

LAUNCH

Cornwall and Virgin Orbit
are launching the UK
back into Space

Spaceport Cornwall Announcement Q&A



Frequently Asked Questions

Q. How much would setting up a Spaceport in Cornwall cost and where will this money come from?

We are considering a phased approach to the project and that matches the build-up in space launch activity and new legislation anticipated over the next few years. The costs will be determined over the next 6-9 months working with UK Gov and Virgin Orbit.

The Council intends to recoup any investment through commercial launch fees paid by Launcher operator's customers launching satellites into Space.

Q. Why are you spending money on this rather than on vital local services?

While we have a tough and challenging Council budget to work with, we've been able to deliver what people told us is most important to them (during the resident budget consultation); these are value for money services to protect the vulnerable, more homes and creating better paid jobs.

Having a Spaceport in Cornwall is directly linked to creating some of these better paid jobs. It will also allow us to build a new industry in and for Cornwall, helping to secure and grow a healthy regional economy.

Q. What does Spaceport mean for local people and why should we invest?

If government supports the New Frontiers plan, then Spaceport Cornwall will be able to create 480 jobs and contribute £25million a year to the local economy. The Space Sector could create thousands more jobs in Cornwall by 2030.

Q. Who will use the Spaceport?

Operators of launch spacecraft, developers of satellites, payload developers, supply chain, scientists...

Q. Does that mean there will be rockets launching from Cornwall Airport Newquay?

The operators we are talking about the use of horizontal launches where conventional aircraft take off in normal fashion but have a rocket attached to the wing or fuselage. Once the aircraft reaches altitude and has travelled a long distance from the Airport the rocket detaches and continues into space to deploy a satellite or satellites. There are currently no plans for a vertical launches in Cornwall.

Q. Why a Spaceport in the UK and Cornwall?

Cornwall is a good place for launch of small satellites. There is rapidly growing market for launch facilities and a lack of Spaceports in Europe. The Spaceport will provide a competitive launch product close to European suppliers and launch customers who are demanding dedicated small payload launches, especially for small satellites.

Q. What is a Spaceport?

Fundamentally it's about offering safe and low-cost launch location for access to space for a range of possible users. It might be a new satellite to monitor crops or driverless cars, for example, or in time it could be a spaceplane carrying scientific experiments or even tourists.

Q. What is Spaceport Cornwall?

Spaceport Cornwall is the name given to the project which encompasses Cornwall Airport Newquay, Goonhilly Earth Station and the wider space, aerospace and supply chain in Cornwall. The project is being driven by the Aerohub Enterprise Zone team at Cornwall Development Company and Cornwall Airport Limited, on behalf of Cornwall Council and the Cornwall and Isles of Scilly Local Enterprise Partnership (LEP).

Q. How does Cornwall Airport Newquay become a Spaceport?

In 2014, Cornwall Airport Newquay (CAN) was shortlisted by the UK Space Agency (UKSA) as a potential site for the UK's first Spaceport. A consultation response was submitted in 2015 and the UKSA asked for Spaceport and Operator proposals for a UK launch proposition to be in place by 2020. The UKSA announced an open call for investment in March 2017 and Spaceport Cornwall made a bid which was led by the Cornwall & Isles of Scilly LEP.

Q. What is a Spaceplane System?

Spaceplane Systems usually comprise of commercial aircraft carrying a separate rocket vehicle designed to deploy satellites or other space payloads, space flight experiences and scientific tasks. Systems can launch objects, or people, into space for brief periods and return to Earth (suborbital flight), or into orbit for periods of months or years.

The 'carrier' aircraft transport the rocket to a safe area or 'range' where it activates a high energy propulsion system to accelerate the spacecraft to the velocity and altitude necessary for Earth

orbit. Spaceplane carriers are aircraft and operate under national regulations issued by the Civil Aviation Authority, but launch into space using rocket propulsion will be regulated by the Commercial Spaceflight Act which will involve the UK Space Agency and the Department for Transportation under a new act of Parliament.

Q. Who is Virgin Orbit?

Virgin Orbit has developed a small satellite launch system using a large Boeing 747 civilian airliner (called Cosmic Girl) that carries a rocket (called Launcher One) capable of launching small satellites into low earth orbit. The aircraft will be a fully modified existing Boeing 747 currently based in the US.

Q. What is the role of Goonhilly Earth Station in the project?

Goonhilly Earth Station (GES Ltd) are joint partners in Spaceport Cornwall and will be providing tracking and monitoring as well as mission control operations, in order to support Virgin Orbit launches.

Q. What is a Spaceport License?

A spaceport licence will be required in order to operate a spaceport in the UK. HM Government, through a partnership between the UK Space Agency, Department for Transport and Civil Aviation Authority, supported by the Health and Safety Executive, are currently developing new regulations to licence UK spaceports.

Q. What is a Spaceflight operator's License?

The Government is enabling a new commercial market for small satellite launch in the UK. This will allow licensed providers to launch small satellites into space from UK spaceports. You will need a licence to operate a spaceflight system in the UK. HM Government are currently developing new regulations to licence Spaceflight.

Q. When did the UK last launch a Satellite into Space?

October 1971. The British rocket sent a satellite into space and was launched from Woomera, Australia. The rocket was called Black Arrow, and was developed by the Royal Aircraft Establishment and Westland Aircraft. The rocket successfully launched a satellite called Prospero, which provided data on the space environment in low Earth orbit. A rocket has not been launched by the UK since the Black Arrow.

Q. Why haven't we heard all about Virgin's involvement before?

The project is in its early inception phase. To date the details of the proposals have been commercially sensitive and subject to Non-Disclosure Agreements.

Q. Why are they pursuing horizontal launch when Elon Musk's SpaceX is going vertical?

They are taking two different business approaches towards lower cost Access to Space. In the past the carrier aircraft size meant that Horizontal launch could only carry relatively small satellites to space. However satellites are reducing in size offering new Horizontal Launch technology to enter the Launch Market. Smaller payload allows dedicated launch for small satellites on smaller vehicles at a safe well connected Airport location.

Virgin Orbit is concentrating on the fast-growing small satellite launch market and has designed its technology to carry payloads of up to 500 kgs using a conventional aircraft and an air-launched rocket. SpaceX is more focused on carrying heavier payloads including cargo resupply missions to the International Space Station. Its Falcon Heavy vertical launch rocket can lift nearly 64 metric tons into orbit.

Q. Is the VO system operating commercially?

Not yet but the system will commence air based tests in the US in late summer 2018.

Q. The challenges to Horizontal as low cost access to Space?

The following factors are challenges to this new technology:

- Relatively small payload constrained by Aircraft size
- New untried technology
- Lack of System readiness
- Lack of global successful Spaceports
- Right airspace linked to a Spaceport
- Needs Supportive legislation
- Access to Launch Range

Many of these factors are in place or can be easily provided in the UK and at Newquay.

Questions on funding and next steps:

Q. Now the partnership has been announced will Spaceport Cornwall definitely happen and what are next steps?

Securing a Spaceport Operator was hard-won and it could deliver enormous potential for Cornwall but first we have to make sure everybody, in the democratically elected Council Cabinet, is in support of this happening. It will go before Cabinet at the appropriate time and we will then know next steps.

Q. Does Cornwall have support from the UK Space Agency for Spaceport?

The UK Space Agency (UKSA) welcomed the announcement as a positive step in Cornwall's bid to the UKSA to host the UK's first horizontal launch Spaceport following a national competitive funding competition. The bid was made by a public-private collaboration of Cornwall Council, the Cornwall and Isles of Scilly Local Enterprise Partnership (LEP) and Virgin Orbit. With the Virgin Orbit commitments confirmed, Cornwall Council will consider possible investment and resources to the project at Cornwall Council Cabinet. It is hoped a UKSA funding commitment will follow.

Q. Do you know what's happening on the UK's Spaceport bid to the UKSA and what happens if Cornwall doesn't get the funding?

No we have no news as yet but we are optimistic. Spaceport is only part of the wider space sector growth in Cornwall. If we are not successful, we will still seek to deliver to the aspiration but this might mean a different approach or timeline. We still have a thriving deep space communication and monitoring capability at Goonhilly Earth Station, which recently secured an additional £24m in private sector investment, plus a planned rocket test facility at Cornwall Airport Newquay

Cornwall would also continue to work with the South West Centre of Excellence in Satellite Applications, which is located at Goonhilly and any operators that may have requirements for testing.

Q. What are next steps in securing funding for Spaceport Cornwall?

With Virgin Orbit commitments confirmed, Cornwall Council will consider possible investment and resources to the project at the Cornwall Council Cabinet. It is hoped a UKSA funding commitment will follow, we are optimistic about this.

Q. The Cornwall & Isles of Scilly LEP led the bid what is its role now?

The LEP exists to drive economic growth and job creation in the county. The LEP will invest £1.9M from the Enterprise Zone Infrastructure Fund in Spaceport Cornwall, and provide further support for businesses and skills development. Space is a key part of Cornwall's intention to develop an increasingly diverse economy for Cornwall and the Isles of Scilly, building on existing strong assets such as Goonhilly Earth Station.

The LEP's 10 Opportunities strategy sees the Spaceport 'upstream' Launch capability and 'downstream' Space technology and data applications delivering benefits across a range of sectors. The LEP will drive the wider 'Space Action Plan' that has been developed for Cornwall so the benefits of Spaceport Cornwall can be maximised.

The UK's Satellite Launch Solution



SPACEPORT
CORNWALL

Virgin **ORBIT**



GOONHILLY
EARTH STATION



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