencers
- Eco-savvy investors who love music and seek a ground-floor opportunity on the future





# How Do Sugar Beet LPs Sound?

Abbey Road Studios in-house producer Rob Cass was **"SPEECHLESS"** after learning Evolution's test record was made entirely from plants.

Peter Thomas, founder and chairman of the UK-based pro audio manufacturer PMC, reported the record's aural performance was **"INDISTINGUISHABLE"** from traditional vinyl.

PMC recently invested in Evolution, which spent 5 years developing its Evovinyl material made from sugar beets.

evovinyl



1980s Maxell cassette tape advertisement



# 71% Gen Z Will Pay More for a Sustainable Record



18 to 24-year-old consumers would gladly spend more a small premium on a product with a proven reduced impact. (Gen Z is the fastest growing segment of the Iceland population)

Source: Key Production, April 2024

**Survey also found: 40-45% of older vinyl fans (25-34, 35-44, 45-54 & 55-65) would pay more for such a record**

Vinyl buyers by Age Group who are looking for environmentally friendly packaging  
Source: Futuresource, 2024





# Thermal Beets Records Use Less Energy to Manufacture & Production Is Far More Efficient



*Vintage press at Rainbo Records, Santa Monica, California*

- Plant-based material consumes 30% less energy if a factory switches entirely to this product
- Requires less heat than PVC, melts more quickly
- Cycle times 50% lower to press a record with Evovinyl compared with PVC





**Making our operation even more sustainable, Thermal Beets Pressing plans to place Solar Panels on the EcoBizPark building roof, such as what they do in Haarlem, Netherlands, at my friends Record Industry**



# A Team Who's Built Factories & Manufactured Eco-Records



**Guðmundur Þórn Ísfeld (President/COO)**: Iceland Native/CEO & Co-Founder of RPM Records, Copenhagen, Denmark. Since March 2018, RPM has furnished 50% of Iceland's records; Gummi's Danish factory takes responsibility for lowering pollution rates while working with sustainable technology.



**Kevin Da Costa (CTO)**: Vinyl Manufacturing Consultant, and technical director of Evolution Music, developer of the world's only 100% plant-based alternative to PVC. Previously installed for ViryTech, press supplier. Kevin has built 24 pressing plants in UK, Europe & US. He's on a personal mission to drive sustainable practices across all parts of the vinyl manufacturing and distribution supply chain.



**Larry Jaffee (CEO)**: Co-Founder & Conference Director of Making Vinyl, B2B conference (est. 2017), celebrating the rebirth of global record manufacturing. Thought leader on vinyl's resurgence, author of the 2022 book Record Store Day: The Most Improbable Comeback of the 21st Century; college professor and prolific journalist; Larry has written about the environment since the early 1980s.



# Soundtrack Album for Documentary about Climate Change Activist Greta Thunberg, LP Made By RPM



Soundtrack record manufactured in 2021 at RPM Records in Denmark. Every step in the production process was carefully considered in order to achieve the most environmentally friendly product possible. The records were made of 100% recycled PVC, and the covers printed on wood-free 350 grams per square meter (gsm) 100% recycled uncoated card stock using plant-based inks. The records are protected by a 100% recycled 250 gsm paper inner sleeve and the cover is sealed with a sticker printed on recycled material. No plastic or shrinkwrap will be used in the packaging or production apart from the recycled PVC in the vinyl record itself.



# My Own Environmental Concerns Hark to 1980

Agenda Magazine, November 1980

## Toxics on Long Island

Industry dumping—and government negligence—have led to drinking water contamination

by Larry Jaffee



Hooker Chemical is something of a household word across the country, including on Long Island. But what many Long Islanders don't know is that the same kind of irresponsible chemical dumping practices that forced 700 families to evacuate from around the Love Canal also happened right in their own backyards.

For example, over four thousand people live in the suburban homes located within a 1.25 mile radius of the abandoned Syosset municipal landfill, where Hooker's Hicksville plant buried approximately 800,000 pounds of toxic solid and liquid waste each year at maximum estimated output between 1946 and 1968. Within 100 feet of the eastern border of the landfill there are two school buildings. Beneath it, at a depth of 70 feet, lies the groundwater table. Five thousand feet away are drinking water supply wells for the adjacent town of Syosset, with over 40,000 residents.

And the Syosset dump is only a fraction of the problem. At a congressional subcommittee's hearing on toxic waste disposal last year, it was revealed through Hooker internal documents that

- The company also disposed of up to 800 tons of chemical and other waste products at the Old Bethpage municipal dump since 1968;

- Hooker disposed of 200 cubic yards of scrapings from its Hicksville lagoons at the Brentwood landfill between 1973 and 1974;

- Thirty to forty workers at the Hicksville plant used the cancer-causing substance methylene (bis) chloroaniline in plastic production from 1972 to 1978 and company officials believed that as late as August 1978 the outside of at least one tank at the plant was still contaminated with the chemical;

- As of August 1978, Hooker had several hundred drums of toxic chemicals stored on its Hicksville plant and some defective drums had leaked and their contents had soaked into the ground;

- Between 1956 and 1975, Hooker dumped hundreds of thousands of pounds of vinyl chloride residue—which can cause liver cancer—on company property.

But Hooker isn't the only culprit; it is just one of the hundreds of industrial toxic chemical polluters on Long Island.

Left: Recharge basin at the Grumman Aerospace Corporation plant in Bethpage. Photo by Larry Jaffee

## Green packaging: what commitment?



Al Gore's award-winning documentary, *An Inconvenient Truth*, was released by Paramount in 2006 in a package that sets the sustainability bar by being made of 100% post-consumer waste recycled paper. LARRY JAFFEE, journalist and author, wonders if 'going green' is a serious commitment by the industry or merely paying lip service.

Writing this article on April 22 seems especially relevant, given it's the 40th anniversary of Earth Day—not to mention the previous week's hyperactive Icelandic volcano that melted a glacier and whose eruptive ash still was disrupting transatlantic air traffic a month later. I also immediately thought of Al Gore's award-winning documentary about global warming, *An Inconvenient Truth*, which was released by Paramount in 2006 in a package that sets the sustainability bar by being made of 100% post-consumer waste recycled paper.

Sadly, few content providers, despite several seeming promising green pronouncements from Hollywood movie studios, have since then put as much attention into an environmentally conscious package. And that's not because various "green options" don't exist. Surely, there's no shortage of vendors willing to sell DVD products with the politically correct, recyclable flavour of the week. But one wonders whether the studios are merely paying lip service, or is it a marketing ploy at a time of flattening DVD sales?

### Practicing what it preached

*An Inconvenient Truth* practiced what it preached in its packaging, whose manufacturer, Ivy Hill, owned by Cinram at the time, succeeded in making the smallest possible environmental footprint. A small circular logo the size of a penny coin (pictured below) depicted a graphic rendering of a windmill and text that states: "This DVD is powered by NativeEnergy," which offers services that reduce carbon emissions to fight global warming.

out of something that lasts forever in a landfill (plastic), why couldn't they be made out of something more ephemeral-like plants?"

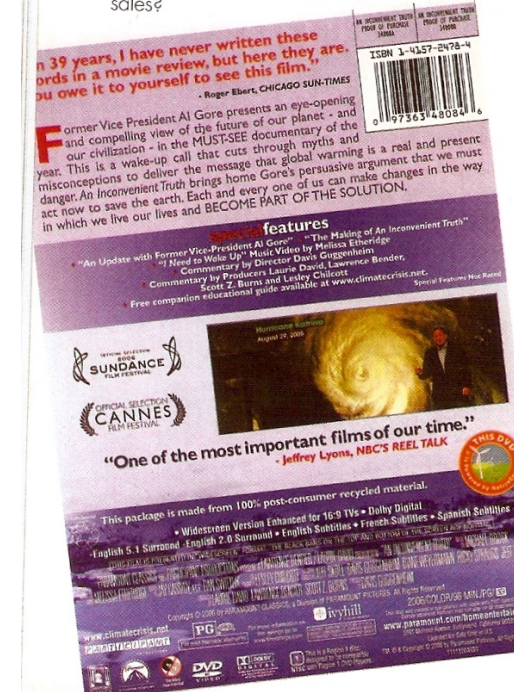
By fortuitous coincidence, a few days later Solomon received a call from a Dutch colleague from PaperFoam, who told him about polystyrene-based trays they were manufacturing that used only about one-sixth of the usual energy and resulting emissions. The polystyrene trays, a natural farm product, can either be recycled or put into your compost bin.



PaperFoam tray

The DVD holder was made for only vegetable. The press population is roughly 8.5 billion, and the DVD population is roughly 0.1% of that.

Seven founder? Manufac working on his n of thoug



## DVD package practises what it preaches

Former US Vice President Al Gore presents a compelling look at the state of global warming in the documentary *An Inconvenient Truth*, reports Larry Jaffee



*An Inconvenient Truth*, the acclaimed documentary on global warming presented by former US Vice President Al Gore, practices what it preaches in its DVD packaging, released late last November by Paramount Home Entertainment.

The DVD is packaged by Ivy Hill, a Cinram Company, to make the smallest possible environmental footprint: it is made of 100% post consumer waste recycled paper, no excess materials, and the package uses absolutely

The DVD's cardboard holder is shrink-wrapped in EarthFirst PLA film, a registered trademark of Plastic Suppliers, which utilizes NatureWorks PLA resin made from 100% field corn. EarthFirst PLA film can be used in packaging, label, shrink sleeve label, folding carton, overwrap, lidding, narrow, evident and window-

The back cover of the DVD package states that it was "manufactured by Ivy Hill, which continues to support ways to protect the environment daily."

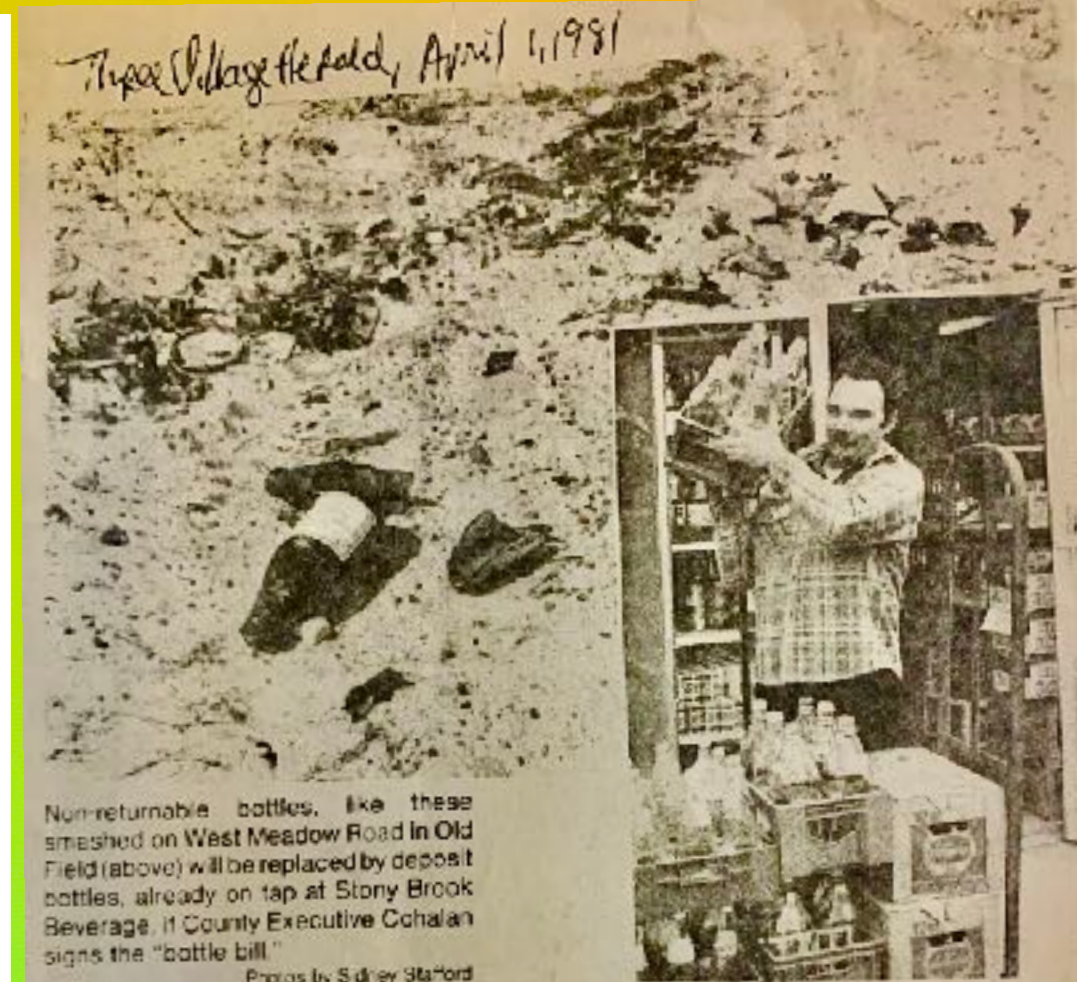
EarthFirst PLA film is made using corn kernels, an annually renewable resource, instead of petrochemicals. EarthFirst PLA film is compostable and is entirely environmentally friendly since it starts as a natural product and ends as a natural product with no impact on the environment. EarthFirst PLA film does not look any different than petrochemical based films. It functions in much the same way as other plastic films but has no harmful effect on our environment. In many cases, EarthFirst PLA film prints better than other substrates since inks dry faster on this substrate.

Properties of EarthFirst PLA films are as good as and often surpass those of petrochemical-based films as they relate to machining, printing, product finishing and overall appearance. A few examples of this film's properties are

improved shelf life, increased productivity, natural dye level of 38, superior scratch resistance, FDA compliance and heat tolerance up to 142° F, not the 104° F stated by others. NativeEnergy, a privately held American Indian energy company whose logo can be found on the back of the *Inconvenient Truth* DVD, works to decrease the amount of carbon dioxide that enters the Earth's atmosphere every day.

NativeEnergy, Participant Productions and Paramount Pictures Classics offer 100% of the CO<sub>2</sub> pollution from air and ground travel, production energy use, and waste associated with the making of *An Inconvenient Truth*. Participant Productions and Paramount Pictures Classics made the film climate neutral and are helping build the Rosebud St. Francis wind farm in South Dakota and the Dovan family dairy farm methane renewable energy project in Pennsylvania.

<http://www.NativeEnergy.com>  
<http://www.earthfirstpla.com/>



Non-returnable bottles, like these smashed on West Meadow Road in Old Field (above), will be replaced by deposit bottles, already on tap at Stony Brook Beverage. If County Executive Cahalan signs the "bottle bill" Photos by Sidney Starford

## Last public hearing on bottle bill April

by Larry Jaffee

The county legislature's passage last week of a mandatory five-cent deposit on

be effective until April 1982 if Cahalan gives his final approval, has been attacked by many Three Village area beverage dealers

working in his father's store. "This law is not getting the problem. The distributor



# So, Is It Possible to Have



*\*Slight clarification to the [video](#): vinyl records are recyclable and most pressing plants regrind their scrap PVC material.*



# Please Stay in Touch

## We Want to Work With You



**[Business Plan available in May 2024]**

**Larry Jaffee, CEO ([thermalbeets@gmail.com](mailto:thermalbeets@gmail.com))**  
**+1-917-291-2488 (NYC mobile)**

**Guðmundur Örn Ísfeld, COO ([isfeld@rpmrecords.dk](mailto:isfeld@rpmrecords.dk))**  
**+45 71 53 90 82**

**Kevin Da Costa, CTO ([kevin@evolution-music.co.uk](mailto:kevin@evolution-music.co.uk))**  
**+44 7446 078104**

**THANK YOU!**