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RECCo response to: Vision for an AI-enabled clean energy system - call for evidence

We welcome the opportunity to respond to the Government's call for evidence on the vision for an AI-enabled clean energy system. RECCo supports the ambition to ensure that artificial intelligence (AI) is used responsibly to support a cleaner, more affordable, efficient and secure energy system.

RECCo is the Code Manager for the Retail Energy Code (REC), a role which is expected to become an Ofgem-licensed role before the end of 2026. The REC governs key arrangements for gas and electricity consumers, including switching, registration, metering information, data enquiry services and performance assurance. Ofgem has also appointed RECCo as the delivery body for the Consumer Consent Service (CCS), which is being developed for governance through the REC and will enable consumers to grant, manage and withdraw permissions for access to their energy data.

The CCS forms part of DESNZ's and Ofgem's Energy Digitalisation Framework, as well as the Energy Smart Data Legislative Framework that DESNZ is currently developing using its powers under the Data (Use and Access) Act 2025 (DUAA).[1] We have also been appointed by Ofgem as the coordinator for the Consumer Data Domain under the Energy Digitalisation Framework, and by DESNZ to deliver Tariff Interoperability under the Smart Secure Electricity Systems (SSES) Programme.[2] All of these roles will support the principles set out in this Call for Evidence by ensuring that the consumer data which underpins the current and future energy retail market is discoverable, accessible and interoperable (including for AI use), and that it is used responsibly and securely to deliver system and consumer outcomes – with appropriate consumer consent for data sharing obtained where necessary.

In addition to our current roles in the retail market, Ofgem has also confirmed its intention to appoint RECCo as the future licensed Code Manager for the Electricity Commercial Code (ECC). The ECC will consolidate the two existing industry codes that cover commercial arrangements for access to, and use of, the electricity transmission and distribution systems.[3] This gives us an opportunity to take an end-to-end view of how upstream grid-balancing actions can result in, or rely on, downstream actions in the energy retail market.

Our detailed answers are set out in the appendix. We have not answered every question but sought to comment where we believe we can add value. We would highlight the following points:

- **AI could fundamentally change how consumers engage with the energy market, and the vision should give greater attention to retail interactions and delegated consumer decisions:** While the call for evidence focuses largely on forecasting, networks and system operation we also welcome the vision's recognition of consumer participation and demand-side flexibility. Building on this, we recommend greater consideration of how AI agents acting on consumers' behalf could manage smart

1 www.gov.uk/government/consultations/energy-smart-data-legislative-framework
2 RECCo website: https://retailenergycode.co.uk/our-programmes/tariff-interoperability-project/
3 The Connection and Use of System Code (CUSC) and the Distribution Connection and Use of System Agreement (DCUSA) respectively.

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assets, compare and switch tariffs, and access flexibility services, including the implications for consumer choice, consent and accountability.

- **Consumer protections should be incorporated from the start:** Any automated AI-enabled energy system should be designed with fairness, trust and consumer protection in mind. Where this involves use of data categories that are included in the DESNZ's proposed Energy Smart Data Legislative Framework, established under the DUAA, then the appropriate consumer consent and redress arrangements established under that framework should be utilised. RECCo suggests that, in addition to the three principles set out in this Call for Evidence, which include energy affordability, another principle should be adopted supporting consumers in vulnerable circumstances.

- **Co-ordination and alignment across Government, regulators and sector governance and delivery bodies is needed to avoid fragmentation and duplication:** Several energy data and digitalisation initiatives are already helping to provide the foundations for an AI-enabled Clean Energy System. These include the establishment of data domains and coordinators, Data Sharing Infrastructure and the Consumer Consent Service under the Energy Digitalisation Framework, DESNZ's associated proposals for an Energy Smart Data Legislative Framework, DESNZ's SSES Programme, Ofgem's guidance on Data Best Practice[4] and Ethical AI Usage[5], and Ofgem's AI lab and sandbox. DESNZ and Ofgem are also separately progressing work on reviewing cyber regulation arrangements in downstream gas and electricity.[6] More widely, AI management standards and frameworks are being established by the International Organisation for Standardisation (ISO) and by the AI Assurance Stakeholder Consortium chaired by BCS, the Chartered Institute for IT.

  We note that responsibility for overall AI strategy resides with the Cabinet Office, and that the Minister of State for Artificial Intelligence is appointed jointly by the Cabinet Office and the Department for Business, Innovation, Science and Trade (BIST). RECCo considers that, where AI use cases, benefits and risks span sectors, these should be considered under a coordinated cross-economy framework that involves cooperation by all relevant government departments and sector regulators. However, we believe that delivery of AI governance should be federated in a way that builds on established sector governance arrangements, delivery bodies and initiatives rather than seeking to introduce new, separate AI-specific structures. We recently expanded on these points in our responses to Ofgem's Call for Input on AI Assurance in the Energy Sector[7], and BIST's Smart Data Multi-Sector Call for Evidence[8].

We would be happy to discuss any of the points raised in this response. RECCo would welcome early engagement with DESNZ as the AI for Clean Energy Strategy develops, particularly on consumer data, consent, switching and the digitalisation of Industry Codes.

Yours sincerely,

Jon Dixon
Director, Strategy and Development

4 www.ofgem.gov.uk/guidance/data-best-practice-guidance. Ofgem has recently consulted on extending this guidance to cover Code Managers: www.ofgem.gov.uk/consultation/code-manager-standard-licence-changes-data-best-practice
5 www.ofgem.gov.uk/energy-regulation/technology-and-innovation/artificial-intelligence
6 www.gov.uk/government/consultations/whole-energy-cyber-resilience-requirements-reshaping-cyber-regulation-in-downstream-gas-and-electricity
7 RECCo website: Our response to: AI assurance in the energy sector - The Retail Energy Code Company
8 RECCo website: Our response to: Smart data multi-sector call for evidence - The Retail Energy Code Company This Call for Evidence considered how Smart Data governance should align with developments in areas such as artificial intelligence, digital verification services and data protection, including where greater cross-sector and internal join-up could support trusted, secure and interoperable data sharing

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Appendix: RECCo response to call for evidence questions

Q1: Where and how can AI add the most value in the energy system?
RECCo is not best placed to assess the relative value of AI across the whole energy system. From a retail market perspective, we are interested in AI's value in end-use efficiency and demand management, which is one of the four application areas the call for evidence identifies. While the call for evidence largely focuses on forecasting, networks and system operation, it recognises the transition towards a more decentralised, dynamic and flexible energy system, with greater consumer participation. We welcome this and consider that the vision could further develop the implications for retail market processes and services, particularly where consumers delegate decisions to AI agents. Downstream, AI can help coordinate demand-side flexibility and optimise household consumption, so that consumers' low-carbon technologies (LCTs), such as electric vehicle (EV) chargers, heat pumps and batteries, are used more efficiently. AI could help lower system costs by making it easier for consumers to move energy usage to off-peak times, reducing the need for network upgrades and additional generation capacity. For example, an AI-enabled flexibility service could shift consumer demand by charging an EV overnight. Similarly, AI can help consumers earn revenue from their LCTs. For example, a flexibility service provider may use AI to decide when to discharge a household battery on the consumer's behalf, responding to price signals and grid needs. By recognising the value of downstream AI, an AI-enabled clean energy system would make better use of all of its low-carbon assets, with the resulting savings passed through to consumers. AI may also play a role in improving consumer tariff selection and switching, ensuring that consumers are on the best tariff for their assets, routines and household needs. As well as giving consumers more choice, a more appropriate tariff can help them to make better use of their low-carbon assets. AI could also play a role in enabling innovation and supporting new business models (such as Energy-as-a-service). RECCo's work on tariff interoperability should help support AI's role in tariff selection and switching. In time, many consumers may use AI agents to interact with the energy market. Rather than visiting a supplier's website or using an app, a consumer may instruct their AI agent to find a cheaper tariff, or to keep their home warm at the lowest cost, and then leave the agent to carry out the necessary steps across multiple providers. Retail market processes, consumer-facing services and data access arrangements will need to be designed so that authorised agents can use them securely, and consumer protection and consent arrangements will need to remain effective where the consumer is not directly involved in each decision. RECCo considers that these changes should be anticipated now, rather than addressed once agent-led interactions are already widespread. The downstream benefits of AI are dependent on consumers being willing to share their data and to allow AI to act on their behalf. Consumer-facing AI will rely on access to household data, such as half-hourly smart meter data. However, consumption data may also reveal patterns of occupancy or behaviour. If personal data is used by an AI-enabled energy system, where it is appropriate to do so, consent should be obtained. Where an AI agent acts on a consumer's behalf, it should be clear who is accountable for its actions, what the consumer has consented to, and how the consumer can review, override or withdraw that authority. RECCo is developing the Consumer Consent Service (CCS), which will help consumers to understand and control how their data is used, giving them a trusted way to grant and withdraw consent. AI systems should also be designed with fairness, trust and consumer protection in mind, so that consumers with less data or fewer connected assets are not disadvantaged. Earning consumer trust should be an important principle when building an AI-enabled Clean Energy system. Without it, adoption of consumer-facing AI is likely to be slower and uneven. An AI-enabled clean energy system should focus on delivering clear outcomes for consumers, including vulnerable groups. Further to the three principles set out in this

Call for Evidence, RECCo suggests another principle should be adopted supporting consumers in vulnerable circumstances. We believe this would help ensure these consumers are not left behind in the energy system transformation and protect against the risks that AI could create for consumer outcomes. It would also recognise the potential use of AI in helping identify vulnerable consumers, which is already being trialled[9].

Adopting an end-to-end approach, with coordination across the energy system, will be key to supporting an AI-enabled energy system and consumer-led flexibility. RECCo welcomes collaboration and alignment across Government, regulators and industry to avoid fragmentation and duplication. As mentioned in the cover letter, there are several energy data and digitalisation initiatives that are already underway that can help provide the foundations for an AI-enabled Clean Energy System, such as the establishment of data domains and coordinators, Data Sharing Infrastructure and the Consumer Consent Service under the Energy Digitalisation Framework and DESNZ's associated proposals for an Energy Smart Data Legislative Framework. We note that responsibility for overall AI strategy resides with the Cabinet Office, and that the Minister of State for Artificial Intelligence is appointed jointly by the Cabinet Office and the Department for Business, Innovation, Science and Trade (BIST). RECCo considers that, where AI use cases, benefits and risks span sectors, these should be considered under a coordinated cross-economy framework that involves cooperation by all relevant government departments and sector regulators. However, we believe that delivery of AI governance should be federated in a way that builds on established sector governance arrangements, delivery bodies and initiatives rather than seeking to introduce new, separate AI-specific structures. To ensure co-ordination and alignment, we are also keen to understand how the National Data Library, mentioned in the call for evidence, interacts with the Energy Digitalisation Framework and the Smart Data Legislative Framework.

AI encompasses different capabilities and functionalities that may bring different benefits and risks. Organisations in the energy industry and other sectors are already using Large Language Models, agentic AI and machine learning. RECCo believes that any AI governance framework should therefore consider differing AI capabilities and functionality when assessing risks and benefits. The framework should also be flexible and able to adapt to future AI developments. We suggest that it may also be necessary to consider the difference between using bespoke in-house AI systems and prebuilt, pre-trained and ready-to-use AI models originating from outside the UK.

Q2: What are the UK's main strengths in applying AI in the energy system, and where may the UK have a competitive advantage over other countries?

RECCo is not best placed to identify the UK's main strengths in applying AI in the energy system or to comment on where the UK may have a competitive advantage over other countries.

Q3: Do the six challenges set out above reflect the main barriers to safe and effective deployment? Which of these is most urgent to address?

RECCo is not best placed to assess which of the six challenges is most urgent to the Energy system as a whole; however, we can comment on some of the challenges that are relevant to the Retail Energy Market.

Access to data: The effectiveness of AI is likely to be closely linked to the availability of high-volume, high-quality, interoperable data. Some of the consumer-related data in the Energy market is fragmented, held by different parties or subject to consent requirements. As the delivery body for the Consumer Consent Service (CCS) and through our work on tariff interoperability, as well as RECCo's emerging Consumer Data

[9] https://digital.utilityweek.co.uk/ck-delta/explains-report-ai-spotlight-on-vulnerability/health-concerns-living-costs-and-technological-readiness

Domain coordinator role, RECCo is directly involved in making consumer data available in a trusted and consistent way.

Regulation and governance: AI will increasingly interact with code-governed processes and shared retail market services; therefore, clear expectations on accountability and assurance are important to RECCo and REC Parties.

Risk, security and trust: Automated tools and AI agents will increasingly interact with REC services, and issues such as cyber security breaches or opaque decision-making could affect the shared services that market participants rely on. We would also suggest broadening the definition of this challenge to include consumer-specific concerns. Protections need to be in place to ensure consumers are treated fairly, that vulnerable consumers are safeguarded, and that where personal data is being used, consent has been obtained if appropriate. There needs to be clear and proportionate guidance to promote the safe, responsible and effective adoption of AI. Cross-sector consumer risks should also be factored into the guidance.

Q4: For the most significant barriers identified, what specific constraints are limiting deployment (e.g. regulatory uncertainty, lack of data access, skills, integration challenges)?

Taking the barriers identified in Question 3, we have considered what constraints are limiting deployment of AI in the Retail Energy Market.

Access to data: Consumer data is held across suppliers, meter operators, network operators and third parties. The Consumer Consent Service is being developed to provide a single, consistent mechanism for consumers to grant, manage and withdraw consent across these parties. It will be important that the Consumer Consent Service, the Data Sharing Infrastructure, the Energy Digitalisation Framework and the proposed Energy Smart Data Scheme are designed to work together, rather than creating competing routes to the same data. The Architecture Reference Framework is working on establishing a common set of 'system-of-system' principles on interoperability, primarily for the Consumer Consent Service and the Data Sharing Infrastructure. Ofgem is consulting on this shortly.

Regulation and governance: A key constraint is the number of bodies and initiatives shaping how AI and data are governed in energy and cross-sector, which risks overlapping or inconsistent requirements and creates uncertainty for organisations seeking to deploy AI. As set out in our response to Question 1, RECCo considers that close coordination and alignment across Government, regulators, industry and cross-sector is essential, rather than creating new AI-specific structures. This would give organisations a clearer, more consistent set of expectations and reduce the risk of fragmentation and duplication. We suggest that any adoption of AI would need to respect regulatory boundaries and build on established sector governance arrangements, delivery bodies and initiatives. This is especially important when considering cross-sector AI collaboration.

Risk, security and trust: As set out in our response to Question 3, RECCo considers that this challenge should include consumer-specific concerns. RECCo suggests that consumer needs and downstream use cases should be factored into the design of an AI-enabled system from the outset, with consumer protection and fairness at its heart, including safeguarding vulnerable consumers. Consumer engagement with AI-supported flexibility propositions will likely be influenced by their trust in the system and its ability to provide good outcomes across all consumer groups.

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Q5: Where are current market, procurement or regulatory incentives failing to support AI deployment? In particular, where and why are promising applications struggling to move from pilot to full-scale deployment?

RECCo is not best placed to comment on current market, procurement or regulatory incentives for AI deployment.

Q6: Which areas of the energy system should be priorities for government action to unlock near-term AI deployment?

RECCo is not best positioned to comment on which areas of the energy system should be priorities for government action to unlock near-term AI deployment. However, from a consumer and retail market perspective, we would draw your attention to the following considerations:

- An AI-Energy System should be designed holistically, considering how value can be unlocked across the end-to-end process.
- Effective AI deployment across the energy system and cross-sector requires coordination, standards and regulatory clarity. It should build on arrangements already in place rather than creating parallel structures. Delivering the Energy Digitalisation Framework, including interoperability between DSI and CCS frameworks, will be key. If a highly integrated system supported by AI is introduced, safeguards and controls should be put in place to protect against bias and ensure that there is not a single point of failure.
- Consumer protections should be designed in from the beginning, not as an afterthought. Consumers should get fair value from AI-enabled services and should not be disadvantaged if they have less data or fewer connected assets. Consumers should also be able to compare and switch between flexible service providers and load controllers that use AI in a way that is easy, transparent and delivers tangible consumer benefits. The new load control licensing regime is an important step and should be considered alongside retail market arrangements.

Q7: Can current market structures support coordination at machine speed, or do existing design features (for example, dispatch intervals or product definitions) begin to constrain system performance? What changes could shape a market that supports this?

Other respondents will be better placed to comment on dispatch intervals and product definitions. However, as

Code Manager for the REC, RECCo notes three implications for retail market arrangements:

- First, retail processes such as switching and registration were designed for consumer-initiated decisions, not continuous optimisation. If AI agents begin to move consumers between tariffs or suppliers far more frequently, central systems will need controls to manage volume and prevent erroneous or unintended switches.
- Second, consumers will increasingly choose between AI optimisers and flexibility service providers, as well as between suppliers. Switching between these services is likely to sit outside existing retail switching arrangements. RECCo would welcome consideration of how consumers can compare and move between optimisers simply, so that competition remains effective.
- Third, AI agents responding to the same signals may ‘herd’ or exploit gaps in market rules without anyone intending it. Market monitoring will need to keep pace, and machine-readable rules would help to reduce ambiguity that automated systems might otherwise exploit.

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Q8: What does effective assurance look like at system-level, rather than for individual AI applications? How can accountability be maintained where outcomes reflect cumulative system dynamics rather than discrete decisions?

RECCo is not best placed to comment on what effective assurance looks like at a system-level across the energy sector. However, consistent with our recent response to Ofgem's call for input on AI assurance in August, RECCo suggests the following points:

AI assurance should principally be addressed through a coordinated cross-sector framework. The principal risks and assurance techniques are not unique to energy, while many use cases combine energy data with other sectors and rely on internationally supplied AI models. Separate sector frameworks could create duplication, inconsistency and complexity that could risk constraining innovation and growth.

Responsibility for outcomes must remain with the organisation using AI. AI does not excuse a breach of regulatory obligations. Ofgem should retain its outcomes-based approach, allowing organisations flexibility in how they assure AI while holding them accountable for consumer, market and operational outcomes. Assurance should be proportionate to the risk and impact of the use case.

Q9: What are the most material risks arising from more autonomous and integrated AI deployment, how can these best be managed, and how do we stage autonomy safely?

RECCo does not have a sufficient basis on which to assess the most material risks to the energy sector more broadly. Our comments are therefore limited to identifying relevant risks and practical challenges related to consumers and the retail energy market.

Fairness and exclusion: As the call for evidence notes, optimisation may favour areas with high smart meter penetration or connected assets. Training data may also not represent digitally excluded consumers. Assurance should consider outcomes across consumer groups, including consumers in vulnerable situations.

Consent drift and scope of delegated authority: AI acting on a consumer's behalf may take actions the consumer did not anticipate or authorise; permission to access data should not of itself be treated as authority to switch tariffs, enter contracts or control assets. The scope and limits of delegated authority should be explicit and easy for consumers to review, amend or withdraw.

Cyber risk to shared services: AI agents can increasingly execute actions, not just read data, and AI is enhancing the capability of attackers. Central retail market systems are shared by all participants, so a compromise or malfunction could affect the whole market.

Q10: Which of the issues highlighted in the transformative future are most relevant to your organisation and what steps are you already taking to realise the opportunities?

Of the issues highlighted in the transformative future, those most relevant to RECCo are control and accountability, market design and coordination, and institutional roles and boundaries. Through the REC, RECCo governs access to shared retail market services, including switching. As automated tools and AI agents increasingly act on consumers' behalf, these services and the wider arrangements we govern or deliver, including tariff interoperability and consumer consent, must remain robust and support clear accountability.

Our principal concerns are accountability, liability and fairness. REC services connect many market participants, so a failure in one party's AI-enabled systems could affect others and make responsibility

difficult to establish. AI-enabled optimisation may also disadvantage consumers who choose not to share their data or have fewer connected assets. Fairness and the needs of consumers in vulnerable circumstances should therefore be considered from the outset.

As AI agents increasingly act for consumers, they will interact with retail processes governed through the REC, and code change processes will need to keep pace with how quickly services evolve. RECCo also recognises that its own ways of working will need to adapt. AI presents an opportunity to make regulatory and code change faster and more accessible, but it must be enabled safely and transparently. Participants should know when AI has been used to analyse their input. Decisions should remain subject to appropriate human oversight and accountability. The rules and data that agents rely on should be accurate, machine-readable and authoritative. Consequently, RECCo is taking several steps to support the adoption of AI:

- Building the Consumer Consent Service as a central, trusted mechanism for consumers to grant, manage and withdraw consent.
- Developing Tariff Interoperability arrangements, which will govern the standardising of data models and access so that apps, devices and providers can compare, quote and switch customers across products and providers, setting the foundations for AI-enabled consumer services.
- Preparing for our role as coordinator of the Consumer Data Domain, where we will be responsible for setting data standards, ensuring interoperability and simplifying data access (including for AI use).
- Using AI in the REC Portal to produce public analytics and to help stakeholders find REC information through our AI assistant, ERIN.
- Making the REC machine-readable through the digital REC and following Ofgem's Data Best Practice Guidance on metadata.

RECCo would welcome early engagement with DESNZ as the AI for Clean Energy Strategy develops, particularly on consumer data, consent, switching and the digitalisation of codes.