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Ecodesign Policies Compared: The United States and the European Union

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INTRODUCTION

The United States has had, and continues to have, an outsized impact on the environment. In 2022, the United States emitted 19 metric tons of CO₂ per capita, ranking third-highest globally after Saudi Arabia and Australia.¹ It is also responsible for 20.3% of total global historical emissions; between 1850 and 2021, the United States emitted

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¹ Laura Paddison & Annette Choi, *As Climate Chaos Accelerates, Which Countries Are Polluting the Most?*, CNN (Jan. 3, 2024), <https://www.cnn.com/interactive/2023/12/us/countries-climate-change-emissions-cop28/> [<https://perma.cc/DZT9-3LBL>].

over 500 Gt of CO₂.² The United States' share of historical emissions is far greater than any other country, and is responsible for a 0.2°C increase in global temperatures.³ In addition, the United States is the largest producer of waste per capita, with each person generating 811 kg, or .89 tons, per year.⁴

In particular, the United States generates a large amount of plastic waste. The United States previously exported its plastic waste to other countries that could sort and process it at lower cost. In 2016, the United States sent almost 700,000 tons of plastic to China.⁵ However, in 2017, China implemented Operation National Sword, which limited plastic imports.⁶ Other importing countries in Southeast Asia quickly followed suit.⁷ In April 2022, the third largest shipping line, CMA CGM, banned scrap plastic deliveries completely.⁸ Today, few companies are willing to ship plastic waste, and even fewer countries accept it in bulk. As a result, the United States has placed 23% more plastic into landfill since 2017.⁹

As a major contributor to climate change, the United States has a moral responsibility, as well as economic and logistical incentives, to reduce the amount of pollution and waste it produces. However, the United States cannot adequately reduce its contributions to climate change without addressing the leading source of greenhouse gas emissions: material resource extraction and processing.¹⁰ Therefore,

² Simon Evans, *Analysis: Which Countries Are Historically Responsible for Climate Change?*, CARBON BRIEF (Oct. 5, 2021, 6:00 AM), <https://www.carbonbrief.org/analysis-which-countries-are-historically-responsible-for-climate-change> [https://perma.cc/EU47-F5UX].

³ *Id.*

⁴ *Global Waste Index 2022*, SENSONEO, <https://sensoneo.com/global-waste-index/> [https://perma.cc/6MBG-58GC] (last visited May 18, 2025).

⁵ Christopher Joyce, *Where Will Your Plastic Trash Go Now that China Doesn't Want It?*, NPR (Mar. 13, 2019, 4:28 PM), <https://www.npr.org/sections/goatsandsoda/2019/03/13/702501726/where-will-your-plastic-trash-go-now-that-china-doesnt-want-it> [https://perma.cc/J8R9-N59U].

⁶ Nicolás Rivero, *A Major Shipping Line Is Refusing to Export the West's Plastic Waste. Here's Why It Matters*, WORLD ECON. F. (Apr. 25, 2022), <https://www.weforum.org/agenda/2022/04/another-big-shipping-line-is-refusing-to-export-the-west-s-plastic-waste/> [https://perma.cc/RPC7-DD2H].

⁷ Martina Igini, *What Are the Consequences of China's Import Ban on Global Plastic Waste?*, EARTH.ORG (Apr. 7, 2022), <https://earth.org/chinas-import-ban/> [https://perma.cc/HZ7A-LNBP].

⁸ Rivero, *supra* note 6.

⁹ *Id.*

¹⁰ *Global Resources Outlook 2024*, UNITED NATIONS ENV'T PROGRAMME (Mar. 1, 2024), <https://www.unep.org/resources/Global-Resource-Outlook-2024> [https://perma.cc/SM3K-X2QT].

the United States must promote policies that support sustainable product design, or ecodesign, to achieve a meaningful reduction in its environmental impact.

This Note will explore U.S. federal policies that implicate ecodesign and how they compare to those from the European Union (EU). Part I will examine why ecodesign is necessary and what it entails. Parts II and III will highlight key U.S. and EU policies that support ecodesign. Lastly, Part IV will consider the impact and scope of these policies and how and why they differ.

I BACKGROUND

The Earth cannot replenish resources at the rate humankind has been using them.¹¹ The extraction and processing of fossil fuels, minerals, and biomass account for over 90% of biodiversity loss and water stress in addition to over 55% of total global greenhouse gas emissions.¹² Resource extraction has more than tripled since 1970 and could rise by almost 60% by 2060 from 2020 levels.¹³ Growth in extraction has exceeded growth in well-being, which is measured using gross national income per capita, education, and life expectancy.¹⁴

However, resource consumption remains tightly linked to economic growth. For every 1% increase in gross domestic product, raw material use has risen by 0.4%.¹⁵ Therefore, decoupling economic activity from the consumption of resources, especially finite ones, will help reduce emissions.

Multiple approaches aim to decouple economic activity from resource consumption, such as increasing the digitization of services, fostering a sharing economy, and creating a circular economy. In a circular economy, linear take-make-waste systems are transformed into systems that keep materials in use, either as a product, components, or raw materials, so that the highest possible value of those materials is

¹¹ 21 *Circular Solutions for Every Business, City and Nation*, CIRCULARITY GAP REPORTING INITIATIVE, <https://www.circularity-gap.world/2022> [https://perma.cc/S7U3-6TAF] (last visited May 18, 2025).

¹² *Id.*

¹³ *Id.*

¹⁴ *Global Resources Outlook 2024*, *supra* note 10.

¹⁵ *Sustainable Materials Management Basics*, U.S. ENV'T PROT. AGENCY, <https://www.epa.gov/smm/sustainable-materials-management-basics> [https://perma.cc/3AU2-UHTS] (last updated Sept. 9, 2024).

retained.¹⁶ Keeping products in use reduces the need to extract raw materials, generates less waste, and, therefore, results in a lower environmental impact. Currently, only 7.2% of extracted materials make it back into the economy; the remainder is discarded after a single use.¹⁷ Consequently, designing products with circular life cycles presents a significant opportunity to reduce their environmental impact.

Ecodesign is a concept central to the circular economy framework. Up to 80% of a product's environmental impact is determined at the design phase, which takes into consideration all stages of a product's life cycle.¹⁸ Accordingly, creating ecodesigned products requires more than implementing increasingly resource-efficient inputs and processes. To retain maximum value from products at the end of their life, they must be designed to extend their usage and ensure recyclability. Products can be designed to have multiple uses, be more durable, and be more modular, such that a product is easier to repair, upgrade, and customize. Products can also be composed of biodegradable materials or from fewer materials that can be easily separated for recycling.

Ecodesign, along with the broader transition to a circular economy, has far reaching implications throughout entire value chains, raising many questions. For example, how can businesses remain profitable if they make products consumers do not need to replace? Might the cost of incorporating recycled materials in production drive down a company's profit margin to an unsustainable degree? Would ecodesigned products sufficiently and desirably replace conventional ones, and would consumers make fewer purchases as a result? How would reducing resource extraction and increasing repairability and recycling affect where and what kinds of jobs are available? These questions deserve much consideration but are beyond the scope of this Note.

¹⁶ *What Is a Circular Economy?*, ELLEN MACARTHUR FOUND., <https://ellenmacarthurfoundation.org/topics/circular-economy-introduction/overview> [https://perma.cc/LYG4-RN64] (last visited May 18, 2025); *Circulate Products and Materials*, ELLEN MACARTHUR FOUND. (Feb. 16, 2022), <https://www.ellenmacarthurfoundation.org/circulate-products-and-materials> [https://perma.cc/4P6D-A2ZU].

¹⁷ *The Circularity Gap Report 2023*, CIRCLE ECON., <https://www.circularity-gap.world/2023> [https://perma.cc/QY8A-8ZSX] (last visited May 18, 2025).

¹⁸ *An Introduction to Circular Design*, ELLEN MACARTHUR FOUND. (June 6, 2022), <https://www.ellenmacarthurfoundation.org/news/an-introduction-to-circular-design> [https://perma.cc/2LEK-RNS8].

II

UNITED STATES POLICIES

Up until November 2024, the United States did not have any policies that identified sustainable product design as a goal. In June 2021, the Head of Public Affairs at the Ellen MacArthur Foundation, a nonprofit working to accelerate the transition to a circular economy, recognized that there was a “very loud silence coming from the Americans at [the] federal level.”¹⁹ However, in late 2021, the Biden administration launched two policies that somewhat address ecodesign: the Circular Economy Strategy Series and the Federal Sustainability Plan. This Note will first review how these initiatives influence ecodesign and then briefly mention other federal policies.

A. Circular Economy Strategy Series

The Circular Economy Strategy Series owes its existence to the Save Our Seas Act 2.0 (SOS 2.0). SOS 2.0 was signed into law on December 18, 2020, by President Trump.²⁰ The law incentivizes investments in recycling infrastructure and innovative methods to reduce plastic waste.²¹ For instance, SOS 2.0 established a Genius Prize for Save Our Seas Innovations to reward advancements “in production and packaging design that reduce the use of raw materials, increase recycled content, encourage reusability and recyclability, and promote a circular economy.”²² It also called for a study on circular polymers and a report on economic incentives to spur development of new end use markets for recycled plastics.²³ SOS 2.0 gave the Environmental Protection Agency (EPA) the authority to implement the Circular Economy Strategy Series.²⁴

¹⁹ Joe Isles, *Which Country Is Leading the Circular Economy Shift?*, ELLEN MACARTHUR FOUND. (June 28, 2021), <https://ellenmacarthurfoundation.org/articles/which-country-is-leading-the-circular-economy-shift> [<https://perma.cc/W8WE-65XA>].

²⁰ Allyn Stern et al., *Bipartisan Save Our Seas 2.0 Act Signed into Law*, BEVERIDGE & DIAMOND (Dec. 22, 2020), <https://www.bdlaw.com/publications/bipartisan-save-our-seas-2-0-act-signed-into-law/> [<https://perma.cc/GTP6-LTDH>].

²¹ Save Our Seas 2.0 Act, S. 1982, 116th Cong. (2020) (enacted).

²² 33 U.S.C. § 4232(a)(2)(B).

²³ Save Our Seas 2.0 Act, S. 1982.

²⁴ *Building a Circular Economy for All: Progress Toward Transformative Change*, U.S. ENV'T PROT. AGENCY (Sept. 2022), https://www.epa.gov/system/files/documents/2022-09/EPA_Circular_Economy_Progress_Report_Sept_2022.pdf [<https://perma.cc/7Y9X-LRL2>].

The Circular Economy Strategy Series is a ten-year plan tackling six sectors.²⁵ The six sectors are recycling, plastics, food waste and organics, minerals and electronics, built environment, and textiles.²⁶ On November 15, 2021, the Biden administration launched the National Recycling Strategy: Part One of a Series on Building a Circular Economy, alongside the Infrastructure Investment and Jobs Act, also known as the Bipartisan Infrastructure Law (BIL), which provides its funding.²⁷ The National Recycling Strategy was followed by the Draft National Strategy to Prevent Plastic Pollution in April 2023, which was finalized in November 2024.²⁸ The latter aims to prevent the release of plastic waste into the environment by 2040 and, excitingly, explicitly mentions “Innovate Materials and Product Design” as an objective.²⁹ In June 2024, the Biden administration continued to make steady progress with the Circular Economy Strategy Series by announcing the National Strategy for Reducing Food Loss and Waste and Recycling Organics.³⁰ The strategy includes investing in the development of new products derived from food waste and in biodegradable food packaging.³¹ The remainder of this section will discuss the National Recycling Strategy in more detail, as the United States has had longer to implement its objectives.

The goal of the National Recycling Strategy is to improve the municipal solid waste recycling system and support the National Recycling Goal of increasing the recycling rate by 50% by 2030.³² The strategy’s executive summary acknowledges that recycling is only one part of creating a circular economy and that redesigning materials and products to be less resource intensive is necessary and will be addressed in future series.³³

²⁵ *Id.*

²⁶ *Id.*

²⁷ *Id.*

²⁸ *National Strategy to Prevent Plastic Pollution*, U.S. ENV’T PROT. AGENCY (Nov. 26, 2024), <https://www.epa.gov/circulareconomy/national-strategy-prevent-plastic-pollution> [https://perma.cc/S5MJ-8N8Z].

²⁹ *Id.*

³⁰ *National Strategy for Reducing Food Loss and Waste and Recycling Organics*, THE WHITE HOUSE (June 2024), https://www.whitehouse.gov/wp-content/uploads/2024/06/NATIONAL-STRATEGY-FOR-REDUCING-FOOD-LOSS-AND-WASTE-AND-RECYCLING-ORGANICS_6.11.24.pdf [https://perma.cc/G58Q-28DM].

³¹ *Id.*

³² *National Recycling Strategy*, U.S. ENV’T PROT. AGENCY (Nov. 15, 2021), <https://www.epa.gov/system/files/documents/2021-11/final-national-recycling-strategy.pdf> [https://perma.cc/BH2Q-3NTZ].

³³ *Id.*

The strategy has five objectives: (1) improve recycling commodities markets, (2) improve recycling infrastructure, (3) reduce contamination in waste streams, (4) support circularity policies and programs, and (5) standardize and increase collection of data.³⁴ To support circularity, the government plans to analyze potential policies for effectiveness, including Extended Producer Responsibility (EPR) laws, national recyclability standards and mandates, material bans, fees for landfill and packaging, and consumer incentives.³⁵ These policies would incentivize innovation for more sustainable product design.

Many states already have EPR laws. These laws make product manufacturers and distributors responsible for their products and packaging at the end of a product's life, which incentivizes the industry to prevent waste as early as the product design stage.³⁶ EPR laws typically require product manufacturers and distributors to establish a producer stewardship organization.³⁷ These organizations manage fees paid by producers to help with the take-back of products, educate consumers, and meet EPR targets.³⁸ Among thirty-three states, there are 139 EPR laws across nineteen product categories, including batteries, drugs, mercury-containing thermostats, and mattresses.³⁹ As of August 2024, seven states have EPR or similar laws related specifically to packaging.⁴⁰

The 2021 Bipartisan Infrastructure Law (BIL), which was launched alongside the National Recycling Strategy, provides funding for the Circular Economy Strategy Series and recycling initiatives. The BIL provides \$275 million for the Solid Waste for Infrastructure for Recycling grants (also authorized by SOS 2.0), \$75 million for Recycling Education and Outreach grants, and \$25 million for battery collection and voluntary labeling guidelines.⁴¹ It also allocates \$74 million to advance electric vehicle battery recycling and reuse,

³⁴ *Id.*

³⁵ *Id.*

³⁶ Kaela Martins, *Extended Producer Responsibility Bills Gain Momentum*, RETAIL INDUS. LEADERS ASS'N (Aug. 30, 2021), <https://www.rila.org/blog/2021/04/extended-producer-responsibility-bills> [<https://perma.cc/EAB4-MHYT>].

³⁷ *Id.*

³⁸ *Id.*

³⁹ *EPR Laws in the United States*, PROD. STEWARDSHIP INST., <https://productstewardship.us/epr-laws-map/> [<https://perma.cc/3EQ9-AJMP>] (last visited May 18, 2025).

⁴⁰ *Packaging EPR Laws in the U.S.*, SOURCE INTEL. (Aug. 7, 2024, 3:28 PM), <https://blog.sourceintelligence.com/packaging-epr-laws-in-the-us> [<https://perma.cc/8K6Q-VTQW>].

⁴¹ Isles, *supra* note 19.

including materials separation.⁴² Soon after rolling out the BIL and National Recycling Strategy, the Biden administration published a plan for federal purchasing.

B. Federal Sustainability Plan

As the world's largest purchaser, the U.S. federal government can stimulate demand for ecodesigned products and processes.⁴³ On December 8, 2021, President Biden issued Executive Order 14057 ("Executive Order on Catalyzing Clean Energy Industries and Jobs Through Federal Sustainability") establishing the Federal Sustainability Plan.⁴⁴ The Federal Sustainability Plan requires that federal vehicles, buildings, operations, and procurement produce net-zero emissions and be powered by carbon pollution-free electricity by 2050.⁴⁵ Each of the plan's initiatives implicate ecodesign to some degree. For example, Section 205 requires agencies to meet sustainable design elements when designing and constructing infrastructure.⁴⁶ The Biden administration created the Buy Clean Task Force in February 2022 to create policy recommendations to increase consideration of construction materials' "embodied emissions"—emissions from extraction, production, transport, and manufacturing.⁴⁷ Similarly, Section 207 of the executive order requires agencies to "promote a

⁴² *Biden-Harris Administration Announces Nearly \$74 Million to Advance Domestic Battery Recycling and Reuse, Strengthen Nation's Battery Supply Chain*, U.S. DEP'T. OF ENERGY (Nov. 16, 2022), <https://www.energy.gov/articles/biden-harris-administration-announces-nearly-74-million-advance-domestic-battery-recycling> [https://perma.cc/FE82-YFPZ].

⁴³ *Federal Buy Clean Initiative*, COUNCIL ON ENV'T QUALITY, <https://www.sustainability.gov/buyclean/index.html> [https://perma.cc/U37R-VTPF] (last visited Jan. 19, 2025).

⁴⁴ *Federal Sustainability Plan*, COUNCIL ON ENV'T QUALITY, <https://www.sustainability.gov/federalsustainabilityplan/index.html> [https://perma.cc/EZ4X-E2K2] (last visited Jan. 19, 2025).

⁴⁵ *Id.*

⁴⁶ Exec. Order No. 14057, 86 Fed. Reg. 70935, 70936 (Dec. 13, 2021).

⁴⁷ *Fact Sheet: Biden-Harris Administration Advances Cleaner Industrial Sector to Reduce Emissions and Reinvigorate American Manufacturing*, THE WHITE HOUSE (Feb. 15, 2022), <https://www.whitehouse.gov/briefing-room/statements-releases/2022/02/15/fact-sheet-biden-harris-administration-advances-cleaner-industrial-sector-to-reduce-emissions-and-reinvigorate-american-manufacturing> [https://perma.cc/3JEC-PBZC]; *Fact Sheet: President Biden Signs Executive Order Catalyzing America's Clean Energy Economy Through Federal Sustainability*, THE WHITE HOUSE (Dec. 8, 2021), <https://www.whitehouse.gov/briefing-room/statements-releases/2021/12/08/fact-sheet-president-biden-signs-executive-order-catalyzing-americas-clean-energy-economy-through-federal-sustainability> [https://perma.cc/MW6Q-CSAT]; *Federal Buy Clean Initiative*, *supra* note 43.

transition to a circular economy” by diverting 75% of nonhazardous waste from landfill by 2030.⁴⁸ At a minimum, this requirement encourages agencies to purchase products that have been designed to be recycled.

While Sections 205 and 207 are helpful, Section 208 most directly relates to ecodesign. Section 208 requires federal agencies to make purchases that support innovation and markets for goods that can be reused, refurbished, or recycled and to consider products’ lifecycles.⁴⁹ It also requires that products be composed of recycled or biobased materials “to the maximum extent practicable,” which is in line with existing procurement policy.⁵⁰ Beyond the Circular Economy Strategy Series and Federal Sustainability Plan, a few United States policies indirectly mention ecodesign.

C. Other Policies

Ecodesign requirements are present in a smattering of policies and programs across federal agencies. For example, the EPA’s Environmentally Preferable Purchasing Program provides recommendations for standards, specifications, and ecolabels for products across seven categories: cafeteria, constructions, custodial, electronics, landscaping, machine shop operations, and office.⁵¹ Federal purchasers are required to use these recommendations to the maximum extent practicable.⁵² Notably, the EPA recommends the Cradle to Cradle Certified Product Standard, which requires products be designed, sourced, and processed with circularity in mind⁵³ for nine product types.⁵⁴ The EPA also recommends the Electronic Product

⁴⁸ Exec. Order No. 14057, 86 Fed. Reg. at 70937.

⁴⁹ *Id.*

⁵⁰ *Id.* at 70942.

⁵¹ *Recommendations of Specifications, Standards, and Ecolabels for Federal Purchasing*, U.S. ENV’T PROT. AGENCY, <https://www.epa.gov/greenerproducts/recommendations-specifications-standards-and-ecolabels-federal-purchasing> [<https://perma.cc/NE72-YS9G>] (last updated Jan. 23, 2025).

⁵² *Id.*

⁵³ *How to Design a Circular Product: R-Strategies and Cradle to Cradle Certified*, CRADLE TO CRADLE PRODS. INNOVATION INST. (Sept. 18, 2023), <https://c2ccertified.org/articles/how-to-design-a-circular-product-r-strategies-and-cradle-to-cradle-certified-r> [<https://perma.cc/RK4J-LF3S>].

⁵⁴ *Recommendations of Specifications, Standards, and Ecolabels for Federal Purchasing*, *supra* note 51 (listing adhesives, carpet, ceiling tiles, fiber board and panels, flooring, furniture, insulation, interior latex paint, and other miscellaneous building finishes).

Environmental Assessment Tool (EPEAT) ecolabel, granted to electronic products “[d]esigned for longevity, reuse, recyclability, and repair.”⁵⁵

The Federal Acquisition Regulation, which governs how executive agencies purchase supplies and services, provides slightly more stringent rules. Part 23, which discusses sustainable acquisition, requires qualifying purchases to be energy or water efficient, environmentally preferable, non-ozone-depleting, or made with recovered or biobased materials.⁵⁶ For recovered materials, it directs purchasers to the EPA’s Comprehensive Procurement Guideline program. The program offers recommendations for recycled-content levels for products in eight categories (construction, landscaping, nonpaper office goods, paper, parks and recreation, transportation, and vehicular products), which are published in Recovered Materials Advisory Notices in the Federal Register.⁵⁷ Additionally, the Comprehensive Procurement Guideline Product Supplier Directory lists the products a supplier sells and the amount of recycled content in those products.⁵⁸

For biobased materials, the Federal Acquisition Regulation directs purchasers to the U.S. Department of Agriculture’s BioPreferred Program, which promotes the development and use of biobased products.⁵⁹ If a federal agency or its contractor seeks to purchase a product that falls within one of the 139 categories identified by the USDA, the product must contain a minimum of 25% biobased content.⁶⁰ The BioPreferred Program also allows businesses to apply for the USDA Certified Biobased Product label.⁶¹

Other policies and programs more tangentially promote ecodesign. For example, though the EPA’s Design for the Environment certification primarily ensures that products are safe for human health,

⁵⁵ *Identifying Greener Electronics*, U.S. ENV’T PROT. AGENCY, <https://www.epa.gov/greenerproducts/electronic-product-environmental-assessment-tool-epeat> [https://perma.cc/SJ2M-H8R2] (last updated May 19, 2025).

⁵⁶ FAR 23 (2024).

⁵⁷ *Comprehensive Procurement Guideline (CPG) Program*, U.S. ENV’T PROT. AGENCY, <https://www.epa.gov/smm/comprehensive-procurement-guideline-cpg-program> [https://perma.cc/4469-JNU5] (last updated Jan. 7, 2025).

⁵⁸ *Id.*

⁵⁹ *Identifying Greener Electronics*, *supra* note 55.

⁶⁰ *What Is the BioPreferred Program?*, U.S. DEP’T OF AGRIC., <https://www.biopreferred.gov/BioPreferred/faces/pages/AboutBioPreferred.xhtml> [https://perma.cc/2ZXQ-7S4S] (last visited May 18, 2025).

⁶¹ *Id.*

it requires companies to improve product packaging where possible.⁶² Energy-focused policies like the Renewable Fuel Standard,⁶³ Federal Building Performance Standard,⁶⁴ and Investment Tax Credit for solar photovoltaic systems,⁶⁵ in addition to ecolabels like ENERGY STAR for energy efficient appliances and SmartWay for low-emitting passenger vehicles,⁶⁶ presumably encourage the development of durable and resource-efficient products. Initiatives such as the EPA's Green Chemistry Challenge award program⁶⁷ and the Sustainable Chemistry Research and Development Act of 2019⁶⁸ help reduce the use of water and hazardous chemicals. While these programs incentivize the development of environmentally sustainable products, none explicitly support ecodesign.

III EUROPEAN POLICIES

Unlike the United States, the European Union (EU) and its Member States have many policies that directly promote ecodesign. In December 2019, the EU launched the European Green Deal, which provided €1 trillion in funds for sustainable investments in an effort to

⁶² *Learn About Design for the Environment (DfE) Certification*, U.S. ENV'T PROT. AGENCY, <https://www.epa.gov/pesticide-labels/learn-about-design-environment-dfe-certification> [https://perma.cc/8T9S-5RNB] (last updated Apr. 25, 2025).

⁶³ *Overview of the Renewable Fuel Standard Program*, U.S. ENV'T PROT. AGENCY, <https://www.epa.gov/renewable-fuel-standard-program/overview-renewable-fuel-standard> [https://perma.cc/ZYB3-7LBP] (last updated May 7, 2025).

⁶⁴ *Fact Sheet: Biden-Harris Administration Announces First-Ever Federal Building Performance Standard, Catalyzes American Innovation to Lower Energy Costs, Save Taxpayer Dollars, and Cut Emissions*, THE WHITE HOUSE (Dec. 7, 2022), <https://www.whitehouse.gov/briefing-room/statements-releases/2022/12/07/fact-sheet-biden-harris-administration-announces-first-ever-federal-building-performance-standard-catalyzes-american-innovation-to-lower-energy-costs-save-taxpayer-dollars-and-cut-emissions/> [https://perma.cc/SP7P-TPGA].

⁶⁵ Solar Energy Techs. Off., *Solar Investment Tax Credit: What Changed?*, U.S. DEP'T OF ENERGY (Sept. 8, 2022), <https://www.energy.gov/eere/solar/articles/solar-investment-tax-credit-what-changed> [https://perma.cc/K4YS-V8ZB].

⁶⁶ *Buying Green for Consumers*, U.S. ENV'T PROT. AGENCY, <https://www.epa.gov/greenerproducts/buying-green-consumers> [https://perma.cc/3V6M-3RE3] (last updated May 19, 2025).

⁶⁷ *Information About the Green Chemistry Challenge*, U.S. ENV'T PROT. AGENCY, <https://www.epa.gov/greenchemistry/information-about-green-chemistry-challenge> [https://perma.cc/N9XV-NPYV] (last updated Dec. 16, 2024).

⁶⁸ S. 999, 116th Cong. (2020).

become the world's first climate-neutral continent by 2050.⁶⁹ To support this endeavor, the EU approved its second Circular Economy Action Plan (CEAP) in March 2020, which built upon the first iteration implemented in December 2015.⁷⁰

A. Circular Economy Action Plan Objectives

The CEAP has three main objectives. The first objective is to design sustainable products.⁷¹ The EU made significant progress on this objective by expanding the 2009 Ecodesign Directive, which primarily considered the energy efficiency of products like refrigerators and washing machines.⁷² In March 2022, the European Commission (EC), the EU's main executive body, proposed the Ecodesign for Sustainable Products Regulation (ESPR) to replace the 2009 directive.⁷³ Regulations bind all EU Member States, whereas directives set goals that Member States achieve by creating their own laws. On July 8, 2024, the ESPR went into effect.⁷⁴ The ESPR enables the EC to set performance requirements for almost all categories of goods placed on the EU market.⁷⁵ The ESPR also introduced Digital Product Passports.⁷⁶ Beginning in 2024, most products sold in the EU will come with a digital record of their life cycle, including their origin, materials,

⁶⁹ *The European Green Deal Investment Plan and Just Transition Mechanism Explained*, EUR. COMM'N (Jan. 13, 2020), https://ec.europa.eu/commission/presscorner/detail/en/qanda_20_24 [<https://perma.cc/VTR5-S7NC>].

⁷⁰ *What Is a Circular Economy?*, *supra* note 16.

⁷¹ *Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions About a New Circular Economy Action Plan*, COM (2020) 98 final (Mar. 11, 2020) [hereinafter *Communication COM (2020) 98 final*].

⁷² *Ecodesign for Sustainable Products Regulation*, EUR. COMM'N, https://commission.europa.eu/energy-climate-change-environment/standards-tools-and-labels/products-labelling-rules-and-requirements/sustainable-products/ecodesign-sustainable-products_en [<https://perma.cc/CC5D-6HNT>] (last visited May 18, 2025); European Commission Press Release IP/22/2013, *Green Deal: New Proposals to Make Sustainable Products the Norm and Boost Europe's Resource Independence* (Mar. 29, 2022), https://ec.europa.eu/commission/presscorner/detail/en/ip_22_2013 [<https://perma.cc/65GQ-JJ44>].

⁷³ *Ecodesign for Sustainable Products Regulation*, EUR. COMM'N, https://commission.europa.eu/energy-climate-change-environment/standards-tools-and-labels/products-labelling-rules-and-requirements/sustainable-products/ecodesign-sustainable-products-regulation_en [<https://perma.cc/B897-VG4R>] (last visited May 18, 2025).

⁷⁴ *Id.*

⁷⁵ *Id.*

⁷⁶ *Id.*

environmental impact, and disposal recommendations.⁷⁷ Digital Product Passports will help consumers choose products that have been best designed for reuse and repair.

The ESPR will supplement the EU Green Public Procurement (GPP) program and the EU Ecolabel. Both the GPP and EU Ecolabel are voluntary instruments, which means that Member States and public authorities can determine the extent to which they are implemented.⁷⁸ The GPP program helps purchasers purchase environmentally preferable goods across fourteen product categories by providing core and comprehensive criteria.⁷⁹ Purchasers who meet the core criteria are able to address a product's main environmental impacts with minimal effort or cost, whereas purchasers who choose to meet the comprehensive criteria pursue higher environmental performance at a higher effort and/or cost.⁸⁰ The EU Ecolabel certifies products that have been independently verified to have a low environmental impact.⁸¹ More than 83,590 products and services across twenty-four product categories have been certified.⁸² Both GPP and EU Ecolabel have a designated helpdesk to answer questions about their program.⁸³

The other CEAP objectives relate less to ecodesign. The second objective is to empower consumers and public buyers.⁸⁴ To meet that objective, the EC is working toward right-to-repair laws, mandatory minimums in green public procurement criteria and targets, adding durability and recyclability indicators to the EU Ecolabel, and requiring companies to substantiate their environmental claims to prevent greenwashing.⁸⁵ The last CEAP objective is to increase circularity in

⁷⁷ *EU's Digital Product Passport: Advancing Transparency and Sustainability*, EUR. UNION (Sept. 27, 2024), <https://data.europa.eu/en/news-events/news/eus-digital-product-passport-advancing-transparency-and-sustainability> [<https://perma.cc/8YP5-X4UZ>].

⁷⁸ *About the EU Ecolabel*, EUR. COMM'N, https://environment.ec.europa.eu/topics/circular-economy/eu-ecolabel-home/about-eu-ecolabel_en [<https://perma.cc/YH8E-PLJ7>] (last visited May 18, 2025).

⁷⁹ *Green Public Procurement Criteria and Requirements*, EUR. COMM'N, https://green-business.ec.europa.eu/green-public-procurement/gpp-criteria-and-requirements_en [<https://perma.cc/PP33-DXW9>] (last visited May 18, 2025).

⁸⁰ *Id.*

⁸¹ *EU Ecolabel*, EUR. COMM'N, https://environment.ec.europa.eu/topics/circular-economy/eu-ecolabel-home_en [<https://perma.cc/YRW5-AXQ5>] (last visited May 18, 2025).

⁸² *Id.*

⁸³ *Id.*

⁸⁴ *Communication COM (2020) 98 final*, *supra* note 71.

⁸⁵ *Id.*

production processes in part by developing a reporting and certification system, launching a Bioeconomy Action Plan, and using technology to map resources.⁸⁶

B. Circular Economy Action Plan Sectors

The CEAP focuses on seven sectors: electronics, batteries and vehicles, packaging, plastics, textiles, construction, and food and water.⁸⁷ The EC has made progress toward them all.

Though the EC has yet to publish the Circular Electronics Initiative promised in the CEAP, it has already accomplished some of the stated goals for the electronics sector.⁸⁸ In 2022, the EU approved a law that requires all phones, tablets, and cameras sold in the EU have a USB-C port by 2024 and all laptops by 2026,⁸⁹ achieving the goal of a common mobile phone charger.⁹⁰ In June 2024, the EU adopted the Directive on common rules promoting the repair of goods, which Member States must transpose into law by August 2026,⁹¹ achieving the goal of a right-to-repair for certain products.⁹² The Directive requires manufacturers to repair products for a reasonable price within a reasonable time and establishes an online platform where consumers can connect with repairers.⁹³ Other electronics sector goals are to make charging cables more durable, decouple the purchase of chargers from the purchase of new devices, and explore a take-back program to improve waste collection.⁹⁴

The EU has also made progress on batteries and vehicles. Replacing the 2006 Batteries Directive with a regulation was the first action considered under the 2020 CEAP.⁹⁵ On August 17, 2023, the Batteries

⁸⁶ *Id.*

⁸⁷ *Communication COM (2020) 98 final*, *supra* note 71.

⁸⁸ *Id.*

⁸⁹ European Parliament Press Release, Long-Awaited Common Charger for Mobile Devices Will Be a Reality in 2024, (Oct. 4, 2022), <https://www.europarl.europa.eu/news/en/press-room/20220930IPR41928/long-awaited-common-charger-for-mobile-devices-will-be-a-reality-in-2024> [<https://perma.cc/W8UE-8NEV>].

⁹⁰ *Communication COM (2020) 98 final*, *supra* note 71.

⁹¹ *Directive on Repair of Goods*, EUR. COMM'N, https://commission.europa.eu/law/law-topic/consumer-protection-law/directive-repair-goods_en [<https://perma.cc/W6V4-SE4H>] (last visited May 18, 2025).

⁹² *Communication COM (2020) 98 final*, *supra* note 71.

⁹³ *Directive on Repair of Goods*, *supra* note 91.

⁹⁴ *Communication COM (2020) 98 final*, *supra* note 71.

⁹⁵ European Commission Press Release IP/20/2312, Green Deal: Sustainable Batteries for a Circular and Climate Neutral Economy (Dec. 9, 2020), https://ec.europa.eu/commission/presscorner/detail/en/ip_20_2312 [<https://perma.cc/C8R9-FJG5>].

Regulation went into effect.⁹⁶ Beginning in 2024, batteries will need to adhere to sustainability requirements regarding carbon footprint, recycled content, performance and durability, and responsible sourcing.⁹⁷ By mid-2025, Extended Producer Responsibility laws and waste collection targets will start to apply.⁹⁸ The regulation also introduces material recovery targets.⁹⁹ For example, by 2031, recycling should recover 80% of a battery's lithium.¹⁰⁰ Other goals in this sector include publishing the Comprehensive European Strategy on Sustainable and Smart Mobility and revising the rules on end-of-life vehicles.¹⁰¹

Developments in the packaging sector mirror those in the batteries sector. Like the Batteries Directive, the Packaging and Packaging Waste Directive will be replaced by a regulation.¹⁰² The EC proposed the Packaging and Packaging Waste Regulation in November 2022; as of April 2024, publication of the regulation is pending only the European Council's formal approval.¹⁰³ In an effort to minimize packaging waste, the regulation requires that all packaging be recyclable and meet minimum recycled content requirements.¹⁰⁴ It also sets binding reuse targets for certain types of packaging, bans some single-use plastics starting in 2030 (such as very lightweight bags), and requires Member States to reduce packaging by 15% by 2040.¹⁰⁵ Lastly, the regulation empowers consumers by requiring takeaway food and beverage distributors to allow consumers to bring their own containers and by requiring that packaging be labeled with their

⁹⁶ *Batteries*, EUR. COMM'N, https://environment.ec.europa.eu/topics/waste-and-recycling/batteries_en [<https://perma.cc/7NM4-XK95>] (last visited May 18, 2025).

⁹⁷ European Commission Press Release IP/22/7588, Green Deal: EU Agrees New Law on More Sustainable and Circular Batteries to Support EU's Energy Transition and Competitive Industry (Dec. 8, 2022), https://ec.europa.eu/commission/presscorner/detail/en/IP_22_7588 [<https://perma.cc/B4HG-QLF6>].

⁹⁸ *Id.*

⁹⁹ *Id.*

¹⁰⁰ *Id.*

¹⁰¹ *Communication COM (2020) 98 final*, *supra* note 71.

¹⁰² European Parliament Press Release, New EU Rules to Reduce, Reuse and Recycle Packaging, (Apr. 24, 2024), <https://www.europarl.europa.eu/news/en/press-room/20240419IPR20589/new-eu-rules-to-reduce-reuse-and-recycle-packaging> [<https://perma.cc/J84S-98KU>].

¹⁰³ *Id.*

¹⁰⁴ *Id.*

¹⁰⁵ *Id.*

material composition to facilitate proper disposal.¹⁰⁶ These new rules all require advancements in ecodesigned packaging.

The EU had policies governing plastics prior to the 2020 CEAP. These policies include the 2015 Plastic Bags Directive, which required EU Member States to reduce lightweight plastic carrier bags and to report the number of bags used per year starting 2020,¹⁰⁷ and the 2018 European Strategy for Plastics in a Circular Economy.¹⁰⁸ Under the 2020 CEAP, the EU seeks to take further measures to address plastic waste and started by implementing the 2021 Directive on single-use plastics.¹⁰⁹ The Directive banned the sale of single-use plastic products where easily available and affordable sustainable alternatives exist, such as for plates and straws.¹¹⁰ For other products, the Directive introduces consumer education measures, EPR schemes, and design requirements, such as the requirement that plastic caps remain attached to their bottles.¹¹¹ The EC has introduced other initiatives advancing CEAP goals as well, including the 2022 policy framework to guide the sourcing, labeling, and use of biobased, biodegradable, and compostable plastics,¹¹² and multiple policies to address microplastics¹¹³

The EU has made unprecedented advancements in promoting ecodesign in the textile industry. In March 2022, the EC released the Strategy for Sustainable and Circular Textiles.¹¹⁴ By 2030, the EC will set mandatory product-specific ecodesign requirements for textiles to ensure they are durable; easy to repair, reuse, and recycle; and made with recycled content.¹¹⁵ The strategy communication emphasizes that

¹⁰⁶ *Id.*

¹⁰⁷ *Plastic Bags*, EUR. COMM'N, https://environment.ec.europa.eu/topics/plastics/plastic-bags_en [<https://perma.cc/92TW-4SB6>] (last visited May 18, 2025).

¹⁰⁸ *Plastics Strategy*, EUR. COMM'N, https://environment.ec.europa.eu/strategy/plastics-strategy_en [<https://perma.cc/H3W4-6QBV>] (last visited May 18, 2025).

¹⁰⁹ *Single-Use Plastics*, EUR. COMM'N, https://environment.ec.europa.eu/topics/plastics/single-use-plastics_en [<https://perma.cc/VAR7-JCNH>] (last visited May 18, 2025).

¹¹⁰ *Id.*

¹¹¹ *Id.*

¹¹² *Biobased, Biodegradable and Compostable Plastics*, EUR. COMM'N, https://environment.ec.europa.eu/topics/plastics/biobased-biodegradable-and-compostable-plastics_en [<https://perma.cc/B7PS-PJN8>] (last visited May 18, 2025).

¹¹³ *Microplastics*, EUR. COMM'N, https://environment.ec.europa.eu/topics/plastics/microplastics_en [<https://perma.cc/TH2Q-HCYM>] (last visited May 18, 2025).

¹¹⁴ *Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions About EU Strategy for Sustainable and Circular Textiles*, COM (2022) 141 final (Mar. 30, 2022).

¹¹⁵ *Id.*

designing textile products to extend their duration of use is key to reducing products' environmental impact, noting that failures in durability, such as color loss and poor quality zippers and seams, are among the main reasons why consumers discard textiles.¹¹⁶

The strategy also emphasizes that ecodesign requirements are critical for improving recyclability. Textiles are often made of blended fibers, which are difficult to recycle because few technologies separate textile waste by fiber.¹¹⁷ Furthermore, some fibers, like elastane, act as contaminants, increasing the cost of waste processing and decreasing recycling output quality.¹¹⁸ As a result, only 1% of the EU's textiles are recycled.¹¹⁹

To incentivize innovations in sustainably designed textiles, the EC seeks to support businesses in the reuse sector, increase access to reuse and repair services, ban the destruction of unsold or returned textiles, and introduce Digital Product Passports for textiles.¹²⁰ The EC will also propose Extender Producer Responsibility rules and accompanying economic incentives as well as require large companies to publicly disclose the number of products they discard and destroy.¹²¹ The textiles strategy also outlines how the EC will support research and investment in ecodesign and education in related areas, such as fiber development and life cycle assessments.¹²²

The construction sector has made less progress than the textiles sector. The goal for the construction sector, per the CEAP, is to launch a Strategy for a Sustainable Built Environment.¹²³ The strategy would include integrating life cycle assessment in public procurement, revising material recovery targets, and amending the Construction Products Regulation.¹²⁴ The EC has not drafted the strategy. However, in March 2022, the EC did submit a proposal to revise the Construction

¹¹⁶ *Id.*

¹¹⁷ *Id.*

¹¹⁸ *Id.*

¹¹⁹ *Id.*

¹²⁰ *Id.*

¹²¹ *Id.*

¹²² *Id.*

¹²³ *Communication COM (2020) 98 final, supra note 71.*

¹²⁴ *Id.*

Products Regulation.¹²⁵¹²⁶ After the requisite approvals, the revised regulation went into force January 7, 2025.¹²⁷ In accordance with the ESPR, the regulation mandates that construction products be equipped with a Digital Product Passport to provide information on their environmental impact across indicators such as climate change, water usage, and eco-toxicity.¹²⁸ The regulation also requires that products be designed with easily separable components that are free from harmful substances to prioritize waste prevention, repair, reuse, recyclability, and remanufacturing.¹²⁹

Impressively, the EU developed each of the policies mentioned in the CEAP for the food and water sector. The EU Farm-to-Fork Strategy was approved in 2021 and is working to meet the United Nations' Sustainable Development Goal of halving food waste per capita at retail and consumer levels by 2030.¹³⁰ The revision of the Waste Framework Directive to include binding waste reduction targets is nearly finalized.¹³¹ The Water Reuse Regulation, published in June 2023, enables the safe reuse of treated urban wastewater in agriculture through its water quality standards.¹³² While these policies are necessary and will encourage innovations leading to reductions in

¹²⁵ *Review of the Construction Products Regulation*, EUR. COMM'N, https://single-market-economy.ec.europa.eu/sectors/construction/construction-products-regulation-cpr/review_en [<https://perma.cc/C4KV-BEQX>] (last visited May 18, 2025).

¹²⁶ *Review of the Construction Products Regulation*, EUR. COMM'N, https://single-market-economy.ec.europa.eu/sectors/construction/construction-products-regulation-cpr/review_en [<https://perma.cc/C4KV-BEQX>] (last visited May 18, 2025).

¹²⁷ *New EU Rules on the Safety and Sustainability of Construction Products Mark a New Step for the Sector's Competitiveness*, EUR. COMM'N (Jan. 13, 2025), https://single-market-economy.ec.europa.eu/news/new-eu-rules-safety-and-sustainability-construction-products-mark-new-step-sectors-competitiveness-2025-01-07_en [<https://perma.cc/6G9R-KPW8>].

¹²⁸ European Parliament Legislative Resolution of 10 April 2024 on the Proposal for a Regulation of the European Parliament and of the Council Laying Down Harmonised Conditions for the Marketing of Construction Products, Amending Regulation (EU) 2019/1020 and Repealing Regulation (EU) 305/2011, (Apr. 10, 2024), https://www.europarl.europa.eu/doceo/document/TA-9-2024-0188_EN.html [<https://perma.cc/PLA3-BFTX>].

¹²⁹ *Id.*

¹³⁰ *Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: A Farm to Fork Strategy for a Fair, Healthy and Environmentally-Friendly Food System*, COM (2020) 381 final (May 20, 2020).

¹³¹ *Food Waste Reduction: What EU Actions Are There?*, EUR. PARLIAMENT (Mar. 20, 2024), <https://www.europarl.europa.eu/topics/en/article/20240318STO19401/food-waste-reduction-what-eu-actions-are-there> [<https://perma.cc/MMP4-2KKR>].

¹³² *Water Reuse: New EU Rules to Improve Access to Safe Irrigation*, EUR. COMM'N (June 26, 2023), https://environment.ec.europa.eu/news/water-reuse-new-eu-rules-improve-access-safe-irrigation-2023-06-26_en [<https://perma.cc/E8NE-JY4X>].

resource use and environmental impact, the greatest opportunity for the implementation of ecodesign principles in this sector lies in developing bio-based value chains.

The CEAP seeks to support the 2018 Bioeconomy Strategy and Action Plan, which promotes design innovations for bio-based products.¹³³ Bio-based products can replace products made with fossil fuels with biodegradable alternatives made from renewable resources.¹³⁴ Biorefineries can turn organic waste, residues, and discards into valuable resources.¹³⁵ Therefore, food waste can be potentially transformed into products such as construction materials, packaging, textiles, fuel and other chemicals, plastics, cosmetics, pharmaceuticals, or animal feed.¹³⁶ Further innovation and an adherence to ecodesign principles in bio-based products could lead to a drastic reduction in resource consumption and environmental impact.

C. EU Member States Policies

Some EU Member States have independently made progress toward implementing policies that encourage ecodesign. For example, in 2016, Sweden introduced tax breaks on repairs to incentivize consumers to repair their belongings instead of replacing them. Sweden reduced the Value-Added Tax on repair services from 25% to 12% and began allowing consumers to claim half the labor cost of repairing appliances, such as ovens and dishwashers, on their income tax.¹³⁷

To discourage wasteful design, Spain passed the Law on Waste and Contaminated Soil for a Circular Economy in April 2022, which went into effect in January 2023.¹³⁸ This law imposes taxes on single-use plastic packaging and waste sent to landfill incineration.¹³⁹ France passed a more ambitious law in 2016 that banned supermarkets from

¹³³ *Bioeconomy: The European Way to Use Our Natural Resources, Action Plan 2018*, EUR. COMM'N (Oct. 2018), <https://op.europa.eu/en/publication-detail/-/publication/775a2dc7-2a8b-11e9-8d04-01aa75ed71a1> [<https://perma.cc/CC4W-6FV3>].

¹³⁴ *Id.*

¹³⁵ *Id.*

¹³⁶ *Id.*

¹³⁷ Richard Orange, *Waste Not Want Not: Sweden to Give Tax Breaks for Repairs*, THE GUARDIAN (Sept. 19, 2016, 12:04 PM), <https://www.theguardian.com/world/2016/sep/19/waste-not-want-not-sweden-tax-breaks-repairs> [<https://perma.cc/3RYM-8V63>].

¹³⁸ *Spain: New Tax Measures in the Law on Waste and Contaminated Land for a Circular Economy*, GARRIGUES (Apr. 10, 2022), https://www.garrigues.com/en_GB/new/spain-new-tax-measures-law-waste-and-contaminated-land-circular-economy [<https://perma.cc/M75K-8EBU>].

¹³⁹ *Id.*

disposing of unused food. Further, in 2020, France passed a law that banned all companies from destroying unsold or returned nonfood products.¹⁴⁰ Companies will now have to reuse, donate, or recycle their products instead of putting them in the landfill or incinerating them.¹⁴¹

France has been a leader in pushing for ecodesign, especially in electronics. In 2015, France was the first country to criminalize planned obsolescence, with a penalty of up to two years in jail and fines equal to 5% of total revenue.¹⁴² In 2021, it became the first country to require manufacturers of certain electronic devices to provide consumers with the product's "repairability index," which is a score based on a range of criteria, including how easy it is to take the product apart and the availability of spare parts and technical documents.¹⁴³ Use of the index is enforced with fines.¹⁴⁴ In 2025, France will begin to require producers of televisions and washing machines to provide consumers with a "durability index," indicating a product's robustness.¹⁴⁵

IV

POLICY COMPARISON

Both the United States and the EU utilize a mix of prescriptive, economic, and reflexive policies to promote overall sustainability and, in effect, ecodesign. These policies have had varying degrees of success. The following analysis compares the impact and scope of the policies and considers the circumstances that may account for their differences.

¹⁴⁰ Kim Willsher, *Landmark French Law Will Stop Unsold Goods Being Thrown Away*, THE GUARDIAN (Jan. 30, 2020), <https://www.theguardian.com/world/2020/jan/30/france-passes-landmark-law-to-stop-unsold-goods-being-thrown-away> [https://perma.cc/ZKF8-KL88].

¹⁴¹ *Id.*

¹⁴² Nicolas Boring, *France: Advocacy Group Files Criminal Complaint Against Alleged Planned Obsolescence Practices*, LIBR. OF CONG. (Nov. 1, 2017), <https://www.loc.gov/item/global-legal-monitor/2017-11-01/france-advocacy-group-files-criminal-complaint-against-alleged-planned-obsolescence-practices/> [https://perma.cc/28D2-KP6F].

¹⁴³ Maddie Stone, *Why France's New Tech 'Repairability Index' Is a Big Deal*, WIRED (Feb. 20, 2021, 8:00 AM), <https://www.wired.com/story/frances-new-tech-repairability-index-is-a-big-deal/> [https://perma.cc/A6LL-FWTZ].

¹⁴⁴ *Id.*

¹⁴⁵ *Everything You Need to Know About the Durability Index*, LONGTIME (Feb. 29, 2024), <https://longtimelabel.com/en/news/everything-you-need-to-know-about-the-durability-index/> [https://perma.cc/Y4WQ-CEEN].

A. Policy Impact

The EU and the United States have achieved markedly different levels of progress toward implementing policies that encourage ecodesign. Progress toward the National Recycling Strategy objectives has been slow; only two actions listed on the Circular Economy Implementation Plan Online Platform have a status of “Completed.”¹⁴⁶ However, in the year after the BIL and the National Recycling Strategy were launched, the EPA met with 4,719 individuals representing states, Tribal Nations, local government, nongovernmental organizations, and industry in 115 feedback sessions. These sessions focused on how the grants for recycling programs should be designed and aimed to understand communities’ recycling needs and obstacles.¹⁴⁷

In 2023, the EPA awarded over \$100 million in BIL-funded grants.¹⁴⁸ In the year after the U.S. Federal Sustainability Plan launched, Congress allocated \$5 billion through the Inflation Reduction Act to be spent on lower-carbon construction materials, and the Biden administration launched initiatives to improve federal building efficiency and proposed a rule requiring major federal contractors to publicly disclose their greenhouse gas emissions.¹⁴⁹ However, the results of these actions are unclear.

By contrast, the EU has made clear progress toward its goals. The EU has made steady advancements toward its objectives for various sectors under the CEAP, which it publicizes in a timeline on the CEAP website.¹⁵⁰ In addition, the EU has multiple ways of measuring the impact of its policies and providing data for the EU and its Member

¹⁴⁶ *Circular Economy Implementation Plan Online Platform*, U.S. ENV’T PROT. AGENCY, <https://www.epa.gov/recyclingstrategy/circular-economy-implementation-plan-online-platform> [<https://perma.cc/63YM-MY9A>] (last updated Nov. 21, 2024).

¹⁴⁷ *Building a Circular Economy for All: Progress Toward Transformative Change*, U.S. ENV’T PROT. AGENCY (Sept. 2022), https://www.epa.gov/system/files/documents/2022-09/EPA_Circular_Economy_Progress_Report_Sept_2022.pdf [<https://perma.cc/BZ2P-WY2X>].

¹⁴⁸ *Recycling Grant Selectees and Recipients*, U.S. ENV’T PROT. AGENCY, <https://www.epa.gov/infrastructure/recycling-grant-selectees-and-recipients> [<https://perma.cc/89FV-5H6W>] (last updated Apr. 24, 2025).

¹⁴⁹ *Biden-Harris Administration Celebrates First Year Accomplishments Under President Biden’s Federal Sustainability Plan*, THE WHITE HOUSE (Dec. 8, 2022), <https://www.whitehouse.gov/ceq/news-updates/2022/12/08/biden-harris-administration-celebrates-first-year-accomplishments-under-president-bidens-federal-sustainability-plan/> [<https://perma.cc/GLU9-4XHF>].

¹⁵⁰ *Circular Economy Action Plan*, EUR. COMM’N, https://environment.ec.europa.eu/strategy/circular-economy-action-plan_en [<https://perma.cc/955N-ZFGL>] (last visited May 18, 2025).

States. The Circular Economy Monitoring Framework measures indicators within four categories—production and consumption, waste management, secondary raw materials, and competitiveness and innovation.¹⁵¹ The Material Flow Diagram measures the amount of materials received from imports and resource extraction, tracking them by type through their end-of-life.¹⁵² Lastly, the EU's official statistics website, Eurostat, graphs progress toward the EU Green Deal's goals.¹⁵³ However, few graphs include data beyond 2022, and results from 2020 and 2021 are likely skewed due to the COVID-19 pandemic, so the website likely does not effectively capture the impact of the CEAP.¹⁵⁴

Of the EU Member State policies mentioned, researchers have analyzed the 2021 French law on the reparability index. When French consumers were polled a year after implementation, 55% of them were aware of the index, and most considered it when making purchases.¹⁵⁵ However, one organization found that the self-reported scores were often inflated and did not always accurately reflect a product's reparability due to all criteria being equally weighted.¹⁵⁶ Whether fines have been enforced is unclear, but the law does seem to have some impact on businesses' behavior. For example, Samsung has made disassembly manuals available, and Apple may change the iPhone's front camera replacement procedure to increase its score.¹⁵⁷

B. Policy Differences

The EU and U.S. policies discussed differ in their scope. The U.S. Federal Sustainability Plan, EPA's Environmentally Preferable Purchasing Program, and the U.S. Federal Acquisition Regulation focus on federal assets and federal employee behavior. The three available strategies within the U.S. Circular Economy Strategy Series all place a strong emphasis on recycling, which, in the context of

¹⁵¹ *Circular Economy: Overview*, EUROSTAT, <https://ec.europa.eu/eurostat/web/circular-economy/overview> [<https://perma.cc/PW3N-9JV5>] (last visited May 18, 2025).

¹⁵² *Id.*

¹⁵³ *Id.*

¹⁵⁴ *Id.*

¹⁵⁵ Chloé Mikolajczak, *One Year On, Has the French Repair Index Kept Its Promises?*, RIGHT TO REPAIR (Mar. 7, 2022), <https://repair.eu/news/one-year-on-has-the-french-repair-index-kept-its-promises/> [<https://perma.cc/T6PK-KBVX>].

¹⁵⁶ *Id.*

¹⁵⁷ Sandra Auboy, *French Repair Index: One Year Later*, IFIXIT (Sept. 15, 2022), <https://www.ifixit.com/News/64508/french-repair-index-one-year-later> [<https://perma.cc/524W-X8G5>].

ecodesign, is a last resort. In contrast, the EU policies encompass all products placed on the EU market and address a wider range of product categories. For instance, while textiles seem to be the lowest priority in the Circular Economy Strategy Series, the EU is already adopting measures for this sector.¹⁵⁸ The EU policies also focus on what can be sold by businesses rather than what can be purchased, like the U.S. Federal Sustainability Plan. When businesses are held responsible for developing ecodesigned products, consumers do not need to investigate whether every potential purchase is environmentally preferable, and governments do not need to be as concerned with greenwashing or rely on consumers' purchasing decisions to shift to a circular economy.

In addition, the EU policies focus more on establishing norms. Both the EU and United States use reflexive measures, such as ecolabels, to educate consumers and encourage more sustainable purchasing, which in turn should encourage businesses to design sustainable products. However, the EU went further by making consumer empowerment a main objective of the CEAP. One of the steps the EU took to support that objective was to conduct a study in 2018 to better understand the barriers that prevent consumers from engaging with the circular economy and identify policies that would increase consumer participation.¹⁵⁹ Also, more EU policies, like the EU Strategy for Sustainable and Circular Textiles, discuss supporting circular business models (such as reuse, renting and repair, take-back services, and secondhand retail) and helping businesses navigate them.¹⁶⁰ Lastly, the EU CEAP prioritizes collaboration with multiple countries to create partnerships and agreements. In furtherance of this goal, the EU launched the Global Alliance on Circular Economy and Resource Efficiency in 2021.¹⁶¹ In contrast, the United States has partnered only with Canada.¹⁶² The creation of new norms is essential for the adoption

¹⁵⁸ *What Is a Circular Economy?*, *supra* note 16.

¹⁵⁹ *Behavioural Study on Consumers' Engagement in the Circular Economy*, EUR. COMM'N (Oct. 2018), https://commission.europa.eu/system/files/2018-10/ec_circular_economy_executive_summary_0.pdf [<https://perma.cc/232M-5MT9>].

¹⁶⁰ *Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions About EU Strategy for Sustainable and Circular Textiles*, COM (2022) 141 final (Mar. 30, 2022).

¹⁶¹ *What Is a Circular Economy?*, *supra* note 16.

¹⁶² *Accelerate Progress Through Domestic and International Partnerships*, COUNCIL ON ENV'T QUALITY, <https://www.sustainability.gov/federalsustainabilityplan/partnerships.html> [<https://perma.cc/G74U-6YWQ>] (last visited Jan. 19, 2025).

of ecodesigned products and a more circular economy, and the EU has laid much more groundwork.

The EU and United States' policies also differ in design. The U.S. Federal Sustainability Plan is prescriptive regulation, but it is vague and lacks enforceability. For example, Executive Order 14057 states that federal "[a]gencies shall . . . prioritiz[e] products that can be reused, refurbished, or recycled" to meet the net-zero emissions procurement goal.¹⁶³ This requirement is in addition to the existing requirement that agencies follow the EPA's recommendations to the "maximum extent practicable" when making purchases.¹⁶⁴ The Office of the Federal Chief Sustainability Officer tracks agencies' progress on sustainability goals,¹⁶⁵ but the agencies are responsible for disclosing their information.¹⁶⁶

Similarly, for its net-zero emissions building goal, the U.S. Federal Sustainability Plan states that construction projects "must" and "at minimum" meet "sustainable design requirements . . . wherever technically feasible and practicable."¹⁶⁷ The only enforcement for federal contractors is private, self-reported sustainability disclosures.¹⁶⁸ The Biden administration proposed the Federal Supplier Climate Risks and Resilience Rule in 2022, which would require contractors to publicly disclose their greenhouse gas emissions,¹⁶⁹ but the rule has yet to be adopted.¹⁷⁰

¹⁶³ Exec. Order No. 14057, 86 Fed. Reg. at 70937.

¹⁶⁴ *Id.*

¹⁶⁵ *Federal Progress, Plans, and Performance*, COUNCIL ON ENV'T QUALITY, <https://www.sustainability.gov/progress.html> [<https://perma.cc/9GR4-UP5G>] (last visited May 18, 2025).

¹⁶⁶ *Environmental Protection Agency Progress*, COUNCIL ON ENV'T QUALITY, <https://www.sustainability.gov/epa.html> [<https://perma.cc/X2DH-FGFX>] (last visited May 18, 2025).

¹⁶⁷ *Net-Zero Emissions Buildings by 2045, Including a 50% Reduction by 2032*, COUNCIL ON ENV'T QUALITY, <https://www.sustainability.gov/federsustainabilityplan/buildings.html> [<https://perma.cc/3KVA-RME7>] (last visited Jan. 19, 2025).

¹⁶⁸ *Net-Zero Emissions Procurement by 2050*, COUNCIL ON ENV'T QUALITY, <https://www.sustainability.gov/federsustainabilityplan/procurement.html> [<https://perma.cc/X2QM-YYPN>] (last visited Jan. 19, 2025).

¹⁶⁹ *Federal Supplier Climate Risks and Resilience Proposed Rule*, COUNCIL ON ENV'T QUALITY, <https://www.sustainability.gov/federsustainabilityplan/fed-supplier-rule.html> [<https://perma.cc/4KKC-PLHL>] (last visited Jan. 19, 2025).

¹⁷⁰ Michael R. Littenberg et al., *Another U.S. Climate Disclosure and GHG Emissions Reduction Rule Delayed*, ROPES & GRAY (July 24, 2024), <https://www.ropesgray.com/en/insights/viewpoints/102jef1/another-u-s-climate-disclosure-and-ghg-emissions-reduction-rule-delayed> [<https://perma.cc/8TK5-37TK>].

The EU CEAP also enacted prescriptive regulations that rely on self-reporting; all product sectors except for textiles and food have a directive or regulation. However, the CEAP policies include specific targets, such as recycling rates, and the EU posts Member States' progress publicly via the online Circular Economy Monitoring Framework.¹⁷¹ The combination of specificity and public disclosure likely make the EU's policies more enforceable and, therefore, more successful.

C. Accounting for Policy Differences

Policies are influenced by cultural, political, economic, and geographic circumstances. For example, the United States has more resources than the EU. Therefore, while both the United States and EU are motivated by energy independence, it is likely less of a concern for the United States, which has been a net exporter of energy since 2019.¹⁷² In comparison, the EC highlighted in an ESPR press release that the ESPR can lead to energy savings equivalent to the EU's import of Russian gas.¹⁷³ Furthermore, while both the United States and the EU were affected by China's National Sword policy, the United States has much more land available than the EU, and is less likely to run out of landfill space. Therefore, the United States may regard sustainability measures and ecodesign as lower national priorities compared to the EU.

The scale of the United States may also explain the target audience of these policies. The U.S. federal government is the single largest purchaser in the world and spends over \$630 billion on products and services every year.¹⁷⁴ It has unmatched purchasing power to stimulate demand for ecodesigned goods and services, send normative signals to producers, and push down prices to make goods and services more

¹⁷¹ *Circular Economy Monitoring Framework*, EUROSTAT, <https://ec.europa.eu/eurostat/web/circular-economy/monitoring-framework> [https://perma.cc/2TY7-WQPA] (last visited May 18, 2025).

¹⁷² *U.S. Energy Facts Explained*, U.S. ENERGY INFO. ADMIN., <https://www.eia.gov/energyexplained/us-energy-facts/imports-and-exports.php> [https://perma.cc/W3H6-S4NC] (last updated July 15, 2024).

¹⁷³ European Commission Press Release, Green Deal: New Proposals to Make Sustainable Products the Norm and Boost Europe's Resource Independence (Mar. 29, 2022).

¹⁷⁴ *Federal Buy Clean Initiative*, COUNCIL ON ENV'T QUALITY, <https://www.sustainability.gov/buyclean/index.html> [https://perma.cc/4VPP-ZYUT] (last visited Jan. 19, 2025).

affordable for other consumers.¹⁷⁵ The Federal Sustainability Plan, by addressing federal procurement, is likely effective on its own and simpler to manage than regulating goods sold on the market, like the EU CEAP aims to do.

Other potential reasons for differences between the United States and EU policies are cultural norms and political realities. Only 37% of Americans believe climate change is a top policy priority,¹⁷⁶ while Europeans ranked climate change as the third most serious problem in the world and 67% of Europeans believe their national government is not doing enough to tackle climate change.¹⁷⁷ Policies often reflect citizens' priorities, so the progress toward ecodesign in the EU could be partly attributed to citizens' desire to purchase more sustainable products. As for political realities, policies are often dependent on multiple factors including, but not limited to, the political group in power, whether a legislator is up for reelection, the strength of lobbying groups, and administrative hurdles.

CONCLUSION

The United States has no explicit ecodesign policy and has only recently started to discuss the concept of a circular economy. Meanwhile, the EU made great strides by expanding its fifteen-year-old Ecodesign Directive into the Ecodesign for Sustainable Products Regulation. It will be many years before either government can measure the impact of these policies and those in development. However, as a late adopter, the United States can learn from the EU's experience and enact robust ecodesign policies that are effective, wide-reaching, and capable of reducing its disproportionate environmental impact. It is both morally and logistically imperative that the United States rapidly reduce its environmental impact. Yet without policies that promote ecodesign, a meaningful reduction will be nearly impossible to achieve.

¹⁷⁵ European Environment Agency, Consumers Can Play Key Role in Creating Demand for 'Circular' Goods and Services (May 17, 2022).

¹⁷⁶ Alec Tyson et al., *What the Data Says About Americans' Views of Climate Change*, PEW RSCH. CTR. (Aug. 9, 2023), <https://www.pewresearch.org/short-reads/2023/08/09/what-the-data-says-about-americans-views-of-climate-change/> [<https://perma.cc/2ELC-T47V>].

¹⁷⁷ *Citizen Support for Climate Action*, EUR. COMM'N (2023), https://climate.ec.europa.eu/citizens/citizen-support-climate-action_en [<https://perma.cc/76ZS-LSHY>].