SRP Waste Management Project

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Introduction

Salt River Project Agricultural Improvement and Power District (SRP) is committed to its sustainability program. As one of the pillars of the program, waste reduction and diversion play an important role in SRP’s vision of helping the Valley grow into a vibrant and sustainable metropolitan area. Investment Recovery Group of SRP approached School of Sustainability, seeking an alternative to landfilling their cable jacket waste with a lower environmental impact. However, the solution to this problem could not bring SRP’s waste management to a higher level due to its limited scope. Given this consideration, in addition to helping address the management of the cable jacket waste, the project was expanded to understand and assess SRP’s sustainability program, in which waste management is embedded so that more opportunities could be identified for further collaborations.

Methods and Interventions

On a waste stream level, Life Cycle Assessment was employed to evaluate and compare the Global Warming Potential and the impacts on human health of the current waste disposal practice and two alternatives, combusting the cable jacket as alternative fuel for cement production and de-crosslinking the cable jacket to restore its thermoplastic nature. To take into account the avoided impact from the production of displaced coal or virgin plastic, the assessment boundary was expanded to incorporate the production processes of coal and polyethylene as well as the relevant background processes that are entailed.

On a higher level, the sustainability program was assessed from four perspectives: pollution prevention, product stewardship, clean technology development, and growth path crystallization. These four angles respectively addressed how SRP manages their internal capability building and external engagement in the short term and long term.

Interviews and document review were adopted for this assessment to improve the understanding about SRP’s internal practice and organization culture about sustainability.
Project Results

The LCA results indicated landfilling were more impactful on global warming and human health than the other two options. It is recommended that the landfilling of the cable jacket waste should be displaced as soon as possible while the waste should be utilized as alternative fuel for cement production, not only for its substantially low impact on human health but also for its compatibility with current process and scalability.

The program assessment suggested that the major internal opportunities lied in creating a sense of urgency, refining the vision, expanding the vision to produce a road map, consolidating the leading sustainability coalition, breaking down the silos between departments, and institutionalizing new approaches. Externally, SRP should also frame the engagement with clear focus and reposition themselves in the long term away from carbon-lite to carbon-neutral and even more.

Possible Next Steps

For the cable jacket waste, although one alternative was identified to be viable to displace the practice of landfilling, there existed possible other alternatives that are even more environmental-friendly. One of them could be using the cable jacket waste as a solid fuel used in commercial rockets.

For the waste management system, the immediate next step could be a waste audit in one or all the SRP’s facilities, especially those facilities with a large amount of waste landfilled, to generate a holistic review of the variety and magnitude of the waste from power generation. The result of the audit could be used to trigger the sense of urgency within the organization and serve as a basis, from which more ideas from employees could be generated and collected. In a bigger picture, possible next steps include a workshop for visioning and road map building, and incorporating the waste audit result into customer engagement and supplier partnership.