



# HUMAN RESOURCES INCENTIVE (HRI) STUDY FOR UTILITY NONTECHNICAL LOSS REDUCTION

From August 2015 to December 2017, SRUC engaged with a range of electric utilities worldwide to conduct a study on human resource incentive (HRI) approaches that have been deployed to encourage employees to combat nontechnical electricity losses. From June 2018 to 2019, SRUC utilized those findings to design and implement an HRI program with Jharkhand Bijli Vitran Nigam Limited (JBVNL), a distribution company (discom) utility in India's Jharkhand state.

## **WORK ASSIGNMENT SUMMARY**

Through the HRI for loss reduction study and JBVNL program design, SRUC identified, and informed other utility companies of, internal policies that can promote reduced aggregate technical and commercial (AT&C) electricity losses, which take into account the combination of energy loss from technical loss, theft and inefficiency in billing and commercial losses, such as default in payment and inefficiency in collection. The goal was to identify and establish leading practices that can be implemented

by other utilities facing similar challenges, as nontechnical losses are an area that has been understudied and is not well documented. Once the SRUC team compiled a global report on existing incentives related to utilities' goals for loss reduction, the team used the findings on a program design for an Indian utility suffering from high losses to help it engage its employees to move closer to its goals.

## CHALLENGE

While customer-facing and technical solutions to improve utility performance are well-documented, there are fewer global assessments that explore the internal mechanisms that utilities use to reward staff who demonstrate a clear contribution to helping the company meet its loss reduction goals. Research conducted by the SRUC team studied utilities around the world which have implemented financial, non-financial, and other types of incentives that reward staff for behaviors and activities that help the utility to lower its AT&C losses.

Many of the utilities that had implemented some sort of incentive program were located in India, providing helpful context and examples. Nevertheless, there were many Indian utilities that were still struggling with high levels of losses and had not contemplated using this type of mechanism. Working together with the Ministry of Power, the SRUC team engaged a discom in Jharkhand State to design an incentive program. The selected discom had been struggling to bring down its losses for the last decade, was facing a mandate from the regulator to reduce the size of those losses, and wanted assistance engaging their field staff in that company goal.

## APPROACH

The SRUC team undertook the following steps to perform the HRI study for loss reduction:

### GLOBAL HRI STUDY

- Developed an initial list of 43 electric utilities to be considered for the global study. Developed a down-selection methodology based on 10 qualitative and quantitative metrics.
- Selected two utilities for initial outreach (TATA Power in India and AES Eletropaulo in Brazil), and designed outreach materials and questionnaire to facilitate data collection from these utilities.
- Collected responses from TATA and AES, and adjusted the questionnaire to a broad range of utility companies with different ownership structures, geographic locations, challenges, and sizes.
- Distributed the revised questionnaire to 16 utilities with a target of 7-8 responses.
- Aggregated responses and developed report in collaboration with USAID Missions, and disseminated to participating utilities for their review and approval, then through the USAID Energy Division and to other donors.

### HRI PROGRAM DESIGN

- Identified India as a good location for conducting an HRI loss-reduction pilot, as issues faced by many of the state-owned utilities in the country were very similar to those identified in the global HRI study. In addition, several of the highly functioning utility companies in the country had previously conducted incentive studies providing helpful contextual examples within the same regulatory framework.

- Designed a selection framework to determine candidates for the pilot program by setting up broad evaluation criterion, defining selection parameters and deciding weightage for each parameter. Collected publicly available data from all the utilities across Indian states to evaluate and generate a shortlist of utilities.
- Selected JBVNL as an ideal and qualifying utility to host the pilot program, conducted preliminary discussions with their leadership and, in partnership with USAID/India, initiated the HRI Pilot for Loss Reduction.
- Developed a tailored HRI program design through the following activities, in conjunction with the JBVNL management:
  - Worked with the human resource department to map the JBVNL business units and their roles /responsibilities to understand their current compensation and benefits structure.
  - Determined the energy sales mix by customer segment.
  - Mapped the distribution of employees across JBVNL’s business units and each unit’s core responsibilities.
  - Analyzed the AT&C losses for JBVNL over past five years to understand how and in which areas to best incentivize employees to reduce those losses.
  - Undertook a cost-benefit analysis to evaluate the impact of the proposed incentive scheme on the overall financial performance of JBVNL and made this available as a tool for future analysis to amend the incentive program when applicable.
  - Developed a phased implementation plan.
  - Presented the design, rollout plan, and financial implications to the JBVNL leadership and Board as well as relevant state regulatory authorities.

## KEY RESULTS

SRUC’s engagement with utilities during execution of the [HRI study](#) and pilot resulted in the following key results:

- The development of a report for utility companies around the world that facilitates the understanding of the design of human resources-based loss-reduction incentive programs.
- The HRI pilot at JBVNL supports a financial turnaround of the utility by anticipating enhancing both employee engagement and reduction of utility’s overall losses by 3 percent to 4 percent for over three years.
- A key learning is that these types of HRI programs will need to be designed in a phased manner, with the length of each phase depending upon the current development level of the utility.

## M&E INDICATORS

- Number of original publications on SRUC released to public – **Final Human Resource Incentive for Loss Reduction study published and disseminated**
- Number of laws, policies, regulations, or standards to enhance energy sector governance formally proposed, adopted, or implemented as supported by USG assistance – **One, a Specific HRI program designed and adopted as an internal policy at JBVNL.** (Standard Indicator: EG.7.3-1)

## COOPERATING PARTNERS

SRUC partnered with USAID/India throughout the development of the JBVNL program and engaged with a range of UASID Missions worldwide for help engaging with utilities and carrying out the study.

The team worked closely with each USAID Mission in the countries where the utility teams were queried for the global study.

## **FOLLOW-ON WORK**

SRUC's work in India to design an incentive program for JBVNL was presented to the leadership at the Ministry of Power (MOP) in 2019 and used as an example for other utilities struggling with losses in the country. The MOP requested development of a general guideline for the design of HRI for loss reduction in utilities and the outline of the mathematical structure based on the work at JBVNL, which may be disseminated to other utilities in the country. Similarly, other utility companies in India requested follow-on assistance from SRUC to understand the loss-reduction incentives discussed in the HRI study in more depth and expressed their interest in hosting a pilot project to test some of the methodologies.