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Airbus SE Front Runner For Italian Airline Fleet

What happened: Bloomberg reports that Airbus SE (OTC: EADSF) is the front runner to win a multi-billion dollar contract for a new aircraft fleet for Italy's stateowned airline, following the bankruptcy of Alitalia. The deal is valued at \$5.3 billion and would provide 81 new generation planes over a four year period.

Why it's important: The contract for the aircraft fleet is being issued by the successor of bankrupt Alitalia. Executives at Italia Trasporto Aereo SpA, known as



ITA, have yet to make a final decision and are also in talks with Boeing (NYSE: BA), according to a report from Italian news outlet Corriere della Ser.

What's next: Courier reports that industry sources say Airbus is favored to win the contract, although Boeing may present an "unprecedented package offer with airplanes discounted by as much as 70%." Representatives of both aircraft manufacturers are declining to comment.

After months of talks with European Commission officials over terms of an overhaul, ITA plans to start services on Oct. 15. The new state-owned airline will face an immediate challenge to establish itself after low-cost rivals were able to grab a significant part of its home market during a long restructuring process. *Source: Yahoo Finance*

Surcharge Totals May - October 2021



	May	June	July	Aug	Sept	Oct
15-5	0.7359	0.7702	0.7951	0.8233	*	*
15-7	0.9847	1.0386	1.1805	1.2887	*	*
17-4	0.7310	0.7650	0.7886	0.8133	*	*
17-7	0.8722	0.9147	0.9459	0.9949	*	*
201	0.7195	0.7451	0.7749	0.8189	*	*
301 7.0%	0.8634	0.9048	0.9356	0.9838	*	*
302/304/304L	0.9389	0.9862	1.0180	1.0699	*	*
304-8.5%	0.9704	1.0206	1.0530	1.1068	*	*
305	1.1965	1.2673	1.3042	1.3709	*	*
309	1.2407	1.3115	1.3475	1.4139	*	*
310	1.7057	1.8179	1.8625	1.9547	*	*
316/316L	1.2298	1.3043	1.4502	1.5713	*	*
316LS/316LVM	1.6200	1.7600	1.9600	*	*	*
317L	1.4133	1.5014	1.7036	1.8590	*	*
321	0.9921	1.0451	1.0785	1.1324	*	*
347	1.2977	1.3509	1.3841	1.4396	*	*
409/409 Mod	0.3472	0.3471	0.3705	0.3918	*	*
410/410S	0.3542	0.3542	0.3774	0.4001	*	*
430	0.4111	0.4111	0.4330	0.4553	*	*
434	0.4825	0.4883	0.5519	0.5974	*	*
439	0.4278	0.4276	0.4493	0.4692	*	*
440A	0.4111	0.4111	0.4330	0.4553	*	*
2205	1.1092	1.1634	1.3576	1.4921	*	*
263	6.6693	7.9946	8.2475	7.7472	7.8493	8.3874
276	6.5901	7.1199	6.5237	6.4275	7.1446	8.2827
A286	2.1129	2.2187	2.0210	2.0153	2.1878	2.3119
330	2.7077	5.4791	2.5437	2.5474	2.7587	2.8333
400	5.1575	5.4791	4.8402	4.8974	5.4125	5.4418
Custom 455	0.9400	0.9900	1.0300	*	*	*
Custom 465	1.2000	1.2900	1.3900	*	*	*
600	5.3688	5.6497	4.8973	4.9049	5.3459	5.5073
601	4.5766	4.8061	4.2425	4.2486	4.6100	
617	6.5960	7.5248	7.3395	7.0459	7.4162	8.1455
625	7.0245	7.4154	6.8490	6.8007	7.3522	8.1255
Custom 630	.07800	0.8700	0.9100	*	*	*
718	6.6898	6.9441	6.4667	6.4511	6.8313	7.2706
X-750	5.9189	6.1830	5.4539	5.4597	5.8895	6.1457
825	3.4186	3.6277	3.2981	3.2836	3.5974	3.8829
НХ	4.5259	4.8964	4.4855	4.4236	4.8922	5.5163
188	10.0000	9.4100	9.7900	*	*	*
ССМ	14.2500	12.5100	13.4400	*	*	*
L-605	11.5500	10.6400	11.0500	*	*	*

*Surcharge currently not available

Years in the Making, GE'S Recent GT26 Gas Turbine Upgrade Exceeds Expectations

GE recently announced the completion of the first implementation of its GT26 High-Efficiency (HE) upgrade for the GT26 gas turbine fleet. The work was done at Uniper's Enfield Power Station (Figure 1) in north London.

The upgrade was installed to improve the performance and extend the maintenance interval of the combined cycle plant, according to



GE. A specifically engineered instrumentation network with more than 2,000 sensors was used to collect data from selected components and systems of the gas turbine, including the compressor, combustor, turbine, and cooling systems during testing. GE's engineering team said the data confirmed both efficiency and power output exceeded expectations. Operability, combustion, aeromechanics, and key engine parameters were all within the acceptance criteria, allowing the unit to be released for commercial operation.

"We were pleased to work with GE to enhance our Enfield plant's competitiveness with the GT26 HE upgrade. Increasing efficiency and output, whilst lowering carbon emissions, operational, and maintenance costs, is crucial for the long-term success of our fleet," Simon Balmer, operations director for Uniper's gas turbine fleet, said in a statement issued to *POWER*. "As the first power producer to receive this technology, [we] checked the accuracy of the modelled configuration data compared to actual performance, and the results have confirmed that the upgrade has met the expected benefits in terms of performance and efficiency. This is a good example of the mutual value gained from our long-term collaboration with GE." *Source: Darrell Proctor for POWER* Read More

Largest U.S. Renewable Developer Plans Transmission, Solar Surge

The world's largest renewable developer is eyeing transmission project opportunities as the Biden administration focuses on adding large amounts of wind, solar and storage to the nation's grid in the coming decades.

"We're looking out decades and looking at the enormous renewable field of opportunity," said Rebecca Kujawa, chief financial officer at NextEra Energy Inc., during the company's second-quarter earnings conference call with Wall Street analysts last Friday. "It is clear that over time new transmission needs to be built for that build-out," Kujawa added.

President Biden has called for the nation's power sector to decarbonize by 2035 and for the economy to reach net-zero emissions by 2050. He also is pushing Congress to support build-out of high-voltage power lines to unlock more renewable energy.

Transmission capacity would have to increase by 60% by the end of this decade, with an investment of \$360 billion, to support all the renewables needed to reach the administration's goal, according to a report by Princeton University analysts.

"Work must begin on that today to have the type of infrastructure needed in the future to support a massive influx of renewables. The Biden administration seems to be receptive of that," she said. "They support laying a foundation that's supportive of renewables," said Kujawa.

Federal Energy Regulatory Commission Chair Richard Glick said in April that his agency should assess potential transmission planning reforms "before the end of the summer" to help support the energy transition. "From a broader policy standpoint ... we certainly are happy to see that to start to be a focus at FERC this year, in particular in contemplating how do they support a goal going forward," Kujawa added.



What The US Is Doing About Semiconductor Shortages and How It May Affect Your Operations

Global Semiconductor supply chain woes have been dragging on for months as demand for these chips continues to exceed what the domestic manufacturing sector can deliver.

In May of this year, the wait time for semiconductors hit 18 weeks, slowing from 17 weeks the previous month, according to Sus-

quehanna Financial Group and Bloomberg. That marks a record wait time since Susquehanna began tracking the data in 2017. For some chips, like those used for power management, lead times are well in excess of the chip industry average, with wait times lengthening to 25.6 weeks. A recent White House review of the nation's supply chains found that "the United States has fallen from 37 percent of global semiconductor production to just 12 percent over the last 20 years."

Lawmakers are now taking action to support the U.S. semiconductor industry and remedy its supply chain shortages. On June 8, the Senate passed a bipartisan bill set to invest \$52 billion over five years on incentivizing domestic research and development efforts as well as manufacturing in the chipmaker industry. This bill specifically incentivizes items such as alternatives to Chinese 5G telecommunication gear. Just over a week later, a bipartisan group of senators "proposed a 25 percent tax credit for investments in semiconductor manufacturing as Congress works to increase U.S. chip production," Reuters reported.

These new pieces of legislation are expected to increase the incentives associated with R&D and domestic production so that the U.S. does not have to rely as much on a global supply chain in the future. But these proposals will not be an instant fix. Source: *Kurt Shenk, Built In Beta* Read More

Air Products, Cummins MoU to Speed Up Rollout of Hydrogen Fuel Cell Trucks

Air Products, a world leader in the supply and transport of hydrogen, and Cummins Inc., a global power and hydrogen technologies leader, have signed a memorandum of understanding to work together to accelerate the integration of hydrogen fuel cell trucks in the Americas, Europe and Asia.

Cummins will provide hydrogen fuel cell electric powertrains integrated into selected OEM partners' heavy-duty trucks for Air Products, as Air Products begins the process of converting its global fleet of distribution vehicles to hydrogen fuel cell vehicles, Cummins said in a release.



"We believe hydrogen is the future for heavy duty segments of the transportation market and we can demonstrate to the world its merits by being a first-mover in transitioning our heavy-

duty fleet of trucks to hydrogen fuel cell electric vehicles. We are pleased to be working with Cummins to achieve our fleet transition goals. Sustainability is Air Products' growth strategy and creates our growth opportunities, and nothing says more about our company's approach to sustainability than a fleet of zero-emission vehicles on the road delivering product to customers every day," Seifi Ghasemi, Air Products' chairman, president and chief executive officer, said.

Following a successful demonstration and pilot phase, Air Products plans to convert its global fleet of approximately 2,000 trucks to hydrogen fuel cell zero-emission vehicles. Cummins and Air Products expect the demonstration phase to begin in 2022. Additionally, Cummins and Air Products will work together to increase the accessibility of renewable hydrogen, including hydrogen infrastructure opportunities that promote the adoption of hydrogen for mobility, the release said. *Source: ET Auto* <u>Read More</u>

Tesla, BHP Ink Supply Deal For Nickel Ahead of Demand Surge



Tesla will secure nickel from the commodity production giant BHP, the automaker's latest move to secure direct sources of raw materials that are projected to surge in demand before the decade is out.

BHP's Nickel West division will supply an undisclosed amount of the mineral from its mines in Western Australia. The two companies also agreed to work together to increase battery supply chain sustainability and to identify ways to decrease carbon emissions from their respective operations using energy storage paired with renewable energy.

Nickel is a key mineral in lithium-ion batteries, and a cornerstone of Tesla's next-gen battery chemistry. While many lithium-ion batteries

have cathodes made from nickel, manganese and cobalt, Tesla is taking a different tack. At Tesla's Battery Day 2020, Musk said the automaker would invest in a nickel-rich, cobalt-free cathode for some models, citing greater energy density.

Tesla also hasn't been shy about its own intention to increase battery cell production in the coming decade, aiming to produce 100 gigawatt hours of batteries by 2022, to a staggering 3 terawatt hours per year by 2030. To that end, the company is moving fast to secure purchase agreements with leading nickel producers. Earlier this year, the automaker announced a partnership with a nickel producer in the French Pacific territory New Caledonia. Just a few months later, Tesla chairperson Robyn Denhlm confirmed that the company was looking to purchase around \$1 billion per year in battery minerals from Australia alone.

Musk has repeatedly urged miners to produce more nickel. On an investment call last July, he told producers, "Tesla will give you a giant contract for a long period of time if you mine nickel efficiently and in an environmentally sensitive way." At Battery Day, he reiterated his position: "In order to scale, we really need to make sure that we're not constrained by total nickel availability," he said. "I actually spoke with the CEOs of the biggest mining company in the world and said, 'Please make more nickel, it's very important."

But finding an environmentally friendly nickel source is a challenge. Some of that has to do with issues endemic to present-day recovery and smelting techniques; others are more directly manageable by mining companies. For example, nickel mining operations in Indonesia, the world's largest producer of the metal, have come under fire for their reliance on coal and their waste disposal techniques.

BHP claims its operation is one of the most sustainable in the world, and Tesla's decision to partner with it could be seen as something of a confirmation of that fact. The commodity producer in February said up to 50% of the electricity to power one of its nickel refineries would come from solar energy resources.

The vast majority of the world's nickel supply is currently consumed by the steel industry. While nickel demand in the EV and energy storage sectors is currently relatively small, the International Energy Agency estimates that will increase more than 4,000% over the next 20 years — from 81 metric tons in 2020 to 3,352 metric tons by 2040.

Nickel West has historically been a tiny fraction of BHP's overall business, dwarfed by its iron ore, copper and petroleum businesses. The commodity producer tried to sell Nickel West a number of times since around 2015, but it appears to have changed its tune with the forecasted groundswell of demand from the EV and energy storage sectors.

Industry analysts Benchmark Minerals estimated the deal with Tesla could be worth up to 18,000 tons of nickel annually. *Source: TechCrunch*