



Rubbermaid Chooses LinkCycle

Opportunity:

Reducing Newell Rubbermaid's energy costs

Newell Rubbermaid, as part of its corporate sustainability strategy, is exploring cost-effective solutions to make manufacturing more energy efficient.

Challenge:

Meters and audits are too expensive

Newell's leader of the Global Sustainability Group, Saravana Balaji Jayaseelan (Balaji), is responsible for monitoring and reducing enterprise energy costs. While it's relatively easy to identify which facilities to focus on, current solutions are tedious and expensive when it comes to knowing how energy flows through each machine.

"Periodic energy audits require hiring an expensive analyst for each plant and installing submeters on each machine, which is daunting in terms of hardware and interruptions costs. Metering and auditing are just too tedious, expensive, and frankly, not scalable across most organizations,"

-Sahil Sahni, Co-Founder, LinkCycle

Committed to finding a better way to harness this essential information, Balaji partnered with LinkCycle, a new technology company founded by MIT graduates who audited companies for sustainability strategies. Without stepping foot in the facility, LinkCycle taps into readily available data, and uses math not meters to identify low-hanging opportunities to save on energy costs.

"Knowing which machines to target to save money is crucial for large manufacturing companies, but metering or manually auditing them is neither affordable, nor scalable. Information is key, but also key is the ease of getting it!"

- Balaji, Head of Global Sustainability Group, Newell Rubbermaid

Facility Snapshot

Number of Machines: 87

Resource of Focus: Electricity

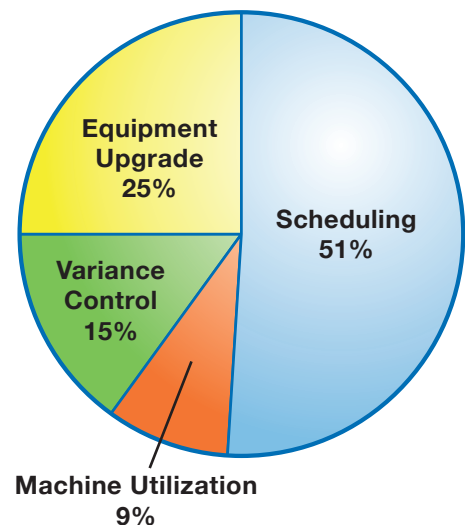
Annual Electricity Usage: 77 GWh

Annual Electric Bill: + \$2 Million

Savings Identified: *20%

*20% Cost Savings by LinkCycle:

- **Scheduling: When to produce, based on electricity price fluctuations**
- **Equipment upgrade: Which machines generate higher ROI**
- **Variance control: Managing machine power variation**
- **Machine utilization: Reducing idling on high fixed energy machines**



*Saving assume real-time pricing which did not apply to the pilot plant

Opportunity:

Data science driven production efficiency

LinkCycle offered Newell a new software that uses readily available data to inform manufacturers of costs savings without ever stepping foot in their plant. Manufacturing is the largest repository of big data and Newell Rubbermaid and LinkCycle partnered to leverage this for production efficiency.

Execution:

Pilot proves data science replaces meters and audits

Newell provided readily available historic electricity and machine-level production data to LinkCycle. Using this, LinkCycle was able to estimate both fixed and variable electricity usage for each machine. The statistical accuracy of the results was found to be greater than 99%, matching available submeter data in the facility. Knowing the electricity profile of each machine positions Newell to save electricity through machine-level optimization.

LinkCycle highlighted the top twenty machines that are good candidates for nighttime production (when electricity prices are potentially lower), machines where idling should be reduced, those to control load volatility, and those that provide the most return on upgrading. Cumulatively, these four strategies yield a potential 20%* reduction in energy costs.

Future:

Cutting production costs for large manufacturers through algorithmic brawn

The success of the pilot compelled Newell Rubbermaid to scale LinkCycle's software into two new facilities. LinkCycle is now partnering with Newell's other software providers to contribute to the overall daily energy dashboard, aiming to roll out the first version of the software by the end of 2013.

The LinkCycle tool is also helping sustainability directors, plant managers, and CFOs, achieve energy cost savings across numerous other companies in various sectors.

“It’s amazing that [LinkCycle] can get to these results with the minimal information I shared. This is the bridge I was looking for in my KPI strategy, telling me which machines to save energy from and how, without having to meter up every machine or conduct extensive audits.”

- Balaji, Head of Global Sustainability Group, Newell Rubbermaid

About the Study Participants



Saravana Balaji Javaseelan

Head of Global Sustainability Group
Newell Rubbermaid, Inc.

balaji.javaseelan@newellco.com



Sahil Sahni

Co-Founder
LinkCycle, Inc.

sahil@linkcycle.com

If you're interested in test driving LinkCycle's software at one of your facilities, get in touch at: info@linkcycle.com