



UK Engagement with Space Committee

Corrected oral evidence

Monday 12 May 2025

4.45 pm

Watch the meeting

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

Evidence Session No. 12

Heard in Public

Questions 114 – 119

Witnesses

[I](#): Professor Sa'id Mosteshar, Director, London Institute of Space Policy and Law; Professor Joanne Wheeler, Director, Earth Space Sustainability Initiative.

Examination of witnesses

Professor Sa'id Mosteshar and Professor Joanne Wheeler.

Q114 **The Chair:** Welcome back to the second part of our meeting this afternoon; I am delighted to welcome two extremely distinguished people. I wonder if I could ask you both to introduce yourselves and tell us just a little about what you do. Professor Wheeler, would you like to begin?

Professor Joanne Wheeler: Thank you; it is a pleasure to be here. I am managing partner at Alden Legal and have been in this industry for a shockingly long time: 32 years. It goes quickly. I am also director of the Earth Space Sustainability Initiative.

Professor Sa'id Mosteshar: Thank you so much for allowing me to appear remotely; it is a great pleasure to be with you. I am a practising barrister and have been focusing on space a little longer than Joanne, in fact for several decades. My first book on the topic was published in 1984. I have primarily practiced public international law in this area, but also of course national law. In addition to being a practising barrister, I am an academic in this field and I direct the London Institute of Space Policy and Law.

Q115 **Lord Lansley:** Thank you both for being with us this afternoon; we are very grateful. My opening question is about whether the UK's structure of space law regulation is in fact world leading, as the former Government claimed it was in the *Space Regulatory Review*. Professor Mosteshar, with the benefit of your decades of experience, do you believe we occupy a world-leading position?

Professor Sa'id Mosteshar: To determine whether in fact we are world leaders, we have to first understand what it is we are trying to do. What do we mean by "world leader"? If it is about attracting investment from outside the UK then obviously there are other countries. The OECD has done a very nice report on where each country stands and how it ranks among others. It has looked at, for example, patents in this field, private investment in the sector, et cetera. We come somewhere around 7th or 8th in the rankings on attracting investments, so I would say we have a good grasp and are good citizens in the sense of implementing our international obligations. Whether we are world leaders, I would say probably not, but again it depends on what you are looking at.

Lord Lansley: Could I ask you as well, Professor Wheeler, perhaps picking up on Professor Mosteshar's point: are we world leading in the sense that our regulatory environment gives rise to benefits in terms of investment into UK space activity?

Professor Joanne Wheeler: I think this is absolutely key. The UK was one of the first in the world to have a space law; we were leading for many years although, yes, there is a "but" coming: our leadership has been rather complacent and allowed other countries to catch up. Just over 10 years ago we warned the Science Minister that this would

happen. Perhaps I can give you some examples of strengths and weaknesses and then some pointers as to how we need to change our approach.

There are a lot of strengths and I agree with the last panel that we have all the building blocks to maintain that leadership, but we have to maintain it and that involves action. We have a comprehensive law through the Outer Space Act and the Space Industry Act. It is comprehensive in regard to spaceports, range, launch, procurement, orbital operations and re-entry; it does not cover human space flight, it does not cover the very large rockets that we may wish to attract moving forward, and it does not capture in situ resource utilisation such as mining using local resources—in other words, mining the moon.

I am going to concentrate on the points that mostly attract investment. Our focus is on safety, security and sustainability and that is increasingly important for insurance and finance. We take an outcome-based approach, which is well considered internationally. Operators need to evidence how they meet a standard, but it is not prescriptive; it allows different compliance approaches and innovation. It also allows different insurance models. As mentioned by the CBI recently, the UK could become a leader in outcomes-based regulation. That is not to be underestimated, especially if we are looking at space with AI, space with cyber, and so on. The UK could even be more anticipatory, and I am happy to answer questions on that.

Although the UK licensing process could be clearer, it is still respected internationally, and that is very important. For example, the US is a big market to break into. The Federal Communications Commission in the US has published the following, and I am going to quote it because it is really quite important: “The grant is based on a finding that the company is and will be subject to direct and effective regulation by the UK concerning orbital debris mitigation”.

It is a huge win for the UK to have that wording—even though the UK did not even know we had it in there—for market access into the US and elsewhere.

UK space law is mature, it is tested and it is comprehensive. It deals with, for example, more consolidation and more M&A transactions, and the UK allowing the transfers of satellites to and from the UK. I have been working with the UK Space Agency on a framework agreement with Luxembourg that allows exactly that, now and moving forward, and I was very impressed with the UK Space Agency’s ability to do that.

To answer your question properly, we also have strengths that we need to capitalise on. We need to use the Department for Business and Trade more in regard to accessing embassies around the world, to encourage other countries to set up in the UK and then export. I still remain impressed by Scottish Enterprise and Scottish Development International and their use of the Department for Business and Trade. We need to have

more international partnerships on a legal basis. We have one with New Zealand and a recent one with Norway, but we can get more.

I am not a tax lawyer and never will be, but we have double taxation treaties with many Commonwealth countries and many across Africa, which are really important in getting investment into the UK. By its nature, the satellite industry is international; Africa is a very important market and there will be benefits for double taxation in exporting into Africa.

We have an insurance industry but we need to use it more; we have finance, we have academic powerhouses and we have law.

But we do have a few weaknesses. First, we still have an uncapped liability. A report from this House went to the Government a few years ago saying that an uncapped liability cannot be insured against and is not conducive to raising finance. We spent 20 years, up to 2015, seeking a cap on liability yet we now have unlimited liability again in the Space Industry Act. Yes, a licence will allow a cap on liability but it is not in statute. There is a Private Member's Bill proceeding now, but to quote one of the best and largest space underwriters worldwide, "This is where industry requires a high degree of certainty". We need a cap on liability or it makes the UK uncompetitive. To continue that quote, "It should come from the UK Government leadership and guarantee a liability cap".

Secondly, our third-party liability insurance for in-orbit activities is not as competitive as other states. Yes, we have a fleet policy for constellations now, but fundamentally the insurance requirement is €60 million per object, even if the object is the size of a shoebox or less, and worth £100,000. So we need to look at that more for safety and risk. Italy is about to bring in a tiered liability model, and so will Greece; and Portugal, France, Finland and Slovakia will have different insurance waivers. Australia, France, Japan and Luxembourg will accept different financial guarantees. These are competitors that we did not have a few years ago, so we need new third-party liability measures. There is one called the mutual model that is based on Pool Re, which provides terrorism insurance and P&I club. The mutual model has been consulted on twice and I would strongly suggest that it comes into the frame. It will fundamentally create an insurance company that is held by industry for industry, which should reduce insurance premia. We are well aware of at least 5 other countries that will follow this approach, which is really valuable for the UK too. I think the UK was the first to propose a tiered liability model, but as I am saying, Greece and Italy will probably bring it in before the UK.

For the last 10 years, we have not been competitive with either that or earth observation data policy; what we are looking to export can get stuck in the Export Control Joint Unit. Actually, I believe it is credible, but we need a policy that it can use to export data from the UK efficiently. If you are looking to export similar data from France, it takes a matter of weeks; here it can be a matter of months. So that was a priority and still is.

Ofcom is highly regarded in the UK and a leader internationally. But I was wondering why companies were leaving the UK and leaving Ofcom to file spectrum through Germany, so I investigated this. It is first come, first served. Spectrum is so congested and so competitive, and obtaining a filing with what is called the International Telecommunication Union as quickly as possible gives you regulatory precedence. That is really important. If spectrum is not subject to co-ordination between other operators, Ofcom requires difficulties to be resolved, which can take a year. Germany allows the filing to be made straightaway and will then resolve any difficulties with the operator and can ask the operator to remove harmful interference. So Germany does this in a matter of weeks while the UK could take a year. I am paraphrasing a little.

In regard to that legal and regulatory framework, we are still not seeing full communications and government alignment between government bodies and regulators. The communications, information sharing and alignment across government departments and regulators are not quite there.

The Chair: Actually, this is a question I was going to come on to but can I just hold you there and ask Professor Mosteshaar if he has anything to add to this?

Professor Sa'id Mosteshaar: I do not really. It was somewhat surprising on the insurance side to have that unlimited liability reintroduced when there were many discussions of it being capped at €60 million. The Space Industry Act somewhat stepped away from that. So that is one thing.

The other thing that Joanne rightly points out is the need for better co-ordination among our regulatory bodies and our government departments. That is key to arriving at a policy that we can all pursue in order to achieve better things.

The Chair: You have both brilliantly answered my question, which was partly about co-ordination and the adaptation that needs to take place in a new environment. It is great when people get ahead of me; we enjoy that very much on the committee. I am going to move us on to Baroness Mobarik's question and we can take it from there.

Q116 **Baroness Mobarik:** A recent report has said that a global centre for space law and arbitration is an area where the UK can become a leader. Do you think that is feasible? To what extent do you think that the growing orbital economy provides that opportunity for the UK's legal and insurance sectors?

Professor Sa'id Mosteshaar: There is no doubt that London in particular is a very well-respected and well-regarded arbitration centre. However, the extent to which it has ventured into the arbitration of space disputes is very limited and it is not a huge area of development. There are very strong vested interests in not having certain legal issues determined because there are arguments on both sides, so they tend to settle in the

insurance area. There have been a number of arbitrations but it is quite limited, I would say.

Professor Joanne Wheeler: This is a brilliant thing to consider, actually. We are lucky in the UK to have finance, insurance and one of the most well-respected legal frameworks globally. In regard to insurance and law, we are seeing more demand for space insurance and space law than we have ever seen—not just in disputes but also in regard to finance contracts, commercial contracts, et cetera. In 2010 the *Space Innovation and Growth Strategy* was saying to Government, “We need to look at the UK being a hub of these activities”. I would say that means not just the global centre of space law but also regulation, standards, insurance, finance and arbitration.

Let me give you one example of where English law still has precedence worldwide: there is a large risk looming that a non-allied power might seek to obtain a huge amount of radio frequency spectrum in what is called low Earth orbit, where most of the constellations are. I was pulled in to support a regulator and three security services in this regard about six years ago, to make arguments that would protect access to this very valuable spectrum. We based those arguments—considering this was an international issue—on an English Court of Appeal case. It was the only precedent worldwide. The English Court of Appeal has respect and persuasive power globally, and I have to say, coming from and being trained in Scotland and England, I was very proud to be able to use that. It has since been tested 48 other times; 48 court cases have been won based on English law. The *Financial Times* covered this very well, but it is hugely valuable in a completely innovative and new area of law. So that is a good example.

Another example is that, before Brexit, the Unified Patent Court was almost based in London just up the road from here.

So there are huge opportunities in regard to insurance, law, regulation and standards. If you think about most of the standards used worldwide for intellectual property, IT and most sports—even rugby, cricket and table tennis—those standards were all developed here. So let us be really proud of that.

Lord Shamash: Can I just ask a question about enforceability? I see that you are using arbitration quite a lot; I was intrigued about how you enforce court decisions when they are trans-global decisions. What happens in practice?

Professor Joanne Wheeler: I was going to give two examples, and my other example is actually about enforceability, because we have had several examples with space-related cases—again involving spectrum or other aspects of space. It has been very hard to enforce, particularly in certain other countries. What we have managed to do successfully with the help of barristers, and again the flexibility and robustness of English law, is find a nexus to bring them into the UK. We have managed to

either have—touch wood—settlements or successful arbitrations with another three cases.

Lord Shamash: What were the issues that led to the arbitration?

Professor Joanne Wheeler: They were disputes about space contracts.

Lord Shamash: So they were ordinary contractual disputes.

Professor Joanne Wheeler: Yes, but they were in the space area.

Lord Shamash: What happens in a situation where I have my satellite up there and a French satellite comes and knocks mine and blows it up or something? Can you enforce that?

Professor Joanne Wheeler: That comes under the liability convention and a state-to-state—

Lord Shamash: So, the answer is yes.

Professor Joanne Wheeler: Yes, we can enforce that but it has not really been tested. I was hoping it would be in 2009 but it was not. The reason it was not—I acted for one of the players in a conjunction in 2009—

Lord Shamash: It is really self-interest; I can see that.

Professor Joanne Wheeler: It never came to court or anything else. The reason it did not is that it is a very grey area. Again, this is where the UK can lead on standards to give certainty: a better risk to insurers and better due diligence for investors.

Q117 **Lord Shamash:** In your joint opinion, what steps do the Government need to take to support the legal and insurance sectors in engaging with space? It is a really wide-open question.

Professor Sa'id Mosteshar: Although I have been involved in some insurance cases, I would not say that I have expertise in insurance disputes in particular, but I do in disputes in general. What the Government can do is fairly limited. In terms of the legal area, there needs to be more opportunity for training and for expertise to be developed. In that regard I would say that we also need to engage more actively in the legal sub-committee of the UN Committee on the Peaceful Uses of Outer Space because that is where we can display our expertise internationally, which has not always been the case. We have not been as active as we might have been and I would certainly encourage the Government to put more focus and effort into that.

Professor Joanne Wheeler: Very simply, the Government should acknowledge insurance and law in the UK a little more than they do and recognise that they can attract companies into the UK because, as I said, we have this powerhouse of finance, insurance, and regulation and law here. Secondly, lawyers, insurers and accountants et cetera are also companies, but I have never seen them really mentioned when SMEs are

mentioned, or in regard to the fact that they have experienced staff who are very productive and generate tax revenues. Maybe they have different structures, but to have that recognition of professional service firms would be really valuable, and we can help investment support and bring companies into the UK. It is one of the things I try to flag up as much as I can.

Lawyers and insurers also help manage risk—the ups and the downs—and seek to find solutions which is very valuable. I speak a lot with Neil Stevens of Price Forbes, and we have looked to find solutions using insurance: this mutual model I have mentioned. Another thing the Government can do to help insurance, bearing in mind that we still have the world centre of insurance here with Lloyd's of London, is to remove insurance premium tax. We did it already for in-orbit and it was 12% of insurance costs. That is a fair chunk. But to remove it for supply and launch now would go a long way. It does not bring in huge tax revenues, but it shows that we are open for business.

I echo Professor Mostesha in regard to capacity building. We have an opportunity to train other countries. I have been involved, luckily, in what are called technical advisory missions for the UN to explain how UK laws work elsewhere; that is hugely valuable for soft power and regulatory diplomacy. We should be involved in more of the CommonSpace training—that is run by the Commonwealth—the UN training and the technical advisory missions. The next one is Ghana. I never get to go, but it is fantastic capacity building and great regulatory diplomacy.

I also strongly agree with Professor Mostesha about the engagement with the legal sub-committee that is going ahead just now on COPUOS.

The Chair: We are going to have votes back to back shortly and once that starts we will let you go because we will be gone for a long time. So let us try to move as fast as we can.

Q118 **Baroness Bonham-Carter of Yarnbury:** Can I address my question to Professor Wheeler? It is about the Earth Space Sustainability Initiative, which enables the UK to shape a more sustainable orbital environment. You mentioned collisions earlier on. Of course that is not just about collisions between countries; it is about space debris in an increasingly full space. Tim Peake told us he thought it was doing a great job, but what international response has the ESSI's activities received?

Professor Joanne Wheeler: Thank you for your question. Can I just take a very quick step back? Five years ago, long-term sustainability guidelines were published by the UN—fantastic guidelines that took 10 years to create—but the finance sector, insurance, regulators, and others were concerned at how these would be implemented into national legislation and national licensing, and how they would affect market access et cetera. There was a gap there, so the ESSI was set up. At the end of the day we need to influence and incentivise commercial operators to do the right thing, and we do that through licensing, regulation and measurable practices and standards.

To answer your question fully, we have engaged through a memorandum of principles to do a summary of our 12 standards, and 144 companies, regulators and insurance bodies have signed the memorandum. That is really incredible.

Baroness Bonham-Carter of Yarnbury: Were they all British?

Professor Joanne Wheeler: No, it was hugely international: from New Zealand, Canada, Africa and Japan. Angola has approached us to sign it. It came out at the same time as the Astra Carta, so I have to give some kudos to the Astra Carta in helping us there, but the Greek Government, the Saudi Government, the Liechtenstein Government, the Kenya Government and quite a few others are now co-operating really wholeheartedly. They came to us; we did not go to them.

So we are looking for practical ways of dealing with this issue that are recognised by finance, insurance and other regulators around the world. As I said, it is early days at the moment but we have now been asked to join the various boards of other international organisations. I am doing the keynote speech at a meeting of UNOOSA and the UN Environmental Programme next week, providing training for Astra Carta and the Commonwealth, and we will be kicking off a commercial training programme with the University of Leicester and some real experts in the UK in a couple of months.

Baroness Bonham-Carter of Yarnbury: That sounds like a good story.

Professor Joanne Wheeler: Onwards and upwards.

The Chair: I am conscious, Professor Mosteshar, that you have already given us quite a lot of evidence around some of these subjects, but do indicate if you want to jump in. I am just trying to clear as much as we can because the Minister is on their feet so any minute now the sound of the Bell will go off.

Professor Sa'id Mosteshar: I would agree with everything that has been said on that particular issue.

The Chair: It is always lovely when witnesses agree when we are short of time.

Q119 **Lord St John of Bletso:** I will follow up on the whole debate on space sustainability. How can the UK contribute to conversations about sustainability and the responsible use of space? Here I am referring to what you mentioned earlier about space debris. Who should pay for this? Should it be Governments? Should it be private? If so, who and what percentage should be paid? Have the United Kingdom's diplomatic endeavours at the United Nations and initiatives such as Astra Carta been successful?

Because we are about to go and vote, I want to ask my final question as well. I am sorry to be throwing all my questions at you, but it was rather alarming earlier on to hear you, Professor Wheeler, talking about the

unlimited liability in the space sector. While all satellites are insured for launch, my understanding is that 80% of satellites are not insured once they have been launched. Is this correct?

Professor Joanne Wheeler: It is more than that; it is about 85%.

The Chair: The Bell is sounding for voting, so I am going to suspend and formally end the session—I do apologise. We look forward to continuing our conversation in written form if nothing else. Thank you so much for being with us.