

An aerial photograph of a dense, green forest. A paved path winds through the trees, curving from the top right towards the bottom center. The trees are various shades of green, and the path is a light grey color. A yellow rectangular box is overlaid on the upper left portion of the image.

Regulatory landscape of the circular economy



Building a better
working world

Contents

Introduction	01
Geographical considerations	02
Sector-specific legislation	05
How companies can adapt to evolving policy trends	07
References	08

Authors
Mark Weick, Nicole Ray

Contributors
Shubhra Verma, Marina Guajardo and Mayank Shekhar

1 Introduction

Historically, geographical limitations and scarcity of natural resources have been key drivers for implementing circular economy policies.

Early efforts to move toward a circular economy were started by Japan in the 1990s. The European Union (EU) and its member states are currently driving the global momentum with efforts focusing on reducing raw materials consumption or increasing resource efficiency. While waste management and recycling policies have been the cornerstone of the circular economy regulatory framework, the policies have gradually evolved toward Extended Producer Responsibility (EPR), eco-modulation and eco-design.¹

This trend indicates a general shift in circular economy thinking from end-of-pipe measures toward at-source or preventative measures. A shift toward eco-design was motivated by EU research indicating that 80% of a product's environmental impact was determined at the design phase.² In recent years, legislators are focusing on holistic material traceability efforts inclusive of digital tools, where we could potentially see a shift toward policy measures based on predictive analytics.³

Figure 1

Policy shift from end-of-pipe measures toward predictive measures

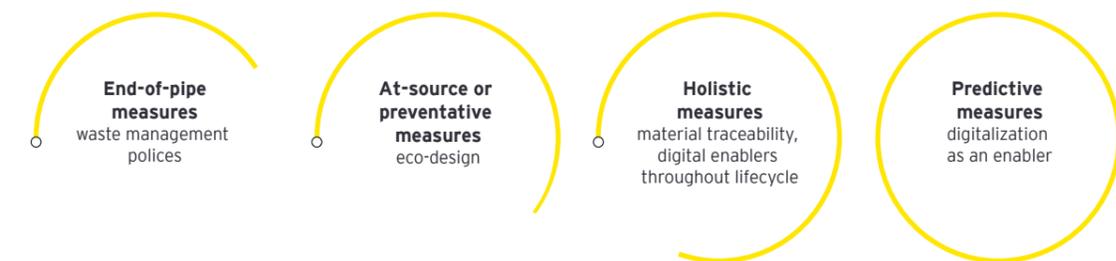


Figure 2

Timeline view of regulations

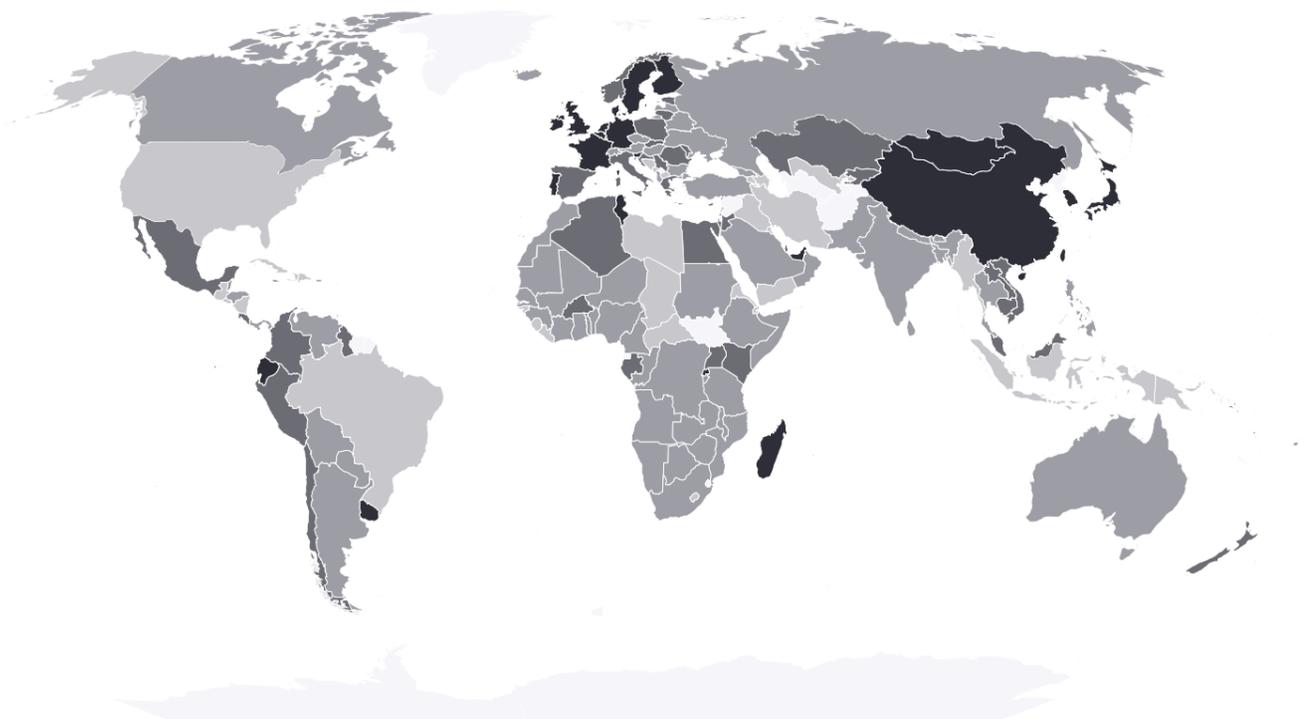


2

Geographical considerations

Figure 3
Maturity assessment of circular economy legislation rated on a scale of 1 to 4

Maturity assessment of federal and national regulations



□ No data available.
Note: Maturity levels are not cumulative.⁴

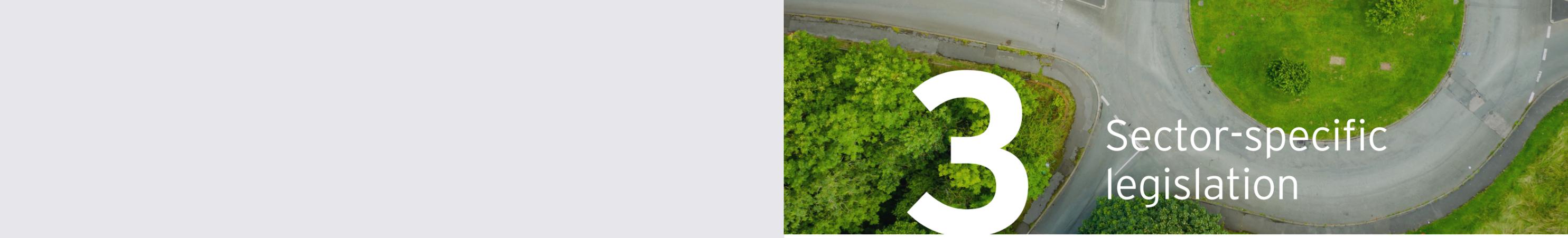
Level	Description	Value
Basic	Waste management and recycling	1
Initiated	Fiscal policy, EPR, product policy	2
Progressive	Roadmap	3
Mature	National circular economy policy	4

Europe

European countries have had waste and recycling policies since the mid-1970s and introduced product design policies in the mid-2000s. However, circularity did not enter the policy discourse until the mid-2010s, following which, several circular economy policies and measures were implemented rapidly. The European Commission's Green Deal proposal (2019) illustrates ambitious goals to become the first climate-neutral continent by 2050,⁵ with circular economy as a key pillar in this transition. The Commission subsequently published the second Circular Economy Action Plan in March 2020.⁶ Additionally, several policy measures and instruments aim to support this transition by embracing circularity. Some of the most ambitious policy measures involve the sectoral policy proposals, such as the New Sustainable Products Initiative, which will revamp the existing eco-design framework by embedding circularity and implementing digital product passports. It has also introduced a proposal for new consumer rights and a ban on greenwashing⁷ that will oblige companies to provide consumers with information on product durability and reparability. Furthermore, the new EU taxonomy framework will include disclosures on circular economy and resource efficiency parameters. In addition to measures set at the EU level, multiple countries, such as France and Germany, have also introduced national circular economy policies. The enhanced ambition and volume of measures coming from the EU are reflected in a high level of circular economy regulation maturity in most EU countries (Figure 3). Surrounding European countries, such as Norway, the United Kingdom and Switzerland, also are following suit. Countries within Eastern Europe effectively transpose EU circular economy legislation but do not appear to be publishing their own roadmaps or strategies.

North America, Latin America and the Caribbean

In the United States, the federal government does not directly address circular-economy-related policies, but it has been embraced in the Sustainable Materials Management (SMM) approach since 2009.⁸ The earliest and most advanced effort was published by the U.S. Environmental Protection Agency (EPA), the National Recycling Strategy, first developed in 2011,⁹ followed by a recent draft published in 2020 for public comment.¹⁰ Additionally, there are ambitious policy measures at the state and local levels to drive circularity, such as the recently announced Colorado EPR for printed paper and packaging,¹¹ which has the potential to encourage other states to follow suit. Moreover, California incorporated a legislative package in 2021 that will promote circular economy efforts to raise consumer awareness and industry accountability, complementing a bold \$270 million investment to modernize recycling systems.¹² It is important to be cognizant of the bipartisan support required for future circular economy efforts to be successful. The Canada-wide Strategy on Zero Plastic Waste and Action Plan, 2018, aims to reduce the harmful environmental impacts of plastic waste through greater prevention, collection and value recovery to achieve a more circular plastics economy. Canada recently announced a new regulation that bans single-use plastics, planned to be implemented in December 2022. It is expected to eliminate more than 1.3 million tons of hard-to-recycle plastic waste and more than 22,000 tons of plastic pollution, equivalent to more than a million garbage bags of litter over the next 10 years.¹³ Several Latin American and Caribbean countries have published roadmaps and strategies to implement circular economy policies as drivers for sustainable economic growth, with some countries already transposing



3

Sector-specific legislation

measures into law, such as Ecuador, which, in 2021, published the Organic Law of Inclusive Circular Economy.¹⁴ There are efforts to develop coordinated action at the continental level. The Latin America and the Caribbean Circular Economy Coalition, formed by policymakers, academics and other stakeholders in cooperation with the Ellen MacArthur Foundation, published a strategic vision for the region to become more circular with measures adapted to the specificities of the region.¹⁵ Several Latin American countries are embracing circularity as a driver for economic growth and environmental protection and are building robust policy frameworks to support this vision, therefore increasing the level of maturity of the continent.

Asia and Africa

Initial efforts in APAC include China's Circular Economy Promotion Law (2000) and Basic Act on Establishing a Circular Society (2000). In China, circular economy is promoted as a top-down national political objective, while in other areas and countries, such as the EU, Japan and the United States, it is a tool to redesign bottom-up supply chains.¹⁶ In 2017, China introduced the National Sword policy restricting the import of secondary raw materials for processing. This policy had global repercussions, with researchers estimating a 23.2% increase in plastics sent to US landfills.¹⁷ Furthermore, according to the All India Plastics Manufacturers' Association, India's plastic ban implemented in 2019 would result in increased packaging costs, 100,000 job losses and a loss of \$650 million in the country.¹⁸

Circularity is gaining prominence in Asian geographies as a future growth strategy, and there are several roadmaps being introduced. According to our research, China Mainland, Japan, Mongolia, Taiwan, South Korea and the UAE have implemented a circular economy policy in the Asia region.

Circular economy efforts in Africa started with several measures to tackle plastic pollution through taxation and bans of single-use plastic. A mature roadmap was implemented in 2016, with the National Action Plan for Sustainable Consumption and Production in Egypt. In 2019, the African Development Bank announced that it would no longer be financing coal projects,¹⁹ and research supports the idea that a circular economy approach can enable greater renewable energy uptake and transitioning.²⁰ The European Green Deal will also have repercussions in African countries, with a high probability of value chain relocation to African countries.²¹ In March 2022, during the UN Environment Assembly meeting in Nairobi, 175 countries agreed to negotiate a new global treaty on plastic pollution. This treaty would include binding measures covering the entire lifecycle of plastics. In emerging economies, circular economy efforts are implemented predominantly by the informal sector. Our research indicates that Madagascar, Rwanda and Tunisia have a national circular economy policy implemented in the Africa region.

Chemicals

The Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) regulation, one of the prominent regulations in the chemicals sector, was first established in 2006 and has been emulated in other parts of the world, such as in South Korea, which, in 2015, adopted The Act on the Registration and Evaluation of Chemicals, also known as K-REACH.²²

Currently, the EU has an ambitious regulatory framework in place to manage chemicals with policies such as the REACH regulation and the Restriction of Hazardous Substances Directive. The growing emphasis on circularity in the EU is influencing policymakers to address material compositions and to increase transparency on materials; for example, with the introduction of the Substances of Concern In articles as such or in complex objects (Products) (SCIP) database introduced in the 2018 revision of the Waste Framework Directive.²³ This database aims to provide detailed and granular information on the presence of substances of very high concern in articles to recyclers, consumers and authorities. In addition to the 2020 Chemicals Strategy for Sustainability (CSS)²⁴ and the 2021 Zero Pollution Action Plan,²⁵ the EU is developing a multipronged approach to increase transparency over the presence of chemicals in products and the environment to improve traceability and recovery to enable a circular and toxic-free society.

Other countries and regions have various levels of maturity and approaches to tackle chemicals legislation. For example, in the US, there are different policies in place at the state level, such as California Proposition 65.

In Asia, countries such as Korea, Japan and China have legal frameworks to tackle chemicals inspired by the EU's REACH regulation. However, each country introduces its own specificities.²⁶ With a growing number of measures and technological breakthroughs, it will become possible to facilitate higher-value chain transparency on the presence of chemicals in material flows, thus enabling higher recovery rates and improved end-of-life treatment options.

Plastics

The earliest policies relating to plastics management focused on bans and levies to reduce plastic waste, with Denmark being the first country to place a levy on plastic bags in 1994. Since then, there has been a drastic increase of measures globally seeking to address plastic pollution through direct bans on single-use products and microplastics, the introduction of EPR schemes, collection targets and measures for mandatory recycling. Additionally, at a global level, the Basel Convention (1988) and United Nations treaty (2020) established requirements to address transboundary movement of hazardous waste, solid waste and municipal incinerator ash, and the entire plastics supply chain, respectively.²⁷ In August 2022, California established the Plastic Pollution Prevention and Packaging Producer Responsibility Act (SB 54) that will impose new sustainability regulatory requirements on all businesses manufacturing single-use packaging and food service ware.²⁸ As we move away from fossil fuels, there will be a potential increase in regulatory focus on bio-based plastics.²⁹

4 How companies can adapt to evolving policy trends

Textiles

In 2007, France was the first country to declare a legal framework for managing textile waste through EPR.³⁰ Since then, the EU has established binding requirements for member states to implement textiles EPR by 2025, and the UK is exploring options for a textiles policy framework that includes EPR.³¹ In March 2022, the EU published a strategy for sustainable textiles that includes measures such as the introduction of mandatory eco-design requirements for textiles, bans on the destruction of unsold goods, and implementation of digital product passports and supply chain due diligence.³² If passed, the New York Fashion Sustainability and Social Accountability Act 2021,³³ currently in committee, would require companies to map their supply chains and provide a social and environmental sustainability report.³⁴ Additionally, California and New York legislators are pushing forward proposed legislation that regulates per- and polyfluoroalkyl substances (PFAS) in textile products.³⁵

The operations of apparel brand manufacturing processes have garnered increased scrutiny for both social and environmental impacts – social impacts, such as the collapse of Rana Plaza in 2013, and environmental impacts, such as being the second highest consumer of water globally,³⁶ as well as contributing 10% to global GHG emissions³⁷ and 11.3 million tons of textile waste annually in US landfills alone.³⁸ Many countries and geographic regions, including France,

Finland, Germany, the Netherlands, China, the EU and the US, led notably by California and New York, are implementing circularity strategies to address these problems. While policies aimed at circularity broadly will impact the textile and apparel space, due to the immense volume of clothing waste, generated emissions and water usage, expectations on increased targeted regulation of the apparel and textile industries are high. At the moment, targeted policies are still in their nascent phase, but this will ramp up due to stakeholder pressure and the industry will become more highly regulated in the coming years.



As circularity becomes more mainstream and is integrated into national and regional growth plans, this will translate into new regulatory pressures for companies operating in these jurisdictions. EY professionals have identified the following recommendations for companies to prepare:

1. Develop strategies aligned with the country's maturity level. This would help companies understand and navigate the underlying evolving regulatory landscape.
2. Identify policy or infrastructure gaps and take necessary preventative actions. Companies operating in areas with barriers to proper recycling and re-processability have a higher possibility of being impacted by legal liabilities, litigation or more stringent legal requirements.
3. Recognize that regional or local policies may have a national or global impact. For example, "right to repair" policies in certain US states will likely motivate companies to provide the same "repair" information to all US customers.
4. Build relationships and seek opportunities to cooperate with value chain and technology partners to prolong materials and resources in the value chains and build data-driven strategies.
5. Leverage digital tools to enhance compliance, reduce administrative burdens and improve transparency. Digital tools used to improve transparency over material flows will be pivotal in helping companies understand their material footprint, increase recovery rates and reintegrate material into the value chain.

In addition to regulatory drivers, evolving consumer preferences will potentially drive companies toward more sustainable and circular business models through purchasing power, growing concern and increased demand to reduce the environmental footprint and material impact.

Industry cooperation, either through coalitions or developing product standards, is an important driver to develop a level playing field and drive competition toward more circular business models. Industry coalitions, such as the Alliance to End Plastic Waste or the US Plastics Pact, can be an effective mechanism to address regulatory gaps and build a unifying organization. However, prior to joining such initiatives and coalitions, buy-in from internal stakeholders can be a challenging exercise.

The European Green Deal will have global implications: With a delocalized value chain, it may create economic opportunities for some countries and displace net emissions.

Informal markets in emerging economies are an untapped opportunity for businesses. Integrating formal and informal markets could be the paragon of profit with purpose.

References

- 1 Mavropoulos, Antonis and Waage Nilsen, Anders, *Industry 4.0 and Circular Economy: Towards a Wasteless Future or a Wasteful Planet* (Wiley, November 2020).
- 2 European Commission, Directorate-General for Energy, Directorate-General for Enterprise and Industry, *Ecodesign your future: how ecodesign can help the environment by making products smarter*, European Commission, 2014, [data.europa.eu/doi/10.2769/38512](https://doi.org/10.2769/38512).
- 3 Antikainen, Maria; Uusitalo, Teuvo; and Kiviytö-Reponena, Päivi, "Digitalisation as an Enabler of Circular Economy," *ScienceDirect website*, www.sciencedirect.com/science/article/pii/S2212827118305432, accessed October 2022.
- 4 Maturity map built on Chatham House data (<https://circulareconomy.earth/>) and internal EY research.
- 5 "Communication from the Commission: The European Green Deal," *EUR-Lex website*, eur-lex.europa.eu/legal-content/EN/TXT/?qid=1588580774040&uri=CELEX:52019DC0640, accessed October 2022.
- 6 "Changing how we produce and consume: New Circular Economy Action Plan shows the way to a climate-neutral, competitive economy of empowered consumers," European Commission press release, March 11, 2020, accessed via the *European Commission website*, ec.europa.eu/commission/presscorner/detail/en/ip_20_420.
- 7 "Circular Economy: Commission proposes new consumer rights and a ban on greenwashing," European Commission press release, March 30, 2022, accessed via the *European Commission website*, ec.europa.eu/commission/presscorner/detail/en/ip_22_2098.
- 8 "National Recycling Strategy: Part One of a Series on Building a Circular Economy," *U.S. Environmental Protection Agency website*, www.epa.gov/recyclingstrategy/national-recyclingstrategy/#NRS%20Part%201, accessed October 2022.
- 9 "National Recycling Strategy," *U.S. Environmental Protection Agency website*, www.epa.gov/recyclingstrategy, accessed October 2022.
- 10 Ibid.
- 11 Heffernan, Melissa and Paben, Jared, "EPR bill in Colorado signed while New York bills fail," *Resource Recycling, Inc. website*, resource-recycling.com/plastics/2022/06/08/epr-bill-in-colorado-signed-while-new-york-bills-fail/, accessed October 2022.
- 12 "Governor Newsom Signs Legislation to Tackle Plastic Pollution, Promote a More Sustainable & Renewable Economy and Protect Californians from Toxic Chemicals," Office of Governor Gavin Newsom release, October 5, 2021, *California Government website*, www.gov.ca.gov/2021/10/05/governor-newsom-signs-legislation-to-tackle-plastic-pollution-promote-a-more-sustainable-renewable-economy-and-protect-californians-from-toxic-chemicals/.
- 13 Kerencheva, Emanuela, "Canada Moves to Eliminate Single Use Plastics," *ESG Today website*, www.esgtoday.com/canada-moves-to-eliminate-single-use-plastics/, accessed October 2022.
- 14 "Inclusive circular economy law will be published in the official Registry," *PrensaEc website*, prensa.ec/2021/06/29/ley-de-economia-circular-inclusiva-sera-publicada-en-el-registro-oficial/, accessed October 2022.
- 15 "Latin America and the Caribbean Circular Economy Coalition launches a vision for a circular economy for the region," *Ellen MacArthur Foundation website*, ellenmacarthurfoundation.org/news/latin-american-and-the-caribbean-coalition-launches-a-vision, accessed October 2022.
- 16 Ghisellinia, Patrizia; Cialanib, Catia; and Ulgiatid, Sergio, "A review on circular economy: the expected transition to a balanced interplay of environmental and economic systems," *ScienceDirect website*, www.sciencedirect.com/science/article/abs/pii/S0959652615012287, accessed October 2022.
- 17 Vedantam, Aditya; Suresh, Nallan C.; Aj, Khadija; and Shelly, Michael, "Impact of China's National Sword Policy on the U.S. Landfill and Plastics Recycling Industry," *ResearchGate website*, www.researchgate.net/publication/358776926_Impact_of_China%27s_National_Sword_Policy_on_the_US_Landfill_and_Plastics_Recycling_Industry, accessed October 2022.
- 18 Nair, Manoj, "Plastic ban: Economic vs environmental cost," *Hindustan Times website*, www.hindustantimes.com/mumbai-news/plastic-ban-economic-vs-environmental-cost/story-jvHqmzq74RmSlow8s5b1QP.html, accessed October 2022.
- 19 Jerving, Sara, "African Development Bank commits to coal-free financing," *Devex website*, www.devex.com/news/african-development-bank-commits-to-coal-free-financing-95698, accessed October 2022.
- 20 Mutezo, G. and Mulopo, J., "A review of Africa's transition from fossil fuels to renewable energy using circular economy principles," *ScienceDirect website*, www.sciencedirect.com/science/article/abs/pii/S1364032120308935#bib4, accessed October 2022.
- 21 Usman, Zainab; Abimbola, Olumide; and Ituen, Imeh, "What Does the European Green Deal Mean for Africa?" *Carnegie Endowment for International Peace website*, carnegieendowment.org/2021/10/18/what-does-european-green-deal-mean-for-africa-pub-85570#:~:text=Creating%20a%20circular%20economy,construction%2C%20electronics%2C%20and%20plastics, accessed October 2022.
- 22 "Global Regulation," *Chemical Compliance Advisory Services website*, chemadvisory.com/global-regulation-1, accessed October 2022.
- 23 "Directive (EU) 2018/851 of the European Parliament and of the Council of 30 May 2018 amending Directive 2008/98/EC on waste," *EUR-Lex website*, eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv:OJ.L_.2018.150.01.0109.01.ENG, accessed October 2022.
- 24 "Chemicals Strategy for Sustainability Towards a Toxic-Free Environment," European Commission Communication PDF, ec.europa.eu/environment/pdf/chemicals/2020/10/Strategy.pdf.
- 25 "Communication from the Commission: Pathway to a Healthy Planet for All," *EUR-Lex website*, eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52021DC0400&qid=1623311742827, accessed October 2022.
- 26 "Chemical Regulations Updating In Asia Pacific: Report for 2017," Chemical Inspection and Regulation Service Limited PDF report, www.cirs-reach.com/Uploads/file/20180307/1520389283_43347.pdf.
- 27 Gorsen, Maureen, "This California law changes things for plastics in the state," *GreenBiz website*, www.greenbiz.com/article/california-law-changes-things-plastics-state, accessed October 2022.
- 28 Ibid.
- 29 Syberg, Kristian; Bille Neilsen, Maria; Westergaard Clausen, Lauge Peter; van Calster, Geert; van Wezel, Annemarie; Rochman, Chelsea; Koelmans, Albert A.; Cronin, Richard; Pahl, Sabine; and Foss Hansens, Steffen, "Regulation of plastic from a circular economy perspective," *ScienceDirect website*, www.sciencedirect.com/science/article/abs/pii/S2452223621000183, accessed October 2022.
- 30 "EPR Policy: France's National Programme for Textiles Recovery," *Circle Lab Knowledge Hub website*, knowledge-hub.circle-lab.com/article/8959?n=EPR-Policy-France%27s-National-Programme-for-Textiles-Recovery, accessed October 2022.
- 31 Husband, Laura, "UK plans to share EPR textiles scheme options in 2022," *Just Style website*, www.just-style.com/news/uk-plans-to-share-epr-textiles-scheme-options-in-2022/, accessed October 2022.
- 32 "Communication from the Commission: EU Strategy for Sustainable and Circular Textiles," *EUR-Lex website*, eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52022DC0141, accessed October 2022.
- 33 "Assembly Bill A8352: 2021-2022 Legislative Session," *The New York State Senate website*, www.nysenate.gov/legislation/bills/2021/A8352, accessed October 2022.
- 34 Tarko Hudson, Rachel; Sones, Alyssa M.; and Shah, Dhara, "New York Fashion Sustainability Act: Now In Committee," *The National Law Review website*, www.natlawreview.com/article/new-york-fashion-sustainability-act-now-committee, accessed October 2022.
- 35 Gigounas, George; Baas, Adam; Fogel, Stefanie Jill; and Bingham, Alexandria, "California and New York propose banning textiles containing PFAS; California moves to impose significant reporting obligations," *DLA Piper website*, www.dlapiper.com/en/us/insights/publications/2022/06/california-and-new-york-propose-banning-textiles-containing-pfas/, accessed October 2022.
- 36 "How Much Do Our Wardrobes Cost to the Environment?," *The World Bank website*, www.worldbank.org/en/news/feature/2019/09/23/costo-moda-medio-ambiente, accessed October 2022.
- 37 McFall-Johnsen, Morgan, "These facts show how unsustainable the fashion industry is," *World Economic Forum website*, www.weforum.org/agenda/2020/01/fashion-industry-carbon-unsustainable-environment-pollution/, accessed October 2022.
- 38 "Textiles: Material-Specific Data," *U.S. Environmental Protection Agency website*, www.epa.gov/facts-and-figures/about-materials-waste-and-recycling/textiles-material-specific-data, accessed October 2022.



EY | Building a better working world

EY exists to build a better working world, helping to create long-term value for clients, people and society and build trust in the capital markets.

Enabled by data and technology, diverse EY teams in over 150 countries provide trust through assurance and help clients grow, transform and operate.

Working across assurance, consulting, law, strategy, tax and transactions, EY teams ask better questions to find new answers for the complex issues facing our world today.

EY refers to the global organization, and may refer to one or more, of the member firms of Ernst & Young Global Limited, each of which is a separate legal entity. Ernst & Young Global Limited, a UK company limited by guarantee, does not provide services to clients. Information about how EY collects and uses personal data and a description of the rights individuals have under data protection legislation are available via ey.com/privacy. EY member firms do not practice law where prohibited by local laws. For more information about our organization, please visit ey.com.

Ernst & Young LLP is a client-serving member firm of Ernst & Young Global Limited operating in the US.

© 2022 Ernst & Young LLP.
All Rights Reserved.

2209-4098276
US SCORE 17539-221US
ED None

This material has been prepared for general informational purposes only and is not intended to be relied upon as accounting, tax, legal or other professional advice. Please refer to your advisors for specific advice.

ey.com