Question 1

- What are the innovation-rich sectors and sub-sectors where Scotland has existing or emerging competitive strength?
- How can we support these sectors to compete, collaborate and seek out global opportunities? What are our most exciting and promising areas of research and innovation where we have an opportunity to grow a significant industrial base in Scotland?
- What are the disruptive global megatrends that we want to harness and capture in Scotland? What steps will we need to take to support our businesses, universities and citizens to be able to engage with those opportunities?
- Should we prioritise our support for early-stage research to create the discoveries and innovations of the future, or shift the balance of our support towards research translation and commercialisation of today's new ideas?
- To what extent should we align our support for early-stage research with our economic and societal ambitions?
- International comparators

How do we make Scotland one of the most innovative small economies in the world?

Deep tech chemistry is a highly innovative sector

Chemistry underpins innovative research and development in many sectors, including those critical to the UK economy and to solving global challenges. These include green technologies, sustainable energy generation and storage, pharmaceuticals, and food security among many others. Many companies using chemistry fit in the category of "deep tech", i.e. have R&D as fundamental to their business an

Question 2

- Net Zero
- Wellbeing economyImproved productivityInclusive growth

Question 4

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- What are the disruptive global megatrends that we want to harness and capture in Scotland? What steps will we need to take to support our businesses, universities and citizens to be able to engage with those opportunities?
- Should we prioritise our support for early

The skills required to establish and grow a small R&D intensive company are different to the skills required to develop and succeed in scientific research. In order to grow the deep tech innovation sector in Scotland, researchers in university (particularly postgraduate students) should have access to training in business and leadership skills, and the chance to experience collaboration with the private sector where possible. Many PhD graduates will go on to form the critical workforce in these innovative SMEs; our research shows that PhDs are well represented in the chemical industry workforce. Of respondents to our 2019 RSC Pay and Reward survey, 55% held a doctoral qualification.⁸

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Catapult Network model

Scotland already hosts some centres that form part of the UK-wide Catapult Network of innovation centres. Research and innovation systems perform best when they are porous and collaborative, with staff able to move between academia and commercial activities; Catapult centres can be an effective driver of this model, as the Fraunhofer Institutes are in Germany. Building upon this network, or expanding the model to create a Scotland-specific innovation network that works closely with Scottish universities, could be an effective way to boost innovation.

Question 6

- How can we ensure regions across Scotland contribute to and benefit from a more innovative and productive economy?
- How do we build innovation systems that deliver regional economic priorities and attract talent and investment to the region?
- How best do we connect companies with Scotland's existing innovation assets and major place-based projects to drive competitive advantage?
- International comparators

How do we support and grow clusters of excellence to deliver on our vision for innovation?

Build on existing strengths

As we have shown, Scotland already has an existing innovation ecosystem with strength and expertise in the chemical sciences. Building on this, and adding facilities needed to grow existing deep tech companies such as scale-up laboratories, will bring additional investment and expertise that will catalyse the formation of clusters. Scotland also has local advantages that could be further exploited to incentivise chemistry clusters such as significant renewable energy resources and petrochemical facilities based around Aberdeen.

Question 7

- What does a business innovation user journey look like? How could this be improved?
- How can we encourage and support more businesses to innovate?
- What can we do to improve skills and training?
- How can we encourage a culture of entrepreneurship in Scotland?

⁸ Chemistry's Contribution, as above

- How can we ensure that the most innovative businesses can start and scale in Scotland?
- Have we got the right mix of incentives and regulations?
- International comparators

What can we do to help businesses innovate today?

• International comparators

How can we become one of the best places in Europe for the adoption and diffusion of technology?

[No response]

Question 10

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[No response]

Question 13

- · Leadership and co-ordination and coherence
- Structures, processes and mechanisms
- The ability to move quickly when opportunities arise
- · Connections and relationships between academia, industry and the public sector
- International comparators

What opportunities are there for greater co-ordination and collaboration across the ecosystem?

[No response]