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Electric aircraft: Coming soon to an airfield near you

5

By Robin Dean on 18 January 2018

Just recently Electro.Aero based at Jandakot airport near Perth took delivery of the Pipistrel electric airplane as seen on a number of news sites over the past week. Although the media coverage was very positive it still attracted a number of scornful comments and on some occasions a complete misunderstanding of electric transportation.



Some of the technical information passed on by the media was a little vague so as an electric car owner that's become totally fascinated with the future of transportation I was keen to take a flight in a craft that many people still don't believe is possible, I have flown a small conventional aircraft before under instructor supervision but am in no way an expert on aviation, my observations are from a novice perspective. If you were an aviation fanatic look out for an electric aircraft coming to an airfield near you soon.



The aircraft

The Slovenian built Pipistrel Alpha electro is two seat training/recreational aircraft propelled by a 60kw electric motor; the battery pack sits just behind the propeller/motor and have a usable capacity of 20kwh. The batteries are charged using an external Pipistrel supplied charger plugged into a common 3 phase power outlet, maximum charger time is 70 minutes although this is rarely necessary and there is also the option of a quick battery swap.

The Flight

The first noticeable difference is the pre flight checks are done in near silence, the motor is switched off, the only power draw is a small amount taken up by the gauges, once take off permission is granted the propeller spins gently into life, no fuel wasted on engine warm up, the power consumed matches the power needed.

Take off is smooth with propeller and wind noise over the cabin evident, the lack of motor noise is a pleasant experience, we climb to 1000 feet with minimal effort and head North-west to Fremantle then North up the coast towards Scarborough beach, Alpha electro comfortably achieves 85 knots (157kmh) as we pass over the bumper to bumper motor vehicle traffic heading to the beach.

The return journey South is over the water, Perth's busy beaches to the left, Rottnest Island 18 km to the Right, the journey continues on past Fremantle as we head to Coogee before a direction change to the East and back to Jandakot airport.



The Flight data

I estimated we covered a little over 80kms during the 50 minute flight (yes I am aware aviators use knots and flight time rather than distance), the aircraft departed its hangar with 97% charge and returned with 52% charge remaining, keeping in mind the batteries bottom 30% is kept for the 30 minute reserve so is effectively off limits. Based on those figures the complete energy consumption translates to 9kwh or less than \$3 using grid power.

The battery pack

The media reported the battery packs are good for 1000 hours of flying, I'm not sure at what stage the packs would be regarded as unsuitable for aircraft but I believe that to be a very conservative figure, getting the battery cost per hour down will make all the difference.

The Positives

Overall the Alpha Electro does the job as intended, short range recreational and training, there is also this misconception that going electric is all about saving the planet, luckily that type of one dimensional thinking is quickly fading, as well as the potential savings in fuel, maintenance and long term ownership the full flying experience is far more pleasant, for the passengers and the residents who live near flight paths.



The future

Multi seat cross country electric aircraft are a long way off still, this would take some tremendous developments in battery chemistry, but as small improvements in battery energy density are made available electric aircraft will steadily gain more flying time and carry more passengers and freight.

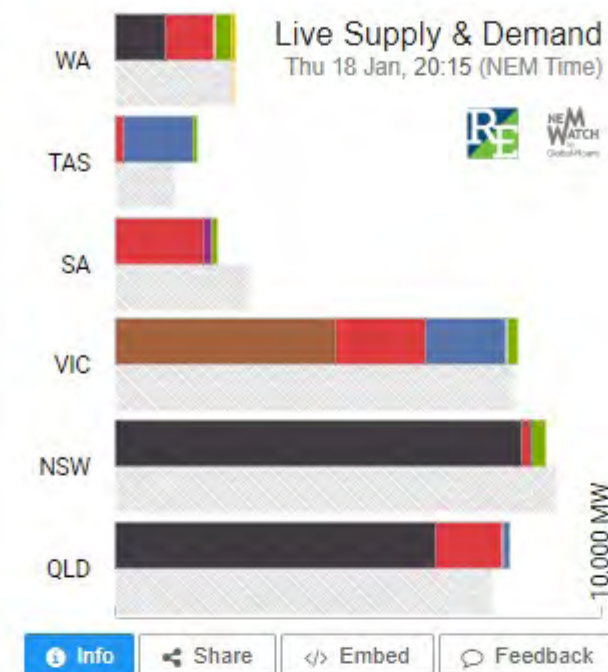
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