



## The UPM Market Informer



### Inside This Issue

Surcharge Update..	2
GE Turbines in Illinois.....	3
Sierra Space Manufacturing.....	3
Pratt & Whitney GTF Engine.....	4
Outokumpu Price Announcement....	4
Midwest Renewable Gas Boom.....	5
California Hydrogen Power.....	5

### Lockheed Martin Opens New F-16 Production Line Amid New Demand

To support the growing demand for new F-16s from partner nations, Lockheed Martin is opening a new production line. The Block 70/72 aircraft will be produced at the company's facility in Greenville, South Carolina.

The line is the only production facility for F-16s in the world, opening three years after the company's long-time F-16 line in Fort Worth, Texas, wrapped up production.

Recently, and on behalf of five foreign military partners, USAF awarded Lockheed Martin approximately \$14 billion to build 128 F-16s at the facility through to 2026.

The first F-16s are expected to roll off the production line in 2022, and production is expected to increase after the first year. The aircraft will be delivered to multiple foreign military partners, including Bahrain, Slovakia, Bulgaria, Taiwan, and others, many of whom have expressed interest beyond the first deliveries.

More aircraft are expected to be built in the upcoming years, and there are requests for F-16s under review from additional foreign military partners.

"This new production line is very significant," said Brian Pearson, integrated product team lead for F-16 foreign military sales, with the Air Force Life Cycle Management Center's Fighters and Advanced Aircraft Directorate, which is leading the effort to build and deliver the new F-16s. "There are 25 nations operating F-16s today, and they have a lot of expertise with the airframe. The line helps us meet the global demand that a number of nations have for [F-16] aircraft and gives us the additional capability to provide the aircraft to countries interested in purchasing it for the first time."

*Source: Michael Tyrell for Aerospace Manufacturing*

# Surcharge Totals March - August 2021



	Mar	Apr	May	June	July	Aug
15-5	0.6720	0.6913	0.7359	0.7702	*	*
15-7	0.9716	0.9804	0.9847	1.0386	*	*
17-4	0.6553	0.6795	0.7310	0.7650	*	*
17-7	0.8472	0.8325	0.8722	0.9147	*	*
201	0.6650	0.6660	0.7195	0.7451	*	*
301 7.0%	0.8350	0.8214	0.8634	0.9048	*	*
302/304/304L	0.9170	0.8974	0.9389	0.9862	*	*
304-8.5%	0.9538	0.9315	0.9704	1.0206	*	*
305	1.2156	1.1736	1.1965	1.2673	*	*
309	1.2447	1.2016	1.2407	1.3115	*	*
310	1.7765	1.6938	1.7057	1.8179	*	*
316/316L	1.2459	1.2345	1.2298	1.3043	*	*
316LS/316LVM	1.7600	1.6500	1.6200	*	*	*
317L	1.4354	1.4271	1.4133	1.5014	*	*
321	0.9868	0.9607	0.9921	1.0451	*	*
347	1.2911	1.2661	1.2977	1.3509	*	*
409/409 Mod	0.2716	0.2978	0.3472	0.3471	*	*
410/410S	0.2741	0.3011	0.3542	0.3542	*	*
430	0.3115	0.3372	0.4111	0.4111	*	*
434	0.3860	0.4185	0.4825	0.4883	*	*
439	0.3260	0.3496	0.4278	0.4276	*	*
440A	0.3115	0.3372	0.4111	0.4111	*	*
2205	1.0520	1.0744	1.1092	1.1634	*	*
263	5.6679	5.9612	6.6693	7.9946	8.2475	7.7472
276	5.7359	6.1061	6.5901	7.1199	6.5237	6.4275
A286	1.7379	1.9045	2.1129	2.2187	2.0210	2.0153
330	2.2771	2.4934	2.7077	5.4791	2.5437	2.5474
400	4.3137	4.7668	5.1575	5.4791	4.8402	4.8974
Custom 455	1.0000	0.9300	0.9400	*	*	*
Custom 465	1.2900	1.2100	1.2000	*	*	*
600	4.5458	4.9519	5.3688	5.6497	4.8973	4.9049
601	3.8872	4.2284	4.5766	4.8061	4.2425	4.2486
617	5.6616	6.0103	6.5960	7.5248	7.3395	7.0459
625	6.2530	6.6094	7.0245	7.4154	6.8490	6.8007
Custom 630	0.7700	0.7800	.07800	*	*	*
718	6.0513	6.3535	6.6898	6.9441	6.4667	6.4511
X-750	5.0801	5.4757	5.9189	6.1830	5.4539	5.4597
825	2.8876	3.1348	3.4186	3.6277	3.2981	3.2836
HX	3.8686	4.1640	4.5259	4.8964	4.4855	4.4236
188	10.0500	11.1100	10.0000	*	*	*
CCM	14.8400	16.5900	14.2500	*	*	*
L-605	11.4100	12.9700	11.5500	*	*	*

\*Surcharge currently not available

## GE turbines to power 302-MW Lincoln Land Wind project in Illinois

GE Renewable Energy will supply 107 of GE's 2.82-127 onshore wind turbines for the 302-MW Lincoln Land Wind project in Morgan County, Illinois.

The wind farm is owned by funds managed by the Infrastructure and Power strategy of Ares Management Corporation. Apex Clean Energy led the development of Lincoln Land Wind, and Ares finalized preconstruction milestones, including securing turbines, financing (tax equity and debt), and other project contracts. The partnership with GE also includes a 20-year full-service agreement. The project is anticipated to be completed by the end of 2021.



Lincoln Land will have 107 of GE's 2.82-127 turbine, which was recently announced as the most widely deployed turbine in the United States in 2020 by the American Clean Power Association.

Tim White, GE Renewable Energy's CEO for On-

shore Americas, said, "We are delighted to continue our partnership with Ares. Together, we have announced more than 800 MW in new onshore units over the last 12 months—this is an exciting milestone, and we're thrilled to support our customers in accelerating the energy transition by helping to deliver sustainable, affordable, renewable energy through our combined projects in the U.S." [Click here for more on this story](#) Source: *Windpower*

## Sierra Space Signs In-Space Manufacturing Agreement With Redwire

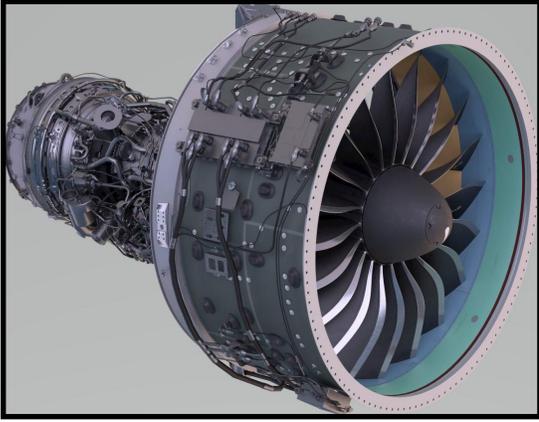
Sierra Space, the new commercial space subsidiary of global aerospace and national security leader Sierra Nevada Corporation (SNC), today announced the signing of a joint agreement with Redwire aimed at leveraging Sierra Space capabilities for a range of in-space services and manufacturing. The memorandum of understanding ("MOU") in the emerging In-Space Manufacturing (ISM) industry is among new commercial agreements for Sierra Space across multiple industries – including space-enabled manufacturing, biopharma research, on-orbit satellite servicing assembly and manufacturing, and microgravity research. SNC announced earlier this month the transition of its space business to Sierra Space, a new commercial space company.



By moving manufacturing and production into a microgravity environment, ISM offers efficiencies and capabilities not possible with terrestrial-based manufacturing methods. New Sierra Space partnerships hint at the exciting commercial potential of ISM, which can be leveraged to transform industries both on Earth and in space.

"The market demand for a 'space-as-a-service' business model, offering space transportation, destinations and infrastructure, is truly exciting. We provide the versatility and affordability that allow ISM companies to scale operations in the new space economy," said Eren Ozmen, President and owner of SNC. "The Sierra Space LIFE™ habitat provides an integrated, flexible and expandable workspace for the many industries – including manufacturing – that can benefit from zero gravity." [Click here for more on this story](#) Source: *Businesswire*

## Pratt & Whitney GTF™ Engines Now Power More Than 1,000 Aircraft



Pratt & Whitney recently celebrated the 1,000<sup>th</sup> aircraft powered by GTF engines, with this milestone aircraft delivered to Sichuan Airlines Co., Ltd. (“Sichuan”). GTF engines power three aircraft families in service today: Airbus A320neo, Airbus A220 and Embraer E-Jets E2. The 1,000<sup>th</sup> aircraft marked the 30<sup>th</sup> A320neo family aircraft in the Sichuan fleet with 51 more to be delivered. In addition to GTF-powered A320neo family aircraft, the airline also operates 87 A320ceo family aircraft with V2500® engines.

“We are honored to take delivery of the 1,000<sup>th</sup> GTF-powered aircraft,” said Li Haiying, Chairman of Sichuan Airlines Co., Ltd. “We offer our congratulations on this milestone, which is a testament not

only to the unmatched economic and environmental performance of GTF engines, but also the long-term relationship we have enjoyed with Pratt & Whitney.”

Powering 54 airlines around the world, GTF engines have saved more than 490 million gallons of fuel and avoided more than 4.7 million tons of carbon emissions, while accumulating more than 8.9 million engine flight hours of experience.

Thanks in part to the engine’s fuel efficiency, these three aircraft families have experienced some of the highest utilization during the pandemic and recovery period. Paired with world-class dispatch reliability, the GTF is enabling operators to expand their route networks more sustainably. It is the engine of choice for more than 80 airlines and lessors who have placed orders and commitments for more than 10,000 engines. To service the growing fleet, Pratt & Whitney has established a global network of the world’s leading maintenance, repair and overhaul (MRO) facilities. [Click here for more on this story](#) Source: Pratt & Whitney

---

## Outokumpu Price Announcement

The following announcement applies to our U.S. and Canada business. Effective with shipments beginning June 1, 2021 Outokumpu Stainless USA, LLC will implement the following price adjustments for all Non-Contract items:

- Cold Rolled material will have their discounts reduced by 2 discount points on the following grades:
  - 200 series
  - 300 series
- Cold Rolled 400 Series discounts including automotive grades will be reduced by 3 discount points.
- Continuous Mill Plate (CMP) will be increased by \$5.00/cwt.
- An Extra increase from \$5.00/cwt to \$8.00/cwt will be applied to Coil width less than 48".
- A Change on Light Gauge Adder extra from 21 to 20 Gauge.
- An Extra of \$15.00/cwt will be applied to 200 series Light Gauge Adder.
- An Extra increase from \$3.00/cwt to \$5.00/cwt will be applied to Coils less than 200 PIW.
- An Extra increase from \$3.00/cwt to \$6.00/cwt will be applied to Bright Anneal.
- An Extra will be applied to Packaging Extras as following.
  - B - Standard CTL Skids (lengths 96" - 192") an increase from \$50.00/each to \$90.00/each.
  - C - Standard CTL Skids (lengths 192" – 240") an increase from \$ 150.00 to \$230.00/each.
  - D - Standard CTL Skids (lengths 240"- 360") an increase from \$250.00/each to \$260.00/each.
  - E - Coil Skids an increase from \$15.00/each to \$35.00/each.
- An Extra of 10% will be applied to All Protective Films.

Discount point increase is incremental to all other previous price announcements.

## California Clean Fuel Standard Sparks Renewable Gas Boom in Midwest



Twenty years ago, Holsum Dairies installed the first anaerobic digester in Wisconsin. Part of a combined heat and power system, the digester mixed cow manure with heat and bacteria to produce biogas that fueled a generator.

It was a novel experiment at the time. The digester, and another the dairy installed a few years later, reduced the size of open lagoons of manure that release methane into the atmosphere. Wisconsin Public Service, the local utility, bought the electricity. But last year, Holsum Dairies changed course, upgraded the two digesters, and began producing renewable natural gas for California's burgeoning renewable fuels market.

"California's market is the biggest driver, for sure," said Holsum Dairies owner Dr. Robert Nagel. He estimates the northeastern Wisconsin dairy will receive three to five times more revenue from selling the renewable natural gas and its environmental benefits than it did from electricity sales to the local The California Air Resources Board adopted the Low Carbon Fuel Standard in 2009. The standard seeks to slash the carbon intensity of transportation fuel 20% by 2030, with annual benchmarks for gasoline, diesel, and greener replacement fuels.

Under the policy, renewable natural gas is used to reduce emissions from existing natural gas-fueled vehicle fleets such as transit buses, trucks, vans, and other multi-passenger vehicles. California refineries, petroleum importers and wholesalers receive credits for buying renewable fuels that lower the overall carbon intensity of the fuels they sell. Through a complex reporting tool, the regulated parties track the deficits and credits from fuel purchases.

Fuels are valued based on a formula developed by Argonne National Laboratory. Renewable natural gas from landfills, wastewater sludge and food and green waste all have a lower carbon intensity than any form of fossil fuel gas. The lowest by far, and thus the highest value credits, is for renewable gas from dairy farms.

That has spurred a biogas boom in the Midwest. The American Biogas Association lists three Midwest states in the top 10 for biogas production potential, primarily based on the strength of the dairy industry. Several states such as Wisconsin have been producing energy from manure for decades already. [Click here for more on this story](#) *Source: Frank Jossi for Energy News Week*

---

## California Coalition Aims to Make Hydrogen Power Cost-Competitive By 2030



HyDeal Los Angeles, a green hydrogen initiative launched in Los Angeles on Monday, aims to bring the cost of hydrogen fuel to \$1.50/kg by 2030. At that price, to achieve 100% renewable energy, blended electricity from a hydrogen-fueled turbine and long term, low cost wind and solar PPAs could run about \$35/MWh.

In the project's first phase, set to take place over the next three months, the partners plan to identify potential industrial-scale applications for green hydrogen in the LA Basin and develop an infrastructure plan to connect them to hydrogen production and storage.

"Our hypothesis is, in a strategically targeted location, if you can aggregate off takers you can scale up faster," said Janice Lin, founder and president of the Green Hydrogen Coalition. "You can afford the infrastructure and reduce cost substantially."

[Click here for more on this story.](#) *Source: Emma Penrod for Utility Dive, Photo by Adeline Kon*