Further to your correspondence from 3 October, I am writing to respond to questions 3, 4 and 5b and c seeking clarification on skills, the National Quantum Technologies Programme and Industrial Strategy Challenge Fund, and security concerns around FDI. I understand that UKRI have responded to you on questions 1-3 and 5a.

**Question 3: What is the Government doing to ensure that a pipeline of workers with the relevant knowledge and experience in quantum technologies is developed at all the qualification levels required?**

Sir Mark has outlined the current support available at PhD level and proposals for further support. National Academy programmes funded by BEIS have a valuable role to play, particularly in attracting leading academic talent. More broadly UKRI are working with partners to outline plans to develop a longer-term talent strategy across all sectors including quantum. As part of our review, which is being jointly led by BEIS and DCMS, we are working with UKRI, industry and academia to better understand the wider need for skills to support a quantum-enabled economy in the future. This review will also look at other government levers to support the development of quantum technologies, such as the wider digital skills policy both DCMS and DfE are responsible for and the use of Government procurement processes to demonstrate and develop these technologies where there is a wider benefit to society in doing so.

**Question 4: How does the Government aim to ensure that strategic considerations feed into decisions made on the funding awarded to the National Quantum Technologies Programme through the Industrial Strategy Challenge Fund?**

ISCF funding has so far been awarded to the wave 2 quantum pioneer challenge. To ensure strategic co-ordination of this challenge across the quantum landscape, UKRI has appointed a challenge director, who is a leading expert in the area and will coordinate across different delivery organisations to make the challenge a success.

BEIS ministers asked UKRI to provide advice on which challenges to fund as part of the third wave of the ISCF. Earlier this year, UKRI ran an expressions of interest process, inviting industry directly to come forward with such ideas.

UKRI received over 250 responses through the expressions of interest process, from a wide range of organisations. Where expressions of interest had common themes or where ideas complemented each other to make a more compelling challenge, efforts were made to consolidate the thinking into one bid to represent a strategic and coherent industry-led challenge programme of activities. UKRI worked with industry leaders to develop the bids and they have been reviewed by experts.

The government set the criteria for which bids will be selected. Challenges must:

- be business-led in an area of existing UK strength;
- take advantage of our research depth and expertise;
- be a clear opportunity for growth with a sustainable global market and contribution from industry;
- have validated evidence that Government intervention is necessary and of strategic importance to the UK, and;
• solving each challenge should catalyse productivity growth.

Government and industry working together to articulate these challenges ensures that strategic considerations feed into decisions made on funding awarded through the ISCF. UKRI is tasked with considering these before making recommendations to myself and Greg Clark. This process is ongoing. We expect for the challenges that constitute wave 3 to be announced in late Autumn 2018, with funding to start in financial year 2019-20.

Question 5

b and c:
• Further detail on the mechanisms (including the threshold) that the Government has to ensure confidence over national security concerns for mergers and acquisitions in private companies (see Qq423-426).
• Whether there should be a notification system to record when quantum technology start-ups first receive offers of foreign direct investment (Qq427429).

The Government published the White Paper “National Security and Investment” and launched a public consultation on 24 July 2018 that ran until 16 October 2018. The White Paper is the next stage in the Government’s reform of its powers in relation to protecting national security from hostile actors’ acquisition of control over entities or assets. It follows the National Security and Infrastructure Investment Review Green Paper published in October 2017 and takes into account the responses to that consultation. The White Paper sets out the Government’s proposed reforms for creating clear and focused powers within a predictable and transparent process. The Government will use the responses to the White Paper to refine these proposals ahead of the introduction of any primary legislation.

The Enterprise Act 2002 allows the Secretary of State to intervene in mergers that give rise to public interest concerns. The threshold for intervening in companies in sectors involving quantum technology, computing hardware and dual use technologies on national security grounds was reduced in June. The new threshold requires a UK turnover of over £1m (originally £70m) or where there is a share of supply of 25% or more (but there is no need for there to be an increase in the share of supply due to a merger).

Given the constantly changing national security landscape the Government needs to have a broad and flexible power to intervene where investments, acquisitions or other events can give rise to national security concerns. That is why the Government’s National Security and Investment White Paper proposes a voluntary notification regime with a call-in power that would provide the Government with such an ability to intervene.

The White Paper encourages notifications from parties who consider that their transaction or other event may raise national security concerns. The Government has published a statement of policy intent alongside the White Paper which sets out details about when and how it expects national security concerns are likely to arise. The statement of policy intent identifies quantum technologies as one of the core areas more likely to pose a national security risk.

The proposed new investment screening regime aims to balance two key objectives of Government: to protect national security and to ensure the continued high levels of foreign direct investment on which the UK economy relies.
The scope of the regime outlined in the White Paper is broader than the scope of the merger control regime in the Enterprise Act 2002 in terms of the types of events that it applies to. Not only are there no financial thresholds that need to be met for a transaction to fall into scope, but the range of transactions and other events that are covered is greater. The new regime will not only provide a power that may be used in relation to mergers, but also equity acquisitions, investments and other events which result in the gaining of significant influence or control and the purchase of both tangible and intangible assets (such as intellectual property) and additional sales.

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