Additional written submission from Greg McLardie, 17 December 2025

To: The Economy and Fair Work Committee   17th December 2025

Subject: <u>Digital Asset (Scotland) Bill Wednesday December 10th follow-up</u>

Executive summary

The Opportunity: This Bill positions Scotland to lead globally applying digital asset legislation to the real economy, encouraging an innovative ecosystem starting with agriculture. Our six-year commercial experience and collaboration with seven international startups coming together for the first time in Scotland, demonstrate readiness to deliver £1.2 billion additional annual income to Scottish agriculture while achieving economy-wide net zero. Scotland's potential is to lead implementation of the Tech Trinity – Digital Trust technology (including blockchain), Web3 and AI – bringing the capability to solve UNFAO estimated US$12.5 trillion global food system challenges – obesity crisis, biodiversity loss, record food poisonings, leading cause of emissions and the farmer demographic timebomb.

The Ask:
1) Support the Bill's technology-neutral approach as drafted
2) Consider targeted guidance distinguishing food-producing farms from speculative land holdings in carbon credit provisions
3) Recommend cross-government coordination given breadth of economic impact

The Evidence:
- £1.17bn annual impact: £561m (carbon credits) + £612m (fairer supply chains)
- 51,000 Scottish farms benefiting at zero cost to government
- 82+ high-skilled Scottish jobs from Two Hands alone; similar growth across six partner startups
- April 2026 Highland pilot providing validation before scaling
- Proven commercial operation (Forbes-featured) unlike US$100bn in failed Web3 ventures

The Urgency: Scotland has first-mover advantage. Prescriptive legislation likely forfeits this opportunity.

This follows up my attendance at the Committee's Wednesday December 10th meeting.

In his October 28th closing remarks to the Committee, Lord Hodge stated great Scotsman Lord Mansfield, who was the Lord Chief Justice of the King's Bench from 1756, looked at what businesspeople were doing in the market and created legal rules to reflect their expectations.

The following provides the Committee with our business experience in Digital Trust and blockchain, and the preparation and plans for Web3 and AI technologies.

1) Mr Richard Lochead and the 2nd Enlightenment

In his address opening the Scottish Centre of Excellence in Digital Trust technology, Richard Lochead stated Scotland was a global leader in the Enlightenment period. Digital trust technology has the potential for Scotland to lead a Second Enlightenment.

We concur with Mr Lochead, based on six years of commercial blockchain experience and leading a collaboration of seven startups on a mission to powerfully impact farmers, fishermen, food systems and nature sustainability.

Bill Impact: We find this Bill to be elegant. It would have been easy to make the Bill more complex. It provides business with clarity and flexibility we find invigorating for our intended global impact.

Government Impact: This Bill goes well beyond the financial sector to have powerful impact on farmers, fishermen and the entire food system, bringing additional income to farmers, attracting young men & women to agriculture, revitalising regional communities and addressing nature sustainability.

Exciting is it would appear no other international jurisdiction is pursuing the direction of this Bill. They are all focused on financial services regulation or a blockchain-prescribed path.

2) Addressing Professor Jill Robbie concerns

I stand shoulder to shoulder with the Prof Jill Robbie on the market dysfunction resulting from the Woodland and Peatland code. The dysfunction stems from large estates and investment funds holding carbon credits primarily for financial returns, resulting in land price inflation, community exclusion, food production displacement the anxiety from landowners moving to very short tenancy terms. The risk is this Bill, as written, makes these credits property, presenting a financial risk to the Scottish government and taxpayers when future changes are made to rectify the code's dysfunctional impact.

Bill Impact: The Committee may wish to consider whether additional guidance is needed to distinguish between carbon credits arising from food-producing farms versus those from, or converting to, nonproductive land held primarily for financial speculation. This distinction would:

- Protect working farmers who are food security assets
- Prevent land market distortion affecting tenants and communities
- Preserve the Bill's intent while addressing legitimate concerns raised by

Professor Robbie Such guidance could distinguish between:

a. **Productive farming digital assets** arising from working farms engaged in food production, where carbon credits emerge from sustainable farming practices that simultaneously benefit food security, local communities, and environmental sustainability; and

b. **Non-productive institutional holdings** where investment funds acquire land primarily for carbon credit speculation without food production, thereby creating risks to food security, community stability, and land market functionality.

The principle: digital assets supporting productive agriculture receive full legislative support; institutional carbon speculation receives appropriate regulatory oversight to prevent market dysfunction.

Government Impact: Scaling the ARCZero approach across Scotland has potential to achieve economywide net zero through agriculture alone:

a. **ARCZero Background:** In 2014 the EU commissioned seven Northern Ireland farms (five carrying livestock) to forensically analyse carbon inventory and greenhouse gas emissions analysis. With scientifically measured baselines, farmers implemented targeted actions to maximise carbon sequestration and minimise emissions. Eleven years later, all seven farms are on track to operate beyond net zero by 2030. Scaled across Scotland and EU brings entire economies to net zero.

b. **Scottish Implementation:** Digital Trust technology enables scaling this approach across all 51,000 Scottish farms at no cost to government and no investment required from farmers. The rivalrous nature of blockchain authentication of source scientific data eliminates greenwashing concerns and restores carbon offset buyer confidence.

c. **Economic Impact:** £561 million annual additional income to Scottish agriculture from authenticated carbon credits, creating pathway to economy-wide net zero while addressing squeezed farm budgets.

3) Bill should not refer to blockchain

- as in Liechtenstein and New Jersey. As one of the few companies globally to have commercialised blockchain technology outside the finance industry, our insight is operational implementation is much more difficult than the coding implementation. The idea is to attract startups seeking to solve significant real-world problems using blockchain as a tool, not startups focused on just the tech itself. There is a huge

graveyard of blockchain companies who built tech solutions then sought problems to solve.

Bill Impact: Bill stands as is with no reference to blockchain.

Government Impact: None

4) Immutability should not be defined further

Requiring immutability to be defined as only associated with a decentralised and permissionless blockchain application is to bring great risk to The Innocents – family-owned farms (comprising 99% of farms), fishing operations and supply chain operators (butchers, processors, wholesalers).   We must protect The Innocents and give them confidence as we transition to Digital Trust and AI technologies. Like using a mobile phone without needing to understand how it works, we need The Innocents focused on sustaining society and not worry about being "gamed".

The gaming industry was an early adopter of permissionless, decentralised DLT applications. Their experience is there are always the few seeking to game the system for disproportionate profit returns.

We must protect The Innocents from being gamed by first replicating a permissionless, decentralised application within a centralised DLT application. When confident, we transition to a decentralised, permissionless Web3 application.

Bill Impact: No changes to the Bill. However, we recommend future regulatory guidance ensuring integrity of immutability in centralised Digital Trust technology applications through requiring:
   a. Every change of custody be authenticated on the chain. One gap renders end-reports unreliable
   b. Proof of stake consensus cannot be controlled by a central authority

Government Impact: This approach creates self-regulating, self-policing ecosystems where transparency and immutability drive accountability without requiring extensive government oversight

5) Digital Trust Technology market impact examples for Committee understanding

Three examples from Two Hands' six years blockchain commercialisation follows:
   a. **Delivering truth, authenticity and supply chain accountability** – A shipment of South Australian seafood arrived in Shanghai with boxes broken and box contents at 16-18□C when specifications required 6-8□C. In n existing supply chains, a lack of accountability would likely result in no supply chain participant taking responsibility for out-of-specification product. However, in this Shanghai incident,

we scanned the box QR codes and in seconds discovered the boxes sat on the Hong Kong tarmac for 76 minutes where the box trauma occurred.

The HK service provider was shocked and embarrassed to discover everyone in the supply chain, from fishermen to Waldorf Astoria chefs and diners, could see the HK service provider operated out of specification. Because of immutability, their reputation would be negatively impacted forever. From that day forward, all supply chain participants operated within specification.

Just imagine the positive impact on food safety, supply chain efficiencies, banking risk and insurance risk.

b. **Delivering end-buyer accountability** – In six years of operation and thousands of transactions in the hospitality sector, known to be at the risker end of debt collection, we had £300 <u>total</u> bad debt. If end-buyers develop a record of making claims or late payment, it negatively impacts their reputation forever. As we expand, Scottish producers will immediately know if they can trust London, Paris and Shanghai buyers based on their immutable, verified performance.

c. **Farmers now seen, their regions become famous** – Chefs and consumers can scan the produce QR code to watch videos of the farmer/fisherman's sacred story, the beauty of the producing region, sustainability and product information and a blockchain dashboard authenticating provenance and sustainability metrics. Now, better producers receive premium pricing. In today's supply chains, farm product is aggregated so farmers average pricing.

The net result is the implicit trust we had in the days when humans were largely confined to local villages, where a bad actor had nowhere to hide, bringing that level of implicit trust to the global village. Trust in transactions and relationships is delivered at scale.

Bill Impact: The Bill's framework enables these outcomes by providing legal certainty for digital assets while maintaining flexibility for innovative business models. The rivalrous and immutable nature of blockchain-authenticated data creates permanent reputation records incentivising integrity throughout supply chains. However, regulations will need to ensure blockchain and immutability is applied with integrity. The application must be truly end-to-end (from producer to end-buyer) and every change of custody must be authenticated on the chain. For immutability, regulation should require proof of stake consensus can't be controlled by a central authority.

Government Impact: This ecosystem becomes self-regulating and self-policing through transparency, auditability and immutability, reducing regulatory burden while improving outcomes.

6) Web3's promise and jurisdictional impact

The transformative potential of Digital Trust technology is Web3 application across an entire industry ecosystem. Truth and authenticity across every transaction and relationship.

Bill Impact: None. The Bill as written encourages development of Web3 applications by providing legal certainty without prescriptive constraints.

Government impact: The Scottish economic impact has potential to be significant, validating Richard Lochhead's '2nd Enlightenment' vision.

Forbes Magazine published a 3-page feature on Two Hands in October 2019 as we were one of the very few commercialised blockchain applications globally, outside the finance industry. Six years later we remain one of the few.

Our insight is blockchain implementation is much more difficult operationally than technically. Yet global investment has focused on the tech.

Once we imbed the blockchain-reengineered food supply chain, we need to develop the governance, rules and regulations to ensure trust and authenticity of all transactions, protect The Innocents, eliminate bad actors and provide remediation for any wrongs to Web3 participants. No one company can do this.

Scotland's high level of collaboration between Government, academia, industries bodies and business is a global competitive advantage, making Scotland best placed to build this Web3 application.

Our intent is for this high-level Scottish collaboration to build a self-governed, Web3, agriculture and food system crossing nations, oceans and continents. Jurisdictional issues will have less relevance.

7) Proving the Concept: Scottish Highlands Pilot Programme

Two Hands and our collaborative partners have the philosophy to crawl before we walk before we run. Starting April 2026, we're piloting Digital Trust technology in the Scottish Highlands with four estates and several restaurants, delivering measurable outcomes within 7 months:

- Each participating farm increases profit by 10%
- World-first blockchain MRV of each farm's carbon inventory, GHGe, and biodiversity
- Validated ESG reporting delivering truth to end-buyers and consumers
- Confirmation that blockchain technology operates with integrity

This pilot, including farmer digital wallets, provides the Committee and Government with real-world Scottish data before broader rollout, allowing evidence-based policy decisions

rather than academic projections. We intend to maintain this region as a pilot as we launch future Web3 and AI initiatives. From experience, pilot implementation and results inform us of long-term impacts also informing government.

All seven startups are asset-light, enabling rapid expansion. Netflix and Spotify acquired 20 million users within 2 years; ChatGPT achieved this in 2 months. We're solving a US$12.5 trillion global problem with no existing solution. The Tech Trinity can be fully implemented in Scotland within 4 years, with continuous pilots as we expand geographically.

Bill Impact: None. The pilot proceeds regardless of the Bill, but the Bill's legal clarity accelerates investment and scaling.

Government Impact: Provides 12-month Scottish evidence base for policy decisions, demonstrating prudent approach to technology adoption in critical food production sector.

8) Humanising AI and the Great Transformation

There's a symbiotic relationship between Digital Trust tech and AI. DTT delivers trust, authenticity and sovereignty. AI has a voracious appetite for data but hallucinates, can deep fake and act as an agent interacting in the real economy. One counter-balances the other.

As we apply DTT from soil health through land and sea produce, the entire supply chain to end-buyers' orders, delivery and payment, we are formatting and digitising very significant data. This enables rapid development in Scotland of a Large Language Model domain specific to agriculture and food systems. As a result, we humanise AI technology as, in this ecosystem, all data and transactions can authentically be traced back to a human being.

AI and Digital Trust technology's symbiotic relationship has potential for three profound impacts:

1) **Coordination at scale offsetting multinational economies of scale**, bringing democratisation of supply chain power and profit distribution. For example, Farmers and crofters currently send very small quantities of livestock to abattoirs for processing. Abattoirs try to coordinate this activity to enable cost-effective production runs, but it is more of a community service rather than a profitable activity. Thus, 25% of the UK's abattoirs have closed since 2018. Instead, AI will coordinate farm and crofter activity so abattoirs are delivered economic quantities. In turn, economic quantities are brought to butchers and logistics.

2) **Predictive analysis providing high confidence in future demand** enabling a matching of chef, grocery and farmer decision making. Currently, grocery buyers

and chefs can change their orders for next week whereas farmers make 10-year decisions. Not only will this bring greater certainty to farming and fishing operations, but all supply chain activity can be planned well in advance, delivering significant efficiencies.

3) **Orchestrate total food system data** that is currently siloed, unravelling incredible complexity providing tools to deliver solutions to challenges costing the global economy $12.5 trillion annually, £12.5 bn annually in Scotland. Food system challenges have resulted in the obesity crisis, the leading cause of biodiversity loss, the leading cause of global greenhouse gas emissions, one-third of food being lost and wasted, record UK food poisonings, and the demographic timebomb with the average age of farmers at 60, in Perthshire it's 75.

The Great Transformation potential from the Technology Trinity—Digital Trust, Web3, and AI:

1) **Return young men and women to farming and fishing** through increased and diverse income streams; ability to build brands directly with end-buyers and consumers; nature and carbon stewardship recognised by society and rewarded; implicit trust in the entire food ecosystem; easy access to cutting-edge technology; and predictive demand and direct end-buyer connection enabling long-term buying agreements, secure financial arrangements, and significant efficiencies.

2) **Revitalised regional communities** through the infrastructure (schools, medical, playgrounds) required for the return of young families

3) **Solutions to Global Food System Challenges**, addressing US$12.5 trillion annual costs from today's dysfunctional food systems.

As agriculture and food systems are likely first to implement the Tech Trinity across an entire industry vertical, our example may inform and encourage other industry verticals.

Bill Impact: None

Government Impact: Significant. Scotland's global leadership in the Great Transformation requires a Team Scotland holistic government approach.

It is recommended:

1) The **Scottish Centre of Excellence in Digital Trust** (CoE) be given a government remit to include food and agriculture. Currently, government funding of the CoE requires a focus on financial services.

2) Forming a **Digital Trust Food Advisory Board** (FAB) aligned with the CoE. The FAB comprises: a) CoE CEO

   b) Academia - The CoE comprises three Scottish university which are global DTT leaders

c) <u>Business</u> – The CoE has access to Scottish DTT business leaders through Digital Trust Taskforce
Scotland

d) <u>Industry bodies</u> – one representative from each of UK AgriTech Centre, SRUC, SAOS and NFUS

3) The FAB to meet twice a year with representatives from the companies collaborating to implement the Technology Trinity.

4) Biannually, the FAB and CoE report to Government representatives on the holistic Scottish economy implications resulting from business experience implementing the Tech Trinity.

9) Addressing Potential Concerns

- **Technology Risk:** All seven startups comprising our collaboration, with one exception, have at least 3 years commercial experience. Unlike the US$100 billion invested in Web3 ventures with no realeconomy traction, we have commercialised blockchain applications serving actual customers across three continents.

- **Farmer Adoption:** Highland pilot (April 2026) provides real-world validation before scaling. Our 'crawl, walk, run' philosophy ensures farmers experience benefits before broader rollout.

- **Cost to Government:** Zero. System is commercially self-sustaining through supply chain efficiencies. No subsidies, grants, or government funding required for implementation or operation.

- **Market Dysfunction:** Proposed guidance on Woodland/Peatland carbon credits specifically addresses this concern by distinguishing productive agriculture from speculative holdings.

- **Data Privacy:** Through digital wallets, farmers will now own, control and monetise their data. The system enables farmers to control who accesses their information and on what terms, reversing today's model where big tech extracts value without compensation.

Requested Committee Actions

1. **Support the Bill as Drafted:** Its technology-neutral approach and balance between clarity and flexibility is essential for real-economy innovation. The Bill's use of 'rivalrous' and 'immutability' provides legal certainty while enabling businesses to proceed with confidence.

2. **Consider Guidance on Carbon Credits:** To distinguish food-producing farms from speculative holdings, addressing Professor Robbie's legitimate concerns

without compromising the Bill's core principles. This protects working farmers while preventing market dysfunction.

3. **Recommend Cross-Government Coordination:** The Bill's impact extends beyond Economy and Fair Work to Health, Environment, Rural Affairs and Net Zero portfolios. A Team Scotland holistic approach maximises benefits and prevents unintended consequences.

I sincerely appreciate the opportunity to present to the Economy and Fair Work Committee on the transformative potential of applying digital asset legislation to Scotland's productive economy. The Bill before you represents more than financial sector innovation, it provides the legal foundation for £1.17 billion annual impact to Scottish agriculture, economy-wide net zero achievement, and Scotland's global leadership in the Great Transformation.

The Highland pilot beginning April 2026 will provide the Committee with Scottish evidence demonstrating these possibilities are not theoretical but achievable.

Greg McLardie
CEO and Co-Founder