CLEAN, QUIET PLANES IN THIS DECADE

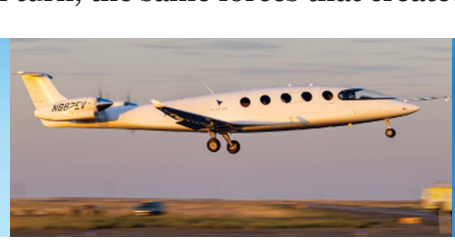
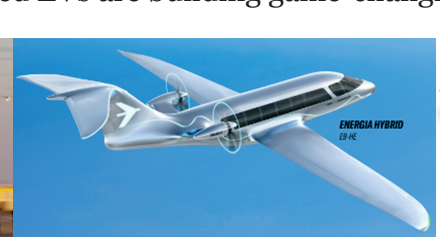
Every day hundreds of planes take off or land at the Aspen Airport, 99% in opposite directions. ASE is known as one of the most dangerous airports in the country.

Buckle up. The aviation revolution is upon us. When the ASE Vision process recommended and Pitkin County Commissioners set Aspen Airport strategy in 2019–20, they considered only airplanes commercially available or planned from major makers *in 2019*. They thought replacements for the airlines' CRJ700 fleets were needed soon and must be bigger (last week's essay shows why not), needing the new airside now planned. They also thought superefficient, electric, and hydrogen aircraft would be small, short-range, and far off. A 19 October 2022 County-invited analysis, first published today, found the opposite.

Efficient and electric planes—just as with cars

The 3–5× better airplane efficiency and lower impacts found feasible a decade ago by Boeing, NASA, and MIT have just been sped and surpassed. A plane 8 times as efficient as a standard business jet was announced in August 2020, months before the Commissioners' decision, but was mistakenly dismissed as having only six seats (as an executive-plane market entry point), overlooking its doubled-size version with severalfold more seats and its design's extensibility to at least regional-jet size by 2030. Such efficiency also greatly reduces the challenges of electric or hydrogen propulsion, bringing both at least a decade closer.

This virtuous cycle has already transformed the automobile industry. A decade ago, electric vehicles (EVs) were widely thought impractical in payload, range, and cost, because batteries were too wimpy, heavy, and expensive. But smartphones spawned advanced batteries; their higher energy density made EVs feasible; mass production made the batteries tenfold cheaper and EVs affordable. Lighter, sleeker cars could drive farther on less energy, needing fewer batteries and saving more weight and cost. Ranges passed 300, 500, 740 miles. EVs won on lifecycle cost and are about to hit sticker-price parity. Now two startups' even more advanced vehicles, 2–3× more efficient than a Tesla, need so little energy that they can run largely or wholly on their own solar cells without even plugging in! And today in turn, the same forces that created EVs are building game-changing electric planes (EPs).

Rapid evolution driven by lower costs and impacts

The EV and EP industries coevolve swiftly, but EPs evolve faster. Some EP electric motors are tenfold lighter, and batteries severalfold lighter, than today's EVs use. Sleeker, lighter planes also need smaller motors and batteries. Top analysts now agree EPs will have lower capital and operating costs than fueled planes, driving rapid adoption for commercial and private aviation.

EPs have scores of skilled, serious, and amply funded developers, nearly 1,000 orders (with up to 30 seats), and 55 intending operators. Over a thousand electric vertical-takeoff-and-landing taxis, innumerable drones, and military R&D further enrich the e-aviation ecosystem. United, American, Delta, and other leading airlines are heavily invested, involved, and already ordering EPs. United is keen to use EPs to serve smaller airports at lower cost. Aspen could be among them.

Superclean planes can serve Aspen in years, not decades

Besides 2024–25 vertical-takeoff air taxis to Denver, Rifle, or Vail, expected electric or hydrogen planes fitting ASE's size limit include 9–19 seats flying 250 nautical miles (nm) in 2025, both 40–80 and 100 seats flying 800 nm in 2026, then rapidly rising size and range. These sizes are ideal for more frequent direct service connecting ASE with more places at similar or lower cost. With some ingenuity, our airspace can safely do that, just as it accommodates General Aviation growth.

These electric planes will have vastly lower impacts than our community's goals seek—hardly any CO_2, pollution, or noise. And this flowering of innovation will make the proposed new airside unnecessary before it could be built. That new airside is far more likely to be late than the whole portfolio of advanced ultraclean airplanes from so many ambitious makers.

Fasten your seat belts: the imminent aviation revolution will be quite a ride. We just need to see it coming before spending $200+ million now planned for a staid, slow, bigger-planes era that has already been overtaken by events.

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Exploring new solutions for a safer, cleaner, quieter, and better Aspen Airport.