



SUBARU of INDIANA AUTOMOTIVE, INC.

## Reaching New Cost and Environmental Goals with Reusables

Doing right by the planet guides every decision Subaru makes as a company. So naturally, reusable packaging plays an important role in their environmental stewardship.

Subaru of Indiana Automotive (SIA) had an 89% usage rate of reusable packaging for North American supplier direct delivered parts. However, SIA set a challenge to increase that number to 95% while also reducing its overall investment in reusable packaging by 30%.

The challenge was set at the same time that SIA was preparing for production of full model changes for the 2015 Subaru Outback and Legacy – and for increased production to meet the ever increasing demand for the popular vehicles. These factors drove SIA's logistics team to look deeper into its manufacturing processes to find new areas and ways to gain deeper process improvements as well as more cost and environmental savings from reusable packaging.

"We took a fresh look and asked ourselves, 'how can we get a stronger return on our existing reusables?'" recalled Steve Sorg, Manager of Logistics Manufacturing Engineering at SIA. "We saw that there were other opportunities for cost reduction, process improvements, and for getting rid of more cardboard."

### MEASURABLE IMPROVEMENTS:

- Saved nearly \$16 million by avoiding purchase of new packaging
- Eliminated additional 153 tons of cardboard and wood pallets, adding to existing annual reduction of 28,000 tons
- Achieved goal of using reusable packaging for 95% of direct ship parts



To achieve the cost savings goal, SIA:

- Repurposed existing reusable packaging where possible
- Replaced corrugated packaging in additional applications with reusable packaging
- Established a single source partnership with ORBIS Corporation that reduced piece price for reusable packaging

### Leveraging reusables long life

Each full model change brings new parts and changes that require the development and procurement of new packaging. But given the long service life of reusable packaging, SIA underwent an aggressive review of its existing packaging to see where it could be re-purposed and avoid the cost of new packaging. This was no small task considering that SIA's supply chain encompasses more than 2,300 unique parts from 164 Tier-1 automotive parts suppliers. Existing reusable packaging was sorted into three categories: carryover, transfer, and modify.

- **Carryover:** In many cases, the part shape that a supplier produced for the past model had not changed, or changed very little, for the new model and could still utilize the previous packaging and dunnage. This category provided a 100% cost avoidance of new packaging purchase, resulting in a \$9.8 million savings in the overall planned investment.
- **Transfer:** In some cases, the new model part was sourced to a new supplier but, again, the new model part could fit in the previous packaging. Even with the cost of transportation to move the packaging from the previous model supplier to the new one, a savings of \$0.6 million was realized.
- **Modify:** Some parts changed enough that they would not fit in the past model dunnage, but the case size of the previous reusable packaging was desirable. These containers were repurposed when the cost of modifying the dunnage did not exceed the cost of new packaging. This provided an additional \$5.2 million savings.



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— Steve Sorg, SIA  
Manager of Logistics  
Manufacturing  
Engineering

In total, this initiative produced a savings of nearly \$16 million over the cost of buying new packaging. This process is not uncommon in the automotive industry, however, Sorg believes SIA’s initiative was more wide scale. Additionally, it was the first time that SIA drove the initiative. In the past, the assessment process occurred only if a supplier took the initiative.

“It wasn’t until this most recent full model year that SIA engineering truly made it part of our core model development project plan and pushed the directive back to the suppliers,” explained Sorg.

### Getting big benefits from one small change

To reach its goal of 95% usage of reusable packaging, SIA reviewed the remaining 11% of direct delivered parts that were shipped in cardboard. Possible candidates were developed through business case justification for conversion.

“Although we had already converted much of our fleet into reusable packaging, there were still cardboard shipments that went unchallenged over the years. It was a case of ‘this is how it’s

always been done’,” said Sorg.

An excellent example that shows how the change of a single part can have a major impact on cost and generate environmental improvements is the packaging change for the Rear Harness Assembly.

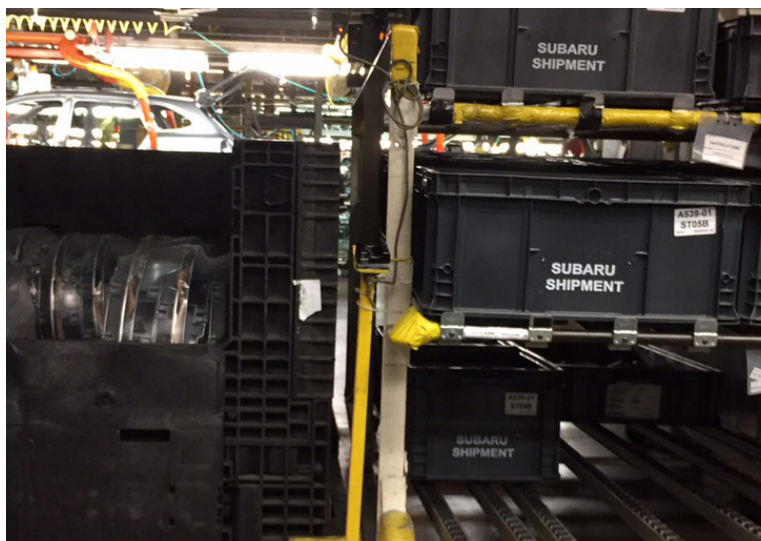
The harness assembly previously shipped in a 24”x15”x11” cardboard carton with four parts in a box. Changing to a reusable packaging tote of the same size reduced SIA’s recycling of cardboard by 86 tons and of wood pallets by 67 tons annually. SIA recouped its investment on the reusable containers in six months, and achieved an annual savings of \$318,000.

“The harness assembly is just one example of the cost savings we achieve with each new application of reusable packaging,” said Sorg.

SIA also reviewed instances where parts shipped in cardboard came in to SIA, and then were shipped out in that same packaging to another supplier for final assembly.

“Since this packaging did not stay in SIA, no one really thought about it. But we found that many of these cases were a good fit for reusables. We





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want to eliminate cardboard wherever possible, whether it is coming out of SIA or a supplier. Thinking globally, we are one earth no matter the final destination,” explained Sorg.

SIA also swapped out some of its bulk containers for handheld totes. In the early years of SIA’s reusable packaging program, there was a strong emphasis on bulk shipments of parts in racks and plastic and steel bins. While this provided transportation efficiencies through increased pack densities, it had the negative impact of increased space requirements at the production lines, increased warehouse inventory, and reduced flexibility in delivery methods.

The handheld totes provide the flexibility to support just-in-time (JIT) production changes. Now they can order mixed pallet shipments rather than a full pallet and reduce the risk and costs due to end of model part obsolescence that result from bulk orders.

The handheld totes also generated an 83% reduction in line side space requirements per part. More importantly, they delivered efficiencies on the line side which translate into cost savings. Multiple parts can be placed on a single line side rack, putting more materials at a work station and reducing walk time.

The ability to understand the overall impact of packaging changes is possible because of SIA’s Manufacturing Engineering Logistics department. The department provides a neutral point for all SIA departments to make their preferred packaging requests. The department has visibility into multiple areas of the supply chain and can weigh the overall potential of reusables. The team directs the company toward the best overall packaging plan that achieves the lowest investment, lowest future running costs, and lowest impact to the environment. In addition to Sorg, the department includes three packaging engineers. Together, they support packaging, systems, and facilities.

“SIA realizes now that reusables provide benefits beyond just environmental ones. With this broader view, we can really dig in and look for new opportunities for reusables to provide more quality improvements and cost reduction,” said Sorg.

SIA won the RPA’s 2015 Excellence in Reusable Packaging Award for businesses with revenues more than \$25 million.



### About the RPA Excellence in Reusable Packaging Award

The Reusable Packaging Association annual Excellence in Reusable Packaging Award recognizes companies that have developed, supported, or implemented measurable and innovative reusable solutions in a business-to-business supply chain. Non-members and members of the RPA are encouraged to enter.

Companies are judged on the quantifiable environmental and economic benefits of their reusable packaging solutions and services. Submissions are reviewed by an independent committee of judges who are not members of the RPA. The award is supported by the U.S. Environmental Protection Agency, Reusable Packaging Machinery Institute, and StopWaste.Org. Applications for the award are accepted in the spring. Visit [www.reusables.org](http://www.reusables.org) to learn more.



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### About SIA

Subaru of Indiana Automotive, Inc. (SIA), a subsidiary of Fuji Heavy Industries, Ltd., is the home of North American Subaru production. Models built at the Lafayette, Indiana plant include the Subaru Legacy and Outback. SIA employs over 3,800 Associates, and every Associate is committed to quality, safety and environmental stewardship.

An industry leader in environmental stewardship, SIA was the first auto assembly plant in America to achieve zero landfill status, and SIA's entire 832-acre site has been designated a Backyard Wildlife Habitat by the National Wildlife Federation.

SIA's community outreach programs include providing charitable contributions and corporate sponsorships, hosting charitable events on-site, donating vehicles and vehicle parts to educational institutions and encouraging Associate volunteerism, which supports hundreds of non-profit organizations and schools throughout Indiana annually. For more information, visit [www.subaru-sia.com](http://www.subaru-sia.com).