

Environmental Review

Rolls-Royce Corporation

December 12, 2018

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Rolls-Royce Environmental Targets

We currently have two global targets, set against a baseline of 2014 and due to be delivered by the end of 2020. These are:

- Zero non-hazardous waste sent to landfill
- Reduce energy use in our operations and facilities by 30%, normalized by revenue

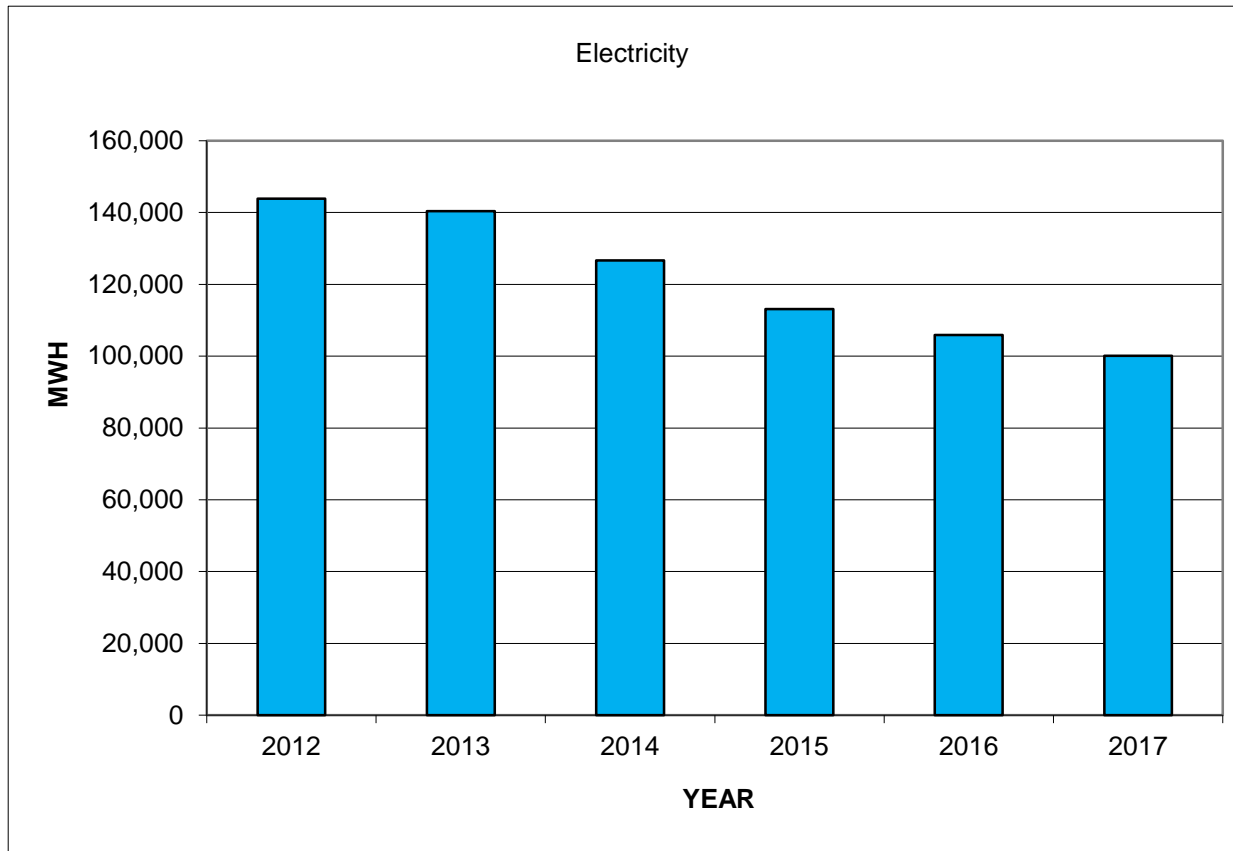
In addition, we have two longer term targets:

- 25% reduction in our production related solid & liquid waste (normalized on turnover), by 2025
- Reduce greenhouse gas (GHG) emissions in our operations and facilities by 50%, absolute, by 2025



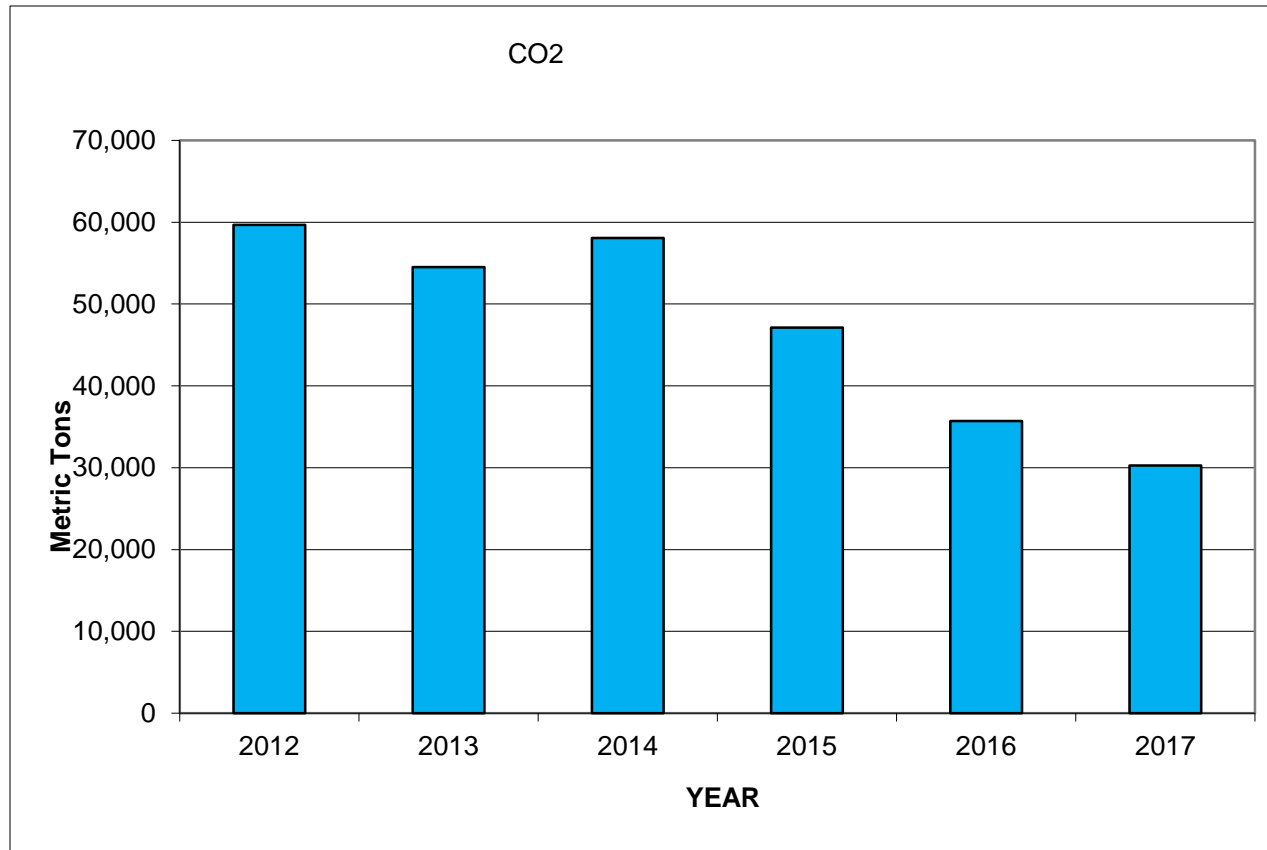
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Electricity



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Green House Gas



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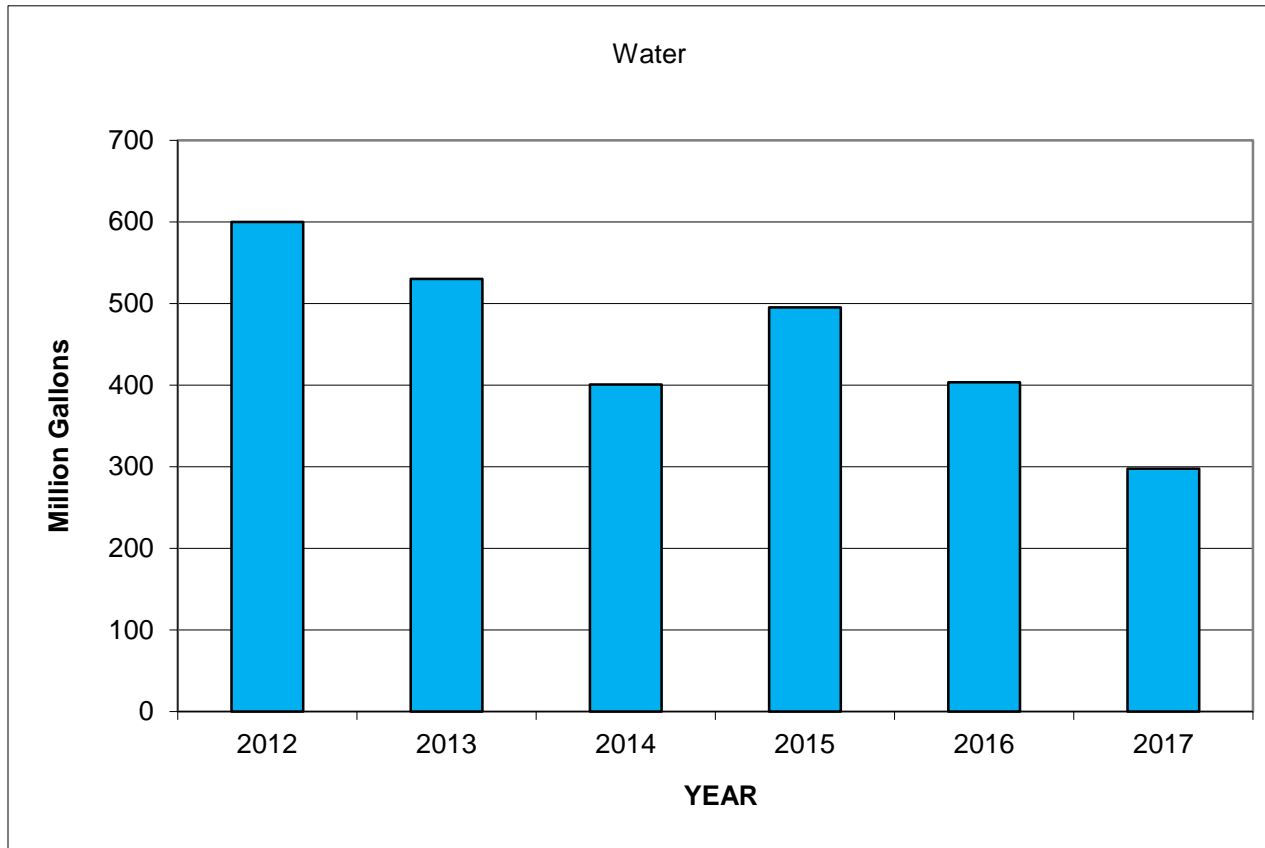
Energy reduction Projects

- Upgrade Energy Monitoring System
- Install variable frequency motors in cooling towers
- Upgrade to LED lighting
- Replace old central air compressors with individual smaller system
- Replace old central steam system with new individual roof top HVAC system
- VFD installation in chilled water system



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Water Use



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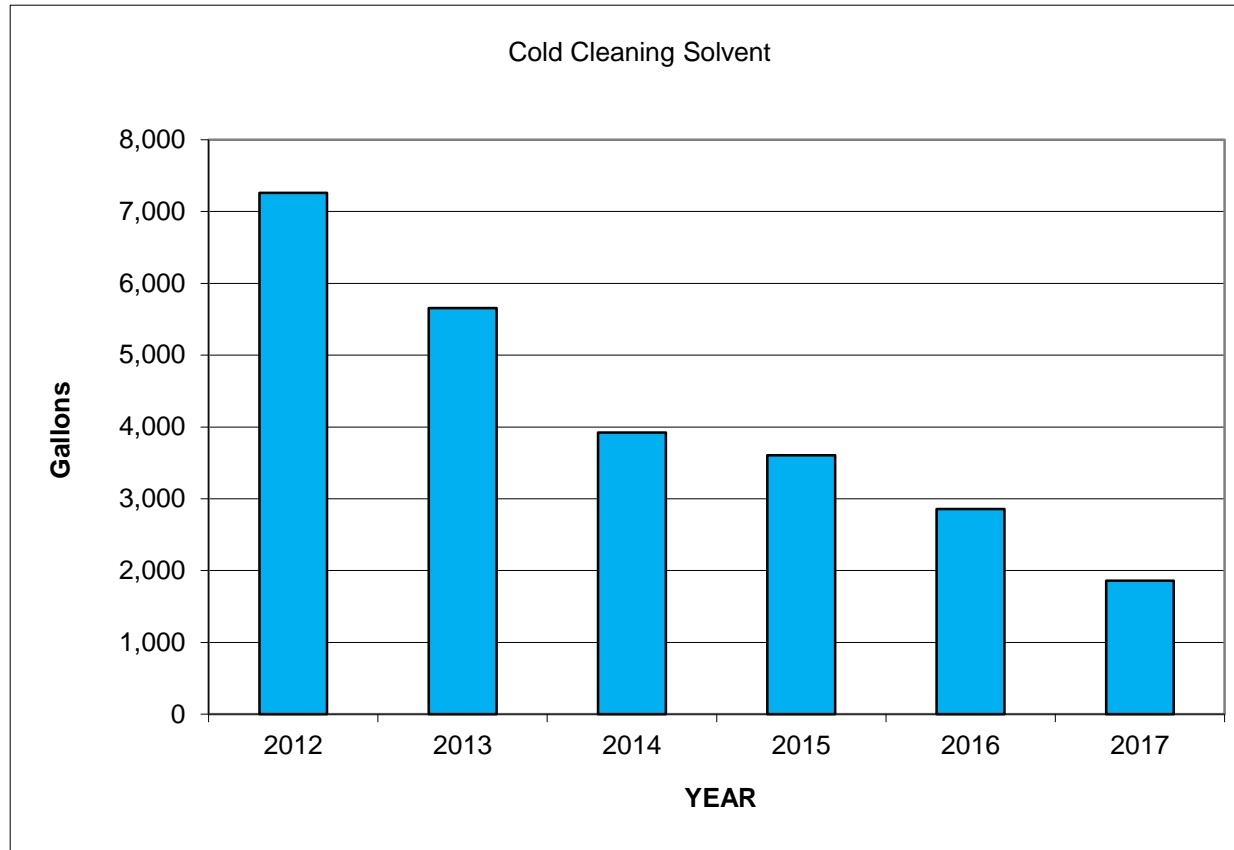
Water reduction Projects

- Replace non-contact cooling water from well water to cooling tower
- Reduction of steam use in facility heating
- New air cooled equipment



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Cold Cleaning Solvent



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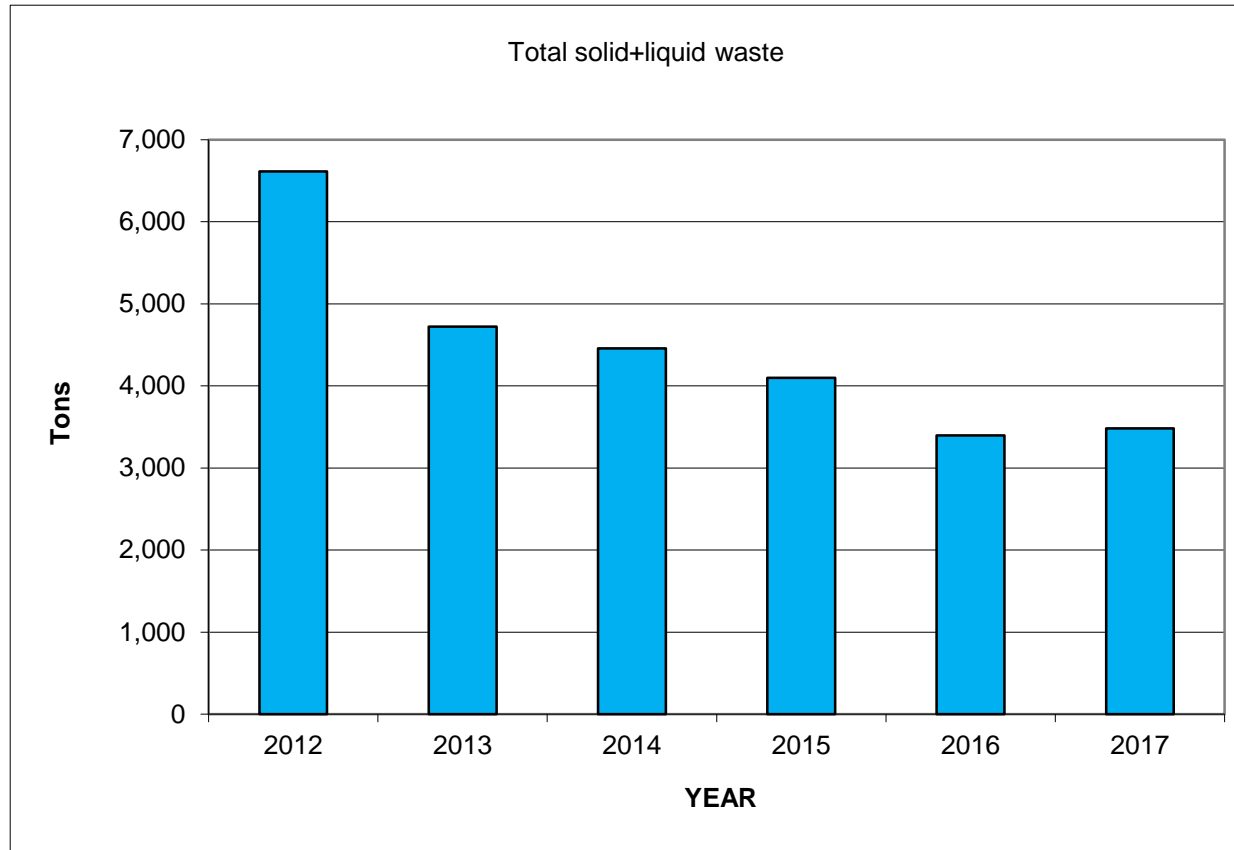
Solvent reduction Projects

- Replace cold cleaning solvent with water base cleaning system
- Combine cleaning operation



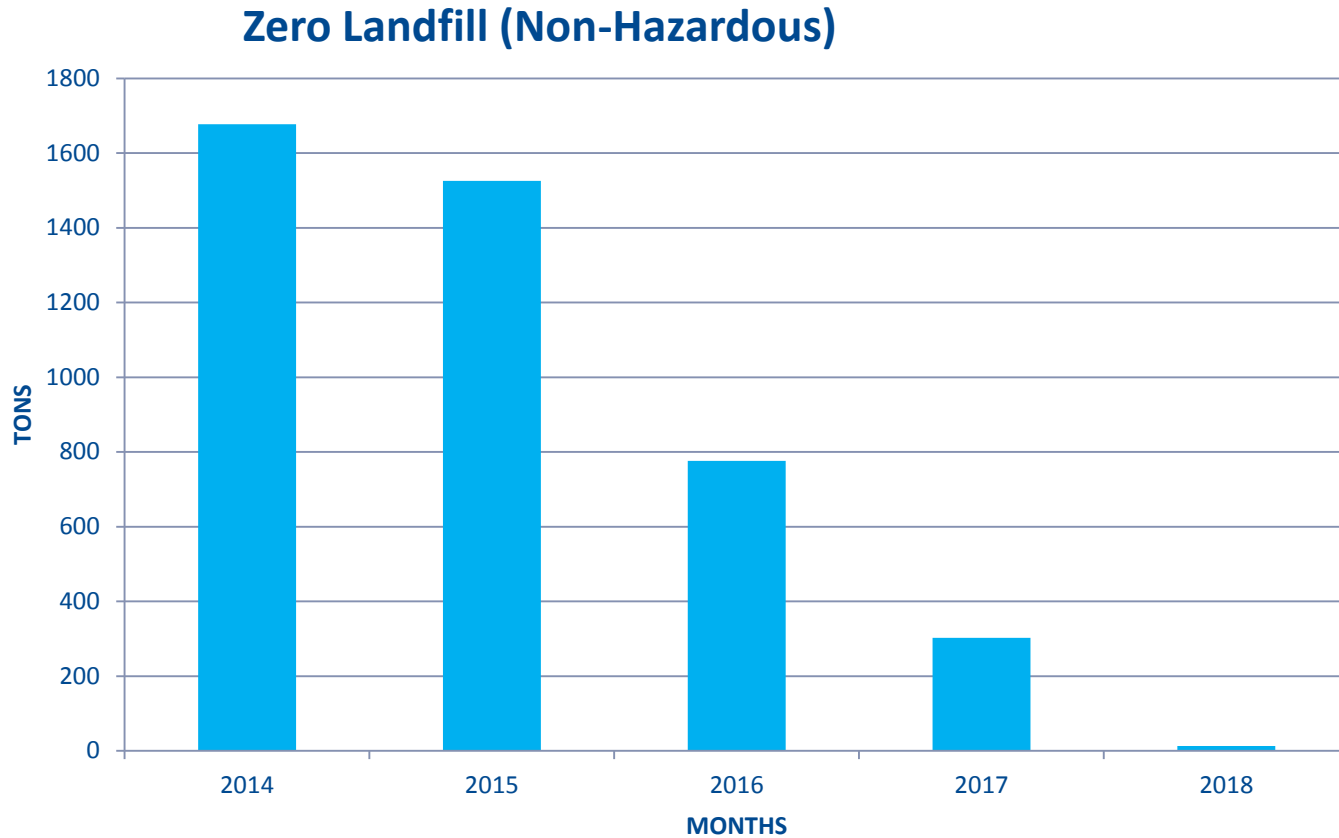
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Total Solid+Liquid Waste



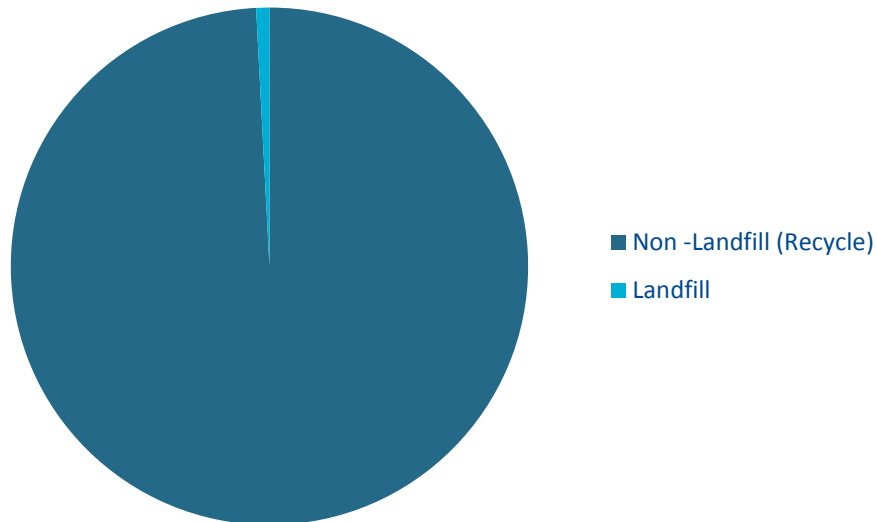
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Zero Landfill (Non-Hazardous)



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Landfill Current State (August/September- Zero landfill)



Items to landfill in 2018 (1%):

- Nickle swarf
- Glass bead media

Data is from January – September 2018



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Landfill diversion Programs

- Segregate trash and recyclable



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Acceptable items for Comingled Recycling



Plastics

Plastic bottles



Metal cans, Aluminum foil & pans

Recycle all rinsed food and beverage metal cans-
steel



Cardboard, newspaper and magazines

newspaper, catalogs, phones books and pizza boxes



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Acceptable items for Comingled Recycling



Paper food containers

Juice boxes, milk, paper bag



Paper

envelopes, office paper, junk mail & file folders

If possible rinse food containers



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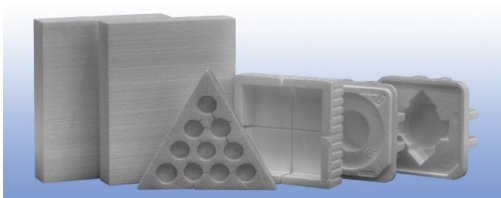
Unacceptable items for Comingled Recycling



No plastic grocery bags



No greasy food containers



No foam packing material



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Recycle trailer Plant-5



Trailer collects

- Cardboard
- Buffering wheels
- Plastics
- Triple rinsed poly drums
- Scrap metal
- Pallets



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Filter re-use program

- Dust Collectors Cartridge Filters cleaned and reused
- Over 6K in savings to date (Banded Stators)



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Oil Socks, Blankets and Huck Towel laundered program



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Oil filter recycling Plant-5 landfill reduction

- Oil filters



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Ni Swarf recycling program



- Being sent to smelter for recycling
- 5/1/18 (8940 Lbs.)
- 5/22/18 (8400 Lbs.)
- 6/13/18 (8560 Lbs.)



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K-Cup recycling

1500 lb recycled in 2018



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Nitrile Glove Recycling Program

23



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Batteries

1900 lb recycled in 2018



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