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To whom it may concern

**ONR Consultation Response: Pro-Innovation Approach to AI Regulation**

Thank you for the opportunity to comment on these proposals for a pro-innovation approach to AI Regulation. This letter and the attached appendix provide The Office for Nuclear Regulation's (ONR) response to [this consultation](https://www.gov.uk/government/publications/ai-regulation-a-pro-innovation-approach/white-paper)[[1]](#footnote-1). Our mission is to protect society by securing safe nuclear operations, which we do by delivering our five statutory purposes:

* nuclear safety;
* nuclear site health and safety;
* nuclear security;
* nuclear safeguards; and,
* safety of transport of nuclear and radioactive materials

We welcome the recognition within these proposals that regulation can enable responsible innovation, increase public trust and strengthen the UK’s position as a global leader in AI. We have published [our approach to innovation](https://www.onr.org.uk/documents/2020/onr-innovation-report-2020.pdf)[[2]](#footnote-2) and are currently piloting a sandbox for AI in the nuclear sector funded by the [regulators pioneer fund[[3]](#footnote-3).](https://news.onr.org.uk/2022/11/onr-successful-in-regulators-pioneer-fund-application/)

We have significant experience of proportionate, outcome focused and enabling regulation and are supportive of proposals to ensure innovation is regulated in this way in the UK. We have provided answers below to the questions that relate to our regulatory experience, which we hope are helpful

Thank you again for consulting us and we would be very pleased to discuss any of our responses with you in more detail as necessary.

Yours sincerely

**Rachel Grant**

Director of Policy and Communications

**ONR’s Response to Consultation Questions on a Pro Innovation Approach to AI Regulation**

**The revised cross-sectoral AI principles**

1. Do you agree that requiring organisations to make it clear when they are using AI would adequately ensure transparency?
2. What other transparency measures would be appropriate, if any?
3. Do you agree that current routes to contestability or redress for AI-related harms are adequate?
4. How could routes to contestability or redress for AI-related harms be improved, if at all?
5. Do you agree that, when implemented effectively, the revised cross-sectoral principles will cover the risks posed by AI technologies?
6. What, if anything, is missing from the revised principles?

**A statutory duty to regard**

1. Do you agree that introducing a statutory duty on regulators to have due regard to the principles would clarify and strengthen regulators’ mandates to implement our principles, while retaining a flexible approach to implementation?

*No, please see response to question 8.*

1. Is there an alternative statutory intervention that would be more effective?

*In our experience to date we have found that our non-prescriptive regulatory framework together with our statutory duties in respect of the Regulator’s Code and the Growth Duty have given us a strong mandate to effectively regulate a range of innovative technologies including AI. On that basis we would encourage that review of these existing statutory mandates would be the most effective and flexible way to implement principles which could be applied to AI.*

**New central functions to support the framework**

1. Do you agree that the functions outlined in [section 3.3.1](https://www.gov.uk/government/publications/ai-regulation-a-pro-innovation-approach/white-paper#section331)[[4]](#footnote-4) would benefit our AI regulation framework if delivered centrally?

*The functions outlined in section 3.3.1 would benefit regulation of AI if delivered as part of a pro-innovation regulatory framework to ensure consistency with regulation of other technologies, including block chain for example.*

1. What, if anything, is missing from the central functions?
2. Do you know of any existing organisations who should deliver one or more of our proposed central functions?
3. Are there additional activities that would help businesses confidently innovate and use AI technologies?

*In addition to the use of sandboxes which is outlined in the paper and which ONR is currently piloting in the nuclear sector, activities which we have found beneficial include the provision of advice and use of* [*expert panels.*](https://www.onr.org.uk/regulating-innovation.htm)*[[5]](#footnote-5) Our evaluation of these innovative regulatory tools has shown that they are beneficial to licensees, supply chain organisations and the sector more widely.*

* 1. If so, should these activities be delivered by government, regulators or a different organisation?

*Our experience is that regulators can successfully use their convening power to deliver these activities with other stakeholders including academics, professional bodies and dutyholders. We have found this approach successful in delivering the expert panels.*

1. Are there additional activities that would help individuals and consumers confidently use AI technologies?
	1. If so, should these activities be delivered by government, regulators or a different organisation?
2. How can we avoid overlapping, duplicative or contradictory guidance on AI issued by different regulators?

*We have undertaken our pilot of the sandbox for use of AI in the nuclear sector jointly with the Environment Agency and would recommend joint working between regulators to avoid any overlap or duplication.*

**Monitoring and evaluation of the framework**

1. Do you agree with our overall approach to monitoring and evaluation?
2. What is the best way to measure the impact of our framework?
3. Do you agree that our approach strikes the right balance between supporting AI innovation; addressing known, prioritised risks; and future-proofing the AI regulation framework?
4. Do you agree that regulators are best placed to apply the principles and government is best placed to provide oversight and deliver central functions?

**Regulator capabilities**

1. As a regulator, what support would you need in order to apply the principles in a proportionate and pro-innovation way?

*We have found the award of the regulator’s pioneer fund grant particularly beneficial in the development of our sandboxing approach, and of developing the sector's approach to the proportionate and safe application of AI.*

1. Do you agree that a pooled team of AI experts would be the most effective way to address capability gaps and help regulators apply the principles?

*Yes. One of the biggest challenges in developing appropriate relevant good practice for innovative technologies such as AI is gaining access to suitably qualified and experienced people. Having a shared resource available to regulators would be beneficial.*

**Tools for trustworthy AI**

1. Which non-regulatory tools for trustworthy AI would most help organisations to embed the AI regulation principles into existing business processes?

*We think that, while they are not sufficiently developed at present, AI standards may in the future help organisations embed these principles and safely deploy AI in the context of an outcome based regulatory framework that ensures risks arising from its deployment are effectively managed.*

*We continue to engage with AI standards work both internationally and domestically, via the International Atomic Energy Agency (IAEA) and the Alan Turing AI standards forum. We will also be engaging in the Autumn on work with the Institution for Engineering and Technology (IET).*

*The few AI standards produced so far have not focused on the practical deployment of AI with respect to safety systems. We have agreed to chair an IAEA working group that will be tasked with producing a TECDOC to address this. We are also working with the US and Canadian nuclear regulators (USNRC and CNSC) to set out some high-level principles for the deployment of AI in safety related applications.*

**Final thoughts**

1. Do you have any other thoughts on our overall approach? Please include any missed opportunities, flaws, and gaps in our framework.

**Legal responsibility for AI**

**L1.** What challenges might arise when regulators apply the principles across different AI applications and systems? How could we address these challenges through our proposed AI regulatory framework?

**L2.i.** Do you agree that the implementation of our principles through existing legal frameworks will fairly and effectively allocate legal responsibility for AI across the life cycle?

**L.2.ii.** How could it be improved, if at all?

**L3.**If you are a business that develops, uses, or sells AI, how do you currently manage AI risk including through the wider supply chain? How could government support effective AI-related risk management?

**Foundation models and the regulatory framework**

**F1.** What specific challenges will foundation models such as large language models (LLMs) or open-source models pose for regulators trying to determine legal responsibility for AI outcomes?

**F2.** Do you agree that measuring compute provides a potential tool that could be considered as part of the governance of foundation models?

**F3.** Are there other approaches to governing foundation models that would be more effective?

**AI sandboxes and testbeds**

**S1.** Which of the sandbox models described in [section 3.3.4](https://www.gov.uk/government/publications/ai-regulation-a-pro-innovation-approach/white-paper#section334)[[6]](#footnote-6) would be most likely to support innovation?

*Our experience is that the single sector model we are piloting in our Regulators Pioneer funded sandbox for the nuclear sector is successful. The model is intended to operate in the nuclear sector with ONR and the Environment Agency being the principal regulators. Our approach has been informed by other safety regulators who face similar challenges (e.g. CAA, MHRA, HSE, DfT) and the output will be shared to the UK Health and Safety Regulators Forum to ensure consistency and sharing of best practice.*

**S2.** What could government do to maximise the benefit of sandboxes to AI innovators

*The government funding, evaluation, and reporting of sandbox activity under the regulators pioneer fund has been successful in this regard.*

**S3.** What could government do to facilitate participation in an AI regulatory sandbox?

**S4.** Which industry sectors or classes of product would most benefit from an AI sandbox?

*The nuclear sector is currently benefiting from sandboxing (see question 19). ONR have taken the learnings from its own regulatory sandbox and is developing the concept of an international regulatory sandbox for the nuclear sector with international regulators and international agencies.*

1. <https://www.gov.uk/government/publications/ai-regulation-a-pro-innovation-approach/white-paper> [↑](#footnote-ref-1)
2. <https://www.onr.org.uk/documents/2020/onr-innovation-report-2020.pdf> [↑](#footnote-ref-2)
3. <https://news.onr.org.uk/2022/11/onr-successful-in-regulators-pioneer-fund-application/> [↑](#footnote-ref-3)
4. <https://www.gov.uk/government/publications/ai-regulation-a-pro-innovation-approach/white-paper#section331> [↑](#footnote-ref-4)
5. <https://www.onr.org.uk/regulating-innovation.htm> [↑](#footnote-ref-5)
6. <https://www.gov.uk/government/publications/ai-regulation-a-pro-innovation-approach/white-paper#section334> [↑](#footnote-ref-6)