

## Part A - General Information

### Organisation

Local Energy Systems

### Organisation Type/Structure

Company (Limited by Shares)

### Theme/Nature of Project

Environment

### Name of Lead Contact

Bethany Holloway

### Email

[beth@localenergysystems.co.uk](mailto:beth@localenergysystems.co.uk)

### How did you find out about the Awards?

Google/Search Engine Search

### Website

<https://www.localenergysystems.co.uk/>

### Social Media Handles (Twitter, Facebook, LinkedIn, Instagram etc):

<https://uk.linkedin.com/company/local-energy-systems>

## Part B - Project Proposal

### Project Mission: A snapshot of the project's intention (50 words max)

Our innovation will harness machine learning to accelerate community energy project development, a sector with the potential to eliminate fuel poverty and catalyse progress towards net-zero. Our goal is to put communities at the heart of the net-zero transition and ensure equitable access to the benefits of renewable energy.

### Situation (250 words)

The net-zero energy transition currently risks leaving the most vulnerable communities behind. With the energy market focused on profit maximisation and international buying-and-selling, UK households are being left in greater levels of fuel poverty and energy insecurity, compounding in already vulnerable and fuel-poor areas (CEE, 2023).

Despite UK government plans to eliminate fuel poverty by 2030, 13% of UK households and 50% of low-income households live in fuel poverty: resulting from high fuel costs and dependency on volatile international markets (DESNZ, 2023).

The scale and impact of fuel poverty is particularly prevalent in the North East, where an estimated 220,000 households are fuel poor (NEA, 2023). This level of socio-economic deprivation directly impacts local communities: ⅓ of County Durham wards are designated as 'left behind areas', one of the highest national concentrations (Local Trust, 2019). These areas are characterised not only by severe deprivation, but by limited community engagement which, in the context of the net-zero transition, places these communities at higher risk of energy insecurity and fuel poverty.

Community energy is uniquely-placed to reform the energy market, engage communities positively with the net-zero transition and create systems change and long-term solutions to fuel poverty (NEA, 2023). Community energy successfully addresses fuel poverty's root causes: saving communities £3.35m on energy bills, creating £22m investment into local spaces and lifting 145,000 households out of fuel poverty in 2021/22 (CEE, 2023). Improving local economic prospects and net-zero engagement is critical for an equitable energy future (Local Trust, 2019).

### Solution (250 words)

Our solution utilises innovative transfer and self-supervised learning models to automate site discovery and assessment for community energy groups. This automation will enable us to reduce customer costs from an upfront £6,000 to a flexible £500/month, representing a 40% reduction in costs (based on 4-6 month average usage) and resolving the complication of high consulting costs. In doing so, we can expand the market to access the 75% that couldn't afford consulting solutions.

For the first time, community groups will be able to access constantly-updating information for multiple sites,

enabling optimised decision-making and resolving the issue of using sub-optimal site locations. Providing a dynamic approach to feasibility that responds to changing conditions will improve on slow-paced, fixed-point-in-time consulting reports and result in more accurate site assessments. Overall, this will boost developer confidence and ensure optimal ROIs. We plan to develop our tool into a user-friendly SaaS offering, which places fully accessible and transparent information into the hands of local communities. To catalyse sector growth and socioeconomic impact, our goal is to double project development annually: totalling 2,300 new projects within 5 years. This would have projected savings of £70m for local households and bring an associated £790m investment into local economies (CEE, 2023; Energy Local, 2022), directly addressing root causes of fuel poverty and shielding communities from energy insecurity in the net-zero transition.

Our route to market will be through customer trials and strong brand promotion. We have already started to validate this market through two early customer trials.

## Part C - Wider Support

**How would the Stephen Lloyd Award network of partners' support be beneficial to your project? (250 words max)**

Our goal is to make accessible the development of community energy projects, creating lower-cost energy for local people and protection from volatile international markets. Intrinsic to this, is understanding the needs of the communities we aim to serve. The expertise and mentoring offered by partners specialising in community work and social reform, such as the Shaftesbury Partnership and Tudor Trust, would be invaluable. Their guidance would assist us in learning and developing a user-friendly solution that prioritises people's needs from the outset, ensuring widespread adoption. Matter and Co's marketing and communications support would help us create a solution that is accessible and speaks the language of our customers. Our project involves developing a novel database for community energy feasibility. Technical IT support with computing and database creation would be instrumental. Similarly, we are keen to connect with Claire Pattie and Bob Thrust, as both legal and financial reporting advice would be particularly helpful as we navigate fundraising and R&D requirements.

Long term, we aim to be recognised as championing the values integral to Ashden, pioneering impactful innovation to accelerate the transition to net-zero. As our project scales from the NE to the whole of the UK, we also hope to develop meaningful relationships with The International Centre for Social Franchising and Social Investment Business.

Our business needs are directly aligned with the mentoring support offered by your network for community relations, technical support and scaling. The opportunity to connect with these partners would allow us to have a greater impact on communities across the UK.

## Part D - Financial Justification

**How do you propose to spend the winning funds of £25,000 (50 words max). Please provide a general idea.**

- £6000-acquiring datasets (HM Land Registry; National Geographic Database; OS Terrain 5)
- £5000-trade shows, community energy events, marketing
- £5000-computational power for intensive machine learning tasks
- £3000-software for feasibility data
- £3500-travel costs to validate early results and engage with community groups ready for trials
- £2000-database hosting
- £500-online work spaces and storage

## Part E - Supporting Information

**Team: We would like to learn a little more about the individual or team invested into the project. What are your individual credentials? Is there a story behind how you or your team all came together to support the project? (75 words max)**

Our four-person female-led team is based in the NE and came together through a combination of direct experience of fuel poverty and passion for creating environmental change. Co-founders Beth and Leo started as community energy practitioners and consultants, which led to our realisation of the inefficiencies of the current approach. Our Geospatial and Machine-Learning Engineers, Josie and Alex, bring expertise in working with complex environmental data and machine-learning programming.

## YouTube Video

<https://youtu.be/gPltWjv8370>