

Composites Market Update for November 2024

The composites industry is experiencing varied performance across segments as it navigates shifting market conditions. Marine composites, for instance, faced a year-over-year decline of approximately 30%, an improvement from the 40% dip seen earlier in the year. Infrastructure composites contracted moderately, with a 5-10% year-over-year decrease, while residential applications showed flat performance with hints of softening demand. Month-over-month trends in September offered a slight reprieve, with total volumes rising marginally due to favorable working days and the Marine segment showing a 7% uptick. Despite some stabilization in areas like pools, the overall demand remains pressured by macroeconomic uncertainties and inflation.

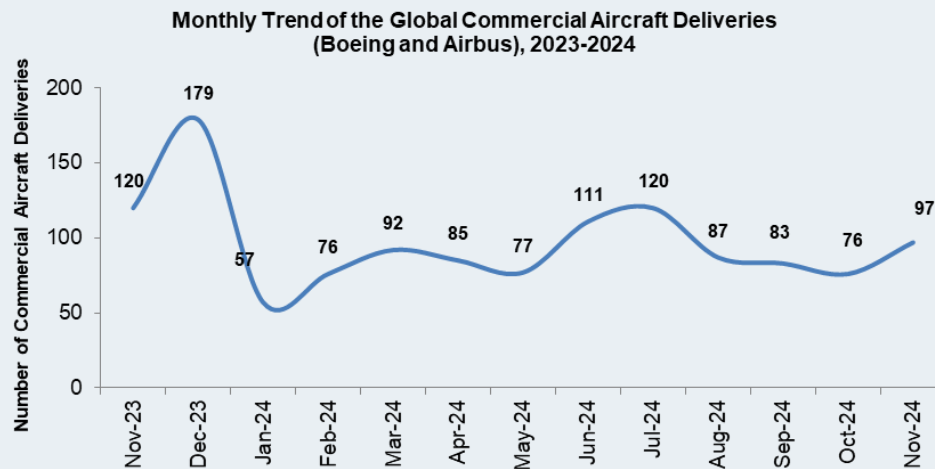
Pricing volatility is another significant factor, influenced by raw material cost fluctuations. Styrene prices have declined, while maleic and phthalic anhydrides have seen increases, driving inconsistent input costs. This has led to a 1-2% reduction in overall product pricing, as companies strive to maintain profitability. The interplay of high inflation, post-COVID adjustments, and delayed infrastructure and residential projects has further complicated market recovery. These challenges underscore the importance of strategic cost management and supply chain resilience as the industry adjusts to new economic realities.

Implications of Potential Tariffs on Composite Imports

The incoming administration's potential implementation of tariffs on imported goods could significantly reshape the composites landscape. Key materials, like glass fiber and resin inputs, which are heavily sourced from China, may face price hikes that ripple through the supply chain. Tariffs could raise costs by an estimated \$0.20 per pound, particularly affecting reinforced products, like thermosets and thermoplastics. While some companies have diversified and localized their supply chains, certain segments, such as epoxy vinyl esters, remain dependent on imports, leaving them exposed. While tariffs aim to stimulate domestic production, they risk reducing U.S. manufacturers' global competitiveness unless offset by targeted incentives or subsidies. To adapt, industry players must innovate, re-evaluate sourcing strategies, and engage policymakers to mitigate potential disruptions while maintaining growth momentum.

Aerospace

Commercial aircraft (Boeing and Airbus) deliveries increased from 76 aircraft deliveries in October 2024 to 97 aircraft deliveries in November 2024.

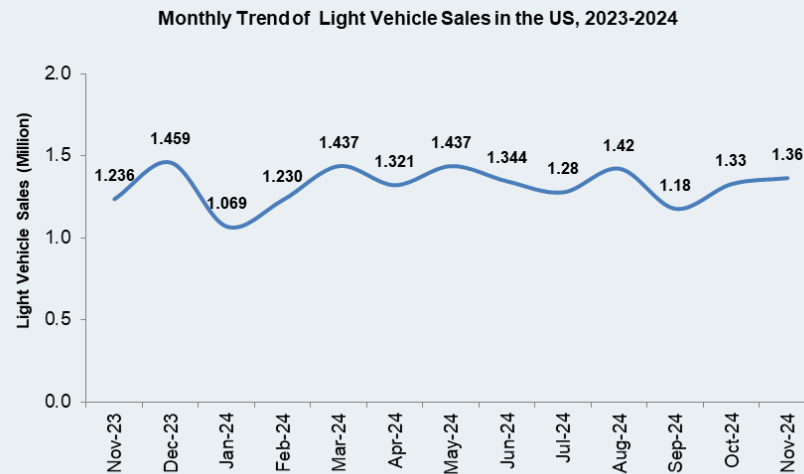


Some of the highlights of November 2024 are as follows:

- **Wichita's NIAR delivers fiber metal laminate test panel to FAA.** The National Institute for Aviation Research (NIAR) at Wichita State University recently completed fabrication and delivery of a full-scale fuselage structural test panel to the Federal Aviation Administration's William J. Hughes Technical Center in Atlantic City, New Jersey. This panel is the fourth panel evaluating the fatigue and damage tolerance capabilities of fuselage structure using hybrid fiber metal laminate (FML) as reinforcement between skin and substructures. The upcoming fifth panel will be optimized version of panel four considering weight saving and reducing manufacturing cost.
- **Dawn Aerospace breaks sound barrier, hypersonic global records.** Dawn Aerospace operating as Dawn Hypersonics, surpassed the speed of sound for the first time with its Mk-II Aurora rocket-powered aircraft, reaching Mach 1.1 and climbing to an altitude of 82,500 feet. This is over twice as high as commercial aircraft and, the company reports, marks the first time a civil aircraft has flown supersonic since Concorde.

Automotive

The U.S. light vehicle sales of 1,363,968 units in November 2024 represented an increase of 10.4% as compared to 1,235,583 units in November 2023.



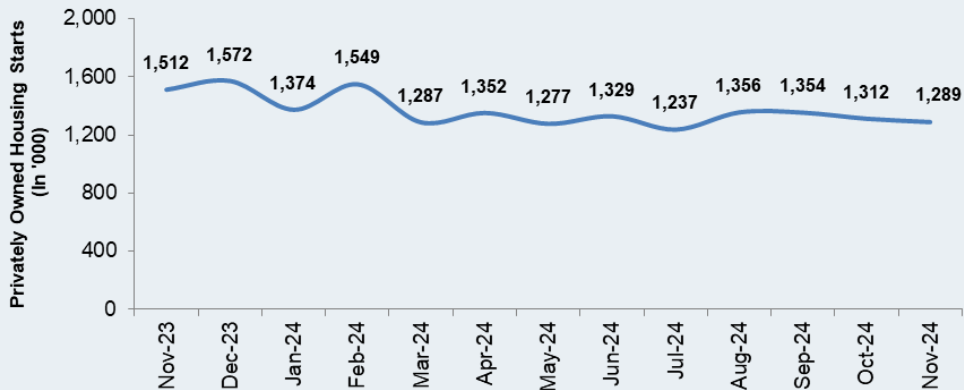
Some of the highlights of November 2024 are as follows:

- **Aptera completes function test for first production-intent sEV.** Aptera Motors achieved a successful drive of its first production-intent body in carbon (BinC) solar electric vehicle (SEV), which will be used for real-world validation and testing. The vehicle, the first in a series, has been engineered to rigorously test Aptera's production-intent design, production components and critical performance metrics such as range, solar charging capability and efficiency.
- **Carbon ThreeSixty unveils industry leading carbon fibre aftermarket wheel.** Carbon ThreeSixty has launched the latest product to be developed and manufactured at its new 44,000 square feet factory in Wiltshire: a high-performance carbon fiber aftermarket wheel. Carbon fiber wheels offer numerous advantages over traditional alloy wheels such as Reduced Unsprung Weight, Enhanced Handling and Performance, and Carbon fiber's unique visual appeal and customizable finishes add a touch of luxury and exclusivity to any vehicle.

Construction

Privately-owned housing starts in November were at a seasonally adjusted annual rate of 1,289,000. This is 1.8% below the revised October estimate of 1,312,000 and is 14.6% below the November 2023 rate of 1,510,000. Single-family housing starts in November were at a rate of 1,011,000; this is 6.4% above the revised October figure of 950,000. The November rate for units in buildings with five units or more was 264,000.

Monthly Trend of Privately Owned Housing Starts in the US, 2023-2024



One of the highlights of November 2024 is as follows:

- GFRP Tech launches South African facility for GFRP rebars production.** GFRP Tech has launched the first manufacturing facility of its kind in South Africa. The facility will manufacture GFRP rebars, GFRP mesh, and GFRP bends. In addition, the multi-million rand facility has been designed to manufacture, test, and supply GFRP Tech's flagship EnviraBar and EnviraMesh alternatives to traditional steel rebars.

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 3 units in October 2024 amounted to 174 MW. Wind energy, with an aggregated generating capacity of 153.17 GW that contributes 11.75% to the total energy sources, amounted to 1,303.90 GW.

One of the highlights of November 2024 is as follows:

- Resolve Composites, Siemens Gamesa partner in Second Wind project.** The Second Wind Project, an initiative led by Resolve Composites and Siemens Gamesa, has resulted in the successful recycling of a 6-meter spar cap section from a wind turbine blade into a 5-meter custom boat hull using ReceTT, Resolve Composites' scalable recycling process that supports different types of solvolysis treatment.

Consumer Goods

New orders for manufactured durable goods in November, down three of the last four months, decreased \$3.0 billion or 1.1% to \$285.1 billion. This followed a 0.8% October increase. Excluding transportation, new orders decreased 0.1%. Excluding defense, new orders decreased 0.3%. Transportation equipment, also down three of the last four months, led the decrease, \$2.9 billion or 2.9% to \$95.5 billion.

One of the highlights of November 2024 is as follows:

- **Arris Debuts Consumer-Driven Brand for Carbon Fiber Tech.** Arris Composites is introducing its first direct-to-consumer brand, Aurorra by Arris (AXA). The tech-driven collection will feature limited-edition products that leverage and scale the company's carbon fiber technology capabilities.

Recent Development in Materials

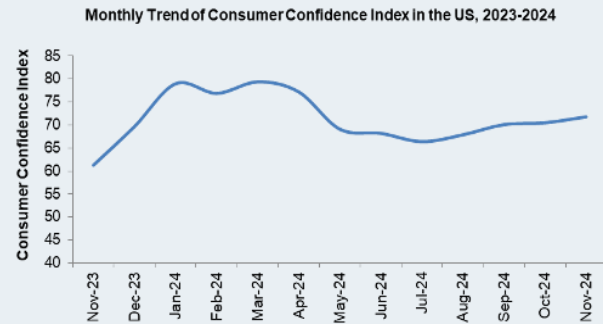
- **PRF Composite Materials unveils RP570 FR REEPREG.** PRF Composite Materials has launched RP570 FR REEPREG, presented at RECOMP 2024: Reuse and Recycling of Composites. Developed for aircraft interior components, RP570 FR REEPREG is a fire-retardant eXpress cure prepreg material made with recycled carbon fiber nonwoven mat and has a complete processing time of 5 minutes at 160°C. This innovative material combines REEPREG's class-leading handleability with PRF's eXpress cure technology and provides a fire-retardant carbon prepreg material that reduces landfill waste, improves circularity, and is highly suited to high volume manufacturing (HVM).

The US Economic Overview – November 2024

The US Consumer Confidence Index increased to 71.8 in November 2024 as compared to 70.5 in October 2024. The GDP at current price of the US increased from US \$29.52 trillion in October 2024 to US \$29.64 trillion in November 2024.

Real gross domestic product (GDP) increased at an annual rate of 3.1% in the third quarter of 2024, according to the "third" estimate. In the second quarter, real GDP increased 3.0%. The increase in the third quarter primarily reflected increases in consumer spending, exports, non-residential fixed investment, and federal government spending. Imports, which are a subtraction in the calculation of GDP, increased.

The price index for gross domestic purchases increased 1.9% in the third quarter of 2024. The personal consumption expenditures (PCE) price index increased 1.5%, also the same as previously estimated. Excluding food and energy prices, the PCE price index increased 2.2%, an upward revision of 0.1%.



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