Market Insights Brief No.7

Innovation funding in practice: from prototype to scale

Productive use of energy is having its moment. A trillion-dollar opportunity on paper, yet still underfunded in practice. The Powering Renewable Energy Opportunities (PREO) programme estimates that $1.2 trillion is needed over this decade, or about $120 billion annually, to unlock PUE in Sub-Saharan Africa (PREO, 2021).

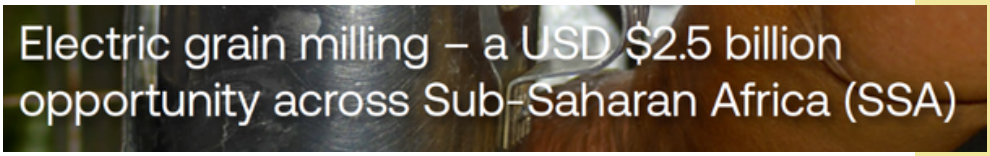
> **"$1.2 trillion over the next 10 years is required to facilitate investment in the acquisition and powering of PUE appliances and equipment in rural SSA, which translates to $120 billion per annum."**

Powering Renewable Energy Opportunities (PREO) (2021). The Market Opportunity for Productive Use of Renewable Energy in Sub-Saharan Africa.

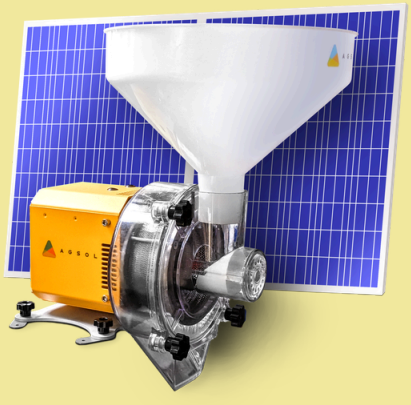
The logic is simple: energy access alone doesn't change livelihoods. It's what energy enables: increased income, improved labour efficiency, and higher productive output.

And the data backs it. Globally, more than 4 out of 5 PUE users see higher earnings after adoption, while in some segments women make up as much as 90% of users (Shell Foundation, 2025). We see the same on the ground. At Agsol, 70% of mill owners or operators are women. 85% report increased income, and over 80% strongly agree the mill is a good business investment. **PUE is one of the clearest, most direct pathways from energy access to real economic activity.**

At Agsol, we work in one of the most immediate and overlooked segments of this opportunity: small-scale milling. In this space, transitioning from diesel to electric grain mills alone represents a $2.5 billion market opportunity by 2030 in Sub-Saharan Africa.



CrossBoundary (2024). Mini-Grid Innovation Insight: Electric Grain Milling.



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The reality: hardware is hard. PUE hardware is harder.

We are not just building a product. We are building a market in segments that are overlooked, poorly understood, and difficult to finance, even when the demand and impact are obvious.

The sector data shows the same thing:

- **Upfront costs are high.** For most rural microenterprises, PUE technologies remain unaffordable without financing or subsidies
- **Customer awareness is low.** Many microenterprises are simply not aware of how PUE can increase their income, slowing adoption
- **The cost of reaching rural customers is significant.** Serving dispersed, hard-to-reach customers remains one of the biggest operational barriers (Shell Foundation, 2025).

Financing has not kept pace with innovation. While new PUE technologies are advancing quickly, financing solutions are still lagging and tend to follow, rather than enable, market growth (GET.invest, 2023).

The uncomfortable middle

This is where most PUE companies operate:

- **Too early for meaningful commercial capital inflows**
- **Too complex for standard development programmes**
- **Too hardware-heavy for typical startup funding**

If this stage is not funded properly, we don't get scale. We get pilots. We get reports. We get the same conversations, year after year. Meanwhile, adoption remains slow, even though the impact is well proven.

Grants are not charity. They are risk capital!

From Agsol's experience, expecting early-stage PUE hardware companies to be funded purely by commercial capital is unrealistic. The market is not set up to take that level of risk. This is where innovation funding becomes critical. Grants absorb early-stage risk and allow companies to:

- **Build and test real hardware**
- **Iterate on design and business models**
- **Validate demand in real markets**
- **Prove that the model works**

This is not about subsidising businesses indefinitely.
It is about getting them to a point where commercial capital and growth become viable.

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From innovation to scale: what the right funding makes possible

Through the **UK government's Energy Catalyst programme**, Agsol was able to move from prototype to production. Energy Catalyst supports early-stage energy innovations in emerging markets, providing the kind of flexible, risk-tolerant funding that allows companies to build, test, and scale solutions that would otherwise struggle to attract commercial capital.

For companies like Agsol, this type of support is what made our business possible. With this backing, we were able to take our solar-powered milling technology out of the lab and into real-world deployment, and to build the systems required to scale it.

The results are tangible:

- A fully industrialised manufacturing process and facility, including in-house motor and electronics design
- Production capacity of up to 500 units per month
- A next-generation solar mill delivering more than 2x the energy efficiency of comparable small electric mills
- Over 50% reduction in production costs while improving quality

And on the ground:

- 600+ mills deployed across 10 countries
- 150,000 people benefiting from more affordable milling services
- Each mill supporting local businesses and creating jobs, the majority held by women
- A flexible financing model tested in partnership with ClimaFI and Jiwambe, designed to align repayment to customer income

Beyond the technology, the programme helped validate the commercial case. The traction and credibility built through Energy Catalyst **directly unlocked follow-on commercial investment matching the grant funding 1:1.**

That is the role of innovation funding at its best. It enables companies to take on the hard problems, prove what works, and build the foundation for investable and scalable businesses.

Agol's state-of-the-art R&D and manufacturing facility in China, opened in 2024

What comes next

With the support of programmes like **Energy Catalyst**, Agsol is moving beyond standalone machines. Our mill owners are already running multi-product businesses, combining milling with grain trading, retail, and animal feed processing. What they are asking for is clear: additional ago-processing machines like dehullers, more flexibility to use and grow their power system, and additional appliances and equipment that help them expand their business.

The next phase is building a broader energy platform. Modular systems built around our ultra-efficient BDLC motor and solar architecture, powering multiple machines on a single, shared energy backbone.

The goal: one energy platform powering multiple income streams.

This is the opportunity ahead. We are building on what already works and scaling it into systems that enable entire microenterprise ecosystems to grow, together with partners and funders that are ready to move with us.

Sources

- CrossBoundary (2024). Mini-Grid Innovation Insight: Electric Grain Milling.
- GET.invest (2023). Financing and Scaling Productive Use of Energy: Challenges and Opportunities for Catalytic Growth.
- Powering Renewable Energy Opportunities (PREO) (2021). The Market Opportunity for Productive Use of Renewable Energy in Sub-Saharan Africa.
- Shell Foundation (2025). Productive Use of Energy Solutions for Microenterprises.