As an environmentally responsible provider of products, Lexmark designs every cartridge and device with recyclability in mind. We design products with easily removed materials and components to facilitate reuse. For over 25 years, Lexmark has reclaimed material through our Lexmark Cartridge Collection Program (LCCP), and for nearly 10 years has reused the plastic in our closed-loop process at our Mexico facility. We focus on reusing materials through circular manufacturing within our own product lines. Where necessary, we seek innovative reuse opportunities in other industries.

Reclaimed plastic
Innovative processes created by our engineers recover post-consumer recycled (PCR) plastic from empty cartridges and pelletize the plastic for integration into new parts. All plastic collected from cartridges at our LCCP facilities is reused or recycled diverting plastic away from landfills and incineration. Reclaimed PCR plastic is incorporated into over 60 Lexmark components at a level up to 100 percent PCR plastic.

Plastics for 3D printing
As we form new partnerships, the materials from our returned cartridges and printers receive new life as fundamental components in nontraditional products. Our partnership with Sinctronics, a Brazilian electronics recycling company, expanded our efforts in circular manufacturing by reusing our end-of-life cartridges to produce high quality plastic. New plastic resin developed from recycled Lexmark cartridges is used for injection molding and in 3D printers.

Return-for-remanufacture
To ensure more recycled plastics find their way into new products, Lexmark partners with syncreon in Poland to remanufacture our cartridges. Plastics, metals and toner from Lexmark end-of-life cartridges are processed by syncreon to create brand-new Lexmark cartridges. The high-performing remanufactured cartridges are designed with the same engineering specifications and assessed with the same quality tests as new cartridges. Collecting materials for reuse at syncreon made it possible for us to expand our remanufactured parts in Europe from 36 percent in 2015 to 50 percent in 2019.

Continual improvement of our process increases the amount of materials we reuse and provides Lexmark the opportunity to assist the European Commission in achieving ten million tons of recycled plastics in new products by 2025.
Toner extending road life
Dedicated to maximizing the reuse of our customer’s returned toner cartridges, Lexmark worked with our longtime sustainability partner, Close the Loop, to collaborate on ways to reuse toner. Close the Loop developed TonerPave, an asphalt additive composed of recycled tires, toner powder and recycled oil. This innovative additive provided Lexmark the opportunity to bring our excess toner back to life at our Lexington campus with the first commercial application of TonerPave in North America. Roads with TonerPave have characteristics superior to comparable roads with virgin raw materials. In 2019, Lexmark captured 450 metric tons of toner from recycled printer cartridges and manufacturing processes with 393 metric tons being used by Close the Loop to create TonerPave and other engineered composites. In 2016, TonerPave was awarded a Manufacturing Leadership award and High Achiever in the Sustainability category.

Renewed roller
Creating a cleaning process to extend the life of a laser printer component was no easy task for Lexmark engineers. Before the new cleaning process, the developer roller in a laser cartridge was rarely a part of a Lexmark remanufactured cartridge. The roller possesses a difficult-to-clean film of toner on the rubber surface that inhibited its reuse. Testing revealed the roller had an extensive life if the film of toner was removed. Lexmark engineers created a novel washing system to remove the toner film using ceramic agitators with scrubbing agents to clean the roller without damaging it or altering its properties. Reuse of developer rollers results in substantial environmental savings caused by eliminating the need to harvest new raw materials. In 2019 over 400,000 rolls were reused in remanufactured cartridges providing material and water savings from reusing the water during cleaning. Lexmark was awarded a Frost & Sullivan's 2015 Manufacturing Leadership Award in Sustainability Leadership for reconditioning our developer rolls.

New life for returned photoconductors
Lexmark devices contain photoconductor units, which are imaging cylinders with photosensitive coatings. At our Boulder, Colorado facility, we replace the photosensitive coating on over 750,000 photoconductors per year, saving energy and materials. In 2019, over 580,000 photoconductors from our returned cartridges were collected and sent to our facilities in Boulder, Colorado, for recoating and reuse. An additional 190,000 photoconductors were recovered from the manufacturing line resulting in the reuse of 52 metric tons of aluminum.

Packaging with reduced carbon footprint
Lexmark engineers re-design packaging to increase the amount of material reused and minimize waste. Package design revisions of the Lexmark MS/MX310, 410, 510 and 610 series cartridges use 40 percent less material and improve container efficiency during shipping. These efficiencies result in energy and natural resource savings, and fewer greenhouse emissions.

Embracing the circular economy, Lexmark creates molded pulp cushions composed of used paper. These packaging cushions provide excellent protection for our cartridges during shipping and are made from 100 percent post-consumer waste. In 2019, our pulp cushions gave 343 metric tons of used paper a second life protecting our cartridges. This project was awarded a Manufacturing Leadership Award in 2013.