Cabinet Office

National Security and Investment Act (Notifiable Acquisition) (Specification of Qualifying Entities) Regulations 2021

Consultation

Closing date: 14 October 2025

CP 1369

National Security and Investment Act (Notifiable Acquisition) (Specification of Qualifying Entities) Regulations 2021

Consultation

Presented to Parliament

by the Chancellor of the Duchy of Lancaster

By Command of His Majesty

22 July 2025

CP 1369

This publication is available at www.gov.uk/official-documents.

Any enquiries regarding this publication should be sent to us at public.correspondence@cabinetoffice.gov.uk.

ISBN 978-1-5286-5913-0

E03408950 07/25

Printed in the United Kingdom

Contents

Ministerial Foreword

Economic growth is the defining mission of this Government and is at the heart of our Plan for Change. To deliver that growth, this Government is implementing policies and programmes that revive Britain's reputation as one of the most open and dynamic economies in the world. The Government recognises that, for centuries, inward investment has benefited the UK economy, and our firm belief is that the vast majority of investment poses no threat to our national security.

A core part of how we stimulate future economic growth and support UK jobs is with a takeovers regime that is business-friendly and pro-innovation. Those principles are embodied in the 2021 National Security & Investment (NSI) Act and the Notifiable Acquisition Regulations (the NARs) which have appropriate safeguards and powers for Ministers to intervene where an investment threatens our national security.

As the Minister responsible for the NSI Act, my priority will always be facilitating investment wherever possible, while robustly protecting national security in the rare cases where I need to intervene. The NSI system stays out of the way of the overwhelming majority of inward investments, and ensures I am only made aware of acquisition that presents genuine risks. And while the current system has proven effective and reliable, it's right that we keep our processes and regulations under review as the world changes and the economy evolves.

This consultation will help us do that. NARs set out the areas of the economy, and the activities in those areas, that would bring a transaction into scope for a mandatory notification to the Government. We are proposing a number of changes, based on the engagement we have been doing with the business community, and on the findings of the report on the NARs I published last year.

These proposals would:

- loosen the scope on certain transactions where we're confident national security risk is unlikely to materialise, including certain parts of the AI and Energy areas;
- bring in some new areas where proportionate, but keeping these to a minimum, namely by introducing a new schedule to mitigate risk in the water sector;
- reflect areas where there are new risks, specifically in Critical Suppliers to Government and Suppliers to the Emergency Services; and

- improve clarity around the areas already covered, reflecting stakeholder feedback, including by creating standalone schedules for Semiconductors and Critical Minerals, which had previously been covered under Advanced Materials.

We believe these measures, complemented by our Industrial Strategy and our National Security Strategy, will strengthen our takeovers regime and protect the flow of investment into the UK. We want to invite you to give your views on any and all of the proposals. I will then consider all of that feedback ahead of setting out the changes we will take forward.

It is imperative that we make these kinds of updates in partnership with the businesses and sectors that they will impact, and I'm grateful to you for making the time to engage. Together we will continually improve our investment screening system and grow the UK's status as a global magnet for investment.

Chancellor of the Duchy of Lancaster
Pat McFadden

General information

Background

The National Security and Investment Act 2021 ('NSI Act') gives the Government powers to scrutinise and intervene in acquisitions of control of entities and assets in, or connected to, the UK economy that may pose a risk to national security.

These powers cover acquisitions in all areas of the economy. Acquirers must however notify the Government of certain acquisitions of control over entities that carry out particularly sensitive activities in 17 areas of the economy, in the form of a 'mandatory notification'; and acquirers must receive approval before completing the acquisition.[1] Such acquisitions are called 'notifiable acquisitions'.

The National Security and Investment Act 2021 (Notifiable Acquisition) (Specification of Qualifying Entities) Regulations 2021 ('the NARs') came into force in 2022, and set out which activities in the 17 sensitive areas of the UK's economy bring an entity into scope of mandatory notification. Accompanying guidance is also available on GOV.UK.

Those 17 areas of the economy as they currently stand are: Advanced Materials, Advanced Robotics, Artificial Intelligence, Civil Nuclear, Communications, Computing Hardware, Critical Suppliers to Government, Cryptographic Authentication, Data Infrastructure, Defence, Energy, Military and Dual-Use, Quantum Technologies, Satellite and Space Technologies, Suppliers to the Emergency Services, Synthetic Biology, and Transport.

Why we are consulting

The Government remains committed to transparency and engaging positively with businesses, including on the NSI system. This consultation sets out the Government's proposals to amend the NARs to ensure that the mandatory notification requirement under the NSI Act remains targeted and proportionate, protects national security, and provides investors with the certainty they need to fuel sustained growth.

[1] These regulations are set out in section 8(2), 8(5), and 8(6) of the NSI Act.

The Government recently published its statutory review of the NARs, the Report on the NSI Act Notifiable Acquisition Regulations (the '2024 NARs Report'), which assessed the effectiveness of mandatory notification requirements in the 17 areas of the economy since commencement of the NSI Act. The Report found that the NARs were largely working well but that improvements could be made. This consultation proposes a number of improvements to the NARs, while also reflecting feedback from the NSI Act Call for Evidence (which was launched under the previous government in late 2023).

The consultation seeks views on proposed changes to the NARs, including how the Government can increase understanding of the acquisitions that require mandatory notification. Responses to the consultation will further inform and refine the changes to the areas of the economy that will be subject to mandatory notification under the NSI system.

Consultation contents

The Government is considering changes to the NARs which seek to update and hone the scope of mandatory notification to ensure the NSI Act continues to capture national security risks in sensitive areas of the economy; while ensuring the vast majority of transactions remain unaffected. These changes do not amount to a major change in policy and will not substantially change the types of entities and activities in scope of the Regulations.

Specifically, the Government is consulting on:

1. creating new standalone mandatory areas already covered in the regulations - Critical Minerals and Semiconductors (the latter also incorporating Computing Hardware)
2. making updates to some areas that would otherwise go out of date - Advanced Materials, AI, Communications, Critical Suppliers to Government, Data Infrastructure, Energy, Suppliers to the Emergency Services, and Synthetic Biology; and
3. introducing a new area to be covered by mandatory notification - Water.

The Government has provided an initial estimate of the impact of the changes on the number of entities and notifications that the proposed changes could bring into scope of mandatory notification, and invites stakeholders' views on these estimates.

The consultation considers each of the mandatory areas in turn, providing a summary of feedback from the Call for Evidence, an overview of proposed changes, and the draft revised schedule itself. Within each draft schedule, square brackets denote whether a line or section is new, updated, or removed. The consultation also includes questions specifically covering the

proposed changes to the NARs, alongside broader questions on stakeholders' experience of the NSI Act.

Consultation

Consultation details

Issued: 22 July 2025

Respond by: 11.59pm, 14 October 2025

Enquiries to: nsipolicy@cabinetoffice.gov.uk

Consultation reference: NSI Notifiable Acquisition Regulations Consultation

Audiences:

We are seeking views from organisations which conduct business activities or invest in entities within any of the mandatory areas of the economy under the NSI Act, alongside industry bodies representing their members in these areas.

We also welcome feedback from parties who have experience with the NSI system or are involved in acquiring or selling entities and assets, including advisers to such parties, and anyone who may need to understand whether an acquisition is likely to be called in by the Government.

Territorial extent:

This will apply across the whole of the UK. National security is a reserved matter in Scotland and Wales, and an excepted matter in Northern Ireland.

How to respond

Respond to this consultation using this link: https://www.smartsurvey.co.uk/s/nsianars/

When responding, please state whether you are responding as an individual or representing the views of an organisation. Your response will be most useful if it is framed in direct response to the questions posed, although further comments and evidence are also welcome.

If you are not able to submit responses through this online form, please contact nsipolicy@cabinetoffice.gov.uk for alternative ways to contribute.

Confidentiality and data protection

Information you provide in response to this consultation, including personal information, may be disclosed in accordance with UK legislation (the Freedom of Information Act 2000, the Environmental Information Regulations 2004, and the Data Protection Act 2018).

If you want the information that you provide to be treated as confidential please tell us, but be aware that we cannot guarantee confidentiality in all circumstances. An automatic confidentiality disclaimer generated by your IT system will not be regarded by us as a confidentiality request.

We will process your personal data in accordance with all applicable data protection laws. See our privacy policy.

In this consultation we are asking for:

- your name, email address and organisation in case we need to contact you about your responses (you do not have to give us personal information, but if you do provide it, we will only use it for the purpose of asking follow-up questions if we need to)

This consultation and the processing of personal data that it entails is necessary for the exercise of our functions as a government department. The legal basis for processing your personal data is to perform a task carried out in the public interest, or in the exercise of official authority vested in the controller. If your answers contain any information that allows you to be identified, the Cabinet Officer will, under data protection law, be the controller for this information.

When responding to this consultation online, your personal data will be processed on behalf of Cabinet Office by SmartSurvey Ltd, which runs the survey collection software. SmartSurvey Ltd. hosts the survey collection only, and your personal data will not be shared with any other third parties. If you want to understand how your data is used by SmartSurvey Ltd, you may wish to read their privacy statement.

We will summarise all responses and publish this summary on GOV.UK. The summary will include a list of names or organisations that responded, but not people's personal names, addresses or other contact details.

Quality assurance

This consultation has been carried out in accordance with the government's consultation principles.

If you have any general comments about the consultation process, contact: enquiries@cabinetoffice.gov.uk

Consultation Questions

Respondent information

Organisation Characteristics

1) What type of organisation do you work for?

Bank; Private equity firm; Asset management firm; Venture capital firm; Investment fund Other investor type; Legal firm and answering on firm's behalf; Legal firm and answering on a client's behalf; Research institution; Higher Education institution; Business operating in the one or more of the 17 NSI mandatory areas; Financial advisory firm; Strategic consultancy firm; Trade body or Business Representative Organisation; Thinktank; Not replying on behalf of an organisation; Other (please specify).

2) In which area(s) of the economy do you operate? If your organisation is a law firm, in which area(s) of the economy do your clients operate? You may wish to refer to the updated Schedules, as the definition of your area may have changed.

Advanced Materials; Advanced Robotics; Artificial Intelligence; Civil Nuclear Communications; Critical Minerals; Critical Suppliers to Government; Cryptographic Authentication; Data Infrastructure; Defence; Energy; Military and Dual-Use; Quantum Technologies; Satellite and Space Technologies; Semiconductors; Suppliers to the Emergency Services; Synthetic Biology; Transport; Other (please specify).

3) How many people work in your organisation?

1-9; 10-49; 50-249; 250+; Not Applicable.

4) In what countries does your organisation operate?

UK; Elsewhere (please specify).

Interactions with the NSI Act

5) Have you submitted a notification under the NSI Act or been involved in other ways with the NSI Act? Please tick any of the following that apply and provide details if relevant.

No; Party involved in a notification; Providing legal services; Party involved in an acquisition that was not notified but was subject to screening under the NSI Act (for example if you received an Information Notice or the deal was called in for review); Other.

6) If you have submitted a notification under the NSI Act, or been involved in an acquisition subject to NSI screening, did you interact as:

An acquirer; The target; A representative for the acquirer; A representative for the target; Other (please specify).

7) If you have submitted a notification, was it a voluntary or mandatory notification or retrospective validation application?

Voluntary; Mandatory; Retrospective; If you have been involved in multiple notifications please specify the amount and type.

8) What was the final outcome of your acquisition screening?

Clearance in initial review period; Final notification after call-in; Final order after call-in; Parties withdrew; Still undergoing assessment; N/A.

Additional questions about the NSI Act

9) To what extent do you agree with the following statements? Use the following scale:

Strongly Agree; Agree; Neither Agree nor Disagree; Disagree; Strongly Disagree.

a) I / my organisation understand(s) the types of risk the Government seeks to address through the NSI Act.
b) I / my organisation understand(s) how the NSI Act works and the requirements it places on my organisation.
c) I / my organisation understand(s) the circumstances of an acquisition that make it more likely that the Government will call it in or impose a final order under the NSI Act.
d) My / my organisation's approach to investment has changed since January 2022.
e) The commencement of the NSI Act was an important factor in changing my / my organisation's approach to investment.

10) Regarding your organisation's activity in the UK, select any of the below that apply to how your approach has changed:

Seek more investment; Seek less investment; Advise on more investment; Advise on less investment; Invest more; Invest less; Seek more research collaborations; Seek less research collaborations; Plan more research programmes; Plan fewer research programmes; Supply more goods and services; Supply fewer goods and services; Do more business; Do less business; Not applicable; Other.

11) Excluding legal work, how many hours of work are required to familiarise yourself with the NSI Act and guidance before considering whether to submit a notification for the first time?
1-5; 6-10; 11-15; 15-20; 20+; My organisation is a law firm.

12) On average, excluding legal work, how many hours of work are required to familiarise yourself with the NSI Act and guidance when considering subsequent notifications?
1-5; 6-10; 11-15; 15-20; 20+; I have only considered submitting one notification; My organisation is a law firm.

13) On average, excluding legal work, how many hours of work are required to engage with the ISU before submitting a notification?
0; 1-5; 6-10; 11-15; 15-20; 20+; My organisation is a law firm.

14) On average, excluding legal work, how many hours of work are required to gather the necessary information for the notification form?
1-5; 6-10; 11-15; 15-20; 20+; My organisation is a law firm.

15) On average, how many hours of legal consultation are required to prepare a notification?

1-10, 11-20, 21-30, 31-40, 40+.

Consultation Questions

1) Do the proposed changes to the NARs achieve their stated policy objectives?

2) Are the updated draft schedules, including where these involve technical terminology, sufficiently clear to enable investors and businesses to self-assess whether they must notify and receive approval for relevant acquisitions? If not, how could the proposed definitions be improved?

3) To what extent are technical and scientific terms correct, sufficiently clear, and commonly understood by those required to notify for the purposes of determining relevant activities?

4) Do you agree with the estimates of the change in the number of businesses in scope of each sector, and the change in notification volume?

5) Are there any notable new national security risks from emerging technologies in these areas of the economy that are not covered by the proposed regulations?

6) Are there entities or activities covered in the proposed regulations that you do not expect warrant mandatory notification?

Proposals

Summary of changes

This section of the consultation sets out each of the changes to the NARs that the Government is considering by category:

- new standalone area definitions (where definitions are already covered by the NARs)
- changes to existing definitions
- new area definitions (not previously covered by the NARs)

The below table provides a brief summary of these changes by area, alongside the Government's estimate for the expected change in notifications and businesses that would be in scope of the NARs.

We estimate the overall change in the number of mandatory notifications per year would be between 10 fewer and 35 more as a result of the following changes in scope.

Table 1 - Estimated change to number of businesses in scope and mandatory notifications from changes in scope of sectors

Changes in Scope			
Mandatory Sector	**Proposed changes in scope**	**Estimated impact on the overall Act**	
		Change in scope (number of businesses)	**Change in number of mandatory notifications per year**
AI	1. Remove cases where 'off the shelf' AI is being used as a tool within internal processes. 2. Add the development of AI systems where this results in either the technology not being available for consumers, creates or improves the capabilities of AI, or increases the speed of computation.	Decrease of 1-50	Decrease of 1-10
Communications	1. Amend the definition of Associated Facilities to only include providers of Associated Facilities who have a relevant turnover of at least £5m, with the exception of cable landing stations (all of which will be caught regardless of turnover). 2. Remove the £50m UK turnover threshold for submarine cable systems. 3. Remove the £50m threshold for repair and maintenance services for submarine cable systems and cable landing stations.	Decrease of 1-10	Decrease of 1-5

Changes in Scope			
Mandatory Sector	**Proposed changes in scope**	**Estimated impact on the overall Act**	
		Change in scope (number of businesses)	**Change in number of mandatory notifications per year**
Critical Minerals	1. Carve out Critical Minerals from Advanced Materials to create a standalone Critical Minerals area. 2. Harmonise the NSI Act critical minerals list with the Critical Mineral Intelligence Centre's (CMIC) latest criticality assessment, while retaining strategically important minerals necessary for defence or scientific purposes not on this list. 3. Add extraction, processing and recycling to the scope of the new definition.	Increase of 1-50	Increase of 1-10
Data Infrastructure	1. Add all third-party operated data centres alongside certain Cloud Service Providers (CSPs) and Managed Service Providers (MSPs). 2. Remove public sector authorities from scope, some of which will be covered by the updated Critical Suppliers to Government area).	Increase of 1-50	Increase of 1-10
Suppliers to the Emergency Services	1. Add subcontractors requiring security clearance at Non-Police Personnel Vetting (NPPV) Level 2 or above.	Increase of 1-50	Increase of 1-10
Water	1. Add water operating companies (certain acquisitions involving water holding companies will also be in scope due to indirect control provisions within the NSI Act).	Increase of at least 17	Increase of 1-5

Table 2 - Estimated change in mandatory notifications from clarifications to sectors

Clarifications		
Mandatory Sector	**Proposed clarifications**	**Impact on mandatory notifications owing to clarifications**[2]
Advanced materials	1. Remove Semiconductors and Critical Minerals from the Advanced Materials area.	Neutral
Computing Hardware	1. Remove and merge definition into the new Semiconductors area.	Neutral

[2] The impact on notification volume of clarifications to the definitions is difficult to estimate numerically, but this column indicates whether the clarifications are expected to cause an increase or decrease overall.

Critical Suppliers to Government	1. Add updated definition for public sector authorities (currently captured in the Data Infrastructure area). Limit scope to the list of 24 ministerial departments, focused on the delivery of certain notifiable services to a relevant government authority below SECRET level. 2. Replace 'List X accreditation' with 'Facility Security Clearance', and add a requirement to have Industry Personnel Security Assurance status.	Increase
Energy	1. Change the definition of an aggregator to be more closely aligned with Ofgem's definition. 2. Add a cumulative capacity threshold starting at 500MW which will also apply at every 500MW increment beyond 500MW. 3. Add multi-purpose interconnectors (MPI).	Decrease
Semiconductors	1. Carve out Semiconductors from the Advanced Materials area and merge with the Computing Hardware definition to create a standalone Semiconductors area. 2. Add advanced packaging techniques, activities involving the wider design process of processing units and memory chips, semiconductor-related devices, and advanced chip designs.	Neutral
Synthetic Biology	1. Make minor changes to the drafting of the exemptions involving gene therapies and cell therapies to simplify the definition.	Decrease

Following this consultation, if these changes are adopted by the Government, the NARs will change from 17 mandatory areas to 19 mandatory areas. The existing regulations themselves will in practice only increase by one new area not previously covered by the existing definitions, as the other two areas are currently covered in the regulation.

New standalone schedules (where area is already covered by the NARs)

New Schedule - Critical Minerals

Summary of proposed changes

The overwhelming feedback on Critical Minerals from the Call for Evidence was that a separate area would increase clarity on which minerals are covered by the Regulations. Some Call for Evidence respondents expressed support for bringing the definition in line with the updated UK list of Critical Minerals.

In response, the Government is proposing to create a standalone Critical Minerals schedule and to remove it from the Advanced Materials section of the NARs. The draft definition seeks to bring the treatment of Critical Minerals under the NARs in line with the latest UK criticality assessment, while also retaining strategically important minerals necessary for defence or scientific purposes beyond the criticality list. Any further updates to the criticality assessment may result in updates to the schedule. Additionally, the Government has added the extraction, processing and recycling of Critical Minerals to the scope of the new definition.

The proposed changes to the **Critical Minerals** schedule are expected to bring **1-50 more businesses** into scope of the NARs**,** and lead to **1-10 more notifications per year.** Although the majority of the schedule has been taken from the Advanced Materials schedule, the extraction, processing and recycling of these minerals is now in scope, and the list of critical minerals is now aligned with the latest UK criticality assessment. While the UK's current production volume of critical minerals is moderate, this will increase from 2030 onwards as demand for net zero technologies and advanced manufacturing increases.

DRAFT NEW SCHEDULE

Critical Minerals

[NEW] Interpretation

1.In this Schedule-

"critical mineral" is to be interpreted in accordance with paragraph 3;

"enabler" means anything which is not a material listed in paragraph 3 but is used in the activities described in paragraph 2 to obtain or process such materials;

"exploration" means any activity aimed at identifying and establishing the properties of critical mineral occurrences;

"extraction" means the activities performed to extract minerals or natural resources from the ground, including by operating equipment to extract minerals or natural resources from mines and wells, or to extract minerals or natural resources from the waste or residue of prior extraction;

"processing" means the refining of substances or materials that have been extracted, including the treating, baking, and coating processes used to convert extracted substances and materials into materials that can be used for manufacturing and other purposes (including further processing) in critical minerals supply chains;

"recycling" means the series of activities during which materials containing critical minerals are transformed into specification-grade commodities and consumed in place of virgin materials to create materials that can be used for manufacturing and other purposes in critical minerals supply chains. This includes re-use, re-purposing, and re-manufacturing.

[NEW] Activities

2. (1) A qualifying entity whose activities consist of or include one or more of the activities set out in sub-paragraph (2) in relation to critical minerals.

(2) The activities referred to in sub-paragraph (1) are:

(a) research;

(b) development or production or having the right to develop or produce;

(c) development or production of anything designed as an enabler;

(e) owning, creating, supplying or exploiting intellectual property;

(f) exploration or having the right to explore;

(g) extraction or having the right to extract;

(h) processing;

(i) recycling;

(j) provision of know-how, services or enablers;

[UPDATED] Critical Minerals

3. Critical mineral means any of the following (in single element, compound or product form).

(a) Aluminium

(b) Antimony

(c) Bismuth

(d) Borates

(e) Cobalt

(f) Gallium

(g) Germanium

(h) Hafnium

(i) Helium

(j) Indium

(k) Iridium

(l) Iron

(m) Lithium

(n) Magnesite

(o) Magnesium

(p) Manganese

(q) Natural graphite

(r) Nickel

(s) Niobium

(t) Phosphorus

(u) Platinum

(v) Rare Earth Elements (lanthanum, cerium, praseodymium, neodymium, promethium, samarium, europium, gadolinium, terbium, dysprosium, holmium, erbium, thulium, ytterbium, lutetium, scandium, yttrium)

(w) Rhenium

(x) Rhodium

(y) Ruthenium

(z) Silicon

(aa) Sodium

(bb) Tantalum

(cc) Tellurium

(dd) Tin

(ee) Titanium

(ff) Tungsten

(gg) Vanadium

(hh) Zinc

New Schedule - Semiconductors

Summary of schedule

Respondents to the Call for Evidence requested greater clarity on which semiconductor-related activities fall under mandatory notification requirements and supported the possible creation of a standalone definition.

In response, the Government is proposing to create a standalone Semiconductors schedule and remove it from the Advanced Materials definition, as well as merge it with the Computing Hardware definition. Additionally, the draft schedule adds advanced packaging techniques and activities involving the wider design process of processing units and memory chips, such as research and development (R&D), within the Semiconductors definition in response to a changing risk profile. Finally, the Government is proposing more comprehensive coverage of semiconductor-related devices and advanced chip designs, closing gaps in the current definitions.

The draft schedule aims to combine the relevant segments of the existing areas into a single, more coherent definition to increase businesses' understanding of what is covered while at the same time responding to emerging national security risks and addressing gaps.

The introduction of the Semiconductors schedule is estimated to leave the **number of businesses in scope of the NARs and number of mandatory notifications unchanged.** Although the majority of the schedule is taken from the Advanced Materials and Computing Hardware schedules, the Government proposes also to include advanced packaging in the scope of the new definition. This is not expected to lead to any more businesses being in scope, because it is expected that there are no UK companies that are involved in advanced packaging that would not already be in scope of the NARs due to other activities that they are involved in. However, the Government anticipates that there could be a small number of voluntary notifications from purchase of intellectual property (IP) following a review of advanced packaging research.

DRAFT NEW SCHEDULE

Semiconductors

[NEW] Interpretation

1. In this Schedule—

"analysis" means the process of understanding the behaviour of a device, in both normal use, and when used outside its designed operating conditions;

"enabler" means anything which is not a material or device described in paragraphs 3 or 4 but is used in the design or manufacture of such materials or devices;

"fabrication" means the process of producing any of the following—

(a) semiconductors;

(b) those materials required alongside semiconductors to create the performance characteristics required of the devices and components;

(c) equipment used for or in connection with the production of semiconductors, including enablers;

"packaging" means the process of turning semiconductors into packages suitable for use in a system, including the processes set out in paragraphs (a) to (e) but does not include the assembly into that system—

(a) distinct advanced techniques for combining multiple semiconductor components or material technologies into a single semiconductor device;

(b) die preparation;

(c) advanced packaging techniques;

(d) mid-packaging testing; or,

(e) post-packaging testing;

"roots of trust" means hardware, firmware or software components that are inherently trusted to perform critical security functions;

"verification" means the process of confirming a device behaves as intended, as described via a collection of requirements and design artefacts including logical and physical investigation and hardware simulation.

[NEW] Activities

2. -

(1) A qualifying entity carrying on activities that consist of or include any of the activities set out in:

(a) paragraph 2(2) in relation to—

(i) any of the materials set out in paragraph 3;

(ii) any of the devices set out in paragraph 4; or

(iii) any enablers.

(b) paragraph 2(3) in relation to any of the devices set out in paragraph 4(1)(d) to 4(1)(f) and enablers related to such devices.

(2) The activities referred to in paragraph 2(1)(a) are—

(a) research;

(b) development including:

(i) development of anything designed as an enabler; or

(ii) development of anything designed to be used for the purpose of production;

(c) production including:

(i) production of anything designed as an enabler; or

(ii) production of anything designed to be used for the purpose of production;

(d) the provision of qualified or certified designs, materials, parts or products;

(e) owning, creating, supplying or exploiting intellectual property;

(f) provision of know-how, services, or enablers for these materials, devices or enablers;

(g) verification;

(h) analysis;

(i) fabrication;

(j) packaging;

(k) recycling or re-using.

(3) The activity referred to in paragraph 2(1)(b) is the integration of systems and equipment.

[NEW] Materials

3. –

(1) The materials referred to in paragraph 2(1)(a) are—

(a) all elemental semiconductors, compound semiconductors and organic semiconductors;

(b) all engineered materials that with design can demonstrate semiconductor-like behaviour;

(c) all materials that are essential to the operation and use of fabrication equipment, when used as part of that equipment.

(2) The materials referred to in paragraphs 3(1)(a) and 3(1)(b) include any additives added to semiconductors.

[UPDATED] Devices

4.

(1) - The devices referred to in paragraph 2(1)(b) are—

(a) [UPDATED] roots of trust of semiconductor devices or similar such devices;

(b) [UPDATED] computing processing devices, coprocessors and accelerators, including—

(i) central processing units (also referred to as “CPU”);

(ii) field programmable gate arrays (also referred to as “FPGA”);

(iii) microcontrollers;

(iv) systems on chips (also referred to as “SoC”);

(v) graphics processor units (also referred to as “GPU”);

(vi) specialist processors for artificial intelligence applications;

(c) [NEW] signals processing circuits and associated sensors and converters, including digital, analogue and mixed signal devices, including—

(i) digital signals processors (also referred to as “DSPs”);

(ii) image signal processors (also referred to as “ISPs”);

(iii) analogue to digital converters (also referred to as “ADCs”);

(iv) digital to analogue converters (also referred to as “DACs”);

(v) signal processing application specific integrated circuits (also referred to as “ASICs”);

(vi) readout integrated circuits;

(vii) photonic integrated circuits;

(d) [UPDATED] systems, equipment, components and devices related to imaging using any part of the electromagnetic spectrum, described in sub-paragraphs (i) to (vi)—

(i) high performance thermal imaging systems, equipment and components providing system sensitivity less than 30 milli-Kevin for large format systems with more than 1 megapixels;

(ii) advanced thermal imaging detectors;

(iii) integrated systems having multiple operating wavebands on a single camera including mid-wavelength and long-wavelength infrared;

(iv) imaging systems with on-chip (smart) processing;

(v) single photon counting detector arrays operating at wavelengths longer than the visible band (wavelength greater than 750 nanometres), and with a size of at least 32x32 elements, or linear arrays with a size of at least 1x256 elements; and

(vi) low noise complementary metal-oxide-semiconductor (also referred to as “CMOS”) and electron multiplying charge coupled device (also referred to as “EMCCD”) cameras where low noise would be less than 1 photoelectron/pixel/second;

(e) [UPDATED] systems, equipment, components and devices related to radio and microwave frequency applications (including radio frequency over optic fibre), including the production of radio and microwave frequency systems, equipment and components incorporating compound semiconductors;

(f) [NEW] systems, equipment, components and devices related to general purpose power electronics incorporating compound semiconductors;

(g) [NEW] other semiconductor devices, components and sub-systems with specific utility for quantum applications or with the utility to exploit quantum effects, beyond the areas of computing, power electronics, radio frequency and microwave, and electro-optic and photonic applications described in paragraphs 4(1)(a) to 4(1)(f), including—

(i) precision time;

(ii) precision frequency;

(iii) sensing gravity, acceleration, rotation, magnetic or electric fields;

(h) [NEW] any semiconductor devices relating to micro-electromechanical systems (also referred to as “MEMS”), including units that function as—

(i) accelerometers;

(ii) gyroscopes;

(iii) pressure sensors;

(iv) magnetic field sensors;

(v) actuators;

(i) [NEW] electronic design automation and verification tools; and

(j) [UPDATED] integrated circuits with the purpose of providing memory.

Changes to existing definitions

Schedule 1 - Advanced Materials

Summary of changes

The main theme from stakeholder feedback in the Call for Evidence was that the existing Advanced Materials definition is too long, complex, and broad. Respondents felt that a narrowed definition would simplify the area and make it easier for non-experts to engage with and interpret the schedule. While the original schedule was drafted with deliberate breadth to cover a broad range of materials and provide the Government with the opportunity to assess national security risks arising from investment across a full range of Advanced Materials, there is a recognised need for clarity.

In response, the draft Advanced Materials schedule removes Semiconductors and Critical Minerals, which will instead form standalone schedules. The definition also includes Rare Earth Elements and their use in the production of certain dual-use objects, alongside a small number of additional materials such as activated carbon, to mitigate possible national security concerns associated with these materials.

The proposed changes to the **Advanced Materials** schedule are estimated to leave the number of businesses in scope of the NARs and the number of notifications **unchanged**. The provisions relating to semiconductors and critical minerals would be removed and made into separate sectors, so the net impact on the number of businesses in scope and notification volume is neutral. This does not account for changes in the definitions of Semiconductors and Critical Minerals, the impact of which is discussed in the respective sections of this document. Besides this, there are no changes in the scope of the Advanced Materials definition.

DRAFT SCHEDULE 1

Advanced materials

Regulation 2

Interpretation

1. In this Schedule—

"2D" means two-dimensional;

[NEW] “2D materials” are those materials with the attributes as defined within ISO/TS 80004-13:2017 ([3]);

"3D" means three-dimensional;

"advanced composites" relates to structural composite materials with either metallic or ceramic matrices and includes 3D reinforcing architectures for any matrix (polymer, metal or ceramic);

"advanced materials" means completely new materials and materials that are developments on traditional materials, where such materials provide any of the following—

(a) targeted properties;

(b) advantageous properties;

(c) outstanding structural properties; or

(d) outstanding functional properties;

[UPDATED] "enabler" means any material or process which is not a material described in paragraph 2(3) or 3 but is used in the design, manufacture or application of such materials;

[REMOVED] [["fabrication" in sector (7) (semiconductors) of the table set out in paragraph 3 means the process of producing a microelectronic circuit on a semiconductor substrate or using other advanced materials;]]

[REMOVED] [["graphene and related 2D" are those materials with attributes as defined within ISO/TS 80004- 13:2017;]]

"metamaterial" —

[UPDATED] (a) means a composite material in which the constituents are designed and spatially arranged through a rational design-led approach to change the manner in which electromagnetic, acoustic or vibrational energy interacts with the material, in order to achieve a property or performance that is not possible naturally and includes a metasurface and for this purpose "composite material" means a solid material formed from two or more constituents and "constituent" includes a region containing a vacuum, gas, liquid or solid;

[UPDATED] (b) does not include the types of composite materials the advanced composites described in paragraph 3 of sector 1 (advanced composites) and composites or coatings containing pigments or fillers that are mixed in or blended into a binder material where both of these types of composite materials can be a constituent from which a metamaterial may be formed;

"metasurface" means a two-dimensional form of metamaterial which includes one or more layers of material that are intentionally patterned or textured (irrespective of whether they are periodic or not) through a rational design-led approach;

[3] [NEW] ISO/TS 80004-13:2024 Nanotechnologies-Vocabulary-Part 13 Graphene and related two-dimensional (2D) materials is published by the International Organization for Standardization. The terms and definitions set out in the standard are available at https://www.iso.org/obp/ui/#iso:std:iso:ts:80004:-13:ed-1:v1:en.

[NEW] “MXenes” means two-dimensional inorganic compounds that consist of atomically thin layers of transition metal carbides, nitrides or carbonitrides;

[UPDATED] "nanotechnology" means the manipulation and control of matter predominantly in the nanoscale to make use of size-and-structure-dependent properties and phenomena distinct from those associated with individual atoms or molecules, or extrapolation from larger sizes of the same material (where "manipulation and control" includes material synthesis in relation to nanotechnology) with current or potential utility for defence, including nanomaterials, nanodevices, nanocomponents and nanosystems (including nanomachines) in accordance with ISO/TR 18401:2017([4]);

[UPDATED] "nanomaterials" means materials with any external dimension in the nanoscale or having internal structure or surface structure in the nanoscale and include nano-objects, dispersions or mixtures containing nano-objects, and nanostructured material (including structuring at an interface between materials, including air, and within a material) in accordance with ISO/TR 18401:2017([5]);

[REMOVED] [["packaging" in sector (7) (semiconductors) of the table set out in paragraph 3 means the process of turning a microelectronic circuit on an appropriate substrate into a package suitable for use in an electronic circuit but does not include the assembly and packaging of chips and devices into circuit boards;]]

"photonic and optoelectronic materials and devices" in sector (8) of the table set out in paragraph 3 relate to high power lasers that are characterised by a combination of power at the output apertures (values of 1 kilowatt and above), beam quality (M^2 of less than 1.2), intended operating ranges (greater than 1 kilometre) and at wavelengths compatible with propagation over those distances (typically 1 micrometre to 2 micrometres wavelengths);

[NEW] “rare earth elements” mean the following elements: lanthanum, cerium, praseodymium, neodymium, promethium, samarium, europium, gadolinium, terbium, dysprosium, holmium, erbium, thulium, ytterbium, lutetium, scandium and yttrium.

[REMOVED] [["semiconductor" means—

(a) semiconductors used to form radio frequency and microwave devices;

(b) semiconductors used to realise imaging sensor arrays;

(c) the accessibility of design and production for semiconductor devices and chips where "chips" include Field Programmable Gate Array devices, System on Chip, Application Specific Integrated Circuits and Readout Integrated Circuits and where "devices" includes radio and microwave frequency control circuitry, power amplifiers, low noise amplifiers and monolithic microwave integrated circuits and detectors;]]

"technical textiles" means textiles (and their processes and enablers) specifically developed for their functional performance including additional functionality (such as integrated computing, processing or data transmission), 3D architectures, protection against blast and ballistic events but does not include sportswear or clothing that is ordinarily available to consumers or household goods.

Activities

2.— (1) A qualifying entity carrying on activities that consist of or include any of the activities set out in sub-paragraph (2) in relation to—

(a) any of the matters described in sub-paragraph (3); or

(b) any of the matters described in relation to the sectors set out in paragraph 3.

(2) The activities referred to in sub-paragraph (1) are—

(a) research;

[4] [NEW] Ibid

[5] [NEW] Ibid.

(b) development or production;

(c) development or production of anything designed as an enabler;

(d) development or production of anything designed to be used for the purpose of production;

(e) the provision of qualified or certified designs, materials, parts or products;

(f) owning, creating, supplying or exploiting intellectual property;

[UPDATED] (g) provision of know-how, services or enablers;

(h) recycling or re-using.

(3) The matters referred to in sub-paragraph (1)(a) are materials, the export or transfer of which is controlled by virtue of their being specified in—

[UPDATED] (a) Schedule 2 to the Export Control Order 2008 ([6]); or

(b) Annex I and Annex IV to Council Regulation (EC) No 2009/428 setting up a Community regime for the control of exports, transfer, brokering and transit of dual-use items ([7]).

Sectors and matters

3. The following Table sets out the sectors and matters referred to in paragraph 2(1)(b).

(1) Advanced composites

1. The matters are, in relation to the sector of advanced composites, those set out in paragraphs 2 to 8.

2. In relation to test, inspection and production equipment—

(a) production technologies and capabilities for the manufacture of metal matrix composites;

(b) production technologies and capabilities for the manufacture of ceramic matrix composites;

(c) manufacture of 3D fibre architectures (that is with interlaminar reinforcement) for all composite types.

3. In relation to materials—

(a) metal matrix composites, powder-based metal matrix composites and continuous fibre reinforced metal matrix composites;

(b) fibre reinforced ceramic matrix composites;

(c) continuous silicon carbide fibres with diameters at or below 140 micrometres;

(d) continuous oxide-based ceramic fibres with diameters at or below 20 micrometres;

(e) coatings for the protection of ceramic matrix composites from degradation in the environment, for example ytterbium mono- and di-silicates;

4. In relation to software and data—

(a) capabilities for the design and design for manufacturing of metal matrix composites and fibre reinforced ceramic matrix composites;

(b) software and computer-aided design for 3D fibre architectures and 3D preforms (with interlaminar reinforcement) for all composite types.

[6] S.I. 2008/3231. Schedule 2 was substituted by S.I. 2017/85 and subsequently amended by S.I. 2017/697, 2018/165, 2018/939, 2019/989, 2021/586, 2022/1042, 2023/302 and 2024/346.
[7] EUR 2009/428 as amended by S.I. 2020/1502 and 2020/1510.

(2) Metals and alloys

1. The matters are, in relation to the sector of metal and alloys, those set out in paragraphs 2 to 5.

2. In relation to systems, equipment and components, magnets utilising rare earth element-lean or element-free permanent magnetic materials with remanent magnetism, known as “Br”, greater than 1.0 Tesla and all rare-earth magnetic materials;

3. In relation to testing, inspection and production equipment—

(a) any processes that are involved in the reduction of either pure or mixed oxides in the solid state into either metals or alloys in or into crude or semi-fabricated forms, including powders, in batches of at least 1 kilogram;

(b) hot isostatic pressing (also referred to as “HIP”);

(c) spark plasma sintering (also referred to as “SPS”) or field assisted sintering technology (also referred to as “FAST”);

(d) diffusion and friction-based joining processes for steel for power transmission shafts described in paragraph 4(e) of this sector (metal and alloys), titanium alloys, nickel alloys or cobalt alloys;

(e) friction-based processes to join metallic material layer by layer to create a structure;

(f) superplastic forming of titanium and aluminium alloys;

(g) electron beam, laser and weld arc-based metal additive manufacturing capabilities.

4. [UPDATED] In relation to materials—

(a) any alloys that are formed by chemical or electrochemical reduction of feedstocks in the solid state directly from their oxides;

(b) titanium alloys with continuous temperature-of-use capabilities above 350 Celsius;

(c) powder metallurgy alloys;

(d) nickel and cobalt based superalloys with continuous temperature-of-use capabilities above 700 Celsius;

(e) steels for power transmission shafts with yield strengths of at least 1030 megapascals at 20 Celsius and 760 megapascals at 450 Celsius, ultimate tensile strengths of at least 1240 MPa at 20 Celsius and 950 megapascals at 450 Celsius and fracture toughnesses of at least 40 megapascals square root metres at 20 Celsius;

(f) high strength high toughness weldable marine grade steels (toughness levels D, E and F);

(g) armour grade steels;

(h) armour grade aluminium alloys;

(i) high entropy alloys and compositionally complex alloys (alloys that are formed by five or more elements where the composition is not dominated by one or two elements);

(j) rare earth element-lean or element-free permanent magnetic materials with remanent magnetisation (also known as “Br”), greater than 1.0 Tesla, and all rare-earth magnetic materials;

(k) magnetic materials with high total saturation flux densities greater than 2.0 Tesla, which may include monolithic and laminate forms, and particulate and fibre reinforced composite materials;

(l) chromium for use in the production of super duplex stainless steels (≥25% Cr);

(m) iridium for use in high temperature coatings, Si wafer crucibles and aviation spark plugs;

(n) manganese for use either as an alloying element in steels or in the production of steels;

(o) niobium for use in high strength, low alloy steels;

(p) platinum for use in thermal barrier coatings;

(q) rhodium for use in high temperature thermocouples and corrosion resistant electrical contacts;

(r) scandium as an alloying element in aluminium alloys.

5. In relation to software and data—

(a) computer models of complex metallic components, formed by powder-based additive manufacture, that embody a fluid and heat transfer function within their structure;

(b) data on the performance of complex metallic components, formed by powder-based additive manufacture, that embody a fluid and heat transfer function within their structure.

(3) Engineering and technical polymers

1. The matters are, in relation to engineering and technical polymers, those set out in paragraphs 2 and 3.

2. In relation to test, inspection and production equipment, machines for additively manufacturing the materials listed in paragraph 3 of this sector (Engineering and technical polymers), including loaded polymer filaments to enable electrically insulating and electrically conducting, thermally conducting and insulating, or magnetic and non-magnetic materials (or any further combination).

3. In relation to materials—

(a) engineering polymer materials and formulations with a glass transition temperature greater than 190 Celsius;

(b) polymers responsive to external stimuli such as electromagnetic, load, chemical and biological stimuli (for example electroactive polymers, thermoactive polymers and self-healing systems) but not hydrogels in applications such as nappies;

(c) high temperature, high pressure and chemically resistant elastomeric seals and systems;

(d) polymer electrical insulation materials with high temperature (greater than 200 Celsius) and high voltage (above 1kilovolt) capabilities for application in aviation electrical power management systems;

(e) filaments and feedstocks for additive manufacturing or 3D printing with bespoke and elevated electrical, magnetic, or electromagnetic properties (typically formed from filled polymer compositions);

[UPDATED] (f) adhesives capable of retaining performance above 190 Celsius;

[NEW] (g) adhesives capable of retaining performance below minus 26 Celsius;

[UPDATED] (h) adhesives with underwater curing capabilities;

[UPDATED] (i) void-filling viscoelastic polymers, created using at least a thermoplastic polyester and curing agent, intended for use to damp vibrations in metallic structures.

(4) Engineering and technical ceramics

1. The matters are, in relation to engineering and technical ceramics, those set out in paragraphs 2 and 3.

2. In relation to test, inspection and production equipment, spark plasma sintering or field assisted sintering technology.

3. In relation to materials—

(a) boron carbide and silicon carbide ceramics for the manufacture of hard armour plates;

(b) ultra-high temperature ceramics (with melting temperatures of at least 3000 Celsius) including transition metal diborides, either as monolithic or composite forms, including other ceramic monoliths or composites where ultra-high temperature ceramics have been added to their bulk or into surfaces;

(c) magnetic materials, including fibres and particulates, for electromagnetic applications at frequencies above 500 megahertz;

(d) functional ceramics (including ferroelectrics, magneto-dielectrics, or multi-ferroics) for acoustic applications, or electromagnetic applications above 100 megahertz;

(e) dielectric and ferroelectric materials for use in the generation of, and manipulation of, high energy or high power radio frequency radiation, including functioning under high voltage conditions;

[NEW] (f) activated carbon in non-textile or fibre forms.

(5) Technical textiles

1. The matters are, in relation to technical textiles, those set out in paragraphs 2 to 6.

2. In relation to systems, equipment and components, textile materials and products manufactured primarily for technical performance and functional properties rather than aesthetic or decorative characteristics but not sportswear or clothing ordinarily available to consumers or household goods;

3. In relation to test, inspection and production equipment—

(a) knitting, weaving, nonwoven or hybrid manufacturing processes related to the textile materials and products described in paragraph 2 of this sector;

(b) fibre manufacturing processes related to the textile materials and products described in paragraph 2 of this sector (Technical textiles);

(c) yarn manufacturing and texturing, dry fabric coating and laminating;

(d) manufacture of 3D textiles;

(e) closed loop recycling processes associated with the textile materials and products described in paragraph 2 of this sector.

4. In relation to materials—

(a) smart fabrics with fibres or yarns equipped with embedded sensors that respond to stimuli and perform a specific function;

(b) fabrics made of smart polymers and textiles to protect and prevent injury or damage from blast and ballistic events;

(c) energy harvesting fabrics;

(d) textiles or fibres incorporating activated carbon;

(e) fabrics with embedded devices for data storage and communication.

5. In relation to software and data—

(a) software and computer-aided design for 3D textiles and preforms;

(b) machine learning software systems for smart textile manufacturing facilities, or for data-driven design and manufacturing of textile materials and systems.

6. In relation to technology—

(a) textile-based wearable electronics with potential to enable subtle integration of electronics with the human body for human-machine interfacing;

(b) integration technologies to enable functionalities such as energy harvesting, data storage and communication, camouflage, structural and personnel health monitoring and protection.

(6) Metamaterials

1. The matters are, in relation to metamaterials, those set out in paragraphs 2 to 6.

2. In relation to systems, equipment and components, metamaterials used in—

(a) electromagnetic components including antennas, arrays, lens, devices;

(b) electromagnetic applications including radiofrequencies and microwave through to ultraviolet wavelengths;

(c) nano-photonics or quantum technology as an enabler;

(d) thermal control or protection;

(e) airborne or underwater acoustics; or

(f) structural applications.

3. In relation to test, inspection and production equipment—

(a) test, inspection and production equipment associated with the fabrication of 2D and 3D arrangements of one or more material and/or device constituents to form a metamaterial (including additive manufacturing, printed electronics methods, nano-fabrication, chemical self-assembly or engineering biology);

(b) equipment associated with the non-destructive test and assurance of assembled or produced metamaterial, including composition, spatially varying composition and spatial arrangement parameters.

4. In relation to materials—

(a) a metamaterial;

(b) tailored or bespoke feedstocks used in fabricating metamaterials including blended or formulated filaments referred to in paragraph 3(e) of sector(3) (engineering and technical polymers), inks or dispersions used for additive manufacturing or printing but excluding inks or dispersions commercialised for forming electrically conducting pathways (known as “wires”) in printed electronics.

5. In relation to software and data, accumulations of metamaterial designs, or of elements comprising metamaterials, any of which that enable artificial intelligence, machine learning design or optimisation of metamaterials.

6. In relation to technology, the inclusion with a metamaterial of technology in the form of systems or components, as well as material constituents, as part of the means and methods that enable metamaterials to alter their function and behaviour once installed or produced.

(7) Semiconductors

[UPDATED] Semiconductors section removed.

(8) Photonic and optoelectronic materials and devices

1. The matters are, in relation to photonic and optoelectronic materials and devices, those set out in paragraphs 2 to 6.

2. In relation to systems, equipment and components—

(a) polarisation control components including materials (solid and liquid) especially for high power applications (greater than 100 watts);

(b) optical fibre designs mitigating nonlinear effects and enabling polarisation control of the output light for high power applications in both transverse single-mode and multimode optical fibre formats;

(c) optical fibre based components such as light diodes, tap couplers and fibre Bragg gratings;

(d) nonlinear components for nonlinear frequency conversion such as optical fibre geometries, crystal materials and optical patterning techniques;

(e) low loss, high bandwidth optical fibre technologies (for laser sources and amplifier stages) and manufacturing techniques where the output power is capable of being scaled up for lasers that meet the characteristics set out in the description of “photonic and optoelectronic material and devices” in paragraph 1 of this Schedule (Interpretation);

(f) phase modulators, where the spectral linewidth of fibre laser amplifiers is limited to no more than 16 gigahertz;

[NEW] (g) specialist optics containing one or more of magnesia (MgO), spinel/magnesium aluminate ($MgAl_2O_4$), quartz/fused silica (SiO_2), sapphire/alumina (Al_2O_3), zirconia (ZrO_2), zinc sulphide (ZnS), zinc selenide (ZnSe), aluminium oxynitride (AlON), silicon aluminium oxynitride (SiAlON), or yttrium aluminium garnet (YAG).

3. In relation to test, inspection and production equipment—

(a) optical fibre designs and production techniques, including coating techniques and test methodologies;

(b) laser materials manufacturing techniques, host material doping techniques and characterisation techniques.

4. In relation to materials—

(a) materials that enable increased amplification, improved quality, improved robustness, improved increased electro-optical efficiency or reduced size or volume;

(b) materials and or coatings or treatments that reduce optical losses of lenses or mirrors;

(c) materials and or coatings or treatments that improve or increase the physical stability or robustness of lenses or mirrors;

(d) materials enabling non-mechanical beam steering for detectors, sensors and imaging systems;

(e) materials that reduce the size, weight and power requirements of optical detection, sensing and imaging systems;

(f) materials suitable for aberration correction of high power lasers (greater than 1 kilowatt) in the atmosphere.

5. In relation to software and data—

(a) algorithms, and their implementation in firmware, that compensate for the adverse atmospheric effects on laser beam propagation at distances greater than 1 kilometre;

(b) software, hardware and algorithm developments that improve phase control/coherent beam combination and efficiency.

6. In relation to technology—

(a) any approaches that enable high average optical power (greater than 3 kilowatts) combined with high quality (M^2 <1.2) amplifiers;

(b) any aspects that enable the propagation of light over significant distances (greater than 1 kilometre), including aberration correction devices.

[UPDATED] (9) 2D materials

1. [UPDATED] The matters are, in relation to 2D materials, those set out in paragraphs 2 to 5.

2. In relation to systems, equipment and components—

(a) developing and operating equipment to synthesise single to few layer graphene and related 2D materials, including controlling the desired structure of the materials or their properties for application;

(b) using processes including chemical exfoliation, electrochemical exfoliation, atom or molecule intercalation, surface growth, solution phase growth, vapour deposition and large area chemical vapour deposition.

3. In relation to test, inspection and production equipment—

(a) synthesis and manufacturing routes to either or both—

(i) graphene and related 2D materials; or

[UPDATED] (ii) 2D materials with bespoke or optimised functional properties, including but not limited to functioning as semiconductors;

(b) research, development and production of materials at scale for use as a filler or pigment including forming or using graphene and related two-dimensional materials in dispersions or mixed with other binders;

(c) research, development and production to integrate the use of materials in devices and systems;

[UPDATED] (d) conversion of 2D materials into intermediaries using processes including surface treatment and functionalisation, dispersion in matrices, mechanical and laser shaping, coating and ink printing processes.

4. [UPDATED] In relation to materials, all 2D materials, including—

(a) graphene, hexagonal boron nitride and transition metal dichalcogenides (such as MoS2 and WS2);

(b) 2D materials as thin films or coatings, powder form or mixtures with other materials; and

(c) energetic materials (such as propellants or explosives).

5. In relation to technology—

(a) stacking of different 2D crystals resulting in either or both a charge redistribution between neighbouring crystals or causing structural changes;

(b) components with finely tuned properties made by combining different 2D materials, including stacking different 2D materials.

(10) Nanotechnology

1. The matters are, in relation to nanotechnology, those set out in paragraphs 2 to 5.

2. In relation to systems, equipment and components—

(a) sensors or detectors including quantum dots with very high sensitivity to—

(i) chemical, biological or nuclear materials (where the threshold is close to and including single molecule levels); or

(ii) light or other forms of radiation (where the threshold is close to and including single photon levels);

(b) autonomous remote or remotely activated sensing and reporting systems that are enabled by nanotechnology including Smart Dust;

(c) nanomachines or nanoscale robots either with physically moving parts or capable of physical movement.

3. In relation to test, inspection and production equipment—

(a) test, inspection or production of nanotechnology or nanomaterials but not including services only offering test and inspection requiring the prior destruction of the produced nanotechnology or nanomaterials to form a test artefact (such as using Scanning Electron Microscopy or Atomic Force Microscopy);

(b) methods to create or integrate nanotechnology for use in any of the following—

(i) computer processing or memory devices (excluding commoditised silicon microelectronics technologies);

(ii) communications or electronic warfare devices or components;

(iii) precision navigation and timing systems;

(iv) detectors, sensing or imaging systems;

(v) counter-measure devices or systems;

(vi) moving parts or soft robotics.

4. In relation to materials, high-density nanoceramics and carbon nanotubes to reinforce ceramics for ballistic and blast protection.

5. [UPDATED] In relation to technology—

(a) technology that exploits nanoscale phenomena or technology that is nano-enhanced or nanoscience that further enhances nanoscale phenomena;

(b) materials possessing exploitable magnetic, quantum or atomic spin states, or in combination for spinwave effects or technologies including defect centres in nanomaterials or utilising skyrmions;

(c) electro-optic, magneto-optic, photonic or nanophotonic effects or devices (including vertical cavity emitting lasers) and circuits;

(d) micro-mechanical, nano-mechanical, electro-mechanical, opto-mechanical, or electro-opto-mechanical effects or systems;

(e) metamaterials.

(11) Critical minerals

[UPDATED] **Critical Minerals section removed.**

(12) Other materials

1. The matters are, in relation to other materials, those set out in paragraphs 2 to 6.

2. In relation to systems, equipment and components—

(a) capacitors based on tantalum;

(b) components used in equipment or systems for the purpose of protecting optical systems and human vision from dazzle or damage by lasers.

3. In relation to test, inspection and production equipment—

(a) machines for additively manufacturing fully-assembled robotic, soft-robotic, sub-systems and systems or autonomous robotic sub-systems, systems and vehicles but not including machines for additively manufacturing individual components for such sub-systems, systems and vehicles;

(b) circuit board manufacturing of pitch, track or gap dimensions less than 30 micrometres;

(c) new component placement technologies, including multi-axis component placement;

(d) additive manufacturing or printing of moving parts, components and machines (known as “4D printing”);

(e) battery pack assembly specifically for defence and security applications at the stage of integration, not isolated battery cell construction.

4. In relation to materials—

(a) materials (including paints or other forms of coating or surface) that are capable of modifying (including in real time) the appearance, detectability, traceability or identification of any object to a human or to sensors within the range of 15 terahertz up to and including ultraviolet;

(b) foams with designed electrical, electromagnetic or thermal protection properties;

(c) honeycombs with designed electrical or electromagnetic properties;

(d) smart materials (including micro-fluidic systems) the properties of which can be repeatedly altered once installed at rates exceeding 1 megahertz;

(e) materials enabling extreme size, weight and power reduction for energy, power and propulsion sources, or sensing or communications devices and systems for use in micro or smaller unmanned systems;

(f) materials used in equipment or systems for the purpose of protecting optical systems and human vision from dazzle or damage from lasers.;

[NEW] (g) lead and lead compounds for use in energetic applications.

5. In relation to software and data—

(a) creative artificial intelligence algorithms for material discovery and optimisation;

(b) quantum simulation for material discovery and optimisation.

6. In relation to technology, neuromorphic or quantum technologies enabling creative artificial intelligence or quantum simulation for materials discovery.

7. [NEW] In relation to Rare Earth Elements (also referred to as “REEs”) and their use in the production of—

(a) magnets (for example neodymium iron boron (Nd2Fe14B) or samarium cobalt (SmCo));

(b) armour materials, including but not limited to structural ceramics;

(c) metals and their alloys;

(d) nuclear applications;

(e) electronic applications (for example insulators, sensors, amplifiers or oscillators);

(f) anti-counterfeiting applications;

(g) countermeasures;

(h) specialist optics (for example lenses, sensor windows).

Schedule 3 - Artificial Intelligence

Summary of changes

Respondents to the Call for Evidence expressed concerns that the definition of AI is too broad and captures activities that would normally have no national security implications. Stakeholders also noted that AI is a very fluid and quickly developing area of the economy.

The updated definition intends to be sufficiently broad to capture emerging national security risks from powerful and evolving technology in the AI sphere, while excluding the rapidly expanding number of businesses using AI for low-risk activities. Consequently, the draft Artificial Intelligence schedule removes low risk cases involving consumer AI. This would mean that cases where consumer AI is being used as a tool within internal processes (without any further material research and development of that technology being performed by the licensee) are no longer in scope of mandatory notification.

The focus is now on assessing cases where there is a meaningful change in the ability of the AI system to do new things, the same things quicker, or the same things better. Entities that test the safety of AI systems, evaluate the risk of disinformation or misinformation, or conduct research into the capabilities of AI systems that could potentially create a risk to the health, safety or security of persons, are also kept in scope.

The changes to the **Artificial Intelligence** schedule are estimated to result in **1-50 fewer businesses to be in scope**, and **1-10 fewer mandatory notifications per year**. This is based on the volume of notifications currently being received that relate to companies licensing third-party AI without any further development, which will be out of scope under the proposed new definition.

DRAFT SCHEDULE 3

Artificial intelligence

Interpretation

1. In this Schedule—

[UPDATED] "artificial intelligence system" means a machine-based system that, from the input it receives, can infer how to generate predictions, digital content, recommendations, decisions or other similar outputs, or influence a physical or virtual environment, with a view to achieving an explicit or implicit objective;

[NEW] "consumer" means an individual acting for purposes that are wholly or mainly outside that individual's trade, business, craft or profession;

[REMOVED] [["advanced robotics" has the same meaning as in Schedule 2;

[REMOVED] "cognitive abilities" means reasoning, perception, communication, learning, planning, problem solving, abstract thinking, decision-making or organisation;

[REMOVED] "cyber security" means the activities necessary to protect network and information systems, the users of such systems, and other persons affected by cyber threats;

[REMOVED] "cyber threat" means any potential circumstance, event or action that could damage, disrupt or otherwise adversely affect network and information systems, the users of such systems and other persons;

[REMOVED] "network and information system" has the same meaning as in regulation 1 of the Network and Information Systems Regulations 2018(1);]]

[NEW] "safety or security of artificial intelligence systems" means potential risks relating to —

(a) the artificial intelligence system's potential to cause harm due to unintended outputs, behaviours, biases, or failures; or

(b) the artificial intelligence system's susceptibility to malicious attacks, unauthorised access, manipulation, interference, or data breaches, and its ability to maintain integrity, confidentiality, and availability;

"technology" has the same meaning as in Schedule 2 to the Export Control Order 2008(2).

Activities — artificial intelligence

[NEW] 2. A qualifying entity is one that meets conditions A or B.

[NEW] 3. Condition A is the commissioning of or carrying on of the development, production or modification of goods, software or technology that use an artificial intelligence system—

(a) where that artificial intelligence system is not available to consumers; or

(b) with the intention of any of these—

(i) the creation of an artificial intelligence system;

(ii) the improvement in the capability of the artificial intelligence system;

(iii) the creation of a new capability of the artificial intelligence system;

(iv) a change in the capability of the artificial intelligence system;

(v) an increase in the speed at which the artificial intelligence system can carry out computations.

[NEW] 4. Condition B is the carrying on of testing and evaluation of artificial intelligence systems in relation to—

(a) safety or security of artificial intelligence systems; or

(b) disinformation or misinformation; or

(c) the capability of artificial intelligence systems that could potentially create a risk to the health and safety or security of persons.

[REMOVED] [[**2.**—(1) A qualifying entity carrying on any of the following activities for one or more of the purposes set out in sub-paragraph 2—

(a) research into artificial intelligence; or

(b) developing or producing goods, software or technology that use artificial intelligence.

[REMOVED] (2) The purposes are—

(a) the identification or tracking of objects, people or events;

(b) advanced robotics;

(c) cyber security.]]

Schedule 5 - Communications

Summary of changes

Respondents to the Call for Evidence called for a clearer explanation of what comprises an Associated Facility. They also raised concerns that it was difficult to establish whether a company was caught by the definition because they did not know the turnover of the target's clients who provided public electronic communication networks and services.

The draft schedule seeks to address this feedback by amending the provisions on an Associated Facility to include only those providers of associated facilities which have a turnover of at least £5m, in line with the requirement to pay Ofcom's administration charge under section 38 (fixing of charges) of the Communications Act. By disaggregating the definition from the target's clients, acquirers will no longer have to find out a third party's turnover to determine whether they are caught by the definition.

The proposals also remove the thresholds for cable landing stations, submarine cable systems and the repair and maintenance services for both in the UK as these represent critical segments of the telecommunications sector. While most of these were already caught by the existing schedule, the Government is proposing to remove the thresholds to ensure that all are covered by the Regulations.

The proposed changes to the Communications schedule are estimated to result in **around 1-10 fewer businesses to be in scope, and around 1-5 fewer notifications per year**. The introduction of the threshold for associated facilities will slightly decrease the number of businesses in scope, based on the number of identified associated facilities that pay Ofcom's administration charge. The removal of the turnover threshold for submarine cable systems, cable landing stations, and associated repair and maintenance services will bring a negligible number of businesses into scope. Overall, introducing the associated facility turnover threshold is expected to have the biggest impact, and outweigh the impact of the other changes, such that the total number of businesses in scope is estimated to slightly decrease. We predict there to be a small decrease in the number of notifications too, in line with the decrease in the number of businesses in scope.

DRAFT SCHEDULE 5

Communications

Interpretation

1. In this Schedule—

"cable landing station" means a cable landing station for a submarine cable system;

"electronic communications service" has the meaning given by section 32(2) of the Communications Act 2003(1);

"public electronic communications network" means a public electronic communications network as defined by section 151(1) of the Communications Act 2003(2) and includes a submarine cable system that is provided for purposes which include the purpose of making electronic communications services available to the public;

"public electronic communications service" means a public electronic communications service as defined by section 151(1) of the Communications Act 2003(3), and includes an electronic communications service that is provided by means of a submarine cable system so as to be available for use by members of the public;

"submarine cable system" means a system of fibre optic cables which—

(a) are beneath the sea (whether on or in the seabed or in a tunnel); and

(b) are used for the conveyance of signals.

Public electronic communications providers

2. —

(1) A qualifying entity which—

(a) carries on activities which consist of or include either or both of the following—

(i) providing a public electronic communications network;

(ii) providing a public electronic communications service; and

[UPDATED] (b) Except for a submarine cable system, meets the turnover condition in sub-paragraph (2).

(2) The turnover condition is that the turnover of the entity's relevant business for the relevant period is at least £50,000,000.

(3) In sub-paragraph (2)—

(a) "relevant business" means so much of any business carried on in the United Kingdom by the entity in question or any of its associated entities as consists of either or both of the following—

(i) the provision of a public electronic communications network;

(ii) the provision of a public electronic communications service;

(b) "relevant period" means—

(i) the period of one year ending with the 31st March last before the time when a person gains control of the qualifying entity, by virtue of one or more of the cases described in subsection (2), (5) or (6) of section 8 of the Act; and

(ii) in the case of an entity which at that time has been carrying on that business for a period of less than a year, the period, ending with that time, during which it has been carrying it on.

(4) For the purposes of sub-paragraph (3)(a), another qualifying entity is an associated entity of the entity in question if—

(a) the entity in question owns, or has a controlling interest in, the other qualifying entity;

(b) the other qualifying entity owns, or has a controlling interest in, the entity in question; or

(c) a person or group of persons owns, or has a controlling interest in, both entities.

(5) For the purposes of sub-paragraph (4), a person has a controlling interest in a qualifying entity if the person holds more than 50% of the shares or voting rights in the entity; and subsections (3), (4), and (7) of section 8 of the Act apply for the interpretation of this sub-paragraph.

(6) For the purposes of this paragraph—

(a) turnover is to be calculated in conformity with accounting practices and principles which are generally accepted in the United Kingdom;

(b) turnover is to be limited to the amounts derived by an entity from the relevant business after deduction of sales rebates, value added tax and other taxes directly related to amounts so derived;

(c) where the relevant business of the entity in question is carried on by two or more entities that each prepare accounts the turnover shall be calculated by adding together the turnover of each, except that no account shall be taken of any turnover resulting from the supply of goods or the provision of services between them.

Associated facilities

3. —

[UPDATED] (1) A qualifying entity which—

(a) makes available anything that is an associated facility to either or both a—

(i) public electronic communications network;

(ii) public electronic communications service; and

(b) meets the turnover condition in sub-paragraph (2A).

[NEW] (1A) The turnover condition is that the turnover of the entity's relevant business for the relevant period is at least £5,000,000, save for where an associated facility is a cable landing station, which has no turnover condition.

[NEW] (2A) In sub-paragraph (2)—

(a) "relevant business" means so much of any business carried on in the United Kingdom by the entity in question or any of its associated entities that consists of making available anything that is an associated facility to either or both a—

(i) public electronic communications network;

(ii) public electronic communications service.

(b) "relevant period" means—

(i) the period of one year ending with the 31st March last before the time when a person gains control of the qualifying entity, by virtue of one or more of the cases described in subsection (2), (5) or (6) of section 8 of the Act; and

(ii) in the case of an entity which has been carrying on that business for a period of less than a year, the period, ending with that time, during which it has been carrying it on.

[NEW] (2B) For the purposes of sub-paragraph (2A)(a), another qualifying entity is an associated entity of the entity in question if—

(a) the entity in question owns, or has a controlling interest in, the other qualifying entity;

(b) the other qualifying entity owns, or has a controlling interest in, the entity in question; or

(c) a person or a group of persons owns, or has a controlling interest in, both entities.

[NEW] (2C) For the purposes of sub-paragraph (2B), a person has a controlling interest in a qualifying entity if the person holds more than 50% of the shares or voting rights in the entity; and subsections (3), (4) and (7) of section 8 of the Act apply for the interpretation of this sub-paragraph.

[NEW] (2D) For the purposes of this paragraph—

(a) turnover is to be calculated in conformity with accounting practices and principles which are generally accepted in the United Kingdom;

(b) turnover is to be limited to the amounts derived by an entity from the relevant business after deduction of sales rebates, value added tax and other taxes directly related to amounts so derived;

(c) where the relevant business of the entity in question is carried on by two or more entities that each prepare accounts, the turnover shall be calculated by adding together the turnover of each, except that no account shall be taken of any turnover resulting from the supply of goods or the provision of services between them.

(2) An associated facility consisting of a building or an entry to a building is excluded by this sub-paragraph unless the main purpose of the building is to host a network element that is active.

(3) An associated facility other than a building or an entry to a building is excluded by this sub-paragraph if the associated facility is an element (such as a pipe, mast, duct, antenna installation, tower or pole) which—

(a) is not itself active; and

(b) is designed merely to host either or both of the following—

(i) other network elements that are not active;

(ii) cables (including strands of optical fibre).

(4) In this paragraph—

"associated facility" has the meaning given by section 32(3) of the Communications Act 2003(4) but as if the reference in that provision to a "facility, element or service" included a reference to a cable landing station.

[REMOVED] [["qualifying network" means a public electronic communications network provided by a qualifying entity falling within paragraph 2;]]

[REMOVED] [["qualifying service" means a public electronic communications service provided by a qualifying entity falling within paragraph 2.]]

Repair or maintenance of submarine cable systems or cable landing stations

4. —

[UPDATED] (1) A qualifying entity carrying on activities which consist of or include the provision of services for the repair or maintenance of—

(a) a submarine cable system (in the United Kingdom or elsewhere) forming part of a public electronic communications network that—

(i) is provided in the United Kingdom by a public electronic communications network or public electronic communications service; or

(ii) interconnects with a public electronic communications network provided in the United Kingdom by a public electronic communications network or public electronic communications service; or

(b) a cable landing station in the United Kingdom that is used in connection with a public electronic communications network or public electronic communications service provided in the United Kingdom by a public electronic communications network or public electronic communications service.

(2) In this paragraph "interconnect" is to be read in accordance with section 151(2) of the Communications Act 2003.

Information systems

5. —

(1) A qualifying entity carrying on activities that consist of or include supplying to persons in the United Kingdom services which consist of or include one or more of the following—

(a) providing a top-level domain name registry which, in any relevant 168-hour period, serviced 14 billion or more queries from devices located in the United Kingdom for domains registered within the Internet Corporation for Assigned Names and Numbers;

(b) providing a domain name system resolver service which, in any relevant 168-hour period, serviced 500,000 or more different Internet Protocol addresses used by persons in the United Kingdom;

(c) providing a domain name system authoritative hosting service servicing 100,000 or more domains registered to persons with an address in the United Kingdom.

(2) A qualifying entity which—

(a) carries on activities which consist of or include supplying to persons in the United Kingdom services which consist of or include providing an internet exchange point; and

(b) has 30% or more of the market share among operators of internet exchange points in the United Kingdom in terms of interconnected autonomous systems.

(3) In this paragraph—

“domain name system” has the meaning given to “Domain Name System” in paragraph 10(5)(a) of Schedule 2 to the Network and Information Systems Regulations 2018(5);

“internet exchange point” has the meaning given in paragraph 10(5)(c) of Schedule 2 to the Network and Information Systems Regulations 2018;

“relevant 168-hour period” means any consecutive period of 168 hours falling within the 12 months ending with the time when a person gains control of the qualifying entity by virtue of one or more of the cases described in subsection (2), (5) or (6) of section 8 of the Act;

“top-level domain name registry” has the meaning given in paragraph 10(5)(d) of Schedule 2 to the Network and Information Systems Regulations 2018.

Schedule 7 - Critical Suppliers to Government

Summary of changes

Respondents to the Call for Evidence noted overlap between the Critical Suppliers to Government and Data Infrastructure areas and called for greater certainty on what is covered by each definition.

In response, the Government is proposing to remove the public sector authority (PSA) data provision from the Data Infrastructure schedule and add it to the Critical Suppliers to Government schedule. As part of this, the draft Critical Suppliers to Government definition narrows the PSA definition to focus on the 24 ministerial departments and provide further clarity by adding the specific services that are within scope.

This draft schedule is intended to be more proportionate by enabling the Government to better target areas of significant national security risk while minimising burdens for business by excluding cases with minimal risk attached. The updated draft schedule takes a service-led approach to the scope, meaning that third parties can clearly identify if they should be subject to mandatory notification based on the services they are providing.

The proposed clarifications to the **Critical Suppliers to Government** schedule are expected to increase the number of businesses in scope and the notification volume. While the Government's proposed updates will add some entities that provide services to the government to the scope of the NARs, some of these activities are being removed from the scope of the Data Infrastructure area, causing a neutral net change of the scope of the NARs. The upper estimate for the number of new businesses covered is based on the existing number of contractors held by the 24 ministerial departments in the five critical notifiable services. However, it is likely that many of these businesses would already be in scope because they operate under another provision in the Critical Suppliers to Government schedule.

Draft Schedule 7

Critical Suppliers to Government

Interpretation

1. In this Schedule—

[NEW] “accounting or financial service” means the provision of services related to accounting, bookkeeping or financial functions. This includes—

(a) bookkeeping;

(b) payroll processing;

(c) accounts payable and receivable management;

(d) budgeting and forecasting;

(e) financial analysis and reporting;

[NEW] “facilities management service” means the provision of services related to the maintenance, operation, or management of buildings and physical workspaces. This includes—

(a) building maintenance and repairs;

(b) cleaning and janitorial services;

(c) security services;

(d) heating, ventilation and air conditioning system maintenance;

(e) waste management and recycling; specifically conference waste;

(f) parking management;

[REMOVED] [[“government” has the same meaning as “contracting authorities” in regulation 2 of the Public Contracts Regulations 2015(1);]]

[NEW] “human resources or recruitment service” means the provision of services related to human resources or recruitment functions. This includes—

(a) recruitment process outsourcing;

(b) payroll processing;

(c) employee training and development;

(d) performance management systems;

(e) employee health and wellbeing services;

(f) human resources information systems management;

[NEW] “information technology service” means the provision of services related to information technology functions. This includes—

(a) cloud computing;

(b) cybersecurity;

(c) software development;

(d) network management;

(e) data storage and backup;

(f) help desk and technical support;

(g) information technology consulting;

[NEW] “notifiable service” means—

(a) an accounting or financial service;

(b) a facilities management service;

(c) a human resources or recruitment service;

(d) an information technology service; or

(e) a security and security hardware Service;

[NEW] “relevant government authority” means a person that is—

(a) wholly or mainly funded out of public funds, or

(b) subject to public authority oversight and does not operate on a commercial basis, and this includes relevant ministerial departments but does not include His Majesty acting in his private capacity;

[NEW] “relevant ministerial department” means any ministerial department listed in paragraph 2;

[UPDATED] “relevant public contract” means a contract for pecuniary interest where the contract has as its object the execution of works, the supply of products or the provision of services to a relevant government authority;

[NEW] “security and security hardware service” means the provision of security functions and includes—

(a) physical security services including—;

(i) on-site security guards;

(ii) patrol services;

(iii) access control management;

(iv) event security;

(b) electronic security including—;

(i) CCTV installation and monitoring;

(ii) alarm systems;

(iii) electronic access control systems;

(c) emergency response planning;

(d) information security management.

[NEW] Interpretation – ministerial department

2. A ministerial department includes—

Attorney General's Office
Cabinet Office
Department for Business & Trade
Department for Culture, Media & Sport
Department for Education
Department for Energy Security & Net Zero
Department for Environment, Food & Rural Affairs
Department for Science, Innovation & Technology

Department for Transport
Department for Work & Pensions
Department of Health & Social Care
Foreign, Commonwealth & Development Office
HM Treasury
Home Office
Ministry of Defence
Ministry of Housing, Communities & Local Government
Ministry of Justice
Northern Ireland Office
Office of the Advocate General for Scotland
Office of the Leader of the House of Commons
Office of the Leader of the House of Lords
Scotland Office
UK Export Finance
Wales Office

Activity – critical suppliers to government

[UPDATED] 3. A qualifying entity being a party to a relevant public contract where the contract contains one or more of the features set out in paragraph 4.

[UPDATED] 4. The features referred to in paragraph 3 are—

(a) either or both the processing or storage of material to which a security classification of SECRET or TOP SECRET has been applied in accordance with the document titled "Government Security Classifications Version 1.1 – May 2018" published by the Cabinet Office;

(b) a requirement to have Facility Security Clearance as described in the document titled "Facility Security Clearance (FSC) Policy and Guidance for UK Defence Suppliers and MOD Contracting Authorities Version 1.4 - March 2024" published by the Ministry of Defence;

(c) a requirement for employees of the qualifying entity to be vetted at or above 'Security Check' level as described in guidance titled "National security: vetting clearance levels" published on 12 February 2020 by the United Kingdom Security Vetting;~~.~~

(d) a requirement to have Industry Personnel Security Assurance status as described in the document titled "Industry Personnel Security Assurance (IPSA): Policy Version 1.0 - May 2021" published by the Cabinet Office;

(e) the delivery of a notifiable service to a relevant ministerial department where the delivery of that notifiable service will or could result in the qualifying entity generating or obtaining access to material to which a security classification of OFFICIAL together with a marking of SENSITIVE has been applied or could be applied in accordance with the document titled "Government Security Classifications Version 1.1 – May 2018" published by the Cabinet Office.

Schedule 9 - Data Infrastructure

Summary of changes

Respondents to the Call for Evidence noted that the current Data Infrastructure definition is excessively broad and highlighted duplication with the existing Critical Suppliers to Government definition. Respondents also noted the lack of clarity on which data centres and activities are in scope of this definition.

In response to this, the draft Data Infrastructure schedule removes the provision requiring notification for entities solely on the basis of having contracts with a Public Sector Authority. This proposed change means that industry will notify under the 'Critical Suppliers to Government' schedule if they hold a contract with one of the 24 ministerial departments and provide specific services (see separate section).

The schedule has also been updated to reflect the changing national security risks. The draft definition adds third-party operated data centres, including data processing and data storage facilities, in addition to those offering peering/interconnection or subsea cable connections. This includes certain Cloud Service Providers (CSPs) and Managed Service Providers (MSPs) i.e. those who offer or resell Platform-as-a-Service (PaaS) and Infrastructure-as-a-Service (IaaS). This is intended to provide greater certainty for stakeholders on what data centres and activities are in scope under the schedule.

The proposed changes to the **Data Infrastructure** schedule are expected to bring **1-50 more businesses** into scope of the NARs and lead to **1-10 more notifications per year**. This estimate is based on the number of operators running data storage facilities, excluding those with Meet-Me-Rooms or that offer peering, because they would already be captured by the current regulations. This does not account for the provision relating to government contractors that store, process or transmit digital data which is covered in the Critical Suppliers to Government section.

DRAFT SCHEDULE 9

Data Infrastructure

Interpretation

1. In this Schedule—

"administrative access" refers to either or both authorisation or access granted via either or both logical or administrative access controls by virtue of which an entity may access relevant data infrastructure or control access to relevant data infrastructure where such access would otherwise be restricted or compartmented and where such access would permit the modification of the relevant data infrastructure in a way that was not authorised;

[NEW] "data centre" means a structure or group of structures dedicated to the centralised accommodation, interconnection and operation of information technology and network telecommunications equipment providing data storage, processing and transmission services together with all the facilities and infrastructure for power distribution and environmental control;

"electronic communications network" has the meaning given in section 32(1) of the Communications Act 2003(1);

"public electronic communications network" has the meaning given in section 151(1) of the Communications Act 2003;

"public electronic communications service" has the meaning given in section 151(1) of the Communications Act 2003;

[REMOVED] [["public sector authority" means an authority listed in paragraph 2;]]

[REMOVED] [["relevant activity" means storing, processing or transmitting data in digital form which are used in connection with the administration and operation of a public sector authority;]]

[UPDATED] "relevant data infrastructure" is physical or virtualised infrastructure, which is either a data centre or is housed in a data centre and—

(a) the qualifying entity—

(i) provides a data centre or space within a data centre in which a customer or multiple customers can locate their own networks, servers and storage equipment; or

(ii) provides customers with access to networks, servers and storage equipment housed in a data centre on which customers can operate their own services and/or applications;

(b) is provided for peering, interconnection or exchange of digital data between providers of public electronic communications networks and/or providers of public electronic communications services but which is not owned by a provider of public electronic communications networks or a provider of a public electronic communications service; or

(c) enables the interconnection of one or more public electronic communications networks with an electronic communications network where part of that network is provided by means of a submarine cable system;

"specialist or technical services" means either or both—

(a) equipment installation services;

(b) equipment repair and maintenance services;

"submarine cable system" means a system of fibre optic cables which—

(a) are beneath the sea (whether on or in the seabed or in a tunnel); and

(b) are intended for the conveyance of signals.

[REMOVED] [[Interpretation – public sector authority]]

Activity – data infrastructure

3. A qualifying entity carrying on any of the activities set out in paragraph 4.

4.The activities referred to in paragraph 3 are—

(a) owning or operating relevant data infrastructure;

(b) managing relevant data infrastructure on behalf of other entities;

(c) managing facilities where relevant data infrastructure is located;

(d) providing specialist or technical services to entities carrying on activities described in sub-paragraphs (a), (b) or (c), which give the entity providing those specialist or technical services physical access to relevant data infrastructure;

(e) providing services where the provision of such services gives the entity providing those services administrative access to relevant data infrastructure;

(f) producing or developing software designed for use in the services in sub-paragraph (e) which configures or manages the provision of administrative access.

Schedule 11 - Energy

Summary of changes

Feedback from the Call for Evidence suggested that changes should be made to the cumulative capacity thresholds, with some respondents calling for the thresholds to be removed altogether. Stakeholders also requested clarification on whether multi-purpose interconnectors are in scope.

In response to this feedback, the draft Energy schedule adds a provision on multi-purpose interconnectors and a large cumulative capacity threshold. It also changes the definition of an aggregator to be more closely aligned with Ofgem's definition and removes repetitive paragraphs (3(a)(iv) and 3(b)(iv). However, the definition retains some thresholds as these are necessary for the Government to examine aggregation of assets. This is especially the case as electricity generation assets are often controlled centrally, including smaller assets.

The changes to the **Energy** schedule are estimated to leave the number of businesses in scope and notification volume unchanged, while the clarifications to the definition are estimated to decrease notification volume. The Government's proposed updates include clarifications relating to the definition of 'downstream gas activities' and 'enabling the operation' of a petroleum facility. The draft definition also clarifies qualifying thresholds for upstream oil and gas, brings multipurpose interconnector licences into scope and amends the megawatt (MW) thresholds for electricity accumulation to 500MW intervals. Overall, the Government expects that the changes in scope net out to a neutral impact on notifications.

DRAFT SCHEDULE 11

Energy

Interpretation

1. In this Schedule—

“aggregation” means combining multiple customer loads or generated electricity for sale, purchase or auction in the electricity market of Great Britain;

“downstream oil activity” means any of the following activities—

(a) the import of any of crude oil, intermediates, components and finished fuels;

(b) the storage of any of crude oil, intermediates, components and finished fuels;

(c) the production of intermediates, components and finished fuels through refining or blending processes;

(d) the distribution of petroleum-based fuels to storage sites by road, pipeline, rail or ship;

(e) the delivery of petroleum-based fuels to retail sites, airports or end users;

“existing upstream petroleum facility” means an upstream petroleum facility that began operating before the first day of the month that is 12 calendar months before the month in which a person gains control, by virtue of one or more of the cases described in subsection (2), (5) or (6) of section 8 of the Act, of the qualifying entity;

“gas” means any substance which is or (if it were in a gaseous state) would be gas within the meaning set out in section 48(1) of the Gas Act 1986;(**1**)

“gas interconnector” has the meaning set out in section 5(8) of the Gas Act 1986(**2**);

“gas processing facility” has the meaning set out in section 90(1) of the Energy Act 2011(**3**);

“gas processing operation” has the meaning set out in section 90(2) of the Energy Act 2011;

“generate” in relation to electricity means carrying on an act within section 4(1)(a) of the Electricity Act 1989(**4**);

“generating asset” means an asset used to generate electricity;

“group undertaking” has the meaning set out in section 1161(5) of the Companies Act 2006(**5**);

“LNG import or export facility” has the meaning set out in section 12(6) of the Gas Act 1995(**6**) but does not include facilities in the territorial sea adjacent to Great Britain or the sea in any area designated under section 1(7) of the Continental Shelf Act 1964(**7**);

“new upstream petroleum facility” means an upstream petroleum facility that had not begun operating before the first day of the month that is 12 calendar months before the month in which a person gains control, by virtue of one or more of the cases described in subsection (2), (5) or (6) of section 8 of the Act, of the qualifying entity;

“oil equivalent” means petroleum and, for the purposes of assessments of throughput, where petroleum is in a gaseous state 1,100 cubic meters of this petroleum at a temperature of 15 degrees Celsius and pressure of one atmosphere is counted as equivalent to one tonne;

“petroleum” has the same meaning as in Part 1 of the Petroleum Act 1998(**8**), and includes petroleum that has undergone any processing;

“petroleum licence” means a licence granted under section 3 of the Petroleum Act 1998(**9**) or section 2 of the Petroleum (Production) Act 1934(**10**);

“petroleum production project” has the meaning set out in section 90(2) of the Energy Act 2011;

“terminal” has the meaning set out in section 90(2) of the Energy Act 2011, but does not include gas processing facilities in the United Kingdom or LNG import or export facilities;

“upstream petroleum facility” means a terminal, upstream petroleum pipeline or unit of infrastructure that is or will be necessary to a petroleum production project;

“upstream petroleum pipeline” has the meaning set out in section 90(2) of the Energy Act 2011, but does not include gas interconnectors.

Activity - energy

2. A qualifying entity carrying on any of the activities set out in paragraph 3.

3. The activities referred to in paragraph 2 are—

(a) in respect of any existing upstream petroleum facility that meets the conditions set out in paragraph 4(2)—

(i) owning;

(ii) operating;

(iii) holding a petroleum licence in respect of; or

(iv) where the qualifying entity meets the condition set out in paragraph 4(3), enabling the operation of;

(b) in respect of any new upstream petroleum facility that meets the conditions set out in paragraph 4(4)—

(i) owning;

(ii) operating;

(iii) holding or applying for a petroleum licence in respect of; or

(iv) where the qualifying entity meets the condition set out in paragraph 4(5)—

(aa) developing;

(bb) enabling the operation of; or

(cc) enabling the development of;

(c) [UPDATED] holding a transmission licence, distribution licence or interconnector licence under section 6 of the Electricity Act 1989(**11**) or holding a multipurpose interconnector licence under section 6(1)(ea) of the Electricity Act 1989, as inserted by section 205(8) of the Energy Act 2023 (12[8]) or carrying on any activity in pursuance of an exemption from section 4(1)(b), 4(1)(bb) or 4(1)(d) of the Electricity Act 1989 granted to the qualifying entity by order under section 5(1) of the Electricity Act 1989(**12**);

(d) where the qualifying entity meets the condition set out in paragraph 4(6)—

(i) holding a generation licence under section 6 of the Electricity Act 1989 or carrying on any activity in pursuance of an exemption from section 4(1)(a) of the Electricity Act 1989 granted to the qualifying entity by order under section 5(1) of the Electricity Act 1989; or

(ii) carrying on aggregation;

(e) holding a licence under section 7 or 7ZA of the Gas Act 1986(**13**) or carrying on any activity in pursuance of an exemption from sections 5(1)(a) or 5(1)(aa) of the Gas Act 1986 (**14**) granted to the qualifying entity by order under section 6A(1) of the Gas Act 1986(**15**);

(f) owning or operating—

(i) any gas processing facility in Great Britain that meets the condition set out in paragraph 4(8); or

(ii) any LNG import or export facility that meets the condition set out in paragraph 4(9);

(g) where the qualifying entity meets the conditions set out in paragraph 4(10), supplying petroleum-based road, aviation or heating fuels (including liquefied petroleum gas) to persons in the United Kingdom.

Conditions

4.—(1) This paragraph sets out the conditions referred to in paragraph 3.

(2) The conditions referred to in paragraph 3(a) are that the existing upstream petroleum facility—

(a) has a throughput of greater than 3,000,000 tonnes of oil equivalent over the 12 calendar months preceding the month in which a person gains control, by virtue of one or more of the cases described in subsection (2), (5) or (6) of section 8 of the Act, of the qualifying entity; and

8

(b) is—

(i) situated in whole or in part in the United Kingdom; or

(ii) used in connection with the supply of petroleum to persons in the United Kingdom.

(3) The condition referred to in paragraph (3)(a)(iv) is that the qualifying entity is an owner or operator of the existing upstream petroleum facility.

(4) The conditions referred to in paragraph 3(b) are that the new upstream petroleum facility—

(a) has an expected throughput of greater than 3,000,000 tonnes of oil equivalent in its first 12 calendar months of operation; and

(b) is or will be—

(i) situated in whole or in part in the United Kingdom; or

(ii) used in connection with the supply of petroleum to persons in the United Kingdom.

(5) The condition referred to in paragraph 3(b)(iv) is that the qualifying entity is or will be an owner or operator of the new upstream petroleum facility.

[UPDATED] (6) The condition referred to in paragraph 3(d) is that—

(a) the qualifying entity is an owner or operator of any individual generating asset that has a total installed capacity equal to or greater than 100 megawatts; or

(b) The relevant capacity being acquired increases the total installed capacity of the acquirer or group to meet or exceed thresholds in 500 megawatt increments starting from 500 megawatts.

[UPDATED] (7) For the purposes of sub-paragraph (6)(b), the “relevant capacity” of the qualifying entity is the total of—

(a) the total United Kingdom installed capacity of any generating assets owned or operated by the qualifying entity;

(b) the total United Kingdom installed capacity of any generating assets owned or operated by the acquirer or group undertakings of the acquirer;

(c) the amount of United Kingdom customer load and generated electricity available to the qualifying entity for aggregation; and

(d) the amount of United Kingdom customer load and generated electricity available to the acquirer or group undertakings of the acquirer for aggregation

(8) The condition referred to in paragraph 3(f)(i) is that the gas processing facility has the technological capacity to carry on gas processing operations in relation to greater than 6 million cubic metres of gas per day.

(9) The condition referred to in paragraph 3(f)(ii) is that the LNG import or export facility has the technological capacity to carry on the importation, regasification or liquefaction of greater than 6 million cubic metres of gas per day.

(10) The conditions referred to in paragraph 3(g) are that—

(a) the qualifying entity carries on any downstream oil activity; and

(b) the qualifying entity—

(i) has capacity of greater than 500,000 tonnes; or

(ii) owns a facility in the United Kingdom that has capacity of greater than 50,000 tonnes.

(11) For the purposes of sub-paragraph (10)—

(a) a qualifying entity “has capacity of greater than” a specified number of tonnes if any downstream oil activity was carried on in the United Kingdom by that qualifying entity in relation to greater than that number of tonnes of oil in at least one of the three calendar years preceding the year in which a person gains control, by virtue of one or more of the cases described in subsection (2), (5) or (6) of section 8 of the Act, of the qualifying entity; and

(b) a facility “has capacity of greater than” a specified number of tonnes if it was used for the purposes of any downstream oil activity in relation to greater than that number of tonnes of oil in at least one of the three calendar years preceding the year in which a person gains control, by virtue of one or more of the cases described in subsection (2), (5) or (6) of section 8 of the Act, of the qualifying entity.

Schedule 15 - Suppliers to the Emergency Services

Summary of proposed changes

Respondents to the Call for Evidence called for any change to the drafting involving subcontractors to be specific and clear.

The draft schedule reflects this feedback by adding immediate subcontractors with staff who are required to hold Non-Police Personnel Vetting (NPPV) Level 2 or above to the scope of the schedule. This change will allow the Government to ensure the national security risks of procurement to the emergency services are fully considered.

The proposed changes to the Suppliers to the Emergency Services sector are estimated to **bring into scope 1-50 more businesses**, and lead to **1-10 more notifications per year.** This is based on emergency services commercial procurement data on the number of subcontractors subject to NPPV Level 2 vetting.

SCHEDULE 15

Suppliers to the Emergency Services

Interpretation

1. In this Schedule—

"ambulance services provider" means—

(a) in England—

(i) an NHS trust or NHS foundation trust established pursuant to Part 2 of the National Health Service Act 2006(1) (or their subsidiaries), which has a function of providing ambulance services;

(ii) any private, public or voluntary sector entity which has been commissioned under any arrangement by or on behalf of the NHS Commissioning Board or a Clinical Commissioning Group pursuant to Parts 1 and 4 of the National Health Service Act 2006 to provide ambulance services;

(iii) any private, public or voluntary sector entity which has been commissioned under any arrangement by or on behalf of the Secretary of State pursuant to Part 1 of the National Health Service Act 2006 to provide ambulance services;

(b) in Wales, an NHS Trust established by the Welsh Ambulance Services National Health Service Trust (Establishment) Order 1998(2);

(c) in Northern Ireland, the Northern Ireland Ambulance Service Trust as defined in the Northern Ireland Ambulance Service Health and Social Services Trust (Establishment) Order (Northern Ireland) 1995(3);

(d) in Scotland, the Special Health Board constituted by the Scottish Ambulance Service Board Order 1999(4) or any other private, public or voluntary sector entity providing ambulances and other means of transport under section 45 of the National Health Service (Scotland) Act 1978 (ambulances)(5);

"associated facility" has the meaning given in section 32(3) of the Communications Act 2003(6);

"the British Transport Police Force" means the police force established by Part 3 of the Railways and Transport Safety Act 2003(7);

"the Civil Nuclear Constabulary" means the constabulary established under section 52(1) of the Energy Act 2004 (the Civil Nuclear Constabulary)(8);

"emergency service" means—

(a) Border Force;

(b) the British Transport Police Force;

(c) the Civil Nuclear Constabulary;

(d) a fire and rescue authority;

(e) the Ministry of Defence Police;

(f) the National Crime Agency;

(g) a police body;

"a fire and rescue authority" is—

(a) in England—

(i) an authority constituted by a scheme under section 2 of the Fire and Rescue Services Act 2004 (a combined fire and rescue authority)(9);

(ii) an authority constituted by a scheme to which section 4 of the Fire and Rescue Services Act 2004 applies (a combined fire and rescue authority constituted under the Fire Services Act 1947)(10);

(iii) an authority created by an order under section 4A of the Fire and Rescue Services Act 2004 (a police and crime commissioner as fire and rescue authority)(11);

(iv) a metropolitan county fire and rescue authority;

(v) the London Fire Commissioner;

(vi) a combined authority established under section 103 of the Local Democracy, Economic Development and Construction Act 2009 (combined authorities and their areas)(12);

(b) in Wales—

(i) for a county, a county council;

(ii) for a county borough, a county borough council;

(c) in Northern Ireland, the Northern Ireland Fire and Rescue Service Board, as defined in article 3 of the Fire and Rescue Services (Northern Ireland) Order 2006 (the Northern Ireland Fire and Rescue Service Board)(13);

(d) in Scotland, the Scottish Fire and Rescue Service, as defined in section 1A the Fire (Scotland) Act 2005 (the Scottish Fire and Rescue Service)(14);

"electronic communications network" has the meaning given in section 32(1) of the Communications Act 2003(15);

"electronic communications service" has the meaning given in section 32(2) of the Communications Act 2003;

"fuel card" means a card, the production of which enables the person to whom it is issued to discharge his obligation to a supplier of fuel in respect of payment for that fuel, the supplier being reimbursed by a person other than the person producing the card;

"Ministry of Defence Police" means the police force established under the Ministry of Defence Police Act 1987(16);

"National Crime Agency" means the agency established under the Crime and Courts Act 2013(17);

"personal data" has the meaning given in section 3(2) of the Data Protection Act 2018(18);

"police body" means—

(a) in England and Wales—

(i) a local policing body as defined in section 101 of the Police Act 1996(19) (interpretation); or

(ii) the chief officer of police as defined in section 101 of the Police Act 1996;

(b) in Northern Ireland, the Police Service of Northern Ireland and Police Service of Northern Ireland Reserve;

(c) in Scotland—

(i) the Scottish Police Authority, as defined in section 1 of the Police and Fire Reform (Scotland) Act 2012 (the Scottish Police Authority)(20);

(ii) the Chief Constable of the Police Service of Scotland, as appointed under section 7 of the Police and Fire Reform (Scotland) Act 2012 (senior officers);

"public electronic communications network" has the meaning given in section 151(1) of the Communications Act 2003(21);

"public electronic communications service" has the meaning given in section 151(1) of the Communications Act 2003;

"unmanned aircraft" means any aircraft operating or designed to operate autonomously or to be piloted remotely without a pilot on board.

Activity – suppliers to emergency services

2. A qualifying entity which supplies directly to—

(a) an emergency service of one or more of the goods and services set out in paragraph 4;

(b) an ambulance services provider of one or more of the goods and services set out in paragraph 5.

[NEW] 3. An immediate sub-contractor of a qualifying entity that falls within paragraph 2 (a), which employs staff who are required to hold Non-Police Personnel Vetting (NPPV), specifically, NPPV2 or higher.

Good and services – emergency services

4. The goods and services referred to in paragraph 2(a) are the following—

(a) unmanned aircraft, any component, part or product of an unmanned aircraft, and any equipment, including an electronic device, relating to an unmanned aircraft;

(b) equipment designed to disrupt the operational system of an unmanned aircraft;

(c) equipment designed to detect, track or identify unmanned aircraft;

(d) firearms as defined in section 57(1) of the Firearms Act 1968 (interpretation: firearm)(22);

(e) ammunition as defined in section 57(2) of the Firearms Act 1968 (interpretation: ammunition);

(f) certification, maintenance, support or repairs to vessels operated by Border Force for frontline operational purposes;

(g) maintenance or repairs of unmanned aircraft, any component, part or product of an unmanned aircraft, and any equipment, including an electronic device, relating to an unmanned aircraft;

(h) an electronic communications network, electronic communications service or associated facility, that—

(i) is not a public electronic communications network or public electronic communications service; and

(ii) (is used by the emergency service for the purposes of—

(aa) the prevention or detection of crime; or

(bb) fulfilling the functions of a fire and rescue authority;

(i) hardware, systems or platforms to facilitate the storage of electronic data, used exclusively or primarily by the emergency service for the purposes of—

(i) the prevention or detection of crime;

(ii) fulfilling the functions of a fire and rescue authority; or

(iii) the storage of personal data, including personnel data;

(j) the maintenance and repair of the goods and services referred to in sub-paragraphs (g) and (h);

(k) fuel cards;

(l) services to control systems relating to access and security of buildings;

(m) front line operational delivery of firefighting services in the event of strike action.

Goods and services – ambulance services provider

5. The goods and services referred to in paragraph 2(b) are an electronic communications network or electronic communications service that—

(a) is not a public electronic communications network or a public electronic communications service; and

(b) is used by the ambulance services provider for the purposes of fulfilling its functions.

Schedule 16 - Synthetic Biology

Summary of proposed changes

Feedback from the Call for Evidence noted that Synthetic Biology is a long and complex schedule, and suggested that the scope could be made clearer. Some respondents called for the definition to be narrowed or for exhaustive lists to be introduced.

In response, the draft schedule seeks to clarify some of the terminology and exemptions within the schedule, including through simplifying the exemptions for gene therapies and cell therapies. The Government has, however, decided not to narrow the scope of the schedule further or introduce exhaustive lists as to do so could increase exposure to national security risks in the sector.

The clarifications to the **Synthetic Biology** schedule are estimated to leave the number of businesses in scope **unchanged**, and **decrease the volume of notifications.** In response to stakeholder feedback about ambiguity, the Government intends to simplify exemptions in the definition by restructuring the existing definition, rather than change the overall scope of the schedule. These changes should increase stakeholders' confidence in their interpretation of the definition and avoid over-reporting.

DRAFT SCHEDULE 16

Synthetic biology

Interpretation

1. In this Schedule—

"basic scientific research" means experimental or theoretical work undertaken principally to acquire new knowledge of the fundamental principles of phenomena or observable facts and not primarily directed towards a specific practicable aim or objective;

"medicine" means—

(i) any substance or combination of substances presented as having properties of preventing or treating disease in human beings or animals;

(ii) any substance or combination of substances that may be used by or administered to human beings or animals with a view to—

(aa) restoring, correcting or modifying a physiological function by asserting a pharmacological, immunological or metabolic action;

(bb) making a medical diagnosis;

"services" means routine synthetic biology processes that are outsourced to specialist providers for completion before being re-integrated into the original work stream to assemble into an experiment or goods, including making a specific strand of DNA or running a proprietary algorithm on a dataset.

Activities

2. Subject to the exceptions referred to in paragraphs 5 and 6, a qualifying entity carrying on activities that consist of or include any of the following—

(a) carrying on basic scientific research into synthetic biology;

(b) the development of synthetic biology;

(c) the production of goods using synthetic biology;

(d) the formulation of synthetic biology to enable the degradation of materials;

(e) the provision of services that enable the activities in paragraphs (a) to (d).

Meaning of synthetic biology

3. In this Schedule, "synthetic biology" means the process of applying engineering principles to biology to design, redesign or make biological components or systems that do not exist in the natural world.

4. Synthetic biology includes but is not limited to—

(a) the design and engineering of biological-based parts of—

(i) enzymes;

(ii) genetic circuits and cells;

(iii) novel devices and systems;

(b) redesigning existing natural biological systems;

(c) using microbes to template materials;

(d) cell-free systems;

(e) gene editing and gene therapy;

(f) the use of DNA for data storage, encryption and bio-enabled computing.

Exceptions - general

5. Exceptions to the activities described in paragraph 2 are—

(a) general services or servicing not related to core synthetic biology, where "core" means those activities without which experiments cannot be conducted, such as DNA synthesis or cloning;

(b) the use of microorganisms to remove harmful contaminants, pollutants or toxins from the environment (known as bioremediation), including bio-based reagents that allow for testing for contaminants;

(c) any approach used to gather clinical information for the purpose of making a clinical decision or making a diagnosis (known as diagnostics) but not the storage or ownership of sensitive human genetic information that enables the identification of an individual;

(d) industrial biotechnology research, development or production using enzymes or organisms that have not been modified through the application of synthetic biology; or

(e) the production of substances ordinarily consumed as food or used as feed, including any ingredient or component of such substances.

[REMOVED] [[(f) gene therapy, where it is used solely for the purpose of replacing missing or defective genes to restore phenotypes to achieve a therapeutic effect;]]

[REMOVED] [[(g) cell therapy, where cells are modified by genetic engineering and then introduced into a patient to treat disease.]]

Exceptions – human or veterinary medicines or immunomodulatory approaches

6.—(1) Exceptions to the activities described in paragraph 2 are the ownership, ownership of intellectual property or development of the matters set out in sub-paragraph (2) that employ synthetic biology at any stage of the development or production, unless the circumstances set out in sub-paragraph (3) apply.

(2) The matters referred to in sub-paragraph (1) are—

(a) human or veterinary medicines;

(b) immunomodulatory approaches.

(3) The circumstances referred to in sub-paragraph (1) are where the matter described in sub-paragraph (2)—

(a) has a synthetic biology technology that could be employed or modified to produce, deliver or produce and deliver—

(i) toxic chemicals to achieve an incapacitating or lethal effect on humans or animals;

(ii) materials restricted under Schedule 5 to the Anti-terrorism, Crime and Security Act 2001; ~~or~~

(b) uses substances or pathogens set out in Schedule 5 to the Anti-terrorism, Crime and Security Act 2001; or

(c) [NEW] develops or produces a gene therapy, where it is not used solely for either the purpose of replacing missing or defective genes to restore phenotypes to achieve a therapeutic effect or cell therapy where cells are modified by genetic engineering to achieve a therapeutic benefit.

New schedule (areas not previously covered by the NARs)

Water

Summary of proposals

The Government is seeking feedback on proposals to create a new NARs schedule covering acquisitions in the water sector that could create national security risks.

The UK's critical national water infrastructure is facing increasing risks to its resilience in a growing threat landscape. Investment is one route through which malicious actors could threaten critical infrastructure by providing access to sensitive information and assets. Such control, if left unchecked, could create a variety of national security risks.

The water sector will be receiving around £100bn of investment between 2025 and 2030, and it is important to ensure the right security protections are in place to enable this investment in line with the Government's growth mission. The addition of water as an NSI mandatory area would strengthen the Government's ability to take action on national security grounds and increase its awareness of changes of ownership that could create national security risks.

Reflecting the water sector's position as critical national infrastructure, the Government is proposing to add the water sector to the areas subject to mandatory notification. Specifically:

- A company that has statutory powers and duties to supply water and/or sewerage services to premises within a specified geographical area by virtue of an appointment under section 6 of the Water Industry Act 1991 (a 'water and/or sewerage undertaker'). The water and/or sewerage undertaker holds the de facto monopoly to provide water or sewerage services to premises in its area of appointment.
- This would exclude notification for changes in ownership with companies operating solely as a retailer in the non-household retail market for water.

The proposed introduction of the **Water** schedule would cover the regional water and/or sewage monopolies operating across England and Wales. Therefore, we are expecting **a minimum of 17 companies to be brought into scope of the NARs** under these proposals. While it is difficult to predict the volume of future notifications due to changing levels of investment in the sector,

the Government estimates that the creation of this sector will lead to **an average of 1-5 notifications per year**.

The Government will consider the Independent Water Commission's findings when coming to a final view on the addition of water as an NSI mandatory area.

Estimate of overall cost to business

The estimated costs to business below have been calculated using the costs in the original 2020 NSI Act Impact Assessment, uplifted to current prices. The 2020 Impact Assessment included a table on the estimated costs for each stage of the NSI process, for small, medium and large businesses, split by internal and legal costs, and increasing with the complexity of the case. Table 1 presents estimated costs of each stage of the NSI process, uprated to 2024/25 prices.

Table 3 - Estimated cost per stage of the NSI process

	Small business (revenue <£10m pa)		**Medium business (revenue >£10m <£36m pa)**		**Large business (revenue >£36m pa)**	
	Low	**High**	**Low**	**High**	**Low**	**High**
Familiarisation	**£1,000**	**£1,000**	**£2,000**	**£6,000**	**£16,000**	**£21,000**
Internal	£1,000	£1,000	£2,000	£4,000	£5,000	£5,000
Legal	£0	£0	£0	£2,000	£11,000	£16,000
Early engagement	**£1,000**	**£2,000**	**£6,000**	**£8,000**	**£13,000**	**£16,000**
Internal	£1,000	£2,000	£5,000	£6,000	£7,000	£8,000
Legal	£0	£0	£1,000	£2,000	£6,000	£8,000
Notification	**£1,000**	**£4,000**	**£6,000**	**£9,000**	**£17,000**	**£23,000**
Internal	£1,000	£2,000	£4,000	£5,000	£6,000	£7,000
Legal	£0	£1,000	£2,000	£5,000	£11,000	£16,000
Assessment if called in - standard	**£76,000**	**£93,000**	**£76,000**	**£93,000**	**£76,000**	**£93,000**
Internal	£18,000	£18,000	£18,000	£18,000	£18,000	£18,000
Legal	£58,000	£75,000	£58,000	£75,000	£58,000	£75,000
Assessment if called in - complex	**£137,000**	**£195,000**	**£137,000**	**£195,000**	**£137,000**	**£195,000**
Internal	£21,000	£21,000	£21,000	£21,000	£21,000	£21,000
Legal	£116,000	£174,000	£116,000	£174,000	£116,000	£174,000
Assessment if called in - very complex	**£370,000**	**£428,000**	**£370,000**	**£428,000**	**£370,000**	**£428,000**
Internal	£21,000	£21,000	£21,000	£21,000	£21,000	£21,000
Legal	£348,000	£406,000	£348,000	£406,000	£348,000	£406,000
Implementation of remedies if final order made	**£11,000**	**£17,000**	**£11,000**	**£17,000**	**£11,000**	**£17,000**

To calculate an average cost per notification, we apply weights based on internal management information. These weights consider:

- **Case Progression:** The cost of a case increases as it progresses through the stages of the NSI screening process. To reflect that the overwhelming majority of cases are neither called in or issued a final order, the weighting takes into account the proportion of notifications that are cleared, are called in and are subject to final order.
- **Case Complexity:** Called in notifications of higher complexity require greater engagement and input from the notifying parties. To proxy this, we consider called in cases closed in the additional period to be complex, and those closed in the voluntary period to be very complex. A weighting is applied based on the proportion of cases closed at each of those stages.
- **Business Size:** The cost to a large business of engaging with the NSI process is assessed to be higher based on more individuals on the side of the notifying party having to be engaged in decision making. To reflect this, estimates are made of the proportion of notifications from small, medium and large businesses.

After applying these weights, the cost to business of an average notification is estimated to be between £30,000-£40,000. It is important to note that, in practice, costs will vary widely depending on the parties involved and the nature of the case. The vast majority of notifications are cleared; these will incur a significantly lower cost to business. Much of the cost comes from the relatively low number of notifications with increased complexity that are called in or subject to final order.

Table 2 below presents the estimated upper and lower bound of changes in mandatory notification volumes due to changes in scope of the NARs sectors. Summing these yields a wide range of potential impacts of around 10 fewer or 35 more notifications per year. It is likely that the impact would be within this range.

The midpoint of this range is around 10 more notifications per year. As an indicative estimate of the total cost to business of the proposed NARs changes, 10 notifications (at an average cost of £30,000-£40,000) would incur an increased cost to business of about £300,000 - £400,000 per year. Following the consultation, an updated estimate will be published on the extra number of notifications expected and the resulting cost to business, as part of an Impact Assessment for the legislation.

Table 4 - Estimated change in mandatory notifications, from changes in scope of the sector

	Estimated change in mandatory notification volume of the NSI Act	
	Lower bound	**Upper bound**
Advanced Materials	0	0
Artificial Intelligence	-10	-1
Communications	-5	-1

Critical Suppliers to Government	0	0
Data Infrastructure	1	10
Defence	0	0
Energy	0	0
Suppliers to the Emergency Services	1	10
Synthetic Biology	0	0
Semiconductors	0	0
Critical Minerals	1	10
Water	1	5

This does not include clarifications, the impact of which is difficult to quantify. The ‘Summary of Proposed Changes’ section for each sector indicates whether the ISU estimates that the notification volume will increase or decrease, where the definition is being clarified.

This consultation is available from: www.gov.uk/cabinetoffice

If you need a version of this document in a more accessible format, please email enquiries@cabinetoffice.gov.uk. Please tell us what format you need. It will help us if you say what assistive technology you use.

ISBN 978-1-5286-5913-0

E03408950