AI Reg Lab: High-level findings for licensees and stakeholders

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AI Reg Lab July 2026

The AI Reg Lab is a practical exercise that provides energy sector applicants with:

- an opportunity to stress test their hypothetical or real AI uses against our current AI guidance and broader energy regulatory framework
- the chance to explore the potential risks and impacts of their AI use
- a guided discussion of the regulatory implications of the AI use with an independent panel of AI and regulatory experts.

Participation in the AI Reg Lab does not imply regulatory authorisation, nor does it imply Ofgem's endorsement of any AI use. These summary findings have been anonymised for external publication and do not include confidential operational, security, or commercially sensitive information; any examples are generalised and are not attributable to specific organisations, sites, systems, or individuals.

Themes and key findings

The AI Reg Lab discussions highlighted six key lessons for organisations considering AI to support investment and capital allocation decisions in critical national infrastructure

1. AI should support decisions, not make them

Participants agreed that AI can help analyse options, identify trade-offs and improve the speed and consistency of decision-making. However, accountability for investment decisions must remain with people, particularly where decisions have significant financial, operational, safety or regulatory consequences.

Use AI to inform decisions, while humans remain accountable for outcomes.

2. Explainability and transparency are essential

Trust in AI-supported decisions depends on understanding how recommendations are produced. Decision-makers need visibility of the underlying data, assumptions and reasoning, together with an auditable record of how outputs were generated and used.

If a recommendation cannot be explained or challenged, it should not be relied upon for major investment decisions.

3. Data quality is critical

The effectiveness of AI is heavily dependent on the quality of the information it uses. Organisations should establish clear data standards, ownership and validation processes before deploying AI in decision-making environments.

AI does not overcome poor data qualities; it can amplify its impact.

4. Build AI into existing governance and decision frameworks

The most effective approach is likely to be one where AI complements established engineering, risk and investment processes rather than replacing them. Governance should focus not only on model performance, but also on how recommendations are reviewed, challenged, approved and documented.

Strong governance is about effective oversight of decisions, not just oversight of models, as detailed in the Ofgem ethical AI guidance.

5. Apply oversight proportionate to risk

High-impact decisions require greater scrutiny. AI used to inform significant capital investments should be subject to stronger validation, assurance and human oversight than lower-risk AI uses.

6. Trust and organisational capability matter as much as AI technology

Successful AI adoption depends on employees having the skills and confidence to understand, question and appropriately use AI outputs. Trust is built through transparency, reliable data, clear accountability and demonstrable human oversight.

Effective AI adoption requires investment in people, processes and governance, as well as technology.

Overall takeaway

The strongest lesson from the AI Reg Lab discussions was that successful AI adoption in investment and capital allocation is not about creating autonomous decision-makers. Rather, it is about creating a human-led, AI-assisted decision environment that is transparent, explainable, governed and supported by high-quality data.

The themes discussed are being carefully considered as part of regular review of our regulatory approach to AI use in the energy sector, including our AI guidance first published in May 2025 and updated in May 2026.

Safe and responsible AI has significant potential to transform the energy sector and deliver real benefits for consumers. At the same time, it brings risks that must be proactively and carefully managed.

In addition to Ofgem's regulatory oversight role, it is for participants in the AI Reg Lab to ensure their own compliance of their AI uses with any applicable rules, regulations and laws.

These AI Reg Lab findings reflect views expressed by participating parties at the July 2026 Ofgem AI Reg Lab and do not represent the views, policies or regulatory positions of Ofgem.

These summary findings do not constitute or imply compliance advice or authorisation, nor do they constitute endorsement of any specific AI systems, technologies or use cases (hypothetical or actual). All AI uses have been anonymised to preserve confidentiality and avoid attribution to any individual or organisation.

Submissions to our AI Reg Labs are accepted on a rolling basis.

To be considered for participation in the next AI Reg Lab, we invite licensees, with their innovation partners, if relevant, to submit their AI uses, hypothetical or real: Ofgem AI Reg Lab call for submissions | Ofgem