CASE STUDY

ASDU

Impact case study:

Sustainable local development in Nomzamo Agri Village, Ermelo, Mpumalanga

In partnership with

AMBASSADE DE FRANCE EN AFRIQUE DU SUD, AU LÉSOTHO ET AU MALAWI
Liberté Égalité Fraternité

NEW ZEALAND HIGH COMMISSION
Te Aka Aorere

ROYAL DANISH EMBASSY
Pretoria

Introduction

Nomzamo Agri Village, located in Msukaligwa Local Municipality, adjacent to an abandoned coal mine, is home to 446 households.

Despite historical neglect and unclear land ownership, the community has demonstrated **leadership, innovation and resilience.** Over the past six years, residents have built a foundation for economic and social growth, supported by the Khuthala Environmental Care Group, a community based organisation that serves the Nomzamo Agri Village community.

The active engagement with municipal and district authorities highlight the community's **constructive approach to champion their development**.

The power of partnership in South Africa's just transition

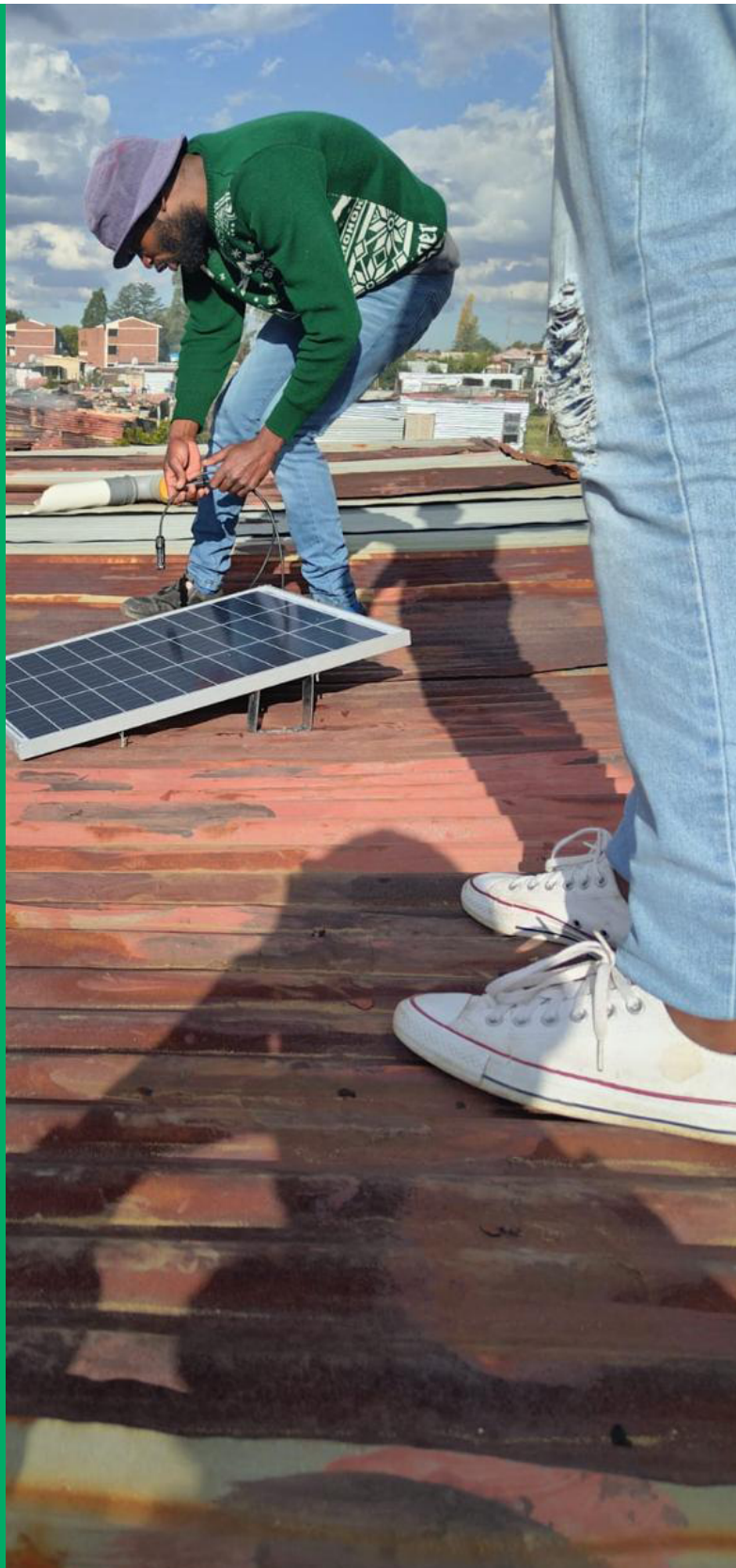
The just transition in South Africa is not just about transitioning to cleaner energy. It is about ensuring that this transition is inclusive, equitable, and driven by the needs of South Africa.

Achieving this requires strong, collaborative partnerships between local leaders, technical experts, funders, and intermediary organisations. The success of the Nomzamo Agricultural Village energy initiative is a testament to what is possible when communities take the lead, and partners come together to support their vision.

Nothing would have been possible without the leadership and commitment of the Nomzamo Agri Village community. They have co-designed an innovative, affordable, and replicable energy solution that responds directly to the needs of their people. This initiative was initiated and led by the residents themselves, who engaged GreenCape's Alternative Service Delivery Unit (ASDU) to embark on a process of alternative service delivery co-design. Alternative service delivery encompasses innovative methods that move beyond traditional municipal approaches to offer interim but sustainable decentralised services to unserviced or unserviceable communities.. These often involve decentralisation, public-private partnerships, and community engagement to improve efficiency and extend basic services to underserved areas.

The success of this project is also due to the invaluable contributions of **key partners, including the Embassy of France in South Africa, Lesotho, and Malawi, the Embassy of Denmark in South Africa, the New Zealand High Commission, the Community Organisation Resource Centre (CORC), and Peco Power**. Each of these partners brought critical expertise, funding, and support to the initiative, ensuring that the solutions developed were not only technically sound but also financially viable and socially inclusive.

This model of partnership-driven development is essential for South Africa's just transition. By centering community voices, leveraging the expertise of diverse stakeholders, and securing the backing of international and local partners, this initiative demonstrates how inclusive, community-led energy solutions can be scaled to drive long-term social and economic growth.



Laying the foundation: Energy security as the catalyst for growth

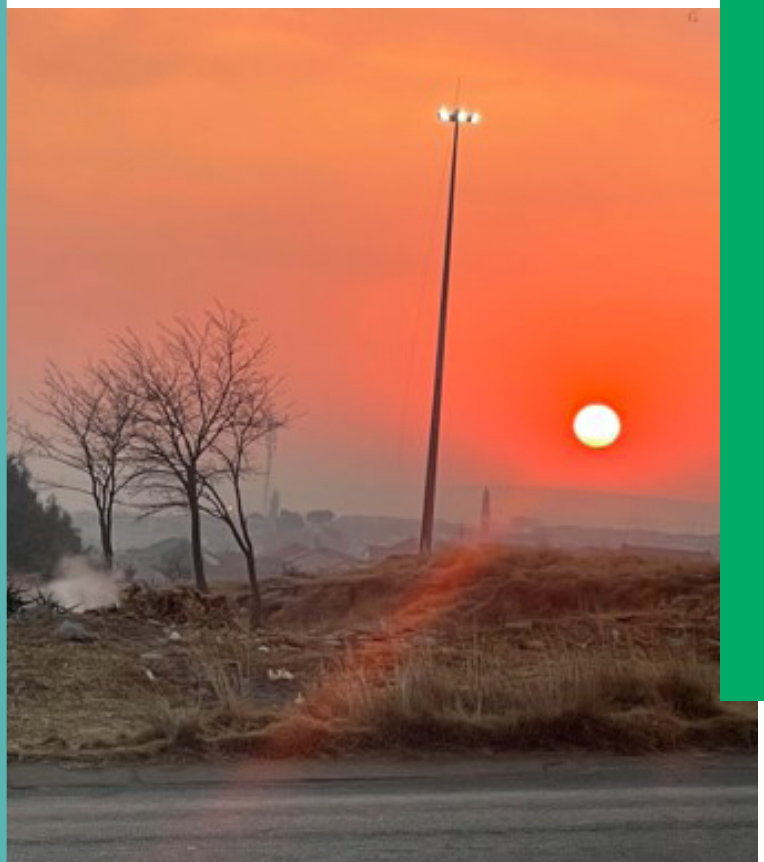
The cornerstone of this growth is energy security. Before the intervention, residents relied on paraffin and candles for lighting, which were expensive and hazardous. The introduction of the Peco Power household system revolutionised daily life, with 91% of households subscribing and electrified and 71.2% of subscribers maintaining regular payments. This high repayment rate shows the community's propensity for pay for infrastructure services which they want and need.

408 out of 446 households in Nomzamo Agricultural Village voluntarily subscribed for the solar powered powerbrick solution. Each system includes a 50W solar panel, a 70W modular powerbrick battery with USB charging capabilities, and three lights (two internal, one external). The Community Organisation Resource Centre (CORC) administered a survey of 288 households in the community in January 2025 to discover the following impacts.

This shift to renewable energy had profound implications:

- Financial savings: **94.8%** of households reported significant cost reductions.
- Improved study conditions: **66.9%** of households noted better learning environments for children.
- Indoor air quality: **71.7%** of residents experienced improved air quality, reducing health risks.

With energy security in place, the foundation was set for further development, enabling economic growth, social cohesion, and the delivery of additional essential services.



Expanding the impact: area lighting for safety and social well-being

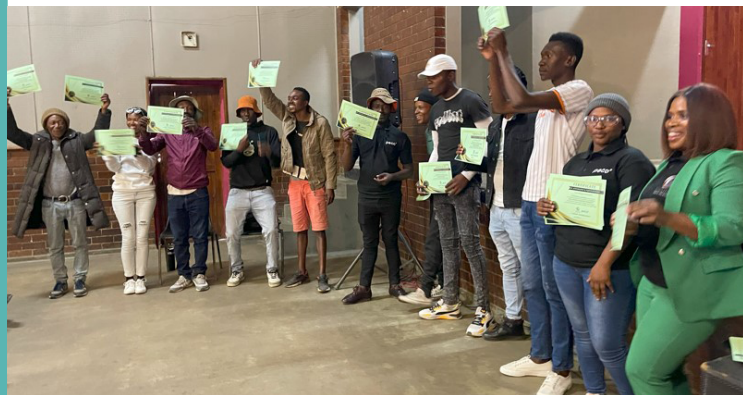
Building on the success of the household-level intervention, 60 solar-powered streetlights were installed. Each streetlight consists of two 10W spotlights, producing a total of 2000 lumens. The impact was immediate and profound:

- **Safety:** 80% of respondents reported feeling safer in their community.
- **Economic activity:** 78% of residents highlighted increased night-time economic opportunities.
- **Social interactions:** Public spaces became more accessible after dark, strengthening community ties.

Strengthening local businesses: Energy and food security for economic growth

Reliable electricity has enabled local businesses to operate more effectively. A communal refrigeration initiative was introduced, allowing small vendors to store perishable goods, reducing waste, and improving food security. These interventions supported:

- Subsidised business solutions: Small businesses in Nomzamo Agricultural Village, including the crèche, a kota shop, a spaza shop, and a seamstress, are supported with access to affordable, customised solar energy solutions tailored to their operational needs. This will reduce their reliance on expensive and unreliable grid electricity, allowing them to grow sustainably.
- Communal refrigeration: A structured approach to shared refrigeration is being implemented, with 10 systems being rolled out across the community: each unit consisting of a 500L chest freezer, a PowerBrick energy solution (3 x 200W PowerBricks and 4 x 200W solar panels), and a reinforced room for secure housing. These units will be installed on residential properties for safety, and managed by trained local operators who will be compensated for running them as small businesses.
- Food security: hared chest freezers ensure longer food storage, and increased disposable income by being able to buy perishable food in bulk.
- Productive energy use: Households move beyond basic lighting to income-generating activities.



Sanitation innovation: Expanding the ASDU model

With a solid foundation in place, the project expanded to include a sanitation sub-programme, piloting two innovative service delivery mechanisms:

- Enviro Loo Waterless Toilet System: A safe, non-polluting, cost-effective sanitation solution that uses evaporation and dehydration to process waste without water, chemicals, or electricity.
- Envirosan's Eaziflush™ Sanitation System: An innovative, water-efficient alternative to Ventilated Improved Pit (VIP) toilets that uses greywater for flushing, reducing water demand while improving hygiene standards.

These pilots provided critical insights to guide the implementation of scalable and sustainable solutions in Nomzamo and beyond.

Agricultural development: From subsistence to market-driven farming

Nomzamo's agrarian roots presented an opportunity to further strengthen economic resilience through urban farming and learning exchanges. Training programs, materials, and equipment supported farmers in transitioning from subsistence to small-scale commercial agriculture. The first cabbage harvest, which was harvested in late 2024, was sold to a local supermarket chain in Ermelo. Key achievements include:

- Skills development: Farmers received training in modern agricultural techniques.
- Market access: Partnerships facilitated direct sales to retailers.
- Food security: Increased production enhanced local food availability.

Employment creation: Bridging short-term needs with long-term opportunities

Skills training opportunities were offered in Nomzamo as part of the project. These were leadership, small business management, and first aid. A total of 17 participants received leadership training, equipping them with the skills to guide and inspire their teams. Small business skills training supported 12 participants in developing entrepreneurial and management competencies. Additionally, six individuals completed first aid training, enhancing their ability to respond effectively to emergencies.

The initiative created 78 temporary jobs, addressing both immediate employment needs and fostering long-term career development:

Temporary jobs: Enumeration phases

- Phase 1: 42 residents, the majority of whom were women, were trained and employed as enumerators. Each participant earned up to R3 600.
- Phase 2: An additional 30 residents were employed under the same structure, further expanding local employment opportunities.

Permanent jobs: Solar PV installers & Peco Champions

At the project's inception, six community members were hired, two as Peco Champions and four as installers. Peco Champions serve the role of sales and marketing, and potential future franchisee of the Peco model in other communities. Over time, one installer was promoted to Champion, and two additional hires were made, ensuring sustained employment and career growth.

Compensation structure:

- Peco Champions: Earn R50 per household installation, plus an additional R30 for every paying subscriber.
- Installers: Receive R100 per household installation.
- Streetlight installations: Installers earn R200 per unit installed.

Total earnings impact

To date, more than R350 000 has been earned by enumerators, Champions and installers, reinforcing the initiative's role in driving local economic empowerment and financial sustainability.

A model for sustainable local development

The Nomzamo initiative demonstrates that energy security is a foundational pillar for sustainable development. By ensuring reliable, affordable energy, the project unlocked a cascade of positive impacts: Improving safety, supporting businesses, enabling sanitation innovation, advancing agricultural development and creating jobs. This model, driven by community participation and data-led co-design, offers a replicable blueprint for alternative service delivery in South Africa's just transition. As the project scales, Nomzamo stands as a testament to the impact of locally driven solutions in creating resilient, economically active, and socially cohesive communities.