

# A PHILANTHROPIC JOURNEY INTO CAUSALITY

Advancing Energy Access in Rural Regions  
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The Rockefeller Foundation recognizes that the problems we are tackling in society today are often stuck in broader systems that reinforce the problems. These complex systems may resist change or change in unexpected ways in response to interventions. When change does happen, oftentimes the pathway to change is difficult to see, with hidden drivers. **Discovering how, why, and under what conditions change is actually happening amid complexity is one way that The Rockefeller Foundation is strengthening its ability to achieve impact on difficult problems.**

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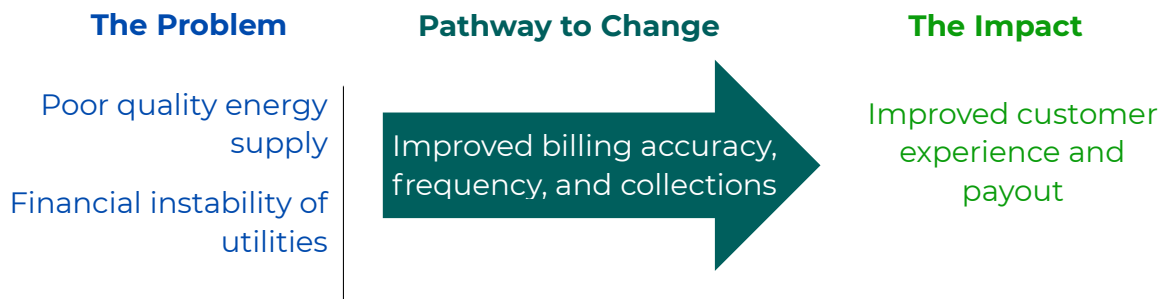
## A problem worth addressing: India’s energy sector

The energy sector in India, despite significant strides in electrification, continues to struggle with poor quality of energy supply coupled with financial instability of utilities, particularly in rural regions. These problems undermine the sustainability of energy access for consumers and the potential of energy companies to reach new or underserved rural customers with energy access.

## The Rockefeller Foundation’s response: The Energy Services Framework

The Rockefeller Foundation (the Foundation) initiated the Energy Service Framework (ESF) program in 2019 in a pilot site in Odisha, with the aim of improving the financial health of energy utilities and distribution companies in rural areas of India, thereby enhancing the financial viability of utilities and consequently, the quality and accessibility of energy services for consumers.

The program focused on enhancing billing accuracy, frequency, and collections to address the prevalent challenges faced by energy consumers, particularly financial distress among utilities, which exacerbated energy supply quality issues as well.

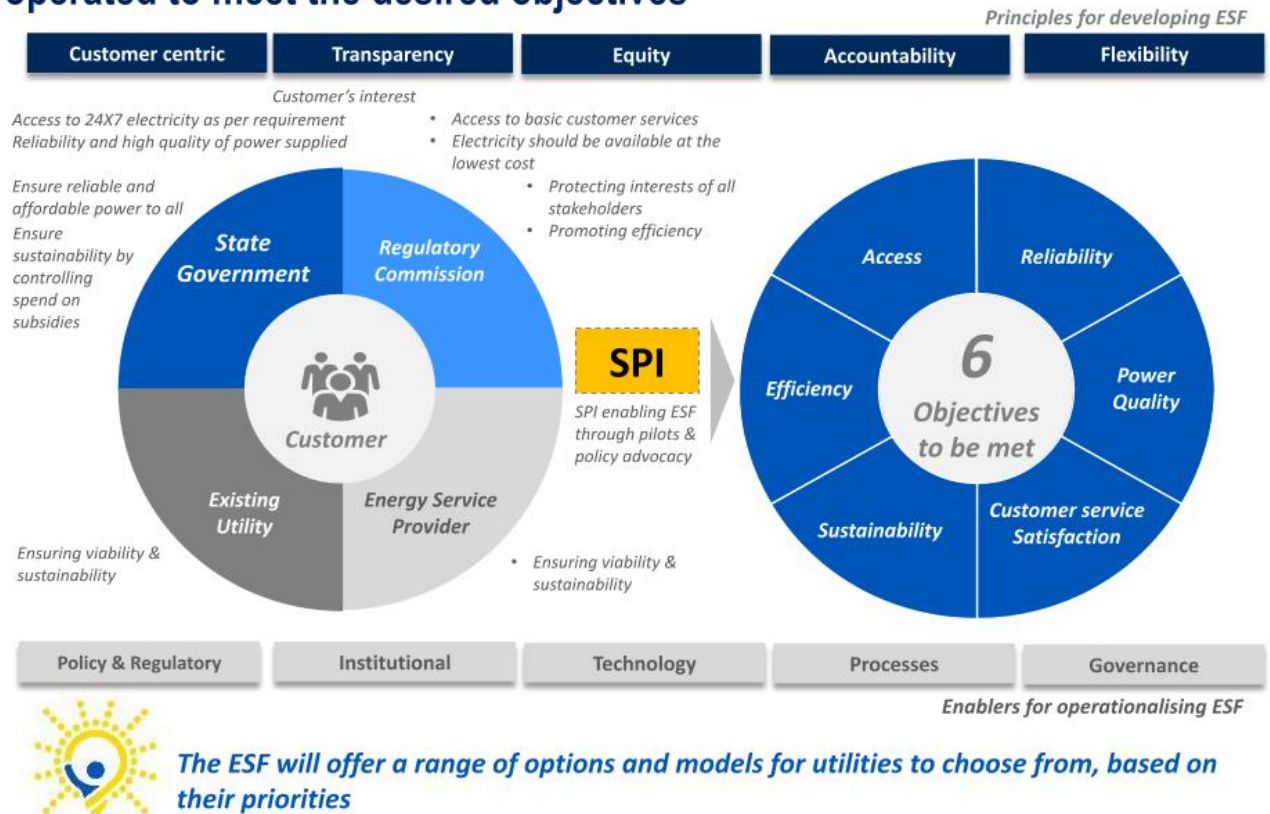


As the program was underway and evidence of the impact of the ESF program was beginning to show, the Foundation noticed:

-  **Increase in coverage and accuracy of billing**
-  **Reduced financial losses for utilities**
-  **Material improvement in share of customers that were paying energy bills**
-  **Financial wellbeing of the utilities beginning to improve**

While initial assessments indicated promising outcomes in terms of utility well-being, questions lingered regarding the tangible benefits experienced by energy customers.

## ESF is a set of principles under which various business models can be operated to meet the desired objectives



Source: Rockefeller's Energy Services Framework, Smart Power India – Progress Review, Q4 2018

## An evaluation of causal pathways

The Foundation team was committed to the ESF program being beneficial for rural customers and needed to know more. Although their monitoring data had been useful, it was also raising other questions. For example, the Foundation had hoped to determine the scale of impact of the intervention by first examining the number of households affected by the intervention and then estimating the breadth of individual impact using a multiplier (e.g., 5x to represent an average of 5 people per household). However, as they explored whether this type of multiplier would give an accurate picture of impact, they found themselves asking questions about how the impact was realized through the intervention and moved from asking monitoring questions into evaluative questions.

### Evaluation focus

The Foundation commissioned an evaluation to understand the extent, nature, and mechanisms through which the ESF program was having an impact on the lives of energy consumers. The main questions the Foundation aimed to address included:

1. How does the ESF model (billing, metering, collections) affect the lives of customers and their households?

2. What are the possible pathways through which the billing, metering, and collection (BMC) intervention can impact people/households?

3. What feedback do customers have about their energy service?



The ultimate goal of the evaluation was to understand the impact of the ESF program through a people-centered lens, with particular focus on the experience for low-income rural energy customers who these utilities companies intended to serve.

It is worth noting that the Foundation didn't originally plan to explicitly test causality with this evaluation; rather they found their way there as **it became clear that the questions they were asking needed meaningful attention to causality to be answered in useful ways.**

**Getting ready:** Before getting into the methods, the Foundation team spent some time reviewing its theory of change, process flow, and other documents that outlined the different components of the intervention. They realized that they had never fully articulated their assumptions or hypotheses about how systemic level impact on the utility would contribute to positive impact on people and households. There was an implied, but unarticulated causal pathway as part of the ESF Program. In response, the Foundation team and evaluators developed additional hypotheses about the causal pathways, in part informed by a literature review to understand which causal mechanisms might be at play.

**Design considerations:** The Foundation team and their evaluators had to grapple with how to answer their questions and test these hypotheses about causal pathways given significant time and resource constraints. They recognized that they did not have the time or budget for an additional evaluation beyond the originally planned one, and certainly not for an experimental or quasi-experimental study, which did not feel like an appropriate approach regardless. They needed methodologically sound and credible findings that could make causal relationships visible, and they needed to do so within their constraints.

To accomplish this, the evaluators designed a study that did not use a specific causal methodology; rather, they engaged in [evaluative bricolage](#) (the combining of multiple methods), including leveraging components of process tracing and outcome harvesting to unpack causality. Guided by the literature review on causal mechanisms, they used a mix of qualitative data (customer interviews and key informant interviews) and quantitative data (surveys and energy consumption data) to understand the pathways to change. They focused on addressing the gap in understanding about the causal mechanisms through which ESF was producing effects on people (Question 2 above) and prioritized understanding key insights, general directional accuracy, and whether the program was really working by getting feedback from energy customers and their households (Question 3 above).

***What is our theory of change?***

***What are our assumptions?***

***What are our causal hypotheses?***

***How can we explore causal pathways given our resource constraints?***



## Causal learnings

The use of causal evaluation approaches - and being explicitly, intentionally attentive to causal relationships at play - allowed the Rockefeller Foundation to test the strength of their assumptions and make clear what their implied beliefs and assumptions are about how ESF works. It also generated deep, strategically relevant insights that alternative evaluation approaches may not have. For example:

↪ The Rockefeller Foundation was able to understand not just what was or wasn't happening, but also how. For example, they had assumed that an improved customer experience and greater confidence in the accuracy of energy billing is what would incentivize people to pay; the reality was that other factors, such as "Bijuli Didis" (community members employed by the program who were mostly women with a lot of social capital) were primary drivers in encouraging people to pay.

↪ The Rockefeller Foundation also started to better see complex unintended consequences - positive and negative - that might be at play. For example, when the accuracy of metering increased, people's expenses increased in ways that hadn't been anticipated. This led to cash constrained community members becoming more conscious of their energy consumption levels, and therefore decreasing their energy usage overall. This is a negative outcome, as The Rockefeller Foundation specifically didn't want their program to contribute to households limiting their use of productive appliances that have revenue-generating purposes.



### Taking action on the learnings

The causal findings were not just interesting and important for understanding the program and its impact. They were actionable. The Rockefeller Foundation was able to use the causal findings, including:

- Informing specific program decisions, such as the decision to no longer use the multiplier to extrapolate household impact to individual impact
- Increasing their focus on ensuring the program is meaningful to energy customers
- Becoming more attentive to and actively managing the unintended consequences and risks that were unearthed
- Informing other considerations around efficiency and resource allocation so that they have a better understanding of where they should be investing more resources and where the strongest return on investment and best outcomes exist
- Ultimately, via the evaluation's equity lens, helping the Foundation to reflect on the ways in which its work was people-centered and responsive to people's needs

The Rockefeller Foundation's experience with causal evaluation demonstrated that **bringing a causal lens to an existing evaluation can be a powerful tool for challenging and strengthening the too often uncontested beliefs** that underlie philanthropic interventions. It did not require a completely new study or the use of experimental or quasi-experimental approaches to generate new and actionable evidence about how, why and under what conditions change was happening. Doing this work opened the door for a wider variety of perspectives on why change happens to be surfaced and explored, and influenced how the foundation not only understood its intervention, but also its decisions moving forward.