



EWA TECHNOLOGIES GROUP

ADVANCED BIOCARBON

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HIGH-GRADE GRAPHENE PRODUCTION FROM RENEWABLE BIOMASS



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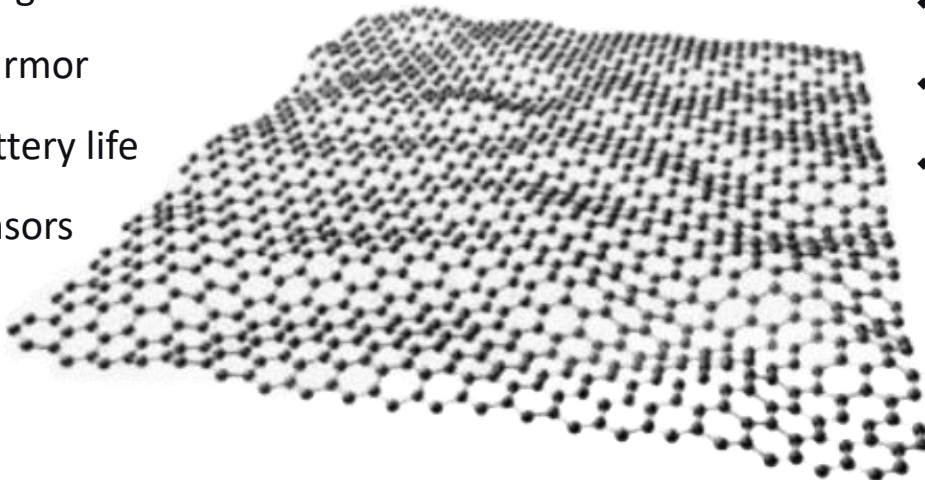


THE PROJECT:

- Global demand for graphene has exploded, **driven significantly by the wars in Iran and Ukraine, as well as fast growing of electricity storage**. The strategic importance of advanced Biomaterials in Graphene production for Civil and military applications has been thrust to the forefront.
- EWA's proven, scalable graphene production technology positions us to become the leading U.S.

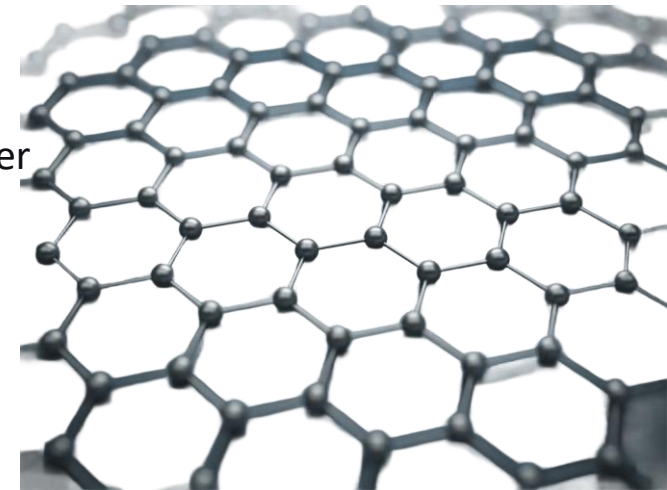
Graphene is essential for:

- ❖ Stealth coatings
- ❖ Bulletproof armor
- ❖ Extended battery life
- ❖ Electrical sensors



Its properties are unmatched:

- ❖ 200x stronger than steel
- ❖ 2x battery capacity
- ❖ 70% more conductive than copper





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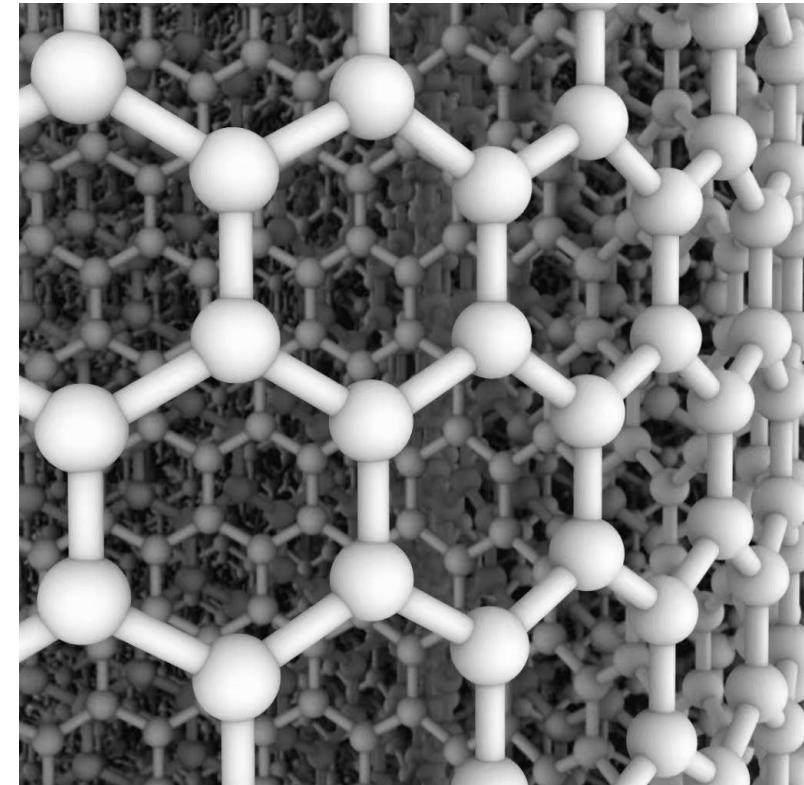
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OUR MILITARY GRADE GRAPHENE (Tire 2): SPECIFICATIONS

Property	Specification
Purity	>99.9%
Structure	Multi-layer graphene (2–8 nm)
Mechanical Strength	200x greater than steel
Surface Area	1,200 m ² /g
Dimensions	4–12 mm flake
Thermal Conductivity	2–4,000 W/m·K
Ballistics	10x more absorbent than steel





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ADVANCED MILITARY USES FOR GRAPHENE



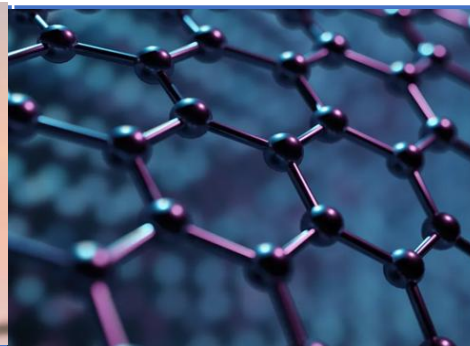
Stealth Radar Absorption

Graphene can absorb radar and radio waves, making aircraft, drones (UAVs), and vehicles nearly invisible to enemy detection.



Advanced Light Weight Body Armor

Graphene's exceptional strength (**200x stronger than steel**) is used in lightweight body armor, ballistic vests, and armored vehicles



Structural Strength:

As a 2D material Graphene is 200 x stronger than steel, it is incredibly strong, light and flexible.



Aerospace Applications:

Graphene enhances epoxy resins and composites, improving strength-to-weight ratios in drone and aircraft structures.



Next Gen Batteries

Graphene anodes increase lithium-ion battery capacity by 50-100%, allowing for lighter batteries that charge faster and last longer



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GRAPHENE ENHANCED PROPERTIES

	Exceptional Physical Strength & Flexibility	As a 2D material Graphene is X200 stronger than steel, it is incredibly strong, light and flexible.
	Superior Electrical Conductivity:	Graphene conducts electricity 70% better than copper, meaning it can be used to make faster computer chips, more efficient power grids, and advanced electronics.
	High Thermal Conductivity:	It conducts heat better than diamond, making it invaluable for pulling heat away from sensitive electronic components.
	Ultra-Light weight & Transparent:	Being essentially all surface area and only one atom thick, it is almost perfectly transparent and very lightweight, enabling innovative applications in flexible solar cells and transparent touchscreens.
	Versatile Applications:	It is currently used in or proposed for high-performance batteries, water filtration, biomedical sensors (such as detecting bacteria), and strengthening composite materials



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WHAT WE DO

1. Feedstock Farmer



Secured 25-year feedstock agreements ensuring sufficient supply for thousands of tons of graphene annually, enable scaling up the production plant as much as needed.

2. EWA's Technology



A state-of-art automated technology and process designed to convert almond and walnut shells into high-grade graphene (Tires 2 and 3). With a large capacity of production, our facility can generate \$80 million in annual profits.

3. High value output products



We offer flexible, long-term supply structures for activated carbon, recovered carbon black (rCB), and graphene aligned with your production processes and engineered for composite applications.



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Global Graphene Market

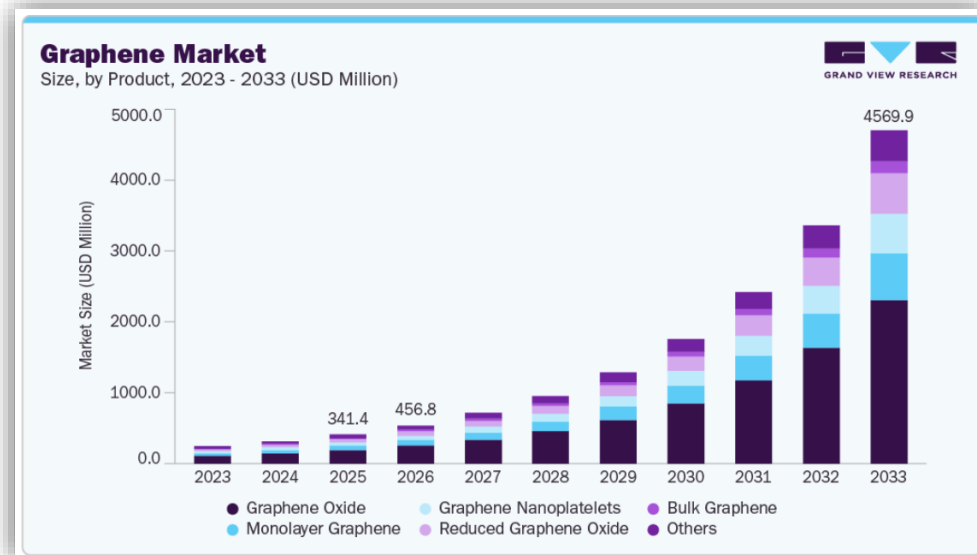
*Source: Grand View Research

Global Market is Real & Explosive*

Global Market Size (2025): \$341 Million USD

•Projected Size (2033): \$4.57 Billion USD

•Annual Growth Rate (CAGR 2026-2033): 39.0%



Key Insight: The global market growing at an exceptional rate, driven by demand for lightweight, high-strength materials in electronics, energy storage, automotive, and defense.

Graphene Market Segmentation by Volume, Price & Tier (2025)

Segment	Volume (t/y)	Price (\$/kg)	Tier
Electronics (CVD)	<10	5,000 – 100,000	Tier 1
Biomedical	<20	1,000 – 10,000	Tier 1–2
Aerospace / Defense	10–50	1,000 – 5,000	Tier 2
Thermal Management	50–150	300 – 1,000	Tier 3
Coatings (Premium)	50–100	200 – 800	Tier 3
Energy Storage	100–400	100 – 500	Tier 3
Composites (Bulk)	1,000+	10 – 200	Tier 4

*Most manufacturers target Tier 3, the first tier where you can produce **tons, not grams**, at a **cost that makes sense**, for customers who **actually need volume (mainly energy storage)**.*

*Being able to produce **Tier 2** at high capacity, our business targets **Tier 2**, while **Tier 3** is our defaults option. This is not a weakness—it is flexibility. If military qualification and approval takes time, we are able to compete into the industrial markets. Once certified, we could capture the higher margins - **Same production line, Two revenue paths**.*



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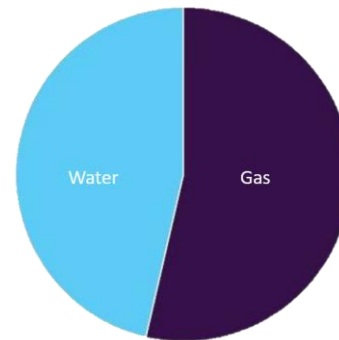


Activated Carbon Market (1)

*Source: Grand View Research

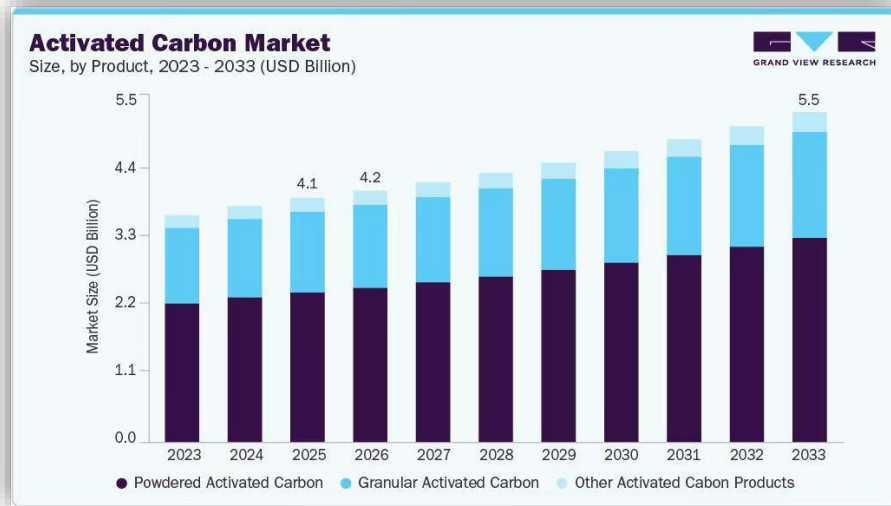
Global Market is Real & Explosive*

- **Global Market Size (2025): \$4.1 Billion USD**
- **Projected Size (2033): \$5.5 Billion USD**
- **Annual Growth Rate (CAGR 2026-2033): 4%**



Region	Market Share
Asia Pacific	48.9%
North America	25.7%
Europe	~15-18% (estimated)
Middle East & Africa	Fastest Growing (4.6% CAGR)
Latin America	Steady Growth

Metric	Value
U.S. Imports (2025)	\$339.5 million
Top Suppliers	China, India, Sri Lanka, Thailand, Japan
Import Dependency	Significant – creates opportunity for domestic production



Key Insight: The North American activated carbon market is a stable, \$1.05 billion market, growing steadily at ~4% annually. It is driven by enforceable EPA regulations (PFAS, MATS) and significant infrastructure spending. Your domestic, biomass-derived production from almond shells is strategically positioned to capture share in the largest end-use segment (water treatment) while building the same platform for higher-value graphene production.



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Activated Carbon Market (2)

Source: Grand View Research

Prices by raw material and form (examples)

Raw Material / Type	Price Range (USD per ton)	Typical Applications
Coal-based GAC (low iodine)	~\$800 – 1,300	Industrial water treatment, air purification
Coal-based GAC (high iodine)	~\$1,300 – 1,800	Municipal water treatment, higher performance
Wood-based AC	~\$1,800 – 3,600	Food & beverage, pharmaceutical, high-purity applications
Coconut shell-based GAC	~\$2,100 – 3,000	Drinking water treatment, gold recovery, high-end filtration

Prices by Application (examples)*

Application	Average Price (USD per ton)	Product Form
Mercury Control (Gas Phase)	~\$3,000	Powdered Activated Carbon (PAC) / Injected Activated Carbon (IAC)
PFAS Water Treatment (Municipal)	~\$5,148 – \$5,654 (\$2.34–2.57/lb)	Granular Activated Carbon (GAC)

*based on governmental tender

Key Insight: Activated carbon pricing is highly segmented by application. Mercury control (gas phase) commands ~\$3,000/ton, while PFAS water treatment (the fastest-growing segment) commands premium pricing of \$5,000–5,700/ton. Your almond shell-based AC can target both segments, with the water treatment market offering the highest margins and strongest regulatory tailwinds from EPA mandates.



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INTRODUCING EWA Technologies



Decades of Experience

We have been designing and building factories in advanced material development, waste-to-energy, and environmental microbiology for decades.

Hundreds of Successful Projects Worldwide

Our technology is proven across a global footprint, including China, Asia-Pacific, Europe, Australia, New Zealand, Africa, Latin America, the Caribbean, and the United States.

Proprietary Knowledge & Know-How

We have designed and executed dozens of next-generation bio-technologies.

On-Site Engineers & Quality Control

Our experts are on the ground daily in Europe, China, and the United States.

Top Engineering & Development Teams

Our teams of PhD-level engineers and scientists from around the world collaborate on our cutting-edge technologies.

Tip of the Spear

We continuously stay on the pulse of emerging technologies.



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Why EWA Technologies Group

EWA Group combines:

- ❖ *Industrial pyrolysis experience at scale*
- ❖ *Three-tier revenue (biochar → AC → graphene)*
- ❖ *U.S. feedstock from agricultural byproducts*
- ❖ *Military-grade graphene targeting defense markets*
- ❖ *We are not a lab experiment, we are inventors, manufacturer and operator – all the way from the lab to the market.*

30 Years of Global Track Record

with more than 10 years global footprint including industrial pyrolysis systems deployed worldwide:

Europe, Asia, Australia, North & South America, Africa

Bottomline:

30 years of industrial experience. Global footprint. U.S. feedstock security. Three products from one platform. Ready to scale.

Innovation & Scientific Background

- Advanced technologies customized to specific feedstock needs
- Novel process for advanced materials production
- Patented technology, Certified under Innovation Management System (ISO 56001:2024)

Circular Economy Advantage

- Self-powered operation (electricity and heat from syngas)
- Minimal carbon emissions
- From agricultural byproducts to high-value materials

Direct Market Access

- From factory to field – no intermediate entities
- Complete vertical integration from feedstock to finished product



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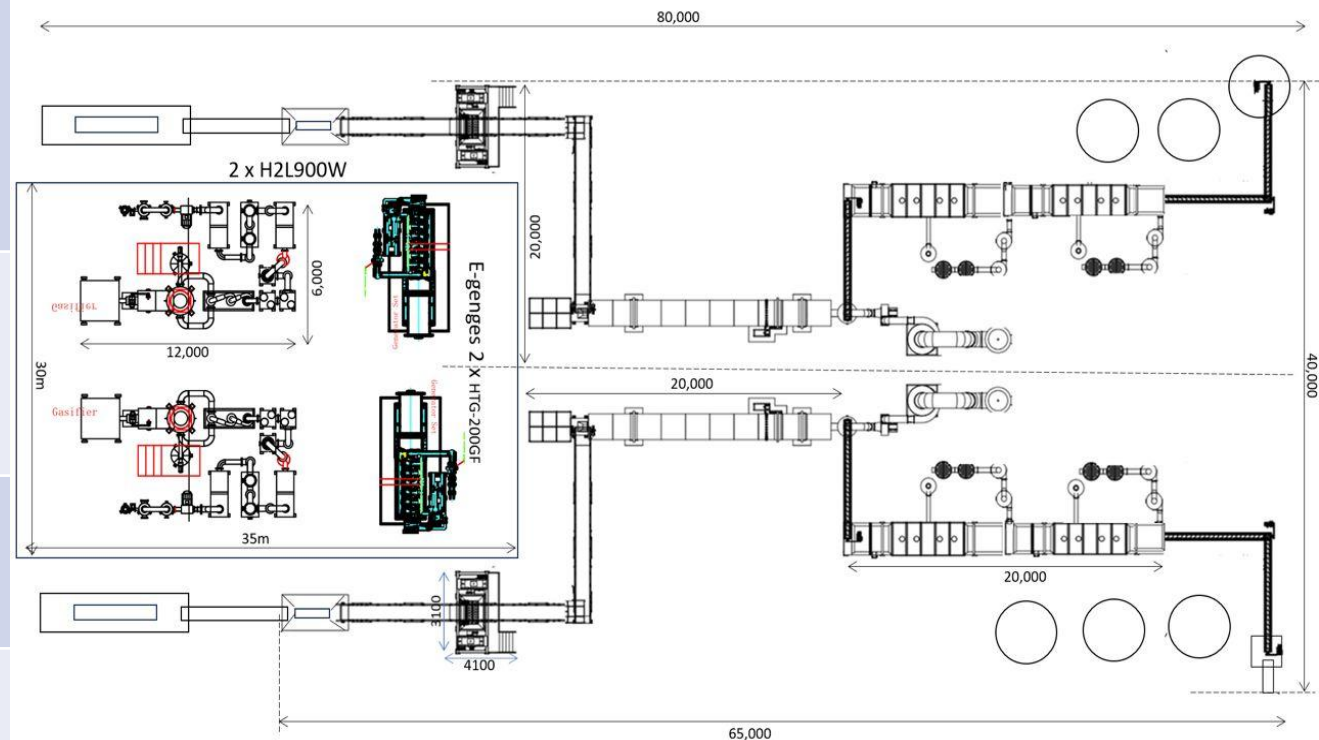
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TECHNOLOGY PORTFOLIO

Facilities Foot-Print: 3,200 m²

Pre-Processing	Thermo-chemical conversion and purification process of almond and walnut shells into purified bio-carbon precursor material for downstream graphene synthesis.
Graphene production	Transforming purified amorphous bio-carbon precursors into multi-layered, high-quality military-grade graphene through controlled compression.
H2Life Power Generation	Non-incinerative power generation from biomass to supply all the electrical and heat for the entire Graphene factory.
Post-process	Post-synthesis Impurity washing → Quality assurance → Bagging for delivery





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Advance BioCarbon – The Winning Strategic Action

