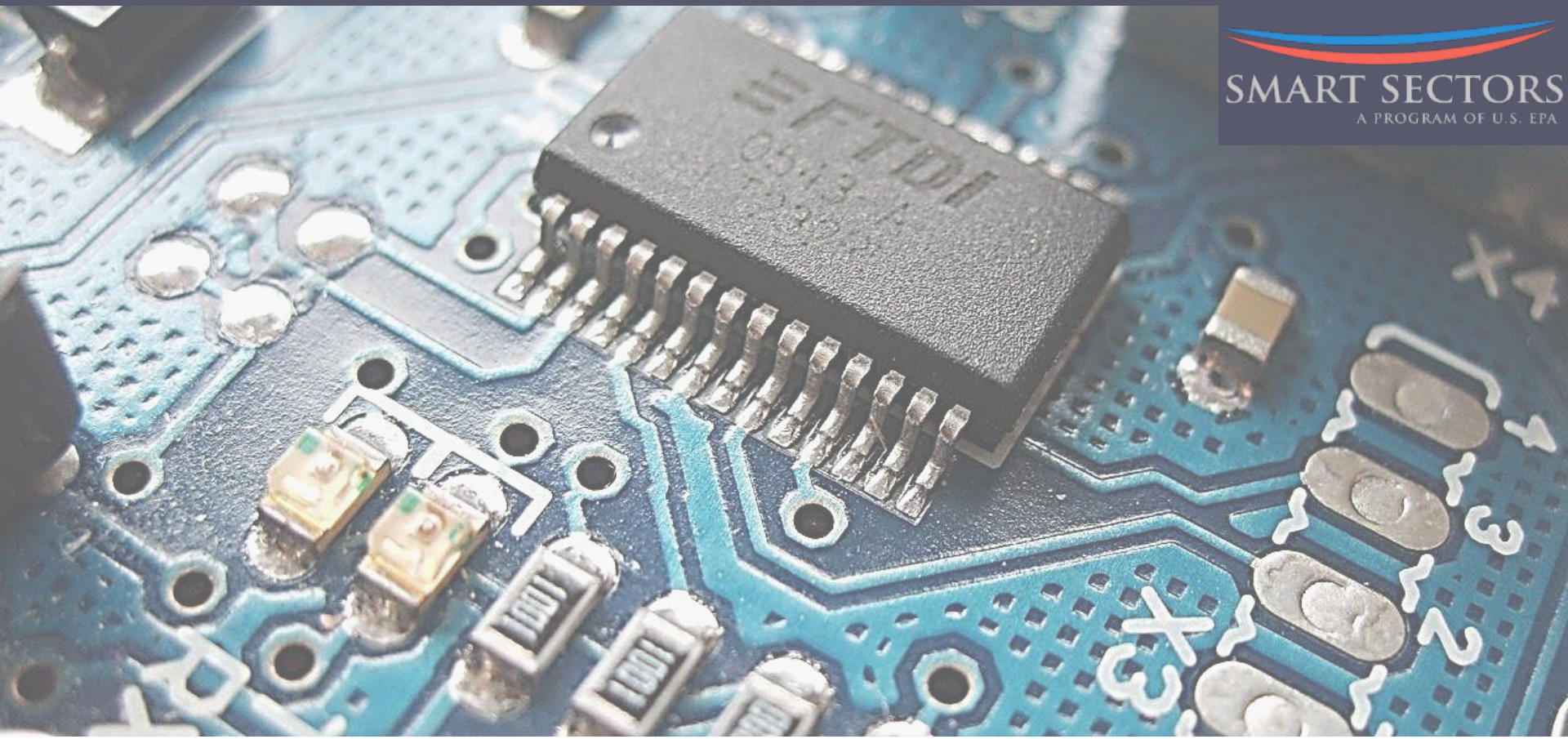
ELECTRONIC PRODUCTS & SEMICONDUCTOR MANUFACTURING

SMART SECTORS
A PROGRAM OF U.S. EPA



ECONOMICS

ENVIRONMENTAL IMPACT

EFFICIENCY

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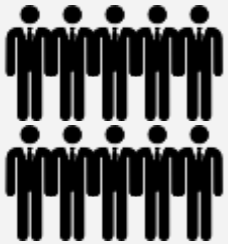
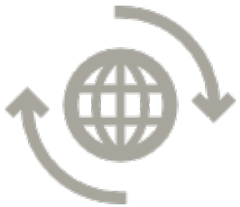


The electronic products manufacturing sector employs approximately 1,092,300 people in the U.S.

Bureau of Labor Statistics, 2019



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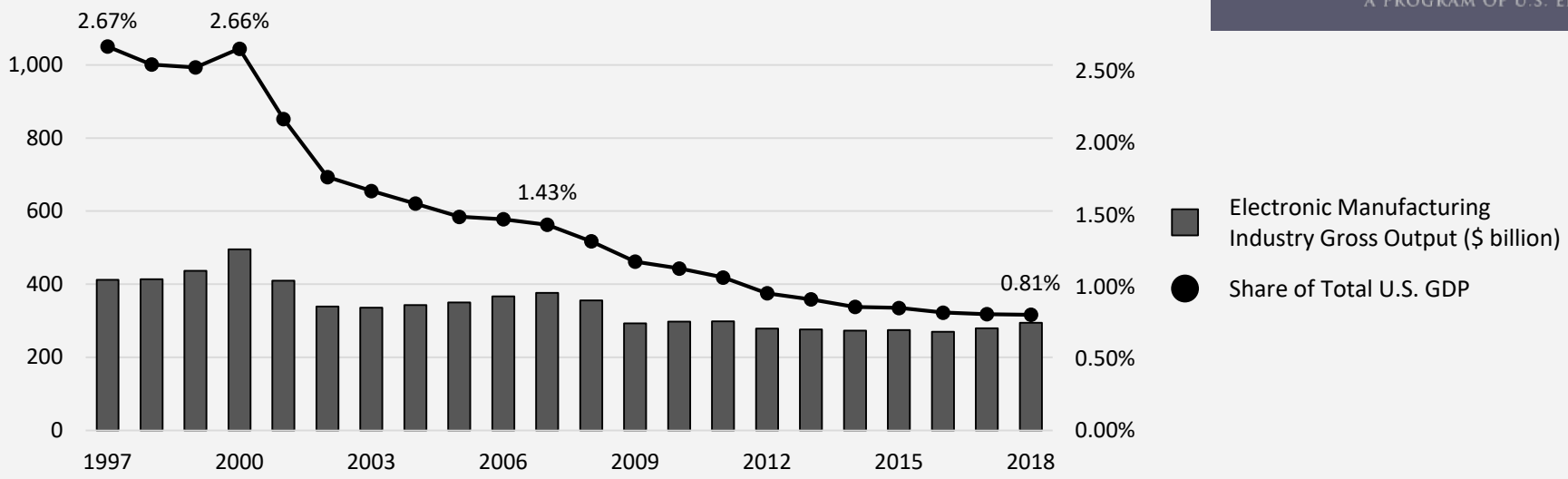
U.S. Electronic Manufacturing Industry's Share of GDP



Between 1997 and 2018, the electronic manufacturing industry's share of GDP has decreased from 2.67% to 0.81% while gross output has decreased from $412 billion to $295 billion.

Bureau of Economic Analysis, 2019

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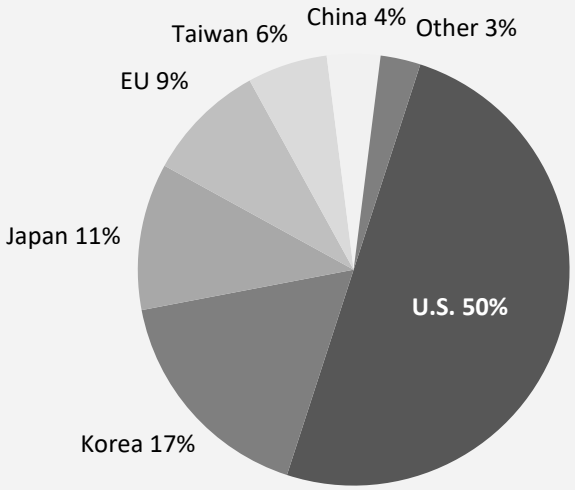
U.S. Semiconductor Industry Share of Global Market (2015)



In 2015, semiconductors produced by U.S. firms constituted 50% of the global market.

International Trade Administration, 2016

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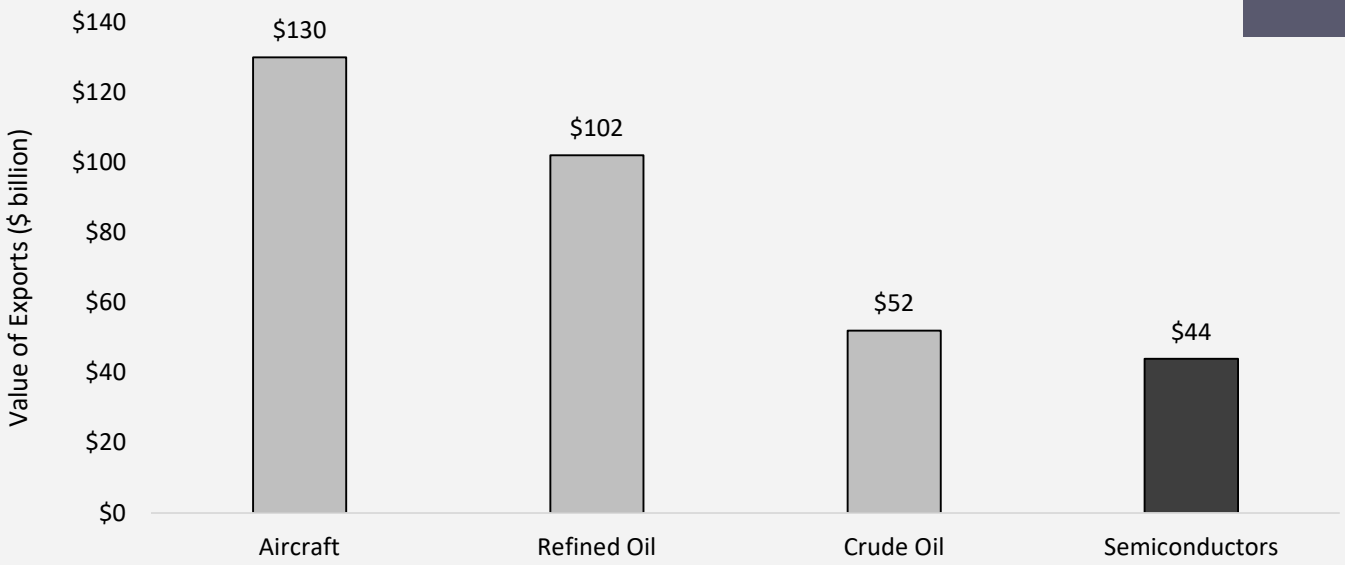
Top 4 U.S. Exports (2018)



Exports of semiconductors were worth $44 billion in 2018, ranking fourth among all U.S. products.

International Trade Commission, 2019

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Electronic Products Combusted with Energy Recovery or Landfilled

Between 2000 and 2015, the quantity of electronic product recycling increased from 190,000 tons to 1,230,000 tons.

U.S. EPA, 2018

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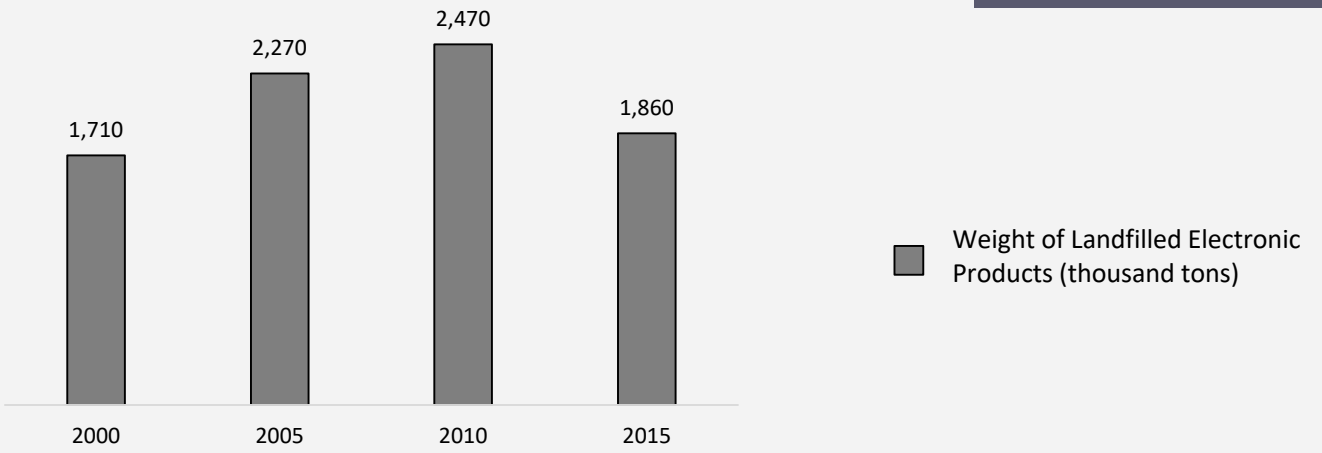
Electronic Products Combusted with Energy Recovery or Landfilled



Between 2000 and 2010, the weight of landfilled electronic products increased from 1.71 million to 2.47 million tons, before declining to 1.86 million tons in 2015.

U.S. EPA, 2019

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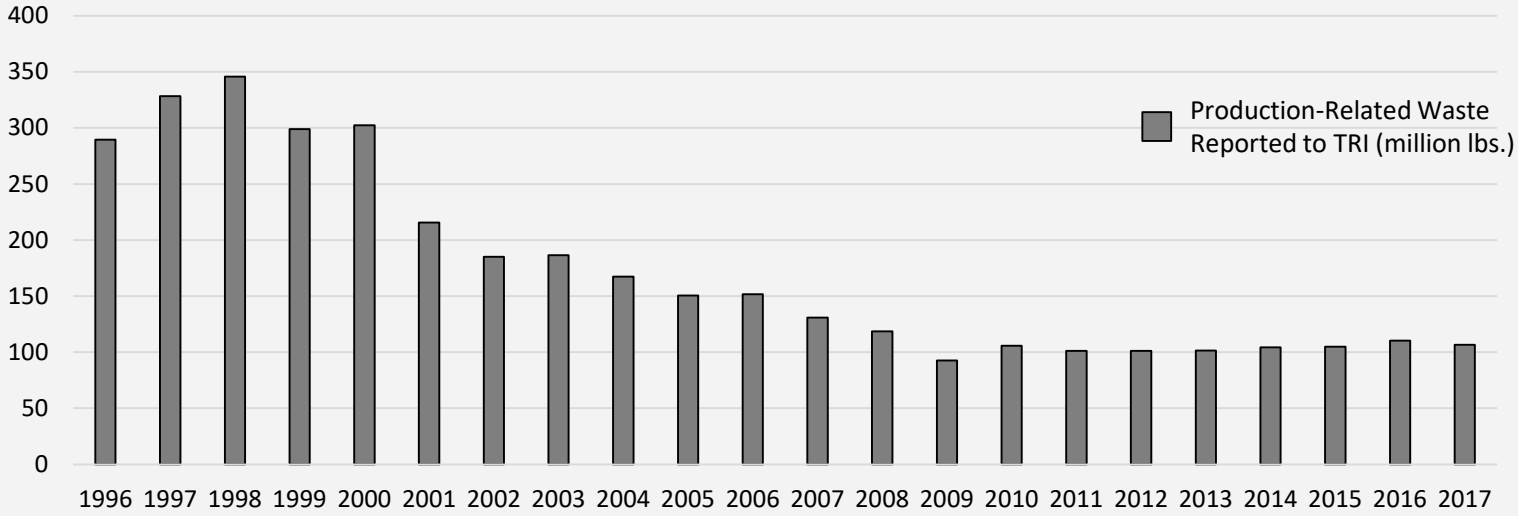
Production-Related Waste from Electronic Products Manufacturing Reported to TRI



Between 1996 and 2017, production-related waste reported to TRI by the electronic products manufacturing sector decreased from roughly 290 million to 107 million pounds.

U.S. EPA, Toxics Release Inventory, 2019

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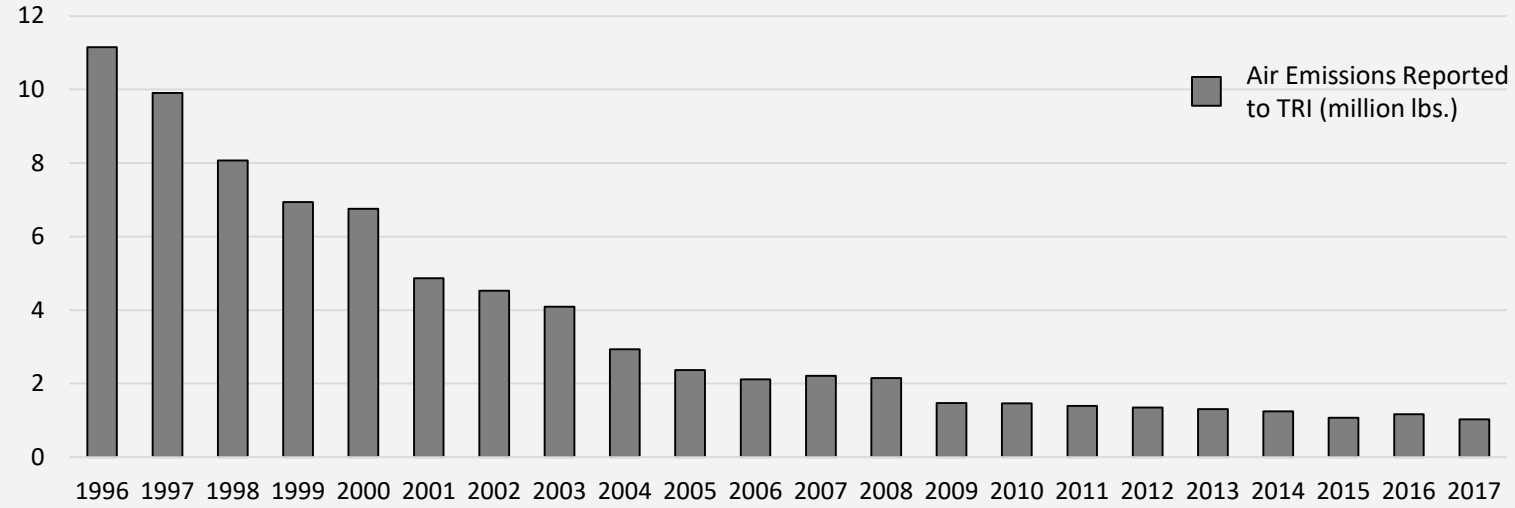
Air Emissions Reported to TRI from Electronic Products Manufacturing



Between 1996 and 2017, air emissions reported to TRI by the electronic products manufacturing sector decreased from about 11 million to 1 million pounds.

U.S. EPA, Toxics Release Inventory, 2019

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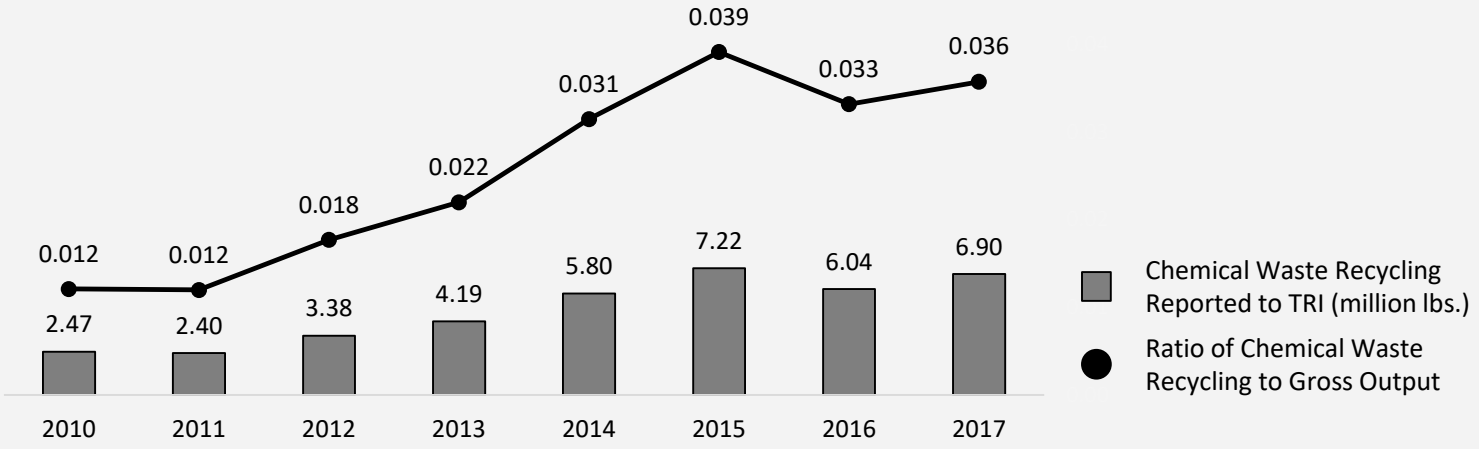
On-Site Chemical Waste Recycling Reported to TRI vs. Gross Output



Between 2010 and 2017, the ratio of chemical waste recycling reported to TRI vs. gross output increased from 0.012 to 0.036, constituting a 200% increase.

U.S. EPA, Toxics Release Inventory, 2019; Bureau of Economic Analysis, 2019

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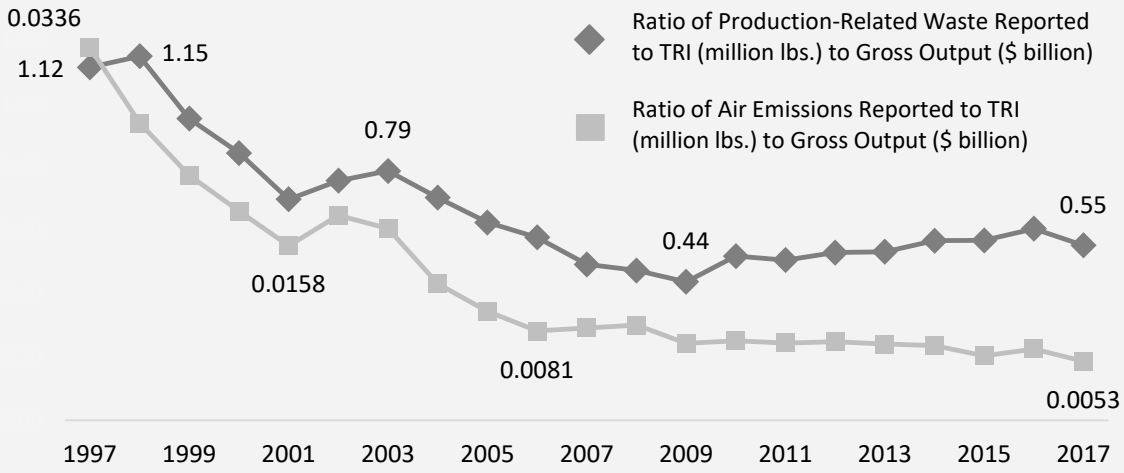
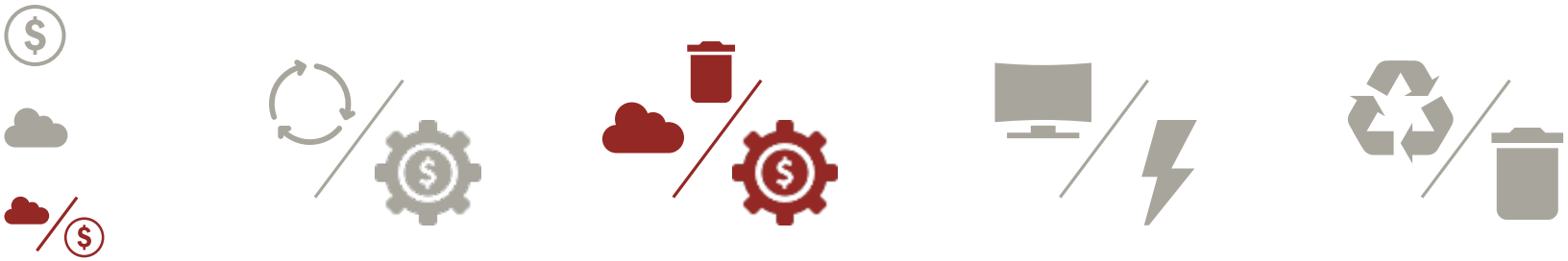
Air Emissions and Production-Related Waste Reported to TRI vs. Gross Output



Between 1997 and 2017, the ratio of production-related waste and air emissions reported to TRI to gross output declined by 51% and 84% respectively.

U.S. EPA, Toxics Release Inventory, 2019; Bureau of Economic Analysis, 2019



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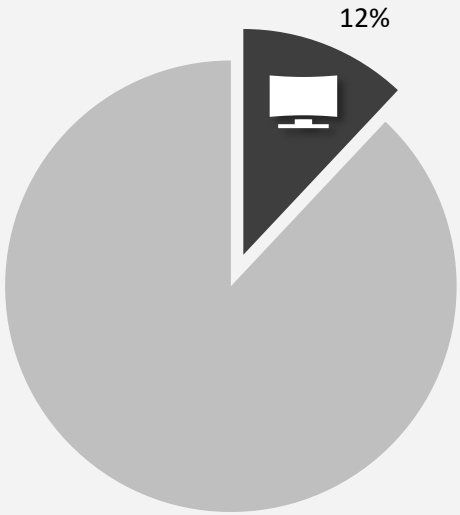
Household Electronic Product Energy Consumption



The average U.S. household owns 24 consumer electronic products, which are responsible for 12% of home electricity use.

U.S. EPA, ENERGY STAR, 2019

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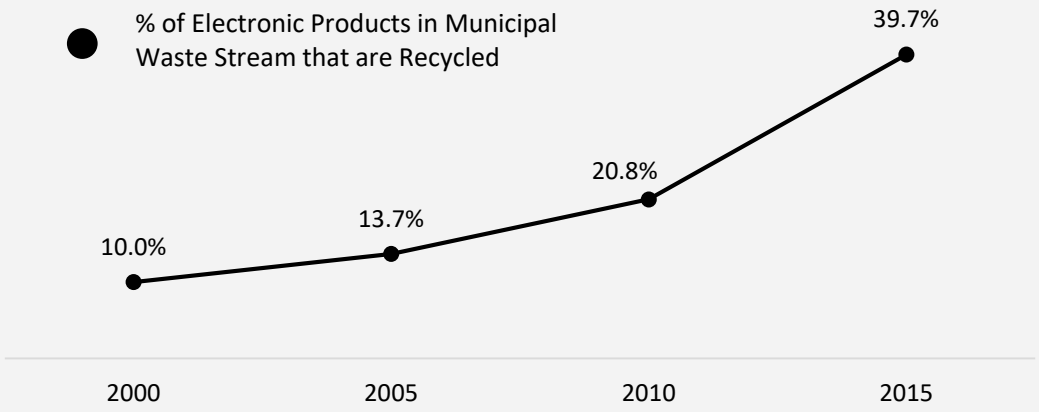
Electronic Product Recycling



Between 2000 and 2015, the percentage of electronic products that entered the municipal waste stream and were recycled increased from 10% to nearly 40%.

U.S. EPA, 2018

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Broadly, the electronic products and semiconductor manufacturing sector includes computer and electronic product manufacturing (NAICS 334). Establishments in this sector manufacture a wide range of computing and communication equipment as well as smaller electronic device components such as semiconductors, circuit boards, capacitors, resistors, and coils.

Establishments in this sector range from companies engaged in the production of final consumer products and scientific instruments such as phones, computers, and medical devices to manufacturers of individual inputs such as silicon chips. Specifically, EPA data sources for electronic recycling include subsets of NAICS 334.

For more information about the EPA Smart Sectors program, visit: epa.gov/smartsectors.

For more information about the electronic products and semiconductor manufacturing sector, visit:

- **U.S. EPA ENERGY STAR**
- **U.S. EPA Sustainable Materials Management**
- **U.S. EPA Facts and Figures about Materials, Waste and Recycling**
- **U.S. Bureau of Labor Statistics – Computer and Electronic Product Manufacturing**
- **U.S. Census Bureau, NAICS 334**