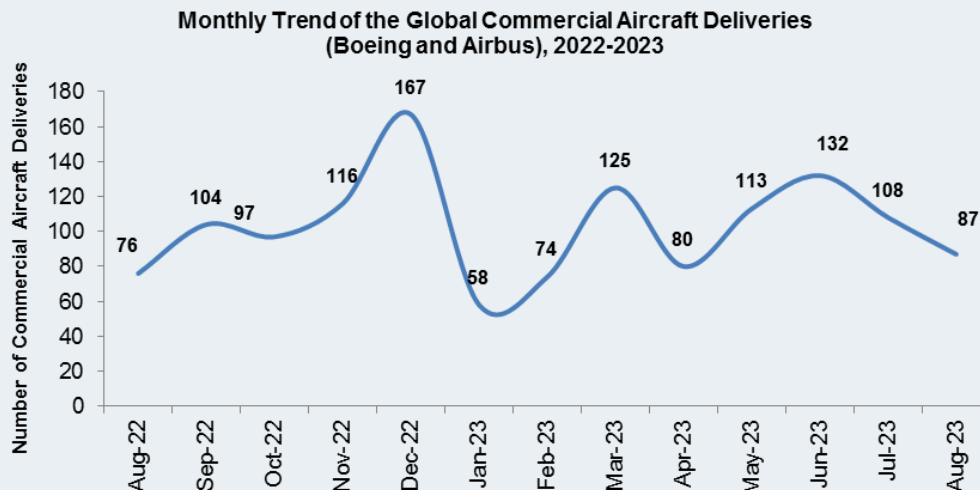


Composites Market Update for August 2023

In August, the composites industry witnessed a noteworthy improvement as compared to the previous month, primarily attributable to an increase in the number of working days, resulting in a substantial 15%-20% surge in activity. This is the result of suspending production in the Marine and RV sectors. However, it is essential to note that concerning the year-over-year perspective, the industry still grappled with a notable decline of approximately 10%-11%. This decline can be attributed to a shift in consumer spending behavior, with customers redirecting their preferences towards entertainment-related products, consequently impacting various sectors adversely. Despite these fluctuations, the infrastructure sector exhibited resilience in August, registering an impressive 20% growth as compared to the preceding month. In stark contrast, the residential sector experienced a more subdued performance, displaying only marginal growth. Looking ahead to September, a cautious outlook prevails, with an anticipated decrease of roughly 10% in comparison to August. This downturn is primarily attributed to the upcoming month's fewer working days; however, there is a noticeable trend towards shorter lead times for customer orders. Furthermore, the industry faces the challenge of rising raw material costs, which escalated by approximately 5%-10% within a single month. When considering the cumulative impact of August and September, this increase averages around 3%-5%. Factors contributing to this surge include the strength of the U.S. dollar and shortages in critical materials, such as styrene. In light of these circumstances, the industry is expected to adopt cost-cutting measures and potentially reduce production in the upcoming months.

Aerospace

Commercial aircraft (Boeing and Airbus) deliveries decreased from 108 aircraft deliveries in July 2023 to 87 aircraft deliveries in August 2023.



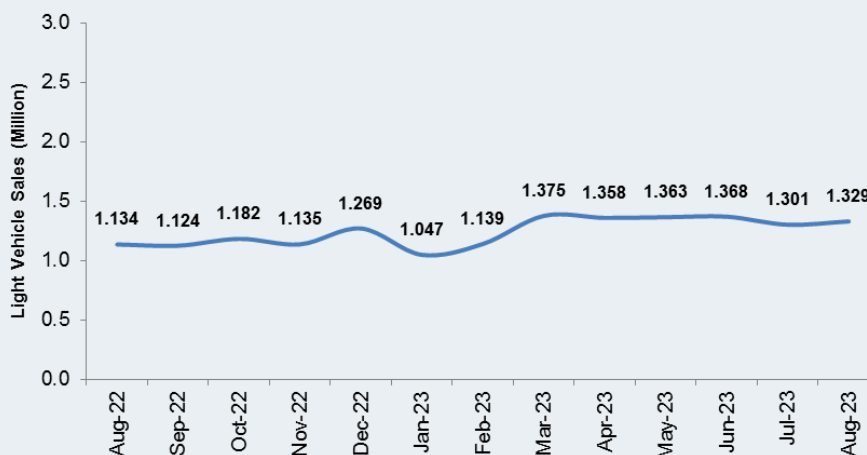
Some of the highlights of August 2023 are as follows:

- Dufour Aerospace Declares Composites Airframe, Nacelle and Tail Suppliers for Aero2 Drone Prototype.** Dufour Aerospace released the final specifications for its uncrewed, hybrid-electric, tilt-wing Aero2 drone, as well as the selection of key suppliers Connova AG for the composite airframe and Aerolite AG for composite structural components in the nacelles and tail. The Aero2 aircraft is expected to be able to transport 40 kilograms over a distance of 400 kilometers. According to Dufour Aerospace, the all-composite lightweight airframe is a key contributor to the Aero2's performance. Connova AG will produce the major subassemblies for the Aero2 airframe main wing, fuselage and engine bay at its production site in Villmergen, Switzerland.
- MoU between GKN Aerospace and Airbus Helicopters.** GKN Aerospace has recently signed a memorandum of understanding (MOU) with Airbus Helicopters, marking a significant step in a long-standing partnership. This collaboration follows the recent pre-selection of Airbus Helicopters to deliver 14 H225M helicopters for Special Operations to the Ministry of Defence of the Netherlands. Under the MU, GKN Aerospace will provide essential support in areas such as engineering, electrical wiring interconnections systems (EWIS) design and manufacturing, as well as maintenance, repair and overhaul (MRO) activities. It will also lead potential innovation projects and aerostructures design and manufacturing, with a particular focus on composite structures. The collaboration will strengthen the aerospace industry in the Netherlands and foster innovation within the Dutch aerospace ecosystem.

Automotive

The U.S. new vehicle sales of 1,328,526 units in August 2023 represented an increase of 17% as compared to 1,134,266 units in August 2022.

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



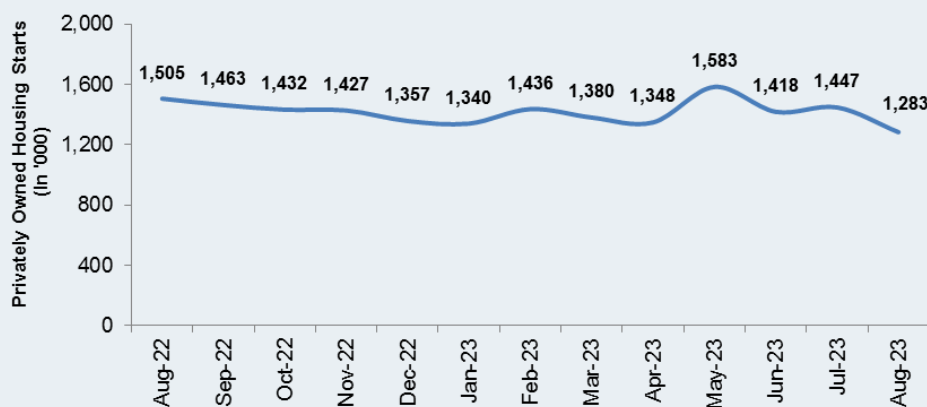
One of the highlights of August 2023 is as follows:

- Technical Partnership between Zenvo Automotive and Managing Composites.** Zenvo Automotive apprised of the latest high-profile technical partnership as they join forces with Madrid-based, Managing Composites, for the build of the all-new Aurora hypercar. The Zenvo Aurora is poised to challenge the hypercar world with its cutting-edge technologies and ground-breaking design. Together with Managing Composites, Zenvo is targeting a composite platform boasting an impressive rigidity of 63,000Nm/deg between suspension hardpoints, while weighing under 120kg, (or an equivalent monocoque exceeding 75,000Nm/deg in less than 64kg). Managing Composites, with their unparalleled expertise, will spearhead the development of an extraordinary carbon fiber platform for the Aurora. The partnership between Zenvo Automotive and Managing Composites goes far beyond just the monocoque.

Construction

Privately-owned housing starts in August 2023 were at a seasonally adjusted annual rate of 1,283,000. This is 11.3% below the revised July estimate of 1,447,000 and is 14.8% below the August 2022 rate of 1,505,000. Single-family housing starts in August were at a rate of 941,000; this is 4.3% below the revised July figure of 983,000. The August rate for units in buildings with five units or more was 334,000.

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



One of the highlights of August 2023 is as follows:

- Bio-based Composite Construction Elements to Combat Climate Change.** Neste, LyondellBasell, Biofibre, and Naftex have created a value chain to combine bio-based polymers with natural fiber for the manufacture of construction elements, which will act as carbon storage, thus helping tackle climate change. By combining bio-based polymers with natural fiber, the partners are enabling the production of construction solutions that have a lower carbon footprint. It is important that the construction sector continues to develop innovative ways to combat climate change.

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 July 2023 amounted to 2,750 MW. This is in contrast to the 6,407 MW generated by 37 units during the same period in 2022. Wind energy, with an aggregated generating capacity of 147.69 GW contributes 11.60% to the total energy sources, which amounts to 1,272.80 GW.

One of the highlights of August 2023 is as follows:

- **Balmoral Launches Composite Scour Protection System.** The company is introducing Balmoral HexDefence, a lightweight composite construction that aims to drastically reduce scour phenomena around fixed wind turbines. Scour refers to the erosion of seabed sediment caused by currents and waves. These conditions can lead to turbine foundation instability and inter-array cable damage, ultimately resulting in expensive cable failure. To mitigate these consequences scour protection is used to defend the seabed around a monopile structure. Balmoral HexDefence, an integrated scour protection and flow reduction system, minimizes offshore operational costs and potential cable failure. The HexDefence structure eliminates the requirement to dump rock, instead providing a non-invasive approach to protecting the monopile and the immediate surrounding area.

Marine

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

One of the highlights of August 2023 is as follows:

- **BMComposites Confirms Second Linx 30 Catamaran Build.** BMComposites, a boat builder specializing in the design and manufacture of carbon fiber composites, confirmed that it received a second order for a Linx 30 foil-assisted, beach landing catamaran tender, marking the second hull of this 30-foot model. The Linx 30 is constructed with carbon fiber and uses a state-of-the-art foil-assisted catamaran hull configuration. The foil induces lift, which in turn works to reduce drag, improves seakeeping, and thereby increases efficiency with a 40% improvement on fuel consumption. The first Linx 30 catamaran was hailed by its mothership superyacht crew and those who have had the opportunity to sea trial it, as offering exceptional stability and performance at high speed.

Consumer Goods

New orders for manufactured durable goods in August, up five of the last six months, increased \$0.5 billion or 0.2% to \$284.7 billion. This followed a 5.6% July decrease. Excluding transportation, new orders increased 0.4%. Excluding defense, new orders decreased 0.7%. Machinery, up four of the last five months, led the increase, \$0.2 billion or 0.5% to \$37.8 billion.

One of the highlights of August 2023 is as follows:

- KraussMaffei and Partners Develop Sustainable, Safe and Stylish Children’s Bike.**
 KraussMaffei and partners have developed a high-performance children’s bike emphasizing a cool design, new safety features and sustainable production. The new Lion Bike by former professional cyclists Marcel Kittel and Tony Martin features a frame and fork made of a high-performance polymer with recycled carbon fibers produced by specialist Weber Fibertech. The frame and fork are made with polyamide 6 (PA6) and 40% recycled carbon fibers. First finished Lion Bikes are expected to be available on the market beginning spring 2024.

Recent Product Launches in the Composites Market

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

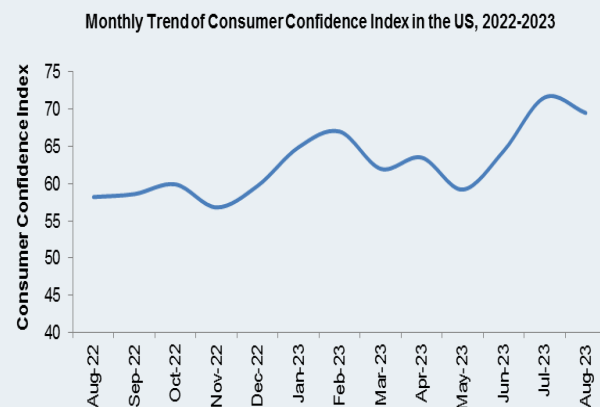
Product	Company Name	Description
Universal Utility Adapter	DragonPlate	DragonPlate has launched the Universal Utility Adapter, a new addition to their modular carbon fiber tube connectors. The cutting-edge adapter allows for a wide range of tool connections to DragonPlate's lightweight and strong carbon fiber tubes and telescoping assemblies, opening exciting new carbon fiber applications.

The US Economic Overview – August 2023

The US Consumer Confidence Index decreased to 69.5 in August 2023 as compared to 71.6 in July 2023. The GDP at current price of the US increased from US \$26.92 trillion in June 2023 to US \$27.13 trillion in July 2023.

Real gross domestic product (GDP) increased at an annual rate of 2.1% in the second quarter of 2023, according to the "third" estimate. The increase in real GDP reflected increases in consumer spending, non-residential fixed investment, and state and local government spending that were partly offset by a decrease in exports. Imports, which are a subtraction in the calculation of GDP, decreased.

The price index for gross domestic purchases increased 1.4% in the second quarter of 2023, a downward revision of 0.3% point. The personal consumption expenditures (PCE) price index increased 2.5%, the same as in the previous estimate. Excluding food and energy prices, the PCE price index increased 3.7%, also unrevised.



About Lucintel: Lucintel has been in the business for 15 years and has served thousands of clients, ranging from small, emerging organizations to multinational Fortune 500 companies such as 3M, Ashland, Audi, Dow, GE, General Motors, and Momentive. Lucintel is a growth accelerator firm that helps companies with market entry strategies, growth financing, M&A, market research, and strategic consulting. Let us create a growth roadmap that meets your goals and budget. Visit www.lucintel.com and contact us today (email: helpdesk@lucintel.com or call us at 972-636-5056) for a free consultation and we will explain how Lucintel can assist your business.