

Influencing activity 1

# Proving the economic viability of alternative business models



OORJA

[www.oorjasolutions.org](http://www.oorjasolutions.org)



India





## Oorja Development Solutions proving the economic viability of offering solar-powered agricultural services on a pay-per-use basis to smallholder farmers in India.

### Introduction

In many rural areas, especially in India, smallholder farmers depend heavily on fossil fuels for on-farm energy, with around 85% still using diesel generators due to the high upfront costs of cleaner, renewable alternatives. These diesel pumps are not only inefficient, costly and polluting, they also burden the farmers by making them dependent on international energy markets, exposing them to volatile price fluctuations and supply risks associated with fossil fuels.

Oorja Development Solutions Limited ('Oorja') recognized this problem and set out to disrupt the conventional energy model for smallholder farmers by introducing a more sustainable and inclusive alternative. Their solution: providing solar-powered irrigation, milling, and cooling services to smallholder farmers on a pay-per-use basis. Instead of requiring farmers to purchase expensive solar irrigation systems upfront, Oorja owns, installs, and maintains the systems, charging the farmers for these services and the energy they use. This approach aligns with the farmers' irregular cash flow, making it affordable and more practical, while also significantly reducing the environmental impact compared to diesel-powered alternatives.

Oorja's impact is therefore two-fold: they reduce CO2 emissions by making solar power accessible and demonstrate a replicable pay-per-use model to inspire mainstream agriculture to adopt similar sustainable practices. Recently, Oorja is developing a new B2B initiative, aimed at partnering with major agricultural corporations to integrate tailored energy services into their operations and extend it to their networks. They have also started deploying solar pumping systems through an EPC (engineering-procurement-construction) model, allowing foundations and institutions to establish their own solar infrastructure, benefiting the smallholder farmers they work with.

Despite the promise of their model, proving the model's economic viability posed challenges, as Oorja needed to overcome financial, operational, and partnership obstacles to show solar energy's benefits for smallholders and the model's potential to scale. This case study explores these challenges and Oorja's successful solutions, establishing its farming-as-a-service model as impactful and economically sustainable.

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## 1. Proving the economic viability of alternative business models.

### Aligning with the market and building credibility

Initially, Oorja focused on providing solar energy solutions to rural Indian households with the goal of balancing profitability and social impact. Yet, early projects revealed that solar mini-grids for households were not financially viable, prompting Oorja to pivot toward agricultural energy services, where demand from smallholder farmers was higher for productivity-enhancing solutions. This shift involved rethinking their value proposition, with extensive fieldwork showing farmers valued services that could directly improve income.

Oorja faced a difficult market environment, due to conflicting government policies that created an uneven playing field for renewables versus fossil fuels. The upfront and running costs of diesel alternatives are often hidden by subsidies and favorable financing options, making it more difficult for renewables as farmers lean towards more cost-efficient options. This misconception complicated Oorja's efforts to prove the value of their service-based model to farmers.

To overcome this and build trust among smallholder farmers, Oorja came up with a unique, community-based pay-per-use business model that removes the upfront cost barrier of technology acquisition – making solar affordable and accessible to low-income farmers. Oorja thoroughly assesses the demand for its services through multi-stage site selection criteria. Through spending time conducting community education activities to help farmers understand the benefits of switching to solar, as well as organizing exposure visits in nearby villages where solar pumps have been installed, Oorja continuously builds trust among its customers.







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### Setting up new value chains

The fee-for-service model requires Oorja to install and maintain the solar infrastructure, which demands significant upfront investment before revenue is generated. However, smallholder farmers, who are the primary beneficiaries, often face severe cash flow constraints, making it difficult for Oorja to rely solely on traditional financing models.

To address this need to finance infrastructure through corporate finance, Oorja adopted a blended finance approach. They combined philanthropic grants with equity funding from impact investors to get solar pumping infrastructure on the ground. They leveraged grants to cover the initial risks and reduce costs for farmers while using equity financing to scale operations.

In selecting investors, Oorja sought to partner with mission-aligned impact investors, such as Acumen and Schneider Electric Energy Access Asia, who share the company's vision of impacting last-mile farmers. This strategy allowed Oorja to demonstrate the viability of their model on a larger scale, as they could reach more farmers without compromising on affordability and still providing investors with a return on investment. As such, they showed that the enormous market of smallholder farmers could be viably serviced through a blended finance model.

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### Conclusion

Oorja's journey to scale their farming-as-a-service model has been defined by challenges, resilience, and innovative approaches. Their pivot from household to agricultural services and their adaptation to policy barriers were key to their growth. Through blended financing, strategic collaborations, and a focus on actionable partnerships, Oorja has shown that renewable energy can be both impactful and economically viable. By proving that sustainable solutions can support low-income communities and the energy sector, Oorja has positioned itself as a leader in combating energy inequity and climate change.

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### Demonstrating scalability and inspiring copycats

Oorja's success has drawn interest from organizations keen to understand their model. Collaborations with the International Institute for Sustainable Development and the International Water Management Institute, along with recent impact evaluations, confirm the model's scalability and effectiveness in reducing costs and increasing income for farmers. "Data is more and more solicited for reports and research articles, as organizations aim to evaluate the impact and benefits of our approach in comparison to other models that have struggled to achieve similar results."

Major organizations like the Aga Khan Foundation, GIZ, and HCL Foundation have partnered with Oorja to extend its Farming-as-a-Service model to regions where they operate. These organizations, sharing a goal of improving smallholder farmers' livelihoods and addressing climate change, typically connected with Oorja directly or through mutual contacts in the solar, agriculture and climate sector. Operating in similar regions with aligned customer segments, these partnerships encouraged Oorja to scale and adapt its Farming-as-a-Service model to better serve communities where these organizations were already active, amplifying the positive impact on their beneficiaries.

Nevertheless, Oorja has faced challenges in 'knowledge partnerships', where valuable insights often disappear into a "black hole", with no actionable outcomes or funding for Oorja's contributions. To address this, they now prioritize partnerships that share their commitment to practical results and recognize that effective collaboration requires resources from all parties.

