



HOUSE OF LORDS

UK Engagement with Space Committee

Corrected oral evidence

Monday 10 March 2025

4.55 pm

Watch the meeting

Members present: Baroness Ashton of Upholland (The Chair); Baroness Bonham-Carter of Yarnbury; Lord Booth-Smith; Lord Clement-Jones; Baroness Donaghy; Lord Lansley; Baroness Mobarik; Lord St John of Bletso; Viscount Stansgate; Baroness Stowell of Beeston; Lord Tarassenko.

Evidence Session No. 3

Heard in Public

Questions 24 - 34

Witnesses

I: Ian Bishop, Deputy Director of Space Strategy, Strategic Engagement and UKSA Sponsorship in the DSIT Space Directorate; Alexandra Jones, Director General, Science, Innovation and Growth, DSIT.

USE OF THE TRANSCRIPT

1. This is a corrected transcript of evidence taken in public and webcast on www.parliamentlive.tv.



Examination of witnesses

Ian Bishop and Alexandra Jones.

Q24 The Chair: Welcome back to our second session this afternoon. I am delighted that we have Ian Bishop, who is the deputy director of space strategy, strategic engagement, and UK Space Agency sponsorship—quite a job title—from the Department for Science, Innovation and Technology. He is joined by Alexandra Jones, who is the director general of science, innovation and growth, also in the Department for Science, Innovation and Technology. Thank you both for joining us this afternoon.

If I may, we will dive straight into some questions that we hope will help to flesh out this session. I will, if I may, begin.

The national space strategy, published in 2021, was the first one that brought civil and military policy together. How do you think that the Government would summarise the progress that has been made? What do you think has been successful and perhaps what has more work to be done?

Alexandra Jones: Thank you. It is a pleasure to be here. As you say, the national space strategy was a landmark because it was the first strategy that brought together civil and military. We have made progress since then in a number of areas—licensing the first spaceports in the UK, supporting the attempted first launch, and investing in launch.

We have made record investments in the European Space Agency, leading the Vigil mission, for example—or being very involved in that—which is about severe space weather, and three new British astronauts, which is great news. We have launched the joint DSIT/MoD National Space Operations Centre, which brings together the two departments to provide monitoring services and support national security.

We have built up our domestic ability to support the space sector as well. If you look at areas like that, and active debris removal is a good example, you can see that we have made real progress. It was very much intended as the start of a process to really think about what we wanted from the space sector. We have followed up since then with the *National Space Strategy in Action* in July 2023, and the space industrial plan in March 2024, and I am sure that we will come on to those.

The national space strategy was a landmark for bringing things together. It did bring everything together and talked about the wider outcomes. It did not go into significant detail on all of those for a range of reasons, and as you have seen from the follow-ups, that is what we have tried to do to get into more detail and specificity.

Also, we have been working with industry, Government and the delivery bodies to make sure we are working as a partnership and putting things



together, as we flesh out exactly what the national space strategy means in the areas where there was less detail. A lot of progress was made, and it did help us come together as a Government.

I can talk more about some of the areas of progress. Certainly, we recognise, and you can see that in the follow-up strategies, that more detail is needed. It is very much a starting point, but one that has helped us come together as a Government, work with industry and focus further on the outcomes we want to see on growth, security, launch capability, and the businesses.

The Chair: Do you think those additional reports and additional approaches have helped you deal with what the NAO was worried about, which was not having enough clarity?

Alexandra Jones: We talked a lot about the NAO report at the time and I think, as the report says, previous Ministers were keen not to have a more detailed implementation plan; they wanted the space to have the conversations. We recognised some formal communication and direction setting. There was more we could do, and I think we have learned some lessons from that, and you can see that.

What it did not capture as much was some of the regular engagement that we did with industry, cross-government, and a whole range of conversations to develop that. Since the fieldwork was completed, we have done a lot as well. We published the space industrial plan. For example, we have established priority capability goals, we have a national space board, which is a director board, and we are doing a lot more because the space directorate has only existed for—I think it was three-and-a-half years, you were saying.

I think you can see considerable progress and that does start to address some of those, but there are real lessons as we go through this spending review for how we communicate effectively, what we are prioritising and how we want to work with industry.

The Chair: Mr Bishop, do you want to add anything? You do not have to, by the way, answer every question to each of you.

Ian Bishop: In addition to the successes since the NSS, I think you have already heard from Lord Willetts and Paul Bates about the success in having the ecosystem across the country really start up, lots of vibrant, innovative businesses and doing well in foreign direct investment and investment into the sector. There are a lot of successes.

Q25 Lord Booth-Smith: Can you provide an update, given it is now the same month for the one-year anniversary of the industrial plan, on some of the more specific actions you have undertaken in order to achieve its stated aims? I will put in my supplementary as well now to manage time. Can you give us any sense about when we might be expecting to see the national space capabilities development plan published, because I know it



is a bit behind?

Alexandra Jones: Yes, absolutely. As you know, the space industrial plan had two high-level aims: delivering specific capability goals and then changing the way we work with the sector. We did commit to a delivery plan in autumn, and that has been delayed—I think quite rightly—because we have had a general election and change of Administration. What we have wanted to do is work through with new Ministers their commitment to the plan, which is very clear.

What we are doing is working through the spending review to make sure that when we do publish a more detailed plan it has money attached, because one of the key things we found from industry is they want some certainty—they want some clarity. What they do not want us to do is publish a plan and then update the plan once we have the funding.

We have made some progress on work through the industrial strategy. As Ian says, and I am sure he will want to add, we have been doing a lot with the sector and thinking about how we have more end-to-end approach with the sector. We are continuing to deliver against the ambitions in the regulatory review, for example. We have a plan agreed with industry. So there has been quite a lot of progress against aspects of it, but we were keen to do the detailed plan—rather than publish two, because you would always have to update it post the spending review—as soon as we have done phase 2 of the spending review.

Ian Bishop: In particular, I would like to touch on the priority capabilities we flagged in the industrial plan. There has been a lot of work going on within Government and the space partnership; that is a body bringing together government academia and industry. We have been doing a lot of thinking about the capabilities that we set out as priorities in that plan. How do we make them real? How do we land them and fund them? That is going to help shape the plan we have post SR to make it real.

Lord Booth-Smith: You very elegantly sidestepped my question about when we can expect to see the different capabilities. I am not suggesting that was deliberate, but is there a timeframe?

Ian Bishop: We need to wait until the spending review completes.

Alexandra Jones: Post June, July—in the summer when it completes. Yes, we are not deliberately evading, but it will be simply after that. But that was a fair call.

The Chair: One always waits for spending review to complete.

Q26 **Lord Lansley:** The European Space Agency—we were talking earlier about the whole structure of the UK's relationship with ESA. Can you tell us how in Government the process is being undertaken to think about what programmes we want to be in and what shares we want to have in what programmes? Looking to the ministerial in November, when and



HOUSE OF LORDS

how is there engagement to try to determine what our future participation in programmes would look like?

Ian Bishop: As in working across Government or with stakeholders?

Lord Lansley: Across Government, yes.

Ian Bishop: There are already lots of conversations ongoing—a lot of the understanding of working with the new Administration and new Ministers about the outcomes they want to achieve, what they want to prioritise, how that would feed into a spending review bid. I am going to say the spending review is one of the limiting factors here because the programmes we can go into will be determined by the spending review.

What we are doing now is looking at the things that might be on offer, how they best align with our national capability goals, our national needs, our national outcomes, and working through them in that way. There is a lot of engagement happening pretty much daily between us.

Lord Lansley: What is ESA's expectations in terms of the UK Government's commitments in advance of the ministerial council? Are they expecting you to have substantive discussions with them over the summer after the spending review about what participation we might take?

Ian Bishop: For a detailed answer, I would have to lean on my ESA colleagues, but the expectation is that the Council of Ministers is a negotiation. There will be engagements in advance with the countries we think might go into the same programmes as us, with different countries, and understanding what the full programme ESA will have on offer. I think that is still to come out in the next few months, and then we can work through all those programmes, which outcomes achieve what outcomes, and which partners we want to prioritise.

Lord Lansley: You did say about stakeholders, because presumably there are commercial partners in the UK—companies in the UK—for whom this is a very significant question. Is there a formal engagement prior to the ministerial?

Ian Bishop: I would have to say there probably will be over the summer. We do hear from them a lot as to which programmes are of most interest to them, which they are most involved in, and there is the ongoing engagement with those existing programmes. When we see the full range of new programmes, we will have to talk to the sector and stakeholders as to their priorities then.

Q27 **Baroness Donaghy:** Could you say a bit about the department's priorities for regulation of activities in space, including international co-operation? While I am speaking, could you say a bit about the space regulatory review?



HOUSE OF LORDS

Alexandra Jones: I think the space regulatory review is a good place to start. That was very much there to give the sector some clarity and some certainty and confidence for investors, developers and operators. We are recognised as world-leading in space regulation and so what we did was work with them to identify seven clear outcomes and 17 recommendations. The outcomes were a whole range of things around being agile—so a streamlined system with much more co-ordination, focusing on growth, on innovation, on accessibility, just making the legislation and guidance easier to understand. Also there was national interest, so supporting national security; safety and sustainability, which is an area we have been leading on in the conversations, including with the King and others; and then international partnerships and multilateral alliances with other either established or emerging space-faring nations working towards some of those regulatory frameworks. Those were outcomes developed with industry.

We have also worked with industry and academics and others to agree a delivery plan—to make sure, against the 17 recommendations and those outcomes, the plan that is sequencing the work, and making sure we are prioritising the right areas to implement all of the review, but in a way that takes it a step at a time.

Those are the key areas. We also have the Regulatory Innovation Office, which you just saw David Willetts, and he is the new chair of that. Space is a priority area identified within that as well, thinking about how we push this forward.

There is quite a lot of work on making sure we implement the whole regulatory review and, through RIO, ensuring we are engaging with the wider sector to identify where regulation can do more.

Ian Bishop: I am just going to add that, on the international side, obviously we work on the UN Committee on the Peaceful Uses of Outer Space and the UN committee on disarmament, as well as championing space through UN resolutions such as on responsible space behaviours. We are trying to take the lead in influencing on the international stage as well.

Q28 **Baroness Bonham-Carter of Yarnbury:** Picking up a bit on Lord Lansley's question about working across Government, I want to ask how you work across the different government departments. Reading the number of departments that have input into your area makes my head sway and I do not know how you manage that. A quick supplementary: with the new Government and new Secretaries of State and Ministers, this presumably has become even more complex because you have had to work with different people and different agendas. You are smiling, I see.

Ian Bishop: It is not just your head, Lady Bonham-Carter, that spins when we look at the amount we are engaged with.



HOUSE OF LORDS

Alexandra Jones: One of the striking things about DSIT is that almost every area we work on has equities across multiple departments. We are in charge of the R&D system—that is pretty much every department. It is something we are well used to. What is striking about space is it is clearly a sector that grows in its own right and with civil and defence matters there, but it is a sector that supports multiple other sectors and then it matters for security.

The way we do this is—and one of the reasons we set up the space directorate was to improve the way that we do this cross-government—is through formal governance, so there are Cabinet committees, there are senior cross-government official groups on this, there are capability or sub-sector specific working groups. We have communities of interest on this. There is a range of different ways we try to do this.

What we have also been doing is working closely with the Cabinet Office, because one of the best ways to work across Government is often to make sure you are engaging with them. Particularly from a security and resilience perspective, this matters.

We are trying to make sure the ministerial meetings are happening appropriately and very regularly. We have a quarterly national space board, which is director level. Then there are specific areas of interest where we are working with people across Government, and with industry, which of course was a question earlier. There are multiple ways in which we do this. We have the industrial strategy, for example.

I think having a space directorate means we can pull that all together. What I have been struck by is the close relationship to the MoD, in particular, because that matters. But also working with the Cabinet Office and others. We are increasingly getting a good group of people at senior levels to focus on thinking about outcomes across Government, as well as for individual departments and areas. That feels like it is making progress.

It always sounds complicated. I think that is because genuinely you do need to involve a range of people, but we are trying to keep the structure one where you know which decisions get made where. You know we can get the feedback on different issues. Then we have good feedback loops, working closely with the agency and others to make sure we are hearing from the sector what is working and what is not.

Baroness Bonham-Carter of Yarnbury: I think Baroness Stowell mentioned the importance of the Cabinet Office in our previous session. There you are—you anticipated the answer.

Baroness Stowell of Beeston: I do not think it was me. But if it was, well anticipated, me.

The Chair: We are coming straight on to you, Baroness Stowell.

Q29 **Baroness Stowell of Beeston:** I wanted to ask you about OneWeb, and



clearly the last Government's investment in OneWeb was controversial and it has been on a rocky road since then. Could you tell us where you see the taxpayers benefiting currently from OneWeb and the prospects for the future? I am thinking particularly at the moment in terms of the changing dynamics within defence and that sort of thing, but there may be other things that you want to point to.

Alexandra Jones: It is important to say, recognising there was a lot of debate about the investment, that it was never made with the aim of short-term profits. It was always about long-term growth of the UK's space sector, R&D activity, talent and high-end manufacturing. OneWeb has created over 400 highly skilled jobs, it has made the UK one of the world's largest satellite operators, and it has demonstrated the success of the UK's orbital licensing capability, so supporting scale and pace of a large global constellation. Those have all been helpful.

We are working with OneWeb on Papa Stour, Shetland Islands, and Lundy island in Devon on LEO satellite broadband in hard-to-reach locations, as well as in a rural connectivity accelerator pilot. There are some ways we are working with them on broadband and connectivity.

We are also looking at where we can work with OneWeb on other contracts. That will be through contracting. But we work very closely with the company, thinking about how we can make the most of the services given it has such a wide constellation of satellites.

There is a real opportunity, as we think about some of the wider shifts, to think about how we can benefit from that special share, but procurement laws always apply, of course. We are looking at how we make sure that wider Government is aware of this or making the most of the fact that they are investing in jobs and satellites in the UK and helping to improve the model. We are looking at where there are opportunities cross-government, subject to procurement, to bring them in even more.

Baroness Stowell of Beeston: Do you want to add anything?

Ian Bishop: No, I think that covers everything.

Q30 **Lord Tarassenko:** I will follow up on that, and it is linked to my question as well, which is about the changing situation since January. There is this report that Eutelsat OneWeb will or would—I do not know if it should be conditional or future—replace Starlink in Ukraine. Given the decreasing involvement in the UK Government, and hence the stake in the company, are we involved at all in the discussions on perhaps replacing Starlink, and doing it in months rather than years in Ukraine? Is that something that DSIT is involved in at all?

Alexandra Jones: We would not be able to comment on those conversations, but I can say a bit about what we are doing in Ukraine, if that is helpful, but not specifically in relation to OneWeb and Eutelsat. Is it useful to say a bit about what we are doing in Ukraine or is it more the OneWeb interest?



HOUSE OF LORDS

Lord Tarassenko: Yes, go ahead.

Alexandra Jones: Even since before Russia launched the invasion we have been working with allies to support Ukraine using space systems, looking at invasion preparation, satellite communications, and earth observation. That is on the military side in supporting the armed forces. We also support the civilian Government in a range of ways that I will not go into detail about here.

OneWeb does supply commercial services in Ukraine, as you say, and we continue to see strong potential for that, but I cannot comment on the specifics of those conversations for commercial reasons. I am sure you will understand.

Lord Tarassenko: I would imagine those developments are forcing you to think about resilience, dealing with situations that up until now you probably would not have thought of too often. Where I want to go with that is the position, navigation and timing framework. There was a government document back in October 2023 about 10 points being set in terms of how to manage the PNT capability and develop it. That is only 18 months ago. Are you able to tell us about the progress on those 10 points?

Alexandra Jones: I am, and I should say we are definitely thinking about resilience and even before some of the events of this year. The National PNT Office, I am pleased to say, is fully staffed. We have funding that has been provided from around Government for that. We have made progress in a range of areas. We have increased the funding for the National Timing Centre, for example—over doubled it, in fact, from £30 million to £62.7 million.

We have been working with the General Lighthouse Authority on enhanced long-range navigation, for example—so looking at PNT across land, air and sea. We have been investing in satellite time and frequency transfer, and we are aiming for the National Timing Centre in the first phase of eLORAN—the long-range navigation—to be subject to the spending review, achieving initial operating capability by January 2027. We have made quite a lot of progress, and there are proper conversations across Government about PNT and thinking about some of that.

We have also been part-funding the Royal Institute of Navigation to look at some of the best-practice principles and doing a lot of work on what initial crisis incident plans should there be, which goes to your point on resilience, issues around PNT. I can talk in a bit more detail about that if that would be useful as well.

Lord Tarassenko: A very quick supplementary, if I may, because we have hardly touched upon the skills agenda for space technology. We have fully staffed the National PNT Office; were you recruiting these people? They must be highly qualified, I presume. Where are you finding



them?

Alexandra Jones: It is a mix of places. I would need to check the full details of exactly where we are, but some of them will be civil servants working with experts. We work with the National Physical Laboratory, for example, and they are incredibly important on the timing side of things. We do work with experts, so the core office will be a mix of people, some of whom will have relevant backgrounds, some of whom will be civil servants pulling things together but ensuring that when it comes to the programmes they are working with the experts in the system. They will be in NPL, they will be in UKRI, they will be in the MoD—who are working very closely, as you would expect, with NPL, on the National Timing Centre.

Often that will be the model because it is challenging to get some of the people into Government. That core office can deal with the co-ordination across Government, pulling all the government departments together—to the points made earlier. Having that, you can have a mix of skills in there. We have some excellent civil servants and the person running it, the deputy director, has a background in security, for example. Then we are drawing on the experts in the system.

The Chair: Can you just tell everybody what NPL is?

Alexandra Jones: Sorry, National Physical Laboratory.

The Chair: It is only because we have the public in mind.

Alexandra Jones: Of course, sorry. I said it once and then I slipped into acronyms. You are quite right.

The Chair: It is fine. Please do not worry about it. We are very pleased that one of our members is in Houston today and joins us now. Lord St John of Bletso, your question, please.

Q31 **Lord St John of Bletso:** At a time when new space firms are struggling in raising working capital to scale up, while we are aware of grants from the space innovation fund, Innovate UK, ESA funding, catapult funding and regional growth funding, what has been done to create a robust ecosystem to help new space firms scale up?

Alexandra Jones: It is a good question. I will start with some of the work we are doing more broadly in the ecosystem on start-up, scale-up, pull-through, and ask Ian to come in on some of the specifics we are doing in the space sector. I think—we recognise this is a wider issue, absolutely—that the UK is very good at R&D. It is pretty good at commercialisation—a mixed picture—but it is much less good at scale-up.

We are doing a range of work right across the system, so not just limited to our department but thinking about the R&D end to innovate supporting packages for small businesses, and some of that will be working with the specific catapults—for example, satellite applications. Some of it will be



HOUSE OF LORDS

thinking about the sectors, and through the industrial strategy we will be thinking about what we need to do for space. We are looking at regulation, because we know that is one of the issues, and if we can move faster from prototype to commercial operation that gives us an advantage that attracts some of the investment, hence the work we are doing on the regulatory review—the Regulatory Innovation Office.

On access to finance more broadly, we are looking at how you have a proper path through the system—thinking about Innovate, through to the British Business Bank, the National Wealth Fund, the British Growth Partnership. We think about all of that and also recognise that grants matter—of course they matter—but we know from firms that it is the contracts, it is the procurements, that are important.

The European Space Agency is an incredibly important part of that ecosystem, as Ian was saying earlier, because it does give contracts, important ones, and we know from the companies that when you have a contract from the European Space Agency or Government, that does make a real difference to your company's prospects and ability to attract investment.

There is a wider system that we are looking to try to fix, but one of the very specific aims in the work we have been doing on space is a better end-to-end approach for space specifically, as I say, through catapult, and through some of the work with ESA. Do you want to say a bit more about what we are doing with that?

Ian Bishop: Yes. One of the other things we are looking at as well is engaging with the Department for Business and Trade and the Treasury on how to use the industrial strategy and the opportunities relating to that, the different levers we can pull to help create an end-to-end offer for British businesses. Alex already talked a bit about the ESA contracting and the ability to leverage more investments and grow through that way.

Work on the regulatory review will make it easier and cheaper to do business and get products to market, reducing those overheads and costs there, I think. I also believe Paul and Lord Willetts talked a little bit about the unlocking space programmes. How do we create the actual market for these space products? It is not just about government procurement. How do we create the customers out there for different services and applications?

The other thing we are looking forward to—this goes back to the spending review point and what comes out after that—is: how do we, as Government, send a clear demand signal? By setting our capability goals, how will we achieve them? That will give businesses and investors confidence as to where we are going and then help lead on to that procurement and contracts.

Alexandra Jones: I just want to build on your points about the market for space services. That is an important part of this because, when you



HOUSE OF LORDS

look at the sector, it grows and there are specific areas we can do to invest in that—not just the regulation and the grants and the procurement, but space services support so many sectors. If we can move more quickly on things like regulation, then we have an opportunity in financial services, for example, to think about insurance or other products where again we can have a world-leading edge.

We are thinking about not just space as a specific sector, but raising the awareness of quite how much it supports other sectors and therefore creating some of that demand. I think that is something we are very keen on as we go through. People do not fully realise, until you start to talk about the resilience points, quite what would happen if you did not have this, but also the opportunities you have—through Earth Observation and through other services to change the way you do business.

Lord St John of Bletso: Could I just ask one very brief supplementary question about a drill-down on skills development, with training education programmes to build a skilled workforce capable of supporting the growing space industry? Skills are going to be a key for small growing businesses. Getting that skills base is a major challenge.

Alexandra Jones: Absolutely. In fact, we published findings from a 2023 space sector skills survey back in September 2023. Some of the points there very much echo that—the importance of a strong skills base on AI, on data, software engineering, systems engineering, and wider technical roles as well as the very specific highly-specialised space capability.

The space agency, and they may have spoken a bit about this, have committed nearly £20 million to education, outreach and workforce projects since 2022. They are working with a number of businesses, looking at teacher development and student competitions, and delivering conferences for careers through the National Space Academy. They have three portfolios: Space to Inspire, Space to Learn and Skills for Space. They are trying to work through the pipeline, as well as the particular skills, which, as you will know well, are not just the very specific skills for the space sector, but the more general skills that we know that we are going to need for AI data software. There is more to do, but I think that has certainly been identified as a priority and we are investing.

The Chair: If the Government are thinking about whether to make the transition from being a grant funder to a customer for space firms, notwithstanding the spending review and all of that, is that the plan? If it is the plan, how would that work without additional funding? Or is that about cross-cutting and the opportunities across departments?

Alexandra Jones: I think that is exactly the question we are looking at in all sectors. How do we think about a proper system that pulls you through from the very early innovations all the way through to some of the contracts we know matter? There are some ways you can do that. We have the Procurement Act, which came into force last month and lets us set clear strategic directions for procurement. It gives a bit more



HOUSE OF LORDS

flexibility for procurers as well to use commercial skills to get the desired outcome. We know that when you do not overspecify the solution but you set out the problem, you get better results from some of this. That will help.

DSIT and the Cabinet Office have set up a new commercial innovation hub to trial some of the new approaches to service design and procurement, and then there are reforms and changes happening in individual departments, including in MoD. For some of those, it is about using existing funding in a different way. Recognising the importance of contracts, we are thinking about also just what is the balance of grants and procurement in the system.

Again, that is why ESA is such an important partner in this, but we can also look at some of our domestic programmes and think about the balance there. We know the fiscal environment, so we are thinking about both how can you use these new reforms to do things a bit differently with existing funding, and then what is the balance across the system. I do not know if you want to add anything.

Ian Bishop: No, I think that point is about using the money correctly or as well as we can, not necessarily always asking for more.

Q32 Baroness Stowell of Beeston: Can I ask about the NAO's assessment that the space agency has more work underway than it has funding for? I would be grateful to know whether or not you think they are going to get increased funding, and if they cannot and they have to make some difficult decisions about priorities, what would be the implications for that in terms of the space policy?

Alexandra Jones: We all know the challenging fiscal context. I cannot comment on whether we will get more funding or not for space, as you would expect. We are all entering into the spending review and talking that through.

I think what we are doing is planning for different scenarios, again as you would expect. In all scenarios of course we will be meeting all the legal commitments, but a lot of the commitments and the plans that were created were in a slightly different fiscal environment. Many of them were created with gateways, for example, to offer opportunities to review programmes.

The national space strategy was very broad. What we are doing now through the subsequent plans has been narrowing down and prioritising. We have also been working very closely with the UK Space Agency in our sponsorship. I am sure Paul and Lord Willetts were talking about the ways that they have been implementing governance and controls.

Although a number of things were thought about in a different fiscal era, we have a plan for how to manage if it is a less generous settlement in the future. The way we will do it is by focusing on the outcomes for Government that we want to achieve, and then how we think across



HOUSE OF LORDS

Government about the best ways to achieve those and the most effective ways.

That is very much working with the UK Space Agency. It is a strong partnership, and we are working through what that looks like. Absolutely, that is legal commitments, but let us think about what else do we do, and that includes the negotiations on the European Space Agency.

I think in this fiscal environment we cannot assume anything, so we are planning for the different outcomes of a spending review but, with those shared government outcomes in mind, how do we achieve those best in the different scenarios?

Q33 **Baroness Mobarik:** I wonder if you could update us on the progress made by Government on developing sovereign launch capability. I would like to know a little bit about the proposed launches in 2025 and also what assessments have been made about the potential of this economic opportunity for the UK. How competitive are we in terms of the launch sector in relation to the likes of SpaceX and Rocket Lab and so on?

Alexandra Jones: You will know we have committed to making the UK a European leader in small satellite launches and delivering a launch capability with genuine benefits. We have invested around £111 million in launch capabilities, including recently £20 million in Orbex to complete construction of their launch vehicle, and launch from SaxaVord, who we have been investing in as well. SaxaVord got its launch licence last year and then several, I think, operators are targeting orbital launches from SaxaVord from this year onwards.

We have made some progress. Clearly the January 2023 Virgin Orbit launch did not go to plan, but I think it did show that we can launch satellites from the UK. There was an anomaly there, but that Cornwall Space Cluster also continues to develop at pace. We have Goonhilly there providing lunar communications to the UK Space Agency and international partners.

We think there is a genuine opportunity for the UK there. Our focus on the small satellites is a particularly important area where we can focus and compete. Our geography is helpful on this. We are moving to invest in the companies that we think have best opportunities in this area. It is a risky area, but I think it is one where we see us having a potential competitive advantage, and so one we have been investing in.

Ian Bishop: I would also add that the Virgin Orbit launch showed that we can do the licensing and regulatory parts of it. In terms of having the government machinery ready to support launch, we are absolutely there.

The Chair: Not to be underestimated, actually, government machinery—it has to do more. Finally, we come to Viscount Stansgate.

Q34 **Viscount Stansgate:** We have heard a lot in the discussions we have had so far about potential future space applications, asteroid mining, in-



HOUSE OF LORDS

space manufacturing, space-based solar power, space debris removal. What does DSIT believe are the future opportunities for the UK, and what would you regard as priorities of the ones I have just mentioned?

Alexandra Jones: We believe there are a number of potential and existing future space application opportunities. The five national space capabilities were identified as the priorities in the space industrial plan through working with industry and academia, not just Government. That is space data for earth applications, position navigation and timing, satellite communication technology, space-domain awareness, and in-space servicing, assembly, and manufacturing. That will guide some of the things we see as real opportunities.

It is also striking quite how much global activity in space is ramping up, some of it through private entrepreneurs investing. Other nations are becoming more space-faring nations. You can see a whole range of areas. What we are prioritising is developing where we have a competitive advantage. What are the areas we can compete in and doing so quickly? The space directorate is now working with Ministers just to work that through, but satellite communications, small satellite manufacturing and some of the active debris removal are areas we see as genuine opportunities. But that capabilities work we did, which was with industry and academia, is the guiding light and we are drilling down into that now to think about specifically, "What does that look like?"

Viscount Stansgate: Are you considering in any form space-based solar power or asteroid mining? Even looking ahead, are you thinking about it?

Ian Bishop: I believe the Department for Energy Security and Net Zero is funding some research into space-based solar power and the place it could take in future energy mix and solutions.

Lord Tarassenko: Is that study done by the department or are you relying on academic papers modelling this? How are you making up your minds about a topic like that?

Ian Bishop: I would need to talk to colleagues in the other government department because it is their research project that they are looking at, so I cannot run with that.

Alexandra Jones: I can say generally what we would do is set up what we are trying to understand, commission the experts to do that, and then it comes back into the department so we can assess it against the various criteria we are looking at: is there a competitive advantage? What is the value for money? To your point about looking to the future, is this going to give us an edge in the future? Some things will not be value for money now, but they might be in the future. You have to think about that.

Lord Willetts may have mentioned he has done some work on business cases on R&D, which is probably thinking about how you do business cases differently. If you take six months to do a business case for a



HOUSE OF LORDS

technology, that technology will have moved on quite a lot in that six months. Improving that one, we have lost out on the next one.

Generally, the approach would be setting out what we want to understand, getting the experts in, but the assessments happen in the department as you compare it and tension it against all the other outcomes. But if one of our outcomes is absolutely growing the space sector, then that is one of the issues that they would be looking at. For them, they would be looking at the specifics on space solar and how it contributes to some of their goals.

Lord Tarassenko: Very briefly, when you talk about experts, are they national experts? Is this a capability of the UK, or are you needing to go outside the UK to get the relevant expertise?

Alexandra Jones: It would depend on how they commission the work. Often, they will be working with international academics, some of whom will be based at UK universities, for example, or UK institutes. They may well get a partnership of people. It will depend. As Ian says, it is one where we would have to check on this specific issue with the department and see what they do.

Viscount Stansgate: If you take an area like space debris, which you have mentioned, and what we know already about the potential problem that is growing and growing and growing, can you say any more about what you think the UK's opportunity in that particular area may be?

Alexandra Jones: We have recently awarded nearly £5 million to Astroscale and ClearSpace to look at the risks and costs of an active debris removal mission—so to rendezvous and de-orbit two UK-licensed satellites. We do see that as an opportunity and one where we are trying to invest to understand where can we develop some competitive advantage in this, given the number of satellites that are now in space, given the growth that we are expecting in satellites in space over the next decades, which is huge, and given the number of satellites that will also not be operating and therefore increase risks of collisions and debris being around. It is clearly an area where we need to do something globally, and we see this as something where the UK could make a big contribution—hence the funding to see what is possible and to get these companies contracts to see what we can do.

Baroness Donaghy: This is just a supplementary to Lord Stansgate's question, if I may, on the benefit of a low gravity vacuum environment—for example, the benefit of semiconductor production, and also health service issues. I wondered if you could tell us what research, if any, has been done in this area.

Alexandra Jones: We are absolutely looking at some of the benefits of that, because, as you say, you can test materials in a totally different way in those zero-gravity environments. I would be happy to write with some more details on the specifics, but I know this is an area where we



HOUSE OF LORDS

are absolutely looking at some of the potential that space can provide for testing some of this.

Baroness Donaghy: Thank you, that would be very helpful.

The Chair: Thank you very much, Alexandra Jones and Ian Bishop. You covered a huge amount of ground in a short period of time, which was fantastic. We all have loads to now think about and also to read and look back on from what you have told us. Thank you very much indeed. You were here representing the Department for Science, Innovation and Technology and representing it very well, if I may say. I now would like to bring this public evidence session to a conclusion,