



skyrora.com  
skyrora.shop

# ENGINEERING CAPABILITY WITH ENVIRONMENTAL CONSCIOUSNESS



@Skyrora



@skyrora\_ltd



Skyrora Limited



@skyrora



skyrora-limited



108 Princes Street,  
Edinburgh EH2 3AA



info@skyrora.com



+44 (0) 131 285 8205

Skyrora is a UK launch vehicle provider with an environmental conscious at the forefront of its focus. Skyrora aim to support government plans for space sector growth and improved sustainability within the space industry by producing innovative technologies that either prevent harm to the environment or greatly reduce the harm caused to the environment by methods and technologies utilised within the space industry.

Having received €3 million of co-funding from the **European Space Agency (ESA)** as part of the ESA Boost! programme, Skyrora are well on track to becoming the first UK company to launch satellites from Europe and allowing a UK sovereign space launch capability – a key government ambition.

Skyrora are in the midst of developing a suite of innovative technologies all with environmental priority. Skyrora's **Ecosene** is a rocket fuel equivalent derived from unrecyclable plastic waste that produces 45 percent less greenhouse gas than traditional Kerosene. Skyrora's **Space Tug** will offer an abundance of environmental benefits, such as the removal of space debris and defunct satellites, as well as repositioning of satellites in orbit.

Skyrora use **3D printing** to manufacture various rocketry components as it is viewed as a key sustainable methodology of production due to the minimal waste generated through this process. In terms of launch, Skyrora's launch infrastructure is substantially containerised and portable with a mobile suborbital launch pad, therefore the ground footprint and ecological impact of our launch site is minimised by design.

Skyrora's strategy is to take an incremental 'step-by-step' approach to allow for critical testing and de-risking, utilising proven technology in combination with advanced additive manufacturing methods. As part of the de-risking approach, Skyrora has developed four suborbital rockets in order

to perform real-time testing of the avionics, ground control systems, payload deployment and recovery systems of the vehicles in parallel with the development of our orbital rocket.

**Skylark Nano** has been successfully launched with a commercial payload several times from Northern Scotland, initiating Skyrora's flight test programme in August 2018 from Easter Ross, carrying a small commercial payload for the social network Ask.fm, with CAA authorisation. The **Skylark Micro** vehicle was launched from the Langanes Peninsula in Iceland in August 2020, which sought to test the onboard avionics and communications.

Our orbital vehicle, **Skyrora XL**, consists of 3 stages with a re-ignitable maneuverable third stage allowing for the specific placement of satellites in orbit. Skyrora XL can carry 315kg of weight up to 500km high.

Skyrora's production facility is located in Loanhead, Midlothian, and we have three different rocket engines in an advanced stage of development. Our upper stage engine, or LEO, successfully tested Skyrora's eco-friendly fuel produced from unrecyclable plastics at our test site in Fife at the beginning of Q1 2020 and has since undergone multiple vacuum chamber engine tests to test the low Earth orbit engine under space-like conditions. These tests took place mid-way through Q4 2020. The 3-tonne engine was additionally tested at the end of Q1, 2020.

In Q2 2020, Skyrora performed a static fire test of the **Skylark L** vehicle at a mobile launch site on the Kildermorie Estate in Ross-shire. During the successful test, the launch vehicle was held securely to the ground while the engine fired for 22 seconds, simulating a launch to space. To conclude the year in Q4 2020, Skyrora successfully completed a full upper stage static fire test of the orbital launch vehicle, Skyrora XL.

