

## 2 Background: CCS priority questions for reviewing the NSRA methodology

CCS commissioned the Royal Academy of Engineering to undertake an external review of the NSRA methodology. The review set out to make the process more open, leveraging the Academy's networks, and drawing in a breadth of external stakeholders, while the CCS progresses other aspects of the methodology review internally.

Following the conclusion of the 2019 NSRA, CCS, in partnership with key government stakeholders, identified priority research areas that would benefit from external expert review, which were shared with the Academy. These four areas are outlined below, along with additional cross-cutting themes. While the research questions guided the Academy's approach to the review, they were not absolute boundaries, and, where appropriate, other promising lines of inquiry were explored.

### 2.1 Scenario design

- What are alternative approaches to the reasonable worst-case scenario (RWCS)? What would be their added value in comparison to the RWCS?
- How are RWCSs or other types of scenarios defined? How can consistency be ensured across a wide variety of different risks (eg, malicious and non-malicious, chronic and acute, domestic and international, etc)?
- Should the NSRA focus on a single RWCS or should it plan for more generic or multiple scenarios per risk (eg, 'pandemic influenza' vs multiple pandemic scenarios)? Should different risks be grouped together and only the RWCS presented (eg, 'pandemics' or 'animal disease')?
- Should the NSRA present both pre- and post-mitigation RWCS or other scenarios?
- What implications might any proposed changes have on local implementation?

→ **Links to** recommendation 4 – a range of scenarios, recommendation 5 – focus on impact, recommendation 7 – clearer communication

### 2.2 Concurrent risks, compound risks, and interdependencies

- How can interdependencies between risks be analytically assessed?
- How can compound/concurrent risks be modelled? How does this relate to the scenario design approach – for example, RWCS rather than most likely occurrence?
- How can cascading risks and their secondary/tertiary impacts be modelled?
- How can risk interdependencies be considered in likelihood and impact assessments?

→ **Links to** recommendation 3 – interdependency mapping