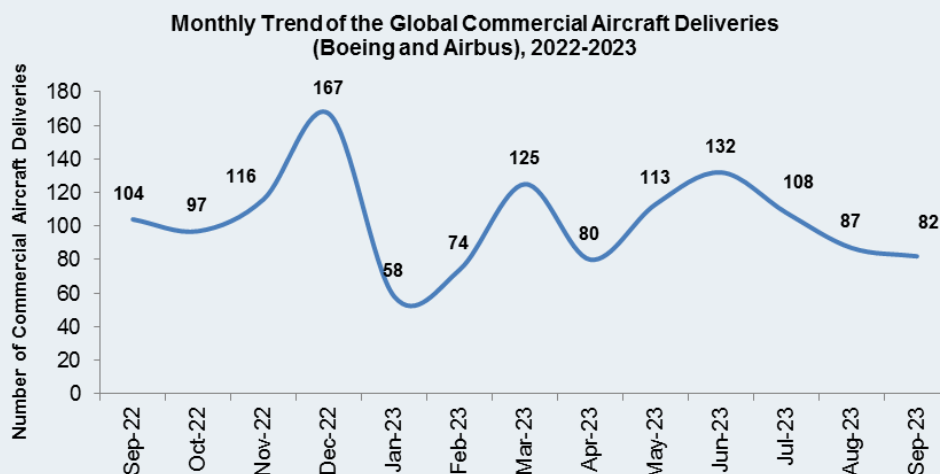


### Composites Market Update for September 2023

Reflecting the current dynamic economic landscape, recent indicators and perceptions of industry participants shed light on the nuanced performance of various industries. Examining year-over-year changes, the data from September revealed a complex scenario, with construction witnessing a 10% decline and infrastructure following suit with a 5% decrease. The marine sector faced a substantial challenge, registering a significant 25% downturn. Business distribution and transportation mirrored the trend, experiencing declines of around 10% and 15%, respectively. Although October is showing a marginal improvement with a 5% decrease, overall market sentiment remained cautious, underlining the persistent economic uncertainties. Beyond the specific industry metrics, the conversation among our market participants unveiled a broader economic narrative. Skepticism arose concerning optimistic government statistics, with escalating credit card debt and mounting default rates on auto loans heightening concerns. The looming prospect of a recession added complexity, with potential consequences including workforce layoffs and increased challenges in the housing market. The discussion also delved into the participation rate, signaling a return to work driven by financial imperatives, and the repercussions of strikes on automotive inventory, highlighting the intricate dynamics of economic challenges.

### Aerospace

Commercial aircraft (Boeing and Airbus) deliveries decreased from 87 aircraft deliveries in August 2023 to 82 aircraft deliveries in September 2023.



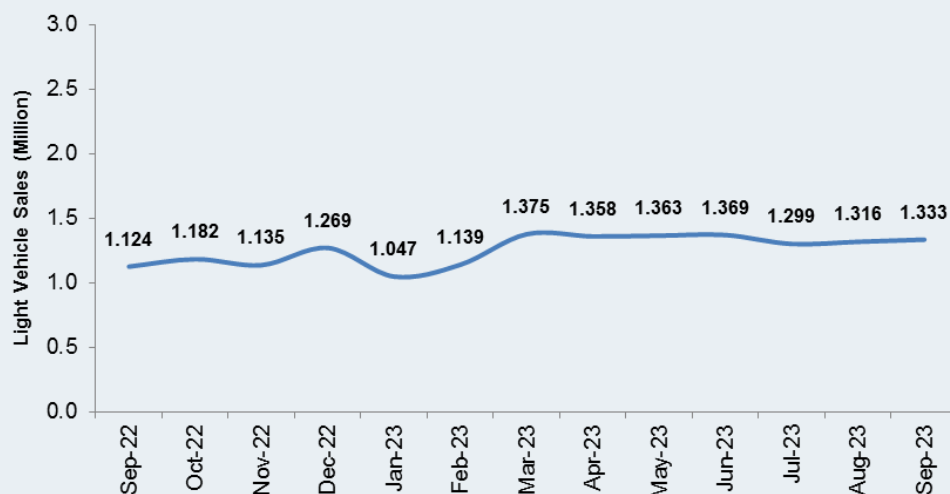
Some of the highlights of September 2023 are as follows:

- Sherwin-Williams Introduce High-Flexibility Body Filler.** Sherwin-Williams Aerospace Coatings has launched Fill Bond Flex Aerospace Filler as a new, convenient method for filling seams, rivets and small spot repair areas on aircraft prior to painting. The high-quality, two-component polyester filler kit is designed to block, and permanently conceal, surface imperfections on composite exterior aircraft surfaces. The lightweight filler provides performance, versatility and productivity by offering strong adhesion, resistance of shrinkage, sand ability, flexibility and stain resistance, making it ideal for creating smooth surfaces for topcoat applications.
- A New Era for Ceramic Matrix Composites.** Ceramic matrix composites use ceramic fibers in a ceramic matrix to enable high-performance structures at high temperatures. For example, the silicon carbide (SiC) fiber-reinforced SiC matrix (SiC/SiC) CMC that GE Aerospace produces for LEAP engine turbine shrouds can withstand 1,300°C, providing much higher resistance than metal super alloys like Inconel, but at one-third the density. This unique combination of properties has helped the LEAP engine run hotter with less cooling, improving efficiency to burn 15-20% less fuel, with lower emissions and maintenance. The GE9X engine, with five CMC parts, will reportedly be the most fuel-efficient engine ever built for a commercial aircraft when the Boeing 777X enters service in 2025.

### Automotive

The U.S. new vehicle sales of 1,333,252 units in September 2023 represented an increase of 19% as compared to 1,124,297 units in September 2022.

Monthly Trend of Light Vehicle Sales in the US, 2022-2023



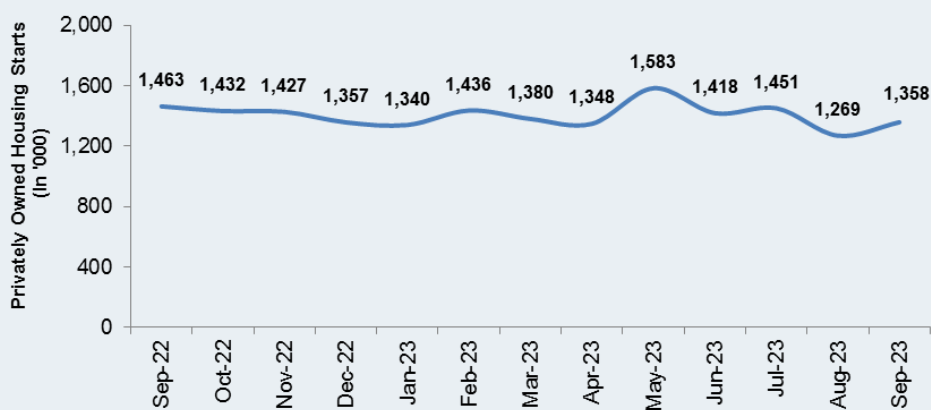
Some of the highlights of September 2023 are as follows:

- Aptera Reveals First Composite Production Parts for BinC Vehicle.** Aptera has announced that the first of its parts for the bodies in carbon solar electric vehicle have been stamped from production tools commissioned at partner C.P.C.'s manufacturing facility. The last stage of pre-production efforts is underway as Aptera begin receiving everything that it needs to build production-intent vehicles at its final assembly facility in Carlsbad, Calif., U.S. The unveiling of its first production parts is meant to be a tangible representation of the company's progress and continuous achievements to come. According to Aptera, each piece of the vehicle has been carefully designed to maintain efficiency and lightweight construction. These production-intent vehicles will be equipped with production parts sourced from trusted supply chain partners and assembled using body structures from C.P.C. They will also undergo rigorous crash testing and validation to ensure safety and reliability.
- British Supercar is Light weighted using Hypetex Colored Carbon Fiber.** British car manufacturer Briggs Automotive Co. has created a Hypetex colored carbon fiber version of its Mono R vehicle, reducing the weight by removing the need for paint. The carbon fiber body was built by Formaplex, a company that manufactures lightweight engineered solutions for top Tier customers in automotive, aerospace and defense markets. BAC's supply chain is 95% U.K.-based. The car's body was created using Hypetex's titanium carbon fiber twill, and finished with a crystalized lacquer, offering a distinctive aesthetic finish. The ultra-lightweight supercar can accelerate from zero to 60 miles per hour in less than 2.5 seconds.

### Construction

Privately-owned housing starts in September 2023 were at a seasonally adjusted annual rate of 1,358,000. This is 7.0% above the revised August estimate of 1,269,000, but is 7.2% below the September 2022 rate of 1,463,000. Single-family housing starts in September were at a rate of 963,000; this is 3.2% above the revised August figure of 933,000. The September rate for units in buildings with five units or more was 383,000.

Monthly Trend of Privately Owned Housing Starts in the US, 2022-2023



**Wind Energy**

As per the most recent "Energy Infrastructure Update" released by the Office of Energy Projects within the Federal Energy Regulatory Commission, wind energy with the combined installed capacity of 15 units from January to August 2023 amounted to 2,761 MW. This is in contrast to the 6,427 MW generated by 41 units during the same period in 2022. Wind energy, with an aggregated generating capacity of 147.70 GW, contributes 11.59% to the total energy sources, amounted to 1,274.18 GW.

**One of the highlights of September 2023 is as follows:**

- **Aeris Energy's Services Division in the USA to Meet Surging Wind Energy Demand.** Aeris Energy, a leading Brazilian manufacturer of wind blades in Latin America and one of the largest producers in the global market, has a services division in the USA to meet the growing demand for wind energy, which is expected to increase by 20% in the coming years worldwide, doubling installed capacity by 2030, according to the Lazard Levelized Cost of Energy Analysis and Future of Wind 2019 (Irena). In addition to the new wind turbine units that will be installed and will need inspection in the coming years – the company already has a contract with the main equipment manufacturers there is another opportunity in the US market in mature turbine lines.

**Marine**

The US marine industry is anticipated to experience good growth in 2023.

**One of the highlights of September 2023 is as follows:**

- **NLcomp Spins off Eco Yachts Brand for Sustainable Composite Boat Development.** It has been announced that Eco Yachts, a spinoff of Northern Light Composites, the startup that created and patented rComposite fiberglass material, has been formed. Eco Yachts recently launches its 30-foot composites-intensive sailing boat Ecoracer30 during The Ocean Race. Eco Yachts won its first prize, an honorable mention in Design Innovation Awards at the Genoa International Boat Show, for "demonstrating what it means to take a prototype and move it into industrial production, using experimental techniques and sustainable materials. Eco Yachts won its first prize, an honorable mention in Design Innovation Awards at the Genoa International Boat Show, for "demonstrating what it means to take a prototype and move it into industrial production, using experimental techniques and sustainable materials.

### Consumer Goods

New orders for manufactured durable goods in September, up following two consecutive monthly decreases, increased \$13.2 billion or 4.7% to \$297.2 billion. This followed a 0.1% August decrease. Excluding transportation, new orders increased 0.5%. Excluding defense, new orders increased 5.8%. Transportation equipment, also up following two consecutive monthly decreases, led the increase, \$12.3 billion or 12.7% to \$109.2 billion.

**One of the highlights of September 2023 is as follows:**

- **Gurit Composite Materials Support FridgeWize Industrial Chiller Fan Blades.** In an effort to redesign and retool its carbon fiber blade production, FridgeWize was introduced to Gurit's line of products and technical support team. FridgeWize retrofits high-efficiency motors — saving up to 70% of the energy costs associated with them. In the early stages of FridgeWize, it became apparent that the aluminum and plastic blades used in the evaporators of walk-in refrigeration systems were not optimized, were prone to plastic deformation causing imbalances, were relatively heavy and could suffer from fatigue. Consequently, FridgeWize improved blade design using carbon fiber which was not only lightweight but would not deform or become unbalanced.

### Recent Development in Materials

**SABIC LNP Thermocomp WF006V Compound Optimizes Electronics.** SABIC highlights a new glass fiber-reinforced LNP Thermocomp WF006V compound, which is well-suited for laser direct structuring (LDS) of antennas that are integrated into the housings and covers of consumer electronics devices, appliances and other electronic components. The new material can help facilitate the adoption of LDS antennas to replace incumbent options such as flexible printed circuit (FPC) antennas by enabling customers to create complex and miniaturized designs, accelerate production and reduce system costs. LNP Thermocomp WF006V is reported to provide a tensile modulus more than two times higher than that of unfilled polybutylene terephthalate (PBT) or polycarbonate (PC) resin, and could be used for molding small, thin-wall parts. It also delivers good surface quality to meet aesthetic requirements, and offers good signal gain and LDS performance. Moreover, compared to traditional materials, the glass fiber-reinforced grade provided improved chemical resistance, hydrolytic stability and lower warpage.

### Recent Product Launches in the Composites Market

The following table represents new product launch in the composites market in September 2023.

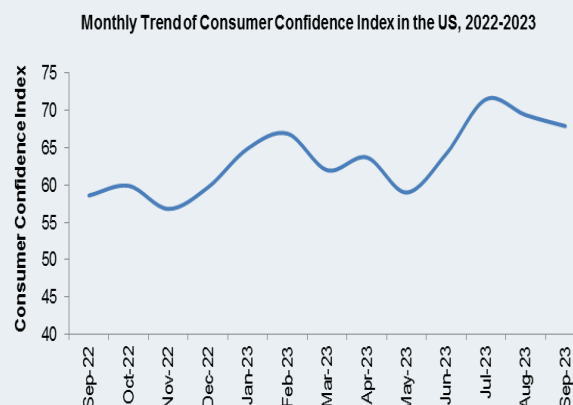
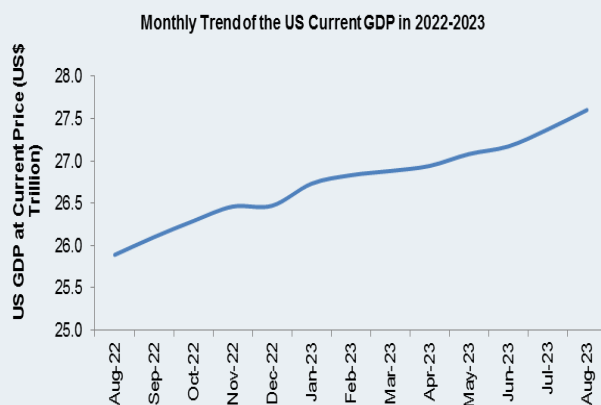
Product	Company Name	Description
LT20 Wheelchair	ROBOOTER	The LT20 wheelchair, with its carbon fiber frame, is both compact and lightweight, weighing just 12.2kg. Despite its lightweight design, the wheelchair can support individuals weighing up to 100kg, making it highly suitable for modern transportation needs. When folded, this solution offers outstanding portability as it can easily fit into the trunk of a car or be carried onto a bus, train, or subway. The rapid rollout of this series is set to boost ROBOOTER's market share in Europe.

### The US Economic Overview – September 2023

The US Consumer Confidence Index decreased to 67.9 in September 2023 as compared to 69.4 in August 2023. The GDP at current price of the US increased from US \$27.37 trillion in July 2023 to US \$27.60 trillion in August 2023.

**Real gross domestic product (GDP)** increased at an annual rate of 4.9% in the third quarter of 2023, according to the "advance" estimate. The increase in real GDP reflected increases in consumer spending, private inventory investment, exports, state and local government spending, federal government spending, and residential fixed investment that were partly offset by a decrease in nonresidential fixed investment. Imports, which are a subtraction in the calculation of GDP, increased.

The price index for gross domestic purchases increased 3.0% in the third quarter of 2023, compared with an increase of 1.4 percent in the second quarter of 2023. The personal consumption expenditures (PCE) price index increased 2.9%, as compared with an increase of 2.5%. Excluding food and energy prices, the PCE price index increased 2.4%, as compared with an increase of 3.7%.



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