Community Compute: A CIC-Driven, Proof of Benefit Infrastructure for Social Impact

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Executive Summary

This paper proposes a UK Community Interest Company (CIC) designed to provide affordable AI compute capacity exclusively to other CICs, with a verifiable Proof of Benefit (PoB) model based on the UK's regulated social impact reporting framework. The aim is to maximise community benefit from scarce AI resources, while maintaining transparency, trust, and long-term sustainability.

While an optional cryptocurrency layer could be integrated for fundraising or impact-tracking purposes, this is not a required component, and the model works fully without it. The core structure relies on existing CIC regulation, asset lock provisions, and verifiable social impact metrics.

1. Background & Context

1.1 CICs in the UK

Established in 2005 under the Companies (Audit, Investigations and Community Enterprise) Act 2004, CICs are designed for enterprises operating for community benefit rather than private profit. Regulated by the Office of the Regulator of Community Interest Companies (ORCIC), CICs must meet:

- Community Interest Test
- Asset Lock provisions
- Annual CIC Report (CIC34) obligations

1.2 The Opportunity in AI Compute

CICs increasingly require access to AI and data processing to deliver their missions. Commercial AI compute pricing can be prohibitive for non-profits and social enterprises. By aggregating demand and negotiating wholesale rates or providing pooled infrastructure, a CIC can lower barriers for all other CICs, positioning AI compute as a modern community asset.

2. Analogy: From Community Halls to Community Compute

Historically, many CICs began by receiving community assets (e.g., a council-owned hall) at nominal cost. While the asset had notional value, it came with ongoing costs — tax, maintenance, utilities — and its real benefit depended on keeping it active and productive for the community. The same applies to GPU compute: whether granted as hardware or purchased as a wholesale service, it incurs continuous costs. Idle capacity is wasted potential.

3. Proposed Model

3.1 Asset Structure Options

1. Physical Infrastructure Model — CIC owns GPU hardware in a data centre.
2. Wholesale Compute Allocation Model — CIC negotiates bulk AI compute capacity and service levels from providers.

3.2 Actors & Motivations

CIC Compute Provider — Operates infrastructure, provides AI advisory and secure data services.
Recipient CICs — Consume compute, receive AI use guidance and secure data handling.
Funders/Granters/Impact Investors — Provide capital, receive verifiable PoB.
CIC Regulator — Oversees compliance and public trust.
Compute Suppliers (optional) — Sell capacity at discount for CSR benefits.
Crypto Participants (optional) — Support social causes (non-essential).

4. Proof of Benefit (PoB) Framework

1. Eligibility Verification — Only registered CICs receive compute.
2. Regulatory Baseline — Annual CIC34 reports as coarse PoB measure.
3. AI-Enhanced Analysis — NLP agents extract measurable outputs.
4. Transactional Logging — Each compute job tagged with project purpose.
5. PoB Scoring — Combines eligibility, regulatory data, and usage alignment.

5. Economic Model (Without Crypto)

Funders/granters cover FIAT cost of infrastructure or wholesale compute. CIC users receive compute credits proportional to their needs. No direct payment from CICs required if funding covers all capacity. PoB score serves as funder’s 'return'.

6. Optional Cryptocurrency Layer

Purpose: Could be used to raise capital or represent impact units, but not required. Minted against verified PoB, not speculation. Investors exchange FIAT for tokens as proof of funding impact. Compute providers earn tokens for capacity contributed.

7. Advantages of the Model

- Regulatory Trust
- Operational Flexibility

- Sector-Wide Benefit
- Data Protection Assurance
- Ethical AI Adoption
- Data Standardisation
- Funder Appeal

8. Implementation Roadmap

1. Feasibility Study
2. CIC Incorporation
3. Infrastructure Setup
4. PoB System Prototype
5. Pilot Programme
6. Scaling