



ubq

## FROM VOLATILITY TO STABILITY:

Challenging the Age  
of Oil-Based Plastics



[UBQMATERIALS.COM](https://ubqmaterials.com)

## CONTENTS

- 03 Navigating Material Risk in an Uncertain Global Market
- 04 How Waste Can Be Remade for Everyday Products
- 07 Avoiding Volatility
- 09 Abiding By Regulatory Requirements
- 10 Material Innovation as a Strategic Business Tool

## 01

## NAVIGATING MATERIAL RISK in an Uncertain Global Market



Traditional predictable material sourcing is over. Between geopolitical instability, energy-related commodity swings, and a tightening web of global environmental mandates, historic reliance on fossil fuel-based materials like plastic is now a significant risk to the balance sheet.

**Dependence on fossil fuel-based materials, the most volatile commodity market on earth, has created outsized risk for businesses.** Leaders across sectors – from automotive to retail to logistics and beyond – are no longer managing mere supply chains; they’re navigating a fundamental transition in value creation. Maintaining economic resilience, supply reliability, and regulatory compliance requires businesses to decouple their products from the volatility of oil-based plastics.

Businesses need stable, reliable, long-term material solutions to support profitability and protect against volatility. Material innovation is no longer a future concept: it’s an increasingly urgent component of business strategy for safeguarding against volatility

**UBQ Materials** manufactures the world’s first alternative to oil-based plastic made entirely from mixed household waste.

Its **UBQ™** product is a **cost-competitive, scalable solution that directly replaces oil-based resins**. Already used in the global supply chains of industry leaders like **Mercedes-Benz, PepsiCo, and McDonald’s**, **UBQ™** eliminates the waste-to-landfill or incineration cycle while insulating businesses from the price shocks and carbon liabilities of the fossil fuel economy.



# 02

## HOW WASTE CAN BE RENEWED for Everyday Products

The world generates over 2 billion tons of municipal solid waste annually, a number anticipated to increase **70%** by 2050. A significant share – nearly **half** of what is tossed in the trash – ends up in landfills or incinerators, polluting the air, waterways, and our communities. In the European Union (E.U.) alone, roughly **58 million tons** of municipal waste was incinerated in 2023.

Municipal waste isn't just an environmental burden; it's becoming a financial one as well. Waste incineration is soon to be included in the E.U. Emissions Trading System (EU ETS), meaning that **the cost of throwing things away is set to skyrocket**.

The **UBQ Evolved Materials™** patented fusion process converts mixed household waste (including organics and hard-to-recycle materials) into a high quality thermoplastic composite. The result is a single, fully replicable material that performs consistently at commercial scale



### 01

#### Dry & Screen

Mixed household waste comes in and is dried and screened to maximize sorting efficiencies.

### 02

#### Sort & Remove

Waste is then sorted to remove metals and minerals which are then properly recycled.

### 03

#### Break Down & Build

Our patented process breaks down the organics into their basic building blocks. This creates the natural stickiness, which is the matrix that binds all of the components together, even those that aren't chemically compatible.

### 04

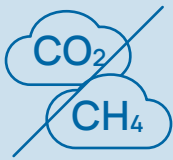
#### UBQ Evolved Materials™

Which results in the creation of **UBQ Evolved Materials™**, the homogeneous, fully replicable composite material.

Rather than treating waste as an unavoidable by-product of consumption, **UBQ Materials** transforms this liability into a strategic asset by converting trash – a virtually infinite and cheap resource – into a valuable resource.

Where oil is finite and volatile, waste is consistently priced and geographically abundant. Leaders can transition entire product lines – from automotive parts to hangers to outdoor furniture to garden products – into carbon-neutral materials without pausing production or re-engineering factory floors.

Prioritizing sustainability and operational efficiency at every stage, the patented **UBQ™** fusion process converts household waste into a trademarked, bio-based thermoplastic material that:



**Reduces pollution,** generating zero emissions, or combustion during production.



**Lowers water usage** as no additional water is required during the material conversion process.



**Reduces energy demands** via a low temperature conversion process that requires less energy usage than oil-based plastic production.



**Protects nature** using landfill and incineration bound waste instead of natural resource extraction.

## MASTERBATCH

The **UBQ™ Masterbatch** product line is a drop-in material, meaning that brands can adopt **UBQ™ Masterbatch** without overhauling their machinery or processes – saving a significant amount on manufacturing overhauls.



The **UBQ Materials** Netherlands facility has capacity to create 80,000 tons of **UBQ™** annually, operates on certified green electricity generated by solar power and uses fully electrical heavy machinery.

Waste streams are providing reliable, cost-effective, good-for-the-planet feedstock for the world's leading manufacturers, including:

**Arcos Dorados**, the world's largest independent **McDonald's franchisee**, which uses **UBQ™** in food trays to serve millions of customers every day.



**Mercedes-Benz** has replaced conventional plastics for the lightweight **UBQ™** in cars including its **Vision EQXX**.

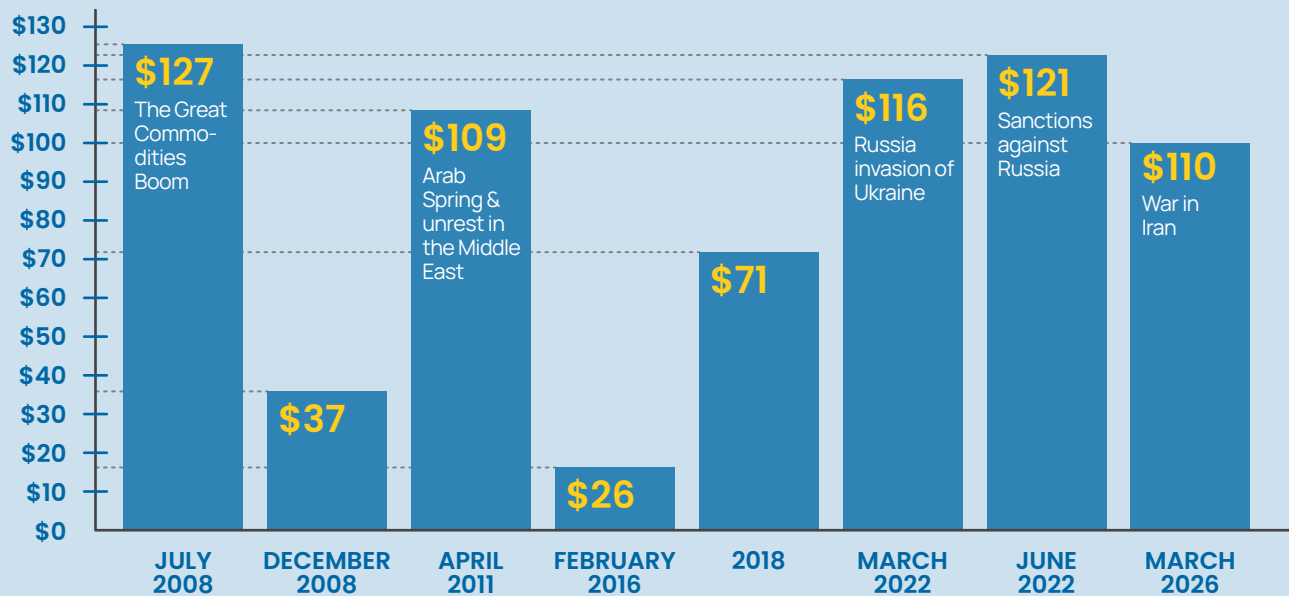


# 03 AVOIDING Volatility



Global manufacturing has historically been pegged to volatile oil and gas markets. While economic crises and ongoing global geopolitical tensions keep oil and gas markets in flux – and, with them, the fossil fuel-based materials that rely on them – market turmoil is not just a headline: it is a direct hit to the bottom line. The risk from geopolitical tensions is twofold as instability chokes the flow of goods and drives material scarcity.

**CRUDE OIL MARKET COST VOLATILITY**  
(Dollars per Barrel)

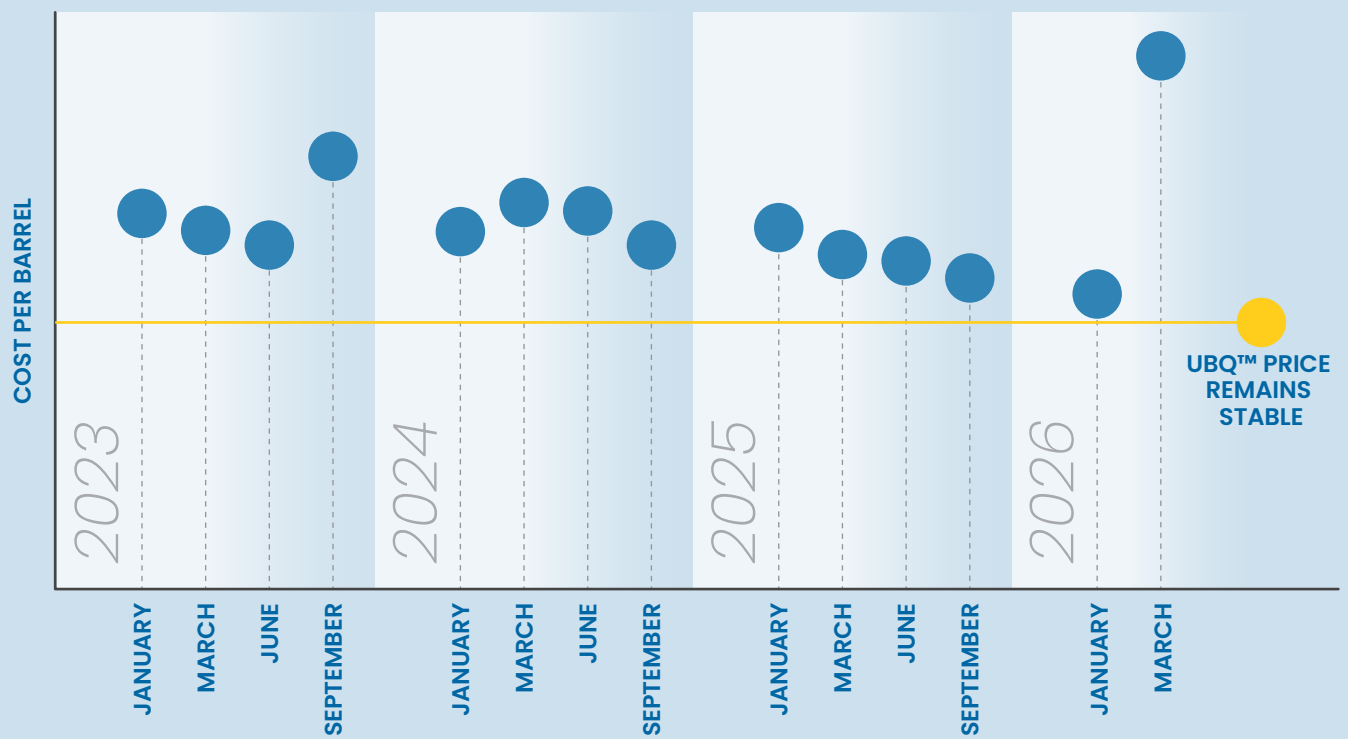


Manufacturers face an impossible choice with their business margins at the mercy of geopolitics and crude oil prices continuing to push the \$100-per-barrel threshold. When material costs spike or shipments stall, businesses must either pass costs down to an already price-sensitive consumer or absorb the hit to their own profit margins. The decision is between losing market share through price hikes, absorbing margin compression, or stalling production all together due to supply shortages.

But this volatility no longer needs to be the cost of doing business. From the sting of price hikes or the paralysis of broken supply chains, it's an entirely avoidable exposure.

### RECENT CRUDE OIL MARKET VOLATILITY VS. UBQ™ PRICING 2023-20226

(Cost per barrel or barrel equivalent)



Every year, the world creates more than [450 million tons](#) of plastic with only 9% of it recycled. Rather than building business operations on a scarce and volatile resource, businesses that explore waste-derived materials operate within a fundamentally different supply model. Waste generation is constant and geographically distributed, creating a stable and hyper-abundant input stream.

# 04

## ABIDING BY Regulatory Requirements



Transitioning to sustainable materials is no longer a corporate preference, but a regulatory necessity. The implementation of the EU’s Corporate Sustainability Reporting Directive (CSRD) and the Corporate Sustainability Due Diligence Directive (CSDDD) puts pressure on business leaders to provide transparent, audited data on their environmental impact.

This challenge is especially difficult because, for most manufacturers, Scope 3 emissions – those generated within the supply chain – are the hardest to address. Yet they often account for the largest share of a company’s carbon footprint.

**UBQ™** is a high-impact lever for Scope 3 reduction compliance. By replacing virgin, fossil fuel-based resins with a carbon-competitive alternative, companies directly decarbonize materials without operational disruption or redesigning entire logistics networks.

By diverting waste from landfills and incinerators while reducing reliance on virgin fossil feedstocks, **UBQ™** helps businesses achieve two goals at once: waste reduction and carbon neutrality. Redirecting waste back into production cycles enables the shift toward a truly circular, resilient economy.

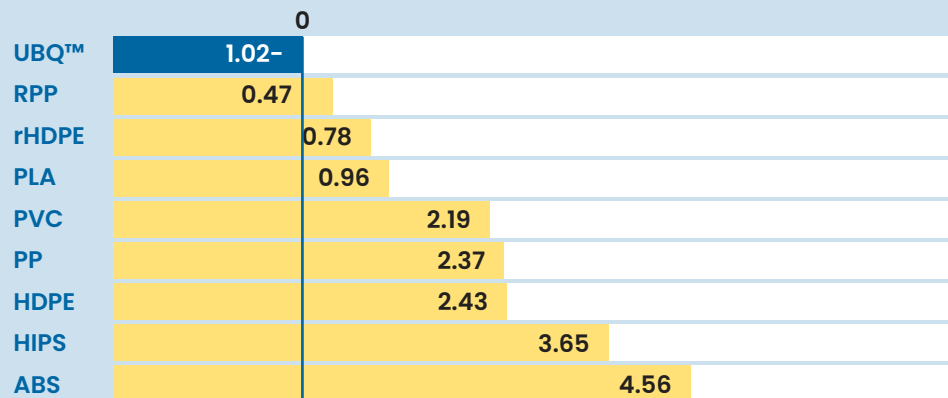
### LOW WATER USAGE

1 lb. of  
UBQ™ uses  
0 gallons of  
water



1 lb. of plastic  
requires  
28 gallons  
of water

### UBQ™ CARBON FOOTPRINT vs. COMMON POLYMERS (kg CO2EQ / kg material)



Source: Ecoinvent database, European values. rPP from Sphera (US values). UBQ design data used for UBQ tablets. ISO 14040:2006.

# 05

## MATERIAL INNOVATION as a Strategic Business Tool

The era of fossil fuel-based manufacturing is at a dead end. Maintaining business as usual brings resounding financial, regulatory, operational, and environmental risks for manufacturers. Material innovation isn't just a sustainability shift: it's critical for long-term business resilience.

The next frontier of industrial efficiency is shifting to waste-derived materials. Integrating materials like **UBQ™** into product lines enables companies to:



**Protect margins,** decoupling physical scarcity and cost of goods sold (COGS) from volatile oil and gas markets



**Maintain operations,** implementing a drop-in solution that requires zero capital expenditure



**Comply with regulations,** transforming Scope 3 challenges into a competitive advantage

Maintaining market position will depend on the speed at which business leaders can transition away from traditional plastics. **UBQ Materials** offers the technology, scale, and track record. Now, the only risk is waiting.

The **UBQ™ Hero Product Challenge** is a new initiative that invites global brands to reimagine their most iconic products using **UBQ™**, offering an opportunity to explore durable material innovation without cost or commitment. **Submit your product for consideration.**

# ARE YOU ON THE PATH TO IMPLEMENTATION?

Here's where to start:

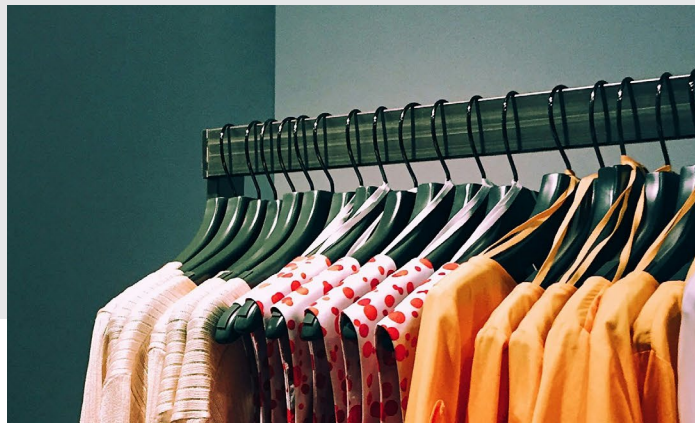
| 01  | 02   | 03   | 04   | 05  |
|---|--|--|--|---|
| BUILD YOUR TEAM   | PROJECT ALIGNMENT  | TECHNICAL PLANNING   | TRIAL AND REFINEMENT   | MANUFACTURING ROLLOUT   |
| <p>Schedule a kickoff meeting with <b>UBQ</b> project leads (<a href="#">sign up here</a>).</p> <p>Determine your project and engineering leads. If needed, identify your executive sponsors.</p> | <p>Identify products to be renewed with <b>UBQ™</b>; providing current material formulations.</p> <p><b>UBQ</b> will validate targeted products, identifying the appropriate <b>UBQ™</b> product to use and suggested formulation.</p> | <p>Discuss quality and performance testing requirements, and establish a plan for testing.</p> <p>Confirm trial location; arrange shipment of appropriate <b>UBQ™</b> product.</p> | <p><b>UBQ</b> technical team will be onsite for product testing.</p> <p>Successful trials move to quality and performance testing; unsuccessful trials lead to formula re-configuration and new trial.</p> | <p>Finalize the plan for initial pilot production runs; determine volume needs.</p> <p>Develop plan for full commercialization.</p> <p>The <b>UBQ™</b> marketing team supports sustainability storytelling and product positioning.</p> |



As part of **Arcos Dorados'** goal to reduce greenhouse gas emissions by 31% throughout its supply chain by 2030, the company partnered with **UBQ** to create trays made of 12.5% **UBQ™**



**Crescent Garden** turned to **UBQ™** to reduce waste and lower their carbon footprint, creating the world's first climate-positive planter which has since expanded into a broader product line.



## READY TO VALIDATE COMPATIBILITY?

Take the next step in making your product less dependent on oil-based materials.

Contact us or send an email:

[HELLO@UBQMATERIALS.COM](mailto:HELLO@UBQMATERIALS.COM)

Submit your product to the

[\*\*UBQ™ HERO PRODUCT CHALLENGE\*\*](#)