

Prestwick Spaceport Planning Consultation - FAQs

Q: When will the spaceport be operational?

A: The spaceport is expected to deliver its inaugural launch in late 2023.

Q: Where will the spaceport be located?

A: It will be situated adjacent to the airport. Beyond the spaceport development, the surrounding area is open to development opportunities that can support the UK's growing space sector, alongside Prestwick's existing aerospace cluster.

Q: How is the spaceport being funded?

A: The funds being used to support the spaceport development will be sourced from less than 10% of the overall Ayrshire Growth Deal (AGD) funding that was awarded to the Ayrshire region. The AGD is a £251.5m financial support package that was successfully secured from Westminster's UK Government, Scottish Government and East, North and South Ayrshire Councils.

Q: What will the spaceport do?

A: Prestwick Spaceport aims to become Europe's leading venue for the combined development and launch operations for horizontal spaceflight solutions. Global market demand for small satellites is booming and operators are increasingly looking to access "Low Earth Orbit" (LEO). This satellite technology enables activities such as monitoring climate change and deforestation, tracking endangered species and the identification of activities such as illegal fishing or mining to be carried out.

Q: What are the plans for the wider aerospace hub?

A: As well as delivering spaceflight capability, we are also building the commercial infrastructure to support it, as well as manufacturing and significant supply chain capability, building on Prestwick's lengthy heritage within aerospace and aviation.

Q: Why is Glasgow Prestwick Airport an effective location for a spaceport?

A: Various factors make Prestwick an ideal location for a spaceport – these include its strong transport links across rail, road, air and sea, an extra-long runway, its proximity to existing space clusters in other parts of Scotland and a benign microclimate that means minimal disruption for the launches we anticipate taking place to support the UK's space ambitions and meet high demand for access to "Low Earth Orbit". In addition, Prestwick benefits from decades of developing engineering expertise and innovation with over 50% of Scotland's aerospace jobs already based in Prestwick as part of Scotland's largest aerospace hub. With the best Visual Flight Rules record (which govern the operation of aircraft) of any UK commercial airport, Prestwick Spaceport would minimise days lost and launch cancellations due to weather.

Q: What does the development mean for the local economy?

A: Prestwick Aerospace is already the largest aerospace cluster in Scotland, providing extensive employment for the local community. The airport is a highly significant

infrastructure asset that, together with companies such as BAE Systems, GE Caledonian, Spirit AeroSystems and Collins Aerospace and Woodward, NATS, helps to sustain thousands of aviation and aerospace jobs in the west of Scotland. It's the heart of Scotland's aerospace industry, with over 50% of the country's aerospace workforce employed at Prestwick. The spaceport's operations will see Prestwick become a globally recognised centre of excellence for the UK space industry, supporting space related businesses both large and small, a development which clearly has significant benefits for the local and national economy.

Q: How will this development support job creation and skills development?

A: The spaceport and space hub supply chain will play an important role in creating up to 4,000 new jobs for the UK space sector's supply chain and will help nurture and develop the STEM (Science, Technology, Engineering and Mathematics) and non-technical skills needed to keep Scotland at the forefront of what is a globally growing industry for years to come. We are already working closely with organisations such as Skills Development Scotland and plan to hold discussions with local colleges and universities on what courses are already available or could be developed that would offer a suitable path to a career in the local space industry.

Q: What kind of jobs could be created?

A: The Spaceport development is expected to act as a flagship hub, bringing further space and aerospace businesses to Prestwick to create high skilled employment opportunities for the local community, as well as apprenticeship schemes for young people to access a career in STEM (Science, Technology, Engineering and Mathematics). However, there will also be opportunities throughout the wider space supply chain to support the new activity, both technical and non-technical. For example, there is expected to be a requirement for transport and logistics support, business development, sales, marketing, recruitment, facilities management, catering and much more. Building on the growing network of companies and pool of talent which already exists in the area, the spaceport will act as a catalyst for economic growth around the cluster to support the growing Scottish and UK space sector.

Q: What role do spaceports play in environmental protection and sustainability?

A: The key benefit of this horizontal 'air launch' system is that it will enable the launch of satellites, many of which will be used to monitor climate change and protect the environment. Ultimately launch is the enabling part of an exciting wider story, with a huge demand for satellite data to support the environment, the economy and society in general. Satellite data can be used to measure natural assets, monitor weather conditions, respond efficiently to natural disasters, verify environmental social governance data from private corporations, improve land management, monitor endangered species, protect infrastructure, track food supply chains, safeguard our marine environments and much more.

Prestwick Spaceport is a member of the Scottish Space Leadership Council (Space Scotland) and UK Spaceports Alliance (which includes other developing launch sites throughout the UK), which are currently facilitating discussions around how launch can be more sustainable and how spaceports, too, can play an important role in the wider drive towards Net Zero. Space Scotland delivered an initiative last year with support from the European Space

Agency and involvement of First Minister Nicola Sturgeon focused on highlighting the need for a sustainable space sector and there is currently work underway to create a Sustainability and Net Zero Roadmap for space looking at the full value chain, satellite manufacture and launch through to downstream data services.

With the existence of an already established local space supply chain around Prestwick and Ayrshire, the carbon footprint caused by transport and logistics for space activity will be minimised, thus also reducing the impact on the environment.

Q: What kind of space services will be offered?

A: Prestwick Spaceport will offer small satellite launch and the surrounding site will offer a number of services beyond launch, including opportunities for the design, development and manufacture of spacecraft and launch vehicles, as well as educational outreach and wider services to support innovation. The site is an ideal location for the development and operation of horizontal space launch systems with safe flight paths, a favourable climate and fantastic connectivity to major cities and space hubs. The infrastructure for such systems is largely already in place. The existing infrastructure around Prestwick Spaceport will provide immediate technical and engineering support to launch provider operations.

Q: What is horizontal 'air launch'?

Horizontal launch technology works by employing a carrier aircraft which takes off from a runway carrying a small launch vehicle. Once the plane is airborne and attains altitude and distance range out over the sea and above the weather, the launch vehicle releases and carries the satellites into space while the aircraft returns.

Q: How many launches would take place in a typical year?

A: The number of launches will depend on market demand. Prestwick Spaceport's Environmental Impact Assessment Screening Report assumed 12 launches a year and we would anticipate one flight per month in the initial phase of operations.

Q: Are there any implications for Prestwick Airport passengers?

A: The carrier aircraft containing the launch vehicle takes off as a conventional aircraft similar to the types of operations already conducted at Prestwick. The operations of the spaceport will be carefully coordinated with the day to day commercial operations of the airport

Q: What does the Astraius launch partnership mean for the spaceport?

A: The Astraius horizontal air launch solution builds upon a previously demonstrated launch system. Partnering with the leading UK based horizontal launch provider will enable us to position Prestwick Spaceport as the premier European launch venue for responsive and affordable access to space for small satellite launch, bringing significant benefits via supply chain opportunities, employment and far more beyond launch.

Q: What size are the rockets being launched?

A: Astraius's horizontal launch technology is suitable for small to medium-sized satellites. Many of the satellite systems which operators will be deploying are no bigger than a shoebox in size. The launch vehicles are known as "small launchers" and are around 20-30

metres in size, far smaller than the large NASA and SpaceX rockets that carry people or large satellites into space.

Q: Where can members of the public watch the aircraft being loaded or launches taking place?

This information will be divulged at a later date, but generally as the launch itself will not occur anywhere near Prestwick but at high altitude and a long way from land, the only part of the launch process that will be visible will be the C-17 aircraft taking off. C-17 aircraft have been safely taking off and landing at Prestwick for more than 20 years.

Q: What do satellites enable and how do they support life on Earth?

A: Smallsats will enable a variety of scientific research including detecting climate change and pollution, monitoring the marine environment, detecting distant asteroids, and carrying out missions such as inspecting larger satellites and removing them from orbit to reduce space debris, as well as being able to gather in-orbit data from a wider variety of points than a single satellite.

Q: What are cubesats and smallsats?

A: 'Smallsats', 'cubesats' and 'pocket cubes' are small satellites which have revolutionised the size of infrastructure and launch transportation needed to send payloads into orbit, enabling the launch vehicles themselves to be smaller than previously. As their names suggest, they use miniaturised technology, with cubesats ranging from sizes smaller than a shoe box to the size of a toaster or a microwave oven. Aside from advantages around size, small satellites also allow for shorter development times and tend to include state-of-the-art technology which can then be used to advance scientific research capabilities. Compared to larger satellites, more Smallsats can be fitted into a launch vehicle, and this means that they have a more distributed risk (if one satellite fails, the mission can still be carried out).

Incidentally, the city of Glasgow, located in close proximity to Prestwick Spaceport, designs and builds more small satellites than anywhere in the world outside of the United States.

Q: In the longer term, is there scope for crewed space flights from the spaceport?

A: Prestwick Spaceport is focused on enabling the air launch of small satellites that can provide a range of services from Low Earth Orbit, including monitoring climate change, identifying illegal mining or shipping, supporting disaster relief and a range of other benefits for businesses and society in general. Although Prestwick may well be the most effective location in the UK for crewed spaceflight missions in the future, human spaceflight does not form part of this planning application and any consents required for such launches would be sought in due course if the potential for crewed launches was explored and deemed to be worthy of further consideration. The same opportunities for public engagement around such activity would be carried out if such a scenario was to transpire.

Q: Is there an environmental impact from fuel or other materials being jettisoned following the air launch phase that occurs far from Prestwick?

A: The planning application will be accompanied by appropriate environmental reports to demonstrate the development's environmental impact and the full documentation will be made publicly available. Various environmental metrics will be assessed to support both the

planning application and spaceport licensing processes. For example, a Marine Environmental Risk Assessment will be carried out and a carbon management plan will be prepared. Many of the satellites being launched from Prestwick Spaceport by Astraion will be used for earth observation purposes to combat climate change. The fuel used is solid rather than liquid or gas, which removes the potential for leaks. However, as with any space launch, there are important environmental responsibilities to consider and the full consortium at Prestwick Spaceport will continue to meet all requirements as set by legislation and consider all opportunities for reducing the emissions caused by launch.

Q: Is the spaceport meeting sustainability targets?

A: The project is working with key stakeholders, including regulators, to ensure environmental impacts are minimised and all environmental requirements are met. For example, a Marine Environmental Risk Assessment will be carried out and a carbon management plan will be prepared

The Spaceport is also a long-term member of the Scottish Space Leadership council (Space Scotland), an organisation that has, at its core, a strong commitment to developing the UK sector in a sustainable way. Following a consultation that Prestwick Spaceport participated in, Scotland recently published its first space sector strategy – again, sustainability and the importance of all areas of the space sector playing a role in reducing environmental impacts as far as practicable³

Space Scotland delivered an initiative last year with support from the European Space Agency and involvement of First Minister Nicola Sturgeon focused on highlighting the need for a sustainable space sector and there is currently work underway to create a Sustainability and Net Zero Roadmap for space looking at the full value chain, satellite manufacture and launch through to downstream data services.

Q: How can we make further comments and what are the next steps?

A: If you have a question that is not available in the FAQs and was not asked during the consultation, or would like to receive information and updates in the future, please visit www.glasgowprestwick.com/spaceport-consultation to submit an enquiry and view applicable deadlines. All comments received will be considered by the project team in progressing the preparation of a planning application. A second public consultation event will be held in due course, prior to submitting the planning application. At that event we will provide feedback on the questions raised at the first event, with there also being an opportunity to ask any further questions at that time.