Shaping circularity: waste management policy under the Biden administration

di Marina Petri

Abstract: *Definendo la circolarità: la policy di gestione dei rifiuti nella Presidenza Biden* – Defining a comprehensive waste management policy entails a broad range of policy tools, as well as the need to take into account a composite set of multifaceted concerns, both environmental and socio-economic. Within the US context, this paper addresses the main role played by the Biden Administration in advancing a comprehensive framework for circular economy in a multilevel scenario, while setting ambitious social and environmental goals. In order to do so, this paper sheds some light on the broader framework characterizing waste management policy at Federal level, including the key tenets of the Trump Administration's "back to basics" approach, while suggesting a possible way forward for the US Presidency in this specific policy sector.

Keywords: EPA, waste management, Bipartisan Infrastructure Law, circular economy

1. Introduction

Waste management policy, which is at the crossroads of environmental and socio-economic concerns, represents the lenses through which the Biden Administration will be observed in this paper. A composite set of regulatory tools, encompassing educational and behavioural measures, as well as economic incentives, is necessary to address the key challenges of waste management. This is particularly true in the context of circularity, where a multifaceted approach must be followed for the development of the main tenets of circular economy in each economic and legal order.

In order to observe and, ultimately, try to assess Mr Biden's contribution to waste management policy in the United States, a general overview of the regulatory framework provided by Federal legislation will be recalled. In this context, specific attention will be paid to the neuralgic role played by the Environmental Protection Agency (EPA). Moreover, some key features characterising waste management policy in the Trump era will be highlighted, with particular regard to the waste policy implications of the environmental (de-)regulation perspective chosen by the Trump Administration (the so called "back to basics" approach).

Against this backdrop, the Biden Administration's efforts in the waste management policy sector will be presented, both with regard to regulatory action (such as the Save Our Seas 2.0 Act) and with particular reference to funding, mainly provided through the Bipartisan Infrastructure Law of 2021. These programmes, built upon some of EPA's initiatives first introduced in 2018 and 2019, represent a relevant step in the direction of

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fostering circularity in the US, as they provide specific measures aimed at improving recycling and reducing waste generation (at least in the food sector). Thus, some targeted considerations on a possible way forward will be drawn in the conclusive paragraph of the paper.

2. From a "back to basics" approach…

In order to provide a cohesive framework for the systematic considerations on Mr Biden's waste management policy to follow, the main elements characterising waste management policy in the US context will be shortly recalled in this paragraph. Moreover, to better contextualise the Biden Administration interventions, it will be relevant to get a glimpse of how the Trump administration has shaped the main trends in this sector.[1]

Waste management policy structurally tackles a variegated set of issues, but, historically, it stems from both economic and environmental protection concerns, as evidenced by the structure and language of the 1976 Resource Conservation and Recovery Act (RCRA).[2] The RCRA, part of Title 40 of the Code of Federal Regulations, establishes a comprehensive legal framework for solid waste management in the United States. It governs waste handling, from collection to final disposal, through a combination of binding laws and regulations (hard law) and non-binding guidelines and policies (soft law). The RCRA is a cornerstone of U.S. environmental law, reflecting a systematic approach to waste management aimed at protecting public health and the environment, within a clear socio-economic setting.

The Environmental Protection Agency (EPA) plays a pivotal role in this framework, as it sets national technical standards for the design and operation of waste disposal facilities, ensuring that they meet environmental protection requirements. Indeed, while the EPA provides overall regulatory guidance, the States are responsible for issuing permits to ensure that both federal and state regulations are followed at the local level. This system of shared responsibility between the federal government and the States reflects the multi-level nature of U.S. environmental policy.

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[1] This paragraph is based upon the contribution on Mr Trump's waste management policy published within this series. See M. Petri, *Waste management policy in the Trump era: where do we go from here?*, in ***DPCE Online***, 1/ 2021.

[2] Before the 1976 RCRA, the so-called first phase of federal solid waste law was characterised by the 1965 Solid Waste Disposal Act (SWDA) mainly focussed on the regulation of landfills and the related research and training. Then, the 1970 Resource Recovery Act (RRA) determined a first shift towards a new paradigm for solid waste management. Interestingly, however, both the SWDA and the RRA implied a limited role for the State, which did not actively regulate the sector; rather, this first legislative initiatives aimed at emphasising good practices (such as reuse and a rudimental form of recycling), in a regulatory setting which was substantially dominated by the relevant market players. After its introduction, the RCRA has been further developed through the 1984 Hazardous and Solid Waste Amendments (HSWA), promoting waste prevention rather than waste disposal, and it has been amended twice more: with the 1992 Federal Facility Compliance Act (focussing on federal enforcement) and with the 1996 Land Disposal Program Flexibility Act.

The RCRA's key concept is the broad and multifaceted definition of "solid waste," which includes a wide range of discarded materials in solid, semisolid, liquid, or contained gaseous forms.[3] These materials require diverse management strategies and are regulated based on their potential impact on human health and the environment. As a matter of fact, under RCRA, a general categorisation of waste is put forward according to its hazardous or non-hazardous nature.[4] Hazardous waste, regulated under Subtitle C of the RCRA, poses significant risks and follows a stringent "cradle-to-grave" regulatory system that tracks waste from its creation through its transport, treatment, storage, and final disposal.

Conversely, non-hazardous waste, regulated under Subtitle D, includes municipal solid waste (e.g., household garbage), industrial waste, and agricultural and food waste. States implement programmess to manage non-hazardous waste in accordance with federal standards, focusing on landfill design (in order to avoid open dumping, while insuring the safe disposal of waste in landfills), waste diversion, and pollution prevention. These programmes must meet federal criteria concerning the design, location, and financial management of landfills, as well as addressing issues like groundwater contamination and methane gas emissions. In this system, the EPA's oversight ensures that the States follow best practices in waste management, while States tailor their programmes to local needs. Hazardous waste management, however, is more centralized, with the EPA playing a primary role in enforcement. The cradle-to-grave system ensures that hazardous waste is monitored and controlled throughout its lifecycle, with the EPA having the authority to authorize States to run their own hazardous waste programmes.

A fundamental principle underpinning waste management policy in the U.S. is the so-called "waste hierarchy".[5] This principle outlines a priority order for dealing with waste: (1) source reduction and reuse to minimize waste generation; (2) recycling; (3) composting; (4) energy recovery from waste (incineration); and (5) final disposal in landfills, only as a last resort. This hierarchy encourages minimizing waste production at the outset and emphasizes recycling and energy recovery before resorting to landfill disposal. Similar to the European model of waste management, the U.S. employs a combination of policy tools to promote this hierarchy. These

[3] *See* the explanatory memorandum on the EPA website, available at <https://www.epa.gov/rcra/resource-conservation-and-recovery-act-rcra-overview#how%20does%20rcra%20work>.

[4] It is interesting to note that the paramount divide between hazardous and non-hazardous waste marks a qualifying difference in with regards to the legal orders, such as several continental European contexts, where the regulatory categorisation of waste is based upon market structure (regulated market for municipal waste/liberalised market for industrial waste), and the hazardous nature of waste has a more transversal, additional, character.

[5] The waste reduction potential of the principle of waste hierarchy is not uncontroverted, as thoroughly analysed in S.Van Ewijka & J.A.Stegemannb, *Limitations of the waste hierarchy for achieving absolute reductions in material throughput*, 132 *Journal of Cleaner Production* 122 (2016). For a conceptualisation of waste hierarchy in the European context, *see*, *ex multis*, J. Hultman & H. Corvellec, *The European Waste Hierarchy: from the sociomateriality of waste to a politics of consumption*, in 44(10) *Environ. Planning-Part A* 2413 (2012).

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include economic incentives, such as pay-as-you-throw systems that charge households based on the amount of waste they generate, and command-and-control regulations, like the permitting system for hazardous waste facilities.

At the federal level, technical and performance standards are used to implement environmentally sustainable waste management practices. For example, emissions standards for waste combustion and incineration facilities are designed to minimize the environmental impact of waste disposal processes.[6] Although landfills remain a primary method of disposal for municipal waste,[7] there has been a legislative push towards a more integrated, multi-level approach to waste management, where waste is increasingly seen as a resource within the economic cycle.

The RCRA is supplemented by the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), commonly known as the Superfund law.[8] The Superfund programme deals specifically with the cleanup of abandoned or historical hazardous waste sites, which are not covered by the RCRA and often pose severe environmental and health risks.[9] Notably, Superfund provides a legal mechanism to hold polluters financially responsible for the cleanup of contaminated sites and establishes a trust fund to finance cleanups when no responsible party can be identified. This intervention has had a significant impact[10] on waste management, particularly in addressing the legacy of industrial pollution and unregulated waste disposal within the US context, where landfilling still represents a paramount waste disposal technique.

The Trump administration's approach to waste management marked a shift towards deregulation and budget cuts[11] consistent with its broader

[6] *See* the explanatory memorandum on the EPA website, available at <https://www.epa.gov/rcra/resource-conservation-and-recovery-act-rcra-overview#how%20does%20rcra%20work>.

[7] According to the last available sectorial data, collected and elaborated by EPA with regard to the period 1960 – 2017 and available at < https://www.epa.gov/facts-and-figures-about-materials-waste-and-recycling/national-overview-facts-and-figures-materials >, in the first two years of the Trump administration no tangible reduction of landfilling as a paramount disposal technique has occurred (around 50% of generated municipal solid waste is landfilled), and a small decline of the ratio of recycled products over general waste is observable (with particular regard to plastics, paper and glass). Moreover, waste generation has increased, in line with a general trend from 2010.

[8] Through Superfund, a tax has been introduced, targeting the chemical and petroleum industries and providing broad Federal authority to respond directly to releases or threatened releases of hazardous substances that may endanger public health or the environment. *See* the explanatory memorandum on the EPA website, available at < https://www.epa.gov/superfund/superfund-regulations >.

[9] Arguably, the development of Superfund is connected to a series of environmental accidents in contaminated and hazardous dumping sites, widely covered by American media between 1978 and 1979, the most famous of which being the so-called *Love Canal tragedy* of 1979 (*see* E. C. Beck, *The Love Canal Tragedy*, *EPA Journal*, January 1979, available at < https://archive.epa.gov/epa/aboutepa/love-canal-tragedy.html >).

[10] *See* G. Valaoras, *Waste Management Policies in the United States of America*, in P. Nicolopoulou-Stamati, L. Hens & C. V. Howard (Eds.), *Health Impacts of Waste Management Policies*, Berlin, 2007, 121-131.

[11] The EPA year in review 2018, which summarises the main regulatory and strategic outcomes of the relevant fiscal year, focussing on the steps forward pursued in environmental matters, published in early 2019, is available at <

stance on environmental and administrative policies. Under President Trump, the EPA prioritized a "back to basics"[12] agenda, focusing on streamlining regulatory efforts and reducing the EPA's role in substantive environmental regulation. This approach led to significant cost savings, with $2 billion being saved, as reported by the EPA,[13] during Trump's first two years in office. Both Scott Pruitt and Andrew Wheeler, who served as EPA Administrators under Mr Trump, embraced this minimal regulatory approach, emphasizing the importance of reducing public expenditure and regulatory burdens[14] on the industry.

Within this general framework, however, it is interesting to point out that specific attention has been paid to high-profile (and high-budget) cleanup initiatives, pursuant to Superfund. The EPA's Superfund Task Force,[15] established in 2017, has been promoted as a key achievement of the Trump administration, as it aimed to prioritize the cleanup of hazardous waste sites, emphasizing human health and environmental protection.[16] As a matter of fact, the focus on Superfund cleanups aligned with Trump's broader strategy of using highly visible programmes to demonstrate progress, despite the overall trend of deregulatory actions.[17] Notably, the

https://www.epa.gov/sites/production/files/2019-01/documents/epa_2018_yearinreview_0128-4.pdf >. Hereinafter, "EPA year in review 2018". This trend is in line with President Donald Trump's 2020 budget 'A Budget for a Better America' (available at < https://www.whitehouse.gov/wp-content/uploads/2019/03/budget-fy2020.pdf >), issuing a 31% budget cut for EPA.

[12] Former EPA Acting Administrator Scott Pruitt's legacy is famously linked to the launch of his "back to basics" agenda on air quality (S. Pruitt, *Memorandum – Back-to-basics process for reviewing National Ambient Air Quality Standards*, 9th May 2018, available at < https://www.epa.gov/sites/production/files/2018-05/documents/image2018-05-09-173219.pdf >), prompting the EPA to concentrate on its core mission ("environment, economy, engagement"). While this "back to basics" perspective did not explicitly encompass a specific focus on waste management, it is possible to affirm that President Donald Trump's EPA has pursued a limited list of high-profile objectives in its waste policy, which are arguably linked to the very structural functions of the Agency.

[13] *See EPA year in review* 2018, p. 5.

[14] In the case of waste policy, in 2018 the EPA removed several products (such as copper filter cakes) from the list of hazardous waste, it reviewed the technical rules on coal ash waste from power plants and it suspended (through a 90-day stay) the application of the Obama administration's regulation of landfill emissions. According to EPA's year in review 2018, 33 major deregulatory initiatives where finalised during the first two years of the Trump administration (*see* p. 2).

[15] *See* EPA, *Superfund: CERCLA overview*, available at < https://www.epa.gov/superfund/superfund-cercla-overview >.

[16] In 2018 alone, 22 sites were removed from the National Priorities List (NPL), a significant increase from previous years. *See* EPA Year in Review 2018, p. 11. In 2019, 27 additional sites were removed from the NPL as part of the Superfund Task Force's efforts. *See* The EPA Year in Review for 2019, published in early 2020, is available at < https://www.epa.gov/sites/production/files/2020-02/documents/hq_2019_year_in_review.pdf >. Hereinafter, "EPA year in review 2019".

[17] For a complete overview, see N. Popovich, L. Albeck-Ripka & K. Pierre-Louis, The Trump Administration Is Reversing More Than 100 Environmental Rules. Here's the Full List, The New York Times, 10th November 2020, available at <

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administration framed Superfund cleanups as part of a broader agenda to revitalize land for economic reuse, reflecting Trump's business-oriented approach to environmental regulation.[18]

This general strategy has been coupled with a cohesive set of high-profile initiatives, which, though at least partially symbolic, were intended to offset the negative perception of deregulation by highlighting tangible environmental benefits. Both the launch of a programme aimed at tackling food waste[19] and the introduction by EPA of the National Framework for Advancing the U.S. Recycling System,[20] following the success of the "America Recycles" summits in 2018 and 2019, fall within this category. This framework, although non-binding, outlined a series of measures to promote recycling, relying heavily on private investment and public-private partnerships, thus highlighting the administration's reliance on voluntary and market-driven approaches rather than comprehensive federal regulation. It is worth mentioning that both initiatives, although non-binding in nature, represented a step forward in addressing recycling challenges, and they constitute the first steps towards the more structural approach to circularity taken by the Biden administration.

3. …to a holistic approach to waste management policy

In the previous paragraph, some systematic considerations have been put forward, with particular reference to the main tenets of waste management policy in the US context. More specifically, both the structural framework first introduced through the adoption of the RCRA and the key aspects of the "back to basics" approach chosen by the Trump administration have been concisely recalled.[21]

It is possible to argue that a flexible regulatory environment allowing for tangible actions to be undertaken by a variety of stakeholders has been beneficial to the development of a more comprehensive waste management policy in the US. However, it is worth underlining that this approach could indeed benefit from being structurally coupled with a stronger long-term policy perspective, aimed at putting into effect the main tenets of waste hierarchy.

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https://www.nytimes.com/interactive/2020/climate/trump-environment-rollbacks-list.html >.

[18] *See* EPA year in review 2019, p. 14.

[19] EPA launched the 'Winning on Reducing Food Waste' initiative in late 2018, in partnership with the U.S. Department of Agriculture (USDA), and the Food and Drug Administration (FDA). According to EPA's review 2018, the programme aims to 'improve coordination and communication across federal agencies as we work to better educate Americans on the impacts and importance of reducing food loss and waste' (*see EPA year in review* 2018, p. 14).

[20] *See* EPA's official website, at < https://www.epa.gov/sites/production/files/2019-11/documents/national_framework.pdf >.

[21] The shift from the Trump to the Biden administration can be evocatively recalled through an observation of the Climate Deregulation Tracker, launched by Columbia University. See M. Burger, D. J. Metzger, H. Aidun & S. Biniaz, *Climate Reregulation in a Biden Administration, Sabin Center for Climate Change Law, Columbia Law School*, 2020, available at < https://scholarship.law.columbia.edu/faculty_scholarship/3042 >.

In this regard, Mr Biden's Administration has strengthened the structural linkages between waste generation and disposal, through a multifaceted approach to circular economy, encompassing several aspects of the waste hierarchy paradigm. From a macro-policy perspective, specific attention has been paid to waste reduction (for example in the context of targeted programmes for food and organic waste), as well as to the further development of a national recycling strategy.[22] It is worth mentioning from the outset that these policy interventions do not, in fact, happen in a vacuum: the quintessential links to both environmental and energy policies,[23] as well as the impact of parallel cohesive interventions at State level,[24] are apparent. However, the approach followed by the Biden Administration is worth being observed in so far as it pinpoints and, ultimately, aims at tackling the key challenges of circularity, both from a regulatory and from an economic perspective.

In this context, a paramount role is played by EPA's Office of Resource Conservation and Recovery (hereinafter ORCR), established under the RCRA. ORCR employs a variegated set of tools (encompassing both regulation and standard setting, as well as promoting an incentive-based approach) to ensure the active involvement of the key stakeholders in the tangible implementation of sustainable waste management.

Even though several notions of circular economy coexist within the broader framework of the green transition,[25] it is worth noting that most of them encompass three key elements: eliminating waste and pollution from intentional design, preserving value by circulating products, and

[22] See J. Brightbill, N. Subramanian, J. H. Adler, V. Patton, Q. Pair, *Year One Review of the Biden Administration*, 4(52) *Environ. Law Rep.* 10257 (2022).

[23] See, *ex multis*, J. C. Dernbach, S. E. Schang, *Making America a better place for all: sustainable development recommendations for the Biden administration*, in 4 *Environ. Law Rep.* 10310 (2021), and, with specific reference to nuclear waste management, S. Benson, *Breaking U.S. nuclear waste stalemate could be key to Biden's climate goals, Stanford scholars say*, *Stanford Report*, 24th March 2024, available at < https://news.stanford.edu/stories/2021/03/biden-can-jumpstart-u-s-nuclear-waste-strategy >. The clear links between waste management policy and environmental policy have been recently pinpointed by the UN, in the context of the International Resource Panel (see International Resource Panel, *Global Resource Outlook 2024*, available at < https://www.resourcepanel.org/reports/global-resources-outlook-2024 >).

[24] Within this general framework, it is worth mentioning that specific attention has been paid to supporting local communities and tribes in tacking the main challenges related to waste management, providing national policy direction in partnership with federal agencies. The tribal waste management programme, strengthened in 2007 through the introduction of a multi-agency tribal infrastructure task force aimed to "develop and coordinate federal activities in delivering water infrastructure, wastewater infrastructure and solid waste management services to tribal communities", is instrumental to the full development of a coherent and cohesive multi-layered approach to waste management (see the contributions available at < https://www.epa.gov/tribal-lands/tribal-waste-management-program >). The membership to the multi-agency infrastructure has been expanded in 2022.

[25] For a comprehensive overview of the issue, see the recent volume by G. Haar, *The Great Transition to a Green and Circular Economy – Climate Nexus and Sustainability*, Cham, 2024. The key tenets of circular economy are pinpointed, in the European context, in W. R. Stahel, *The circular Economy: a user's guide*, London, 2019.

regenerating the natural ecosystem.[26] In all evidence, in order to tackle these issues, it is paramount for all relevant market and regulatory players to be fully invested in the process. Therefore, a comprehensive set of policy tools is needed to define an effective intervention, through a holistic approach.

Within this framework, Mr Biden's agenda did not overtly include waste management as a key priority. Nonetheless, a cohesive set of measures aimed at defining a structured perspective over recycling and circularity has been introduced. A first step in this direction is represented by the adoption, in December 2020, of the Save Our Seas 2.0 Act.[27] The Act, which is focussed on marine debris management, amends the Save Our Seas Act of 2018 and, in doing so, it is a stepping stone in the definition of a wider plastic recycling framework.

In line with the Sustainable Materials Management (SMM) strategy pursued by the United States since 2009, the concept of circular economy provided for in the Act refers to "an economy that uses a systems-focused approach and involves industrial processes and economic activities that are restorative or regenerative by design; enable resources used in such processes and activities to maintain their highest values for as long as possible; and aim for the elimination of waste through the superior design of materials, products, and systems (including business models)."[28]

The Save Our Seas 2.0 Act is a structural normative intervention focussing on plastic reduction, assigning ORCR a relevant role in the enforcement of recycling policy at federal level. Indeed, it has been referred to as "the most comprehensive piece of legislation ever passed"[29] to address the issue of plastic pollution, as it contextualises specific grants within the broader circular economy framework. In particular, in line with ORCR's involvement in the Interagency Marine Debris Coordinating Committee (pursuant to the Save Our Seas Act), the Act authorises EPA to manage the Solid Waste Infrastructure for Recycling (hereinafter SWIFR) grant programme.

The programme supports a wide range of interventions aimed at improving post-consumer materials management and infrastructure, while supporting local waste management and recycling programmes, as well as assisting local waste management authorities in making improvements to

[26] This paradigm (and wording) has been recently (2021) introduced by the Ellen MacArthur Foundation, which is a paramount advocate for circular economy (as opposed to the so-called "linear economy") in the international arena (the official website is available at < https://www.ellenmacarthurfoundation.org/topics/circular-economy-introduction/overview >). Notably, the Foundation leads the Global Commitment in collaboration with the UN Environment Programme.

[27] Public Law n. 116-224, approved 18th December 2020, *An act to improve efforts to combat marine debris, and for other purposes.*

[28] See the 2023 EPA Solid Waste Infrastructure for Recycling (SWIFR) grants for tribes and intertribal consortia, within the same conceptual framework, available at < https://www.epa.gov/system/files/documents/2023-01/EPA-I-OLEM-ORCR-23-07.pdf >. SWIFR, which is funded through the bipartisan infrastructure law of 2021, is enacted pursuant to section 301(a) of the Save Our Seas 2.0 Act.

[29] See EPA report, *Building a circular economy for all: progress toward transformative change*, September 2022, EPA 530-R-22-004, available at < https://www.epa.gov/system/files/documents/2022-09/EPA_Circular_Economy_Progress_Report_Sept_2022.pdf >.

local waste management systems[30]. Together with the Recycling Education and Outreach grant programme and the Battery Collection Best Practices and Voluntary Battery Labelling Guidelines, SWIFR is one of the key waste management and recycling initiatives funded through the so-called 2021 Bipartisan Infrastructure Law,[31] which represents a cornerstone of Mr Biden's public policy agenda.

As a matter of fact, the bill has marked a clear shift in waste management policies at federal level, as it provides for unprecedented support[32] to States, tribes and communities both in infrastructure and in facility management. Within waste policy, the main challenges the bill addresses include subverting the historic lack of financing for waste management plants, especially in the field of solid municipal waste, while tackling waste mismanagement both in collection and in handling of waste. Indeed, both aspects carry a significant social and environmental impact, for communities throughout the federal territory. The funding mechanism for SWIFR and the Recycling Education and Outreach programme, as anticipated, targets a variegated set of multilevel actors,[33] and it is structured along the lines of cooperative agreements and grants.

Even though the Bipartisan Infrastructure Law does not significantly differ from the traditional funding dynamics of grant schemes in the US context, the funds it allocates to waste management are unprecedented: $275 million are destined to SWIFR, while $75 million ($15 million per year from fiscal year 2022 to 2026, available until expended) are to be awarded to grants focused on improving the effectiveness of residential and community recycling programmes within the Recycling Education and Outreach

[30] See the EPA website on SWIFR, at < https://epa.gov/infrastructure/solid-waste-infrastructure-recycling-grant-program >.

[31] The bill, which is officially referred to as the 2021 Infrastructure Investment and Jobs Act, has been approved by Congress as a part of the Biden Administration's *Build Back Better* agenda.

[32] The paramount implications of the Bipartisan Infrastructure Act in the wider US policy scenario, an analysis of which would go beyond the scope of this contribution, have been closely observed by S. Sulmicelli, *A new paradigm for American infrastructure: Biden's agenda to rebuild America*, in G. F. Ferrari, (Eds.), *The American Presidency after two years of President Biden*, *DPCE online*, 1/2023, 391-404. For a closer look at the infrastructural funding aspects of the bill, see also M. Zhang, T. Batjargal, *Review on new spending of United States Bipartisan Infrastructure Bill*, in 6(2) *JIPD*, 2022; M. Titolo, *Biden's Infrastructure Plan: A New Commitment to Public Goods?*, in 16 *Univ. St. Thomas JLPP* 188 (2023), and V. Kilanko, *The Potential Effects of Biden's Infrastructure Bill on the American Economy*, in 2(5) *Int. J. Adv. Sci. Res* 688 (2021).

[33] In particular, SWIFR recipients are States (including the District of Columbia, a territory or possession of the United States, or any political subdivision of a State, Tribe, or territory), Tribes, InterTribal Consortia, Former Indian Reservations in Oklahoma, and Alaskan Native Villages, while Reduce, Reuse, Recycling Education and Outreach programmes recipients also include non-profit organizations and public-private partnerships. For a complete overview of envisaged grant recipients, see J. Biden, *Build a Better America: A guidebook to the Bipartisan Infrastructure Law for State, local, tribal and territorial governments, and other partners*, 2022, The White House, Washington, 440 – 444, available at < https://www.whitehouse.gov/wp-content/uploads/2022/05/BUILDING-A-BETTER-AMERICA-V2.pdf#page=151>.

programme.[34] What is more, both programmes aim at benefitting marginalised communities, as part of the Justice40 initiative put forward by the Biden Administration.[35] The funding process is ongoing,[36] with the second round of grant opportunities being announced as "another historic investment to reduce waste across the Nation"[37] in September 2024: three separate notices (two pursuant to SWIFR and one to the Education and Outreach Programme) have been issued, for a total $117 million.

In this context, the synergies between this comprehensive set of interventions and the wider recycling and food waste prevention strategies enshrined in Mr Biden's agenda are apparent. As a matter of fact, both the (already mentioned) National Recycling Strategy[38] and the National Strategy for Reducing Food Loss and Waste and Recycling Organics[39] play a key role in advancing circularity in the US context, and both are put into action thanks to the funding provided under the Bipartisan Infrastructure Law.

In particular, while the National Recycling Strategy follows up on and updates the National Framework for Advancing the U.S. Recycling System introduced at the end of the Trump administration, the programme aimed at tackling food loss, launched in June 2024, represents a true novelty[40]

[34] *Ibid.*

[35] The Justice40 initiative entails that at least 40% of overall benefits of identified federal programmes help address systemic issues in marginalised communities, with specific regard to climate and the environment. The first step in this direction has been represented by President Biden's Executive Order no. 14008 (*Tackling the Climate Crisis at Home and Abroad*, 27th January 2021), strengthened by the commitment included in Executive Order no. 14096 (*Revitalizing Our Nation's Commitment to Environmental Justice for All*, 21st April 2023). The key role of environmental justice in the context of the Biden agenda is being analysed elsewhere in this volume (see the contribution by C. Sartoretti). For a critical review, see, *ex multis*, S. Conley, D. M. Konisky, M. Mullin, *Delivering on Environmental Justice? U.S. State Implementation of the Justice40 Initiative*, in 53(3) *Publius* 349 (2023).

[36] A complete list of grant recipients within both programmes can be retrieved at < https://www.epa.gov/infrastructure/recycling-grant-selectees-and-recipients >, last checked 21st October 2024. By the end of the Fiscal Year 2023, all 56 States, territories, and the District of Columbia were awarded funding. See ORCR, *Accomplishments Report – FY 2023*, 2024, available at < https://www.epa.gov/system/files/documents/2024-04/fy_2023_orcr_accomplishments_report.pdf >, last checked 23rd October 2024.

[37] EPA Administrator Michael Regan, 16th September 2024. The official press release is available at < https://www.epa.gov/newsreleases/biden-harris-administration-announces-117-million-grants-available-advance-recycling >, last checked 21st October 2024.

[38] The complete report on the *National Recycling Strategy: Part One of a Series on Building a Circular Economy for All*, launched in November 2021, is available at < https://www.epa.gov/system/files/documents/2021-11/final-national-recycling-strategy.pdf >.

[39] The complete report on the strategy, launched in June 2024, is available at < https://www.whitehouse.gov/wp-content/uploads/2024/06/NATIONAL-STRATEGY-FOR-REDUCING-FOOD-LOSS-AND-WASTE-AND-RECYCLING-ORGANICS_6.11.24.pdf >.

[40] As a matter of fact, this strategy, which represents a cornerstone of Mr Biden's waste management policy agenda, has been praised as a truly innovative tool by specialised media. See, *ex multis*, J. Hughes, *'It hurts the economy' – President Biden wages war on food waste*, *World Biogas Association Industry News*, 26th June 2024, available at <

within the US policy context. Notably, it sheds some light on the actions to be taken to meet the 2030 food waste reduction goal (50%)[41] and national recycling rate goals (50% of recycled waste),[42] as it addresses the challenges related to food and organic waste through a circular[43] and holistic approach. Indeed, the Department of Agriculture and the Food and Drug Administration play, alongside EPA, a propulsive role in the development of a cohesive and coherent food reduction strategy, while contributing to the achievement of the global United Nations SDG Target on food loss and waste prevention, thus marking a crucial turning point for the first-ever interagency national strategy on the issue.[44]

The programme, which covers organic waste (food, yard and tree trimmings, as well as other organic, carbon-based, materials in the waste stream), includes measures on education and behavioural nudging to consumers, as well as specific actions targeted to market operators and service providers in the food chain: rationalising the harvest chain, reducing organic waste in the production chain, identifying and sharing best practices on food waste prevention.

This variegated approach is mirrored in the National Strategy to Prevent Plastic Pollution, which has been launched in November 2024,[45] as

https://www.worldbiogasassociation.org/it-hurts-the-economy-president-biden-wages-war-on-food-waste/ >.

[41] See EPA, 2021, *United States 2030 Food Loss and Waste Reduction Goal*, available at < https://www.epa.gov/sustainable-management-food/united-states-2030-food-loss-and-waste-reduction-goal >.

[42] See EPA, 2021, *U.S. National Recycling Goal*, available at < https://www.epa.gov/recyclingstrategy/us-national-recycling-goal >.

[43] It is worth mentioning that this approach, which also provides for a sensible reduction in the use of landfills, is instrumental to the achievement of the reduction of landfill methane emissions envisaged in the U.S. Methane Emissions Reduction Action Plan. This specific issue is key considering the problematic issue of increasing emissions from food and plans in under-regulated landfills, urging an EPA assessment. See J. Lo, Bi*den misses chance to tackle "huge" US landfill emissions*, *Climate Home News Newsletter*, 29th January 2024, available at < https://www.climatechangenews.com/2024/01/29/biden-misses-chance-to-tackle-huge-us-landfill-emissions/ >.

[44] Notably, as part of this general framework, USDA, EPA and FDA renewed their formal agreement for the Federal Food Loss and Waste collaboration, including the US Agency for International Development as well. See the press release available at < https://www.whitehouse.gov/briefing-room/statements-releases/2024/06/12/fact-sheet-biden-harris-administration-releases-first-ever-interagency-national-strategy-for-reducing-food-loss-and-waste-and-recycling-organics/ >.

[45] The round of consultations on the Draft National Strategy to prevent plastic pollution has been completed in 2023, and EPA has launched the strategy in November 2024 (National Strategy to Prevent Plastic Pollution: Part Three of a Series on Building a Circular Economy for All, available at < https://www.epa.gov/system/files/documents/2024-11/final_national_strategy_to_prevent_plastic_pollution.pdf >). In July 2024 a strategy document on plastic pollution has been issued by the White House, reinforcing the approach first put forward in the draft national strategy. *See Mobilizing federal action on plastic pollution:; progress, principles, ad priorities – a collaborative effort of the interagency policy committee on plastic pollution and a circular economy*, available at < https://www.whitehouse.gov/wp-content/uploads/2024/07/Mobilizing-Federal-Action-on-Plastic-Pollution-Progress-Principles-and-Priorities-July-2024.pdf >.

it complements the set of strategies put forward by the Biden Administration to promote circularity in the US context. Assessing the implementation of the strategy will be paramount, with specific regard to the interactions between the three pillars introduced under the Biden Administration.

4. Conclusions: waste management through a policy perspective

In this short contribution specific attention has been paid to the development of waste management policy in the Biden Administration, against the backdrop of the "back to basics" approach introduced by Mr Trump during his past Presidency. In particular, it has been argued that, despite a few high-profile initiatives, Trump's waste management policies lacked a coherent strategy for advancing a circular economy, which instead would promote waste reduction, recycling, and resource recovery.

Conversely, Mr Biden launched a cohesive set of initiatives aimed at providing targeted strategies towards waste reduction and recycling, specifically financed through cooperative agreements and grants, pursuant to the Bipartisan Infrastructure Law of 2021. It is worth recalling, however, that the reliance on state-level implementation and the necessity to foster a strong federal leadership on key waste management challenges underscore the fragmented nature of U.S. waste policy, which remains shaped by the interplay between federal, State, and local governments. Thus, defining a shared ownership for policy intervention in the waste sector becomes paramount for the further development of circularity.

A key role in this context is also played by collaborative public-private partnerships, boasting a propulsive function within the definition of federal standards.[46] These dynamics are reflected in the Biden Administration's focus on grant programmes, which can mainly be assimilated to traditional funding-based schemes. A shift to a performance-based federal plan, agreed with state entities and communities and linking resources to clear milestones and targets to be reached by States, could represent a step forward in this direction, ensuring closer cooperation between governance levels, as well as stronger engagement at State level.

As a matter of fact, while Mr Biden's approach proved definitely more ambitious than that of his predecessors in setting environmental and social goals for waste management policy, the main challenge for the future lies in the cohesive, multilevel implementation of a stronger policy vision, encompassing a shift from waste hierarchy to circularity hierarchy[47] in policy making.

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[46] In this sense, see the recent reactions of trade unions and NGOs to the strategy document on plastic pollution, recalled in B. Taylor, D. Toto, *Updated: Biden administration proposes single-use plastic restrictions*, *Waste today Magazine*, 24th July 2024, available at < https://www.wastetodaymagazine.com/news/biden-single-use-plastic-procurement-policy-reactions-recycling/ >.

[47] The shift from waste hierarchy to circularity hierarchy entails a comprehensive approach over policy design, which encompasses an overall ranking of policies based on the product life-span assessment they imply. This concept has been introduced by the World Resource Institute, *see* M. Stanislaus, *5 Ways to Unlock the Value of the Circular Economy*, 15th April 2019, available at < https://www.wri.org/insights/5-ways-unlock-value-circular-economy >.

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