ZERO WASTE ALLIANCE IRELAND

Towards Sustainable Resource Management

Submission by Zero Waste Alliance Ireland to the Department of Climate, Energy and the Environment on the Proposed Second Whole-of-Government Circular Economy Strategy 2026-2028

5 November 2025

Zero Waste Alliance Ireland is funded by the Department of Climate, Energy and the Environment through the Irish Environmental Network, and is a member of

An Tinteán Nua, Ballymanus, Castlepollard, County Westmeath, Ireland
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05 November 2025

Circular Economy Strategy Consultation,
Circular Economy Strategic Policy Unit,
Department of Climate, Energy and the Environment.
Tom Johnson House,
Haddington Road
Dublin,
D04 K7X4.

By email to **CircularEconomyConsultations@decc.gov.ie**

Dear Sir / Madam,

Submission by Zero Waste Alliance Ireland to the Department of Climate, Energy and the Environment on the Proposed Second Whole of Government Circular Economy Strategy 2026-2028

In response to the invitation by the Department of Climate, Energy and the Environment (DCEE) to make submissions, observations and comments on **Ireland's Second Whole of Government Circular Economy Strategy**, we are attaching a submission prepared by Zero Waste Alliance Ireland (ZWAI).

ZWAI welcomes this opportunity to engage in the consultation process and to contribute to shaping the Irish Government's more sustainable, circular approach to all government activities in Ireland, including the acitvities of agencies coming under the control of the DCEE. We consider that, if a whole of government approach is to be taken, it must include all of the government agencies and units,

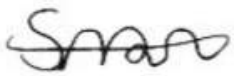
and we hope that the Government's vision of circularity also includes more and better cooperation and exchange of information between departments.

While our core mission focuses on the prevention and elimination of waste in all its forms, we recognise that the need to achieve a truly circular economy is a growing and urgent challenge in terms of resource use, environmental impact, and social responsibility. If a circular economy can be achieved this will be a positive benefit in terms of waste elimination and avoidance.

We therefore regard this public consultation as an important and timely initiative, and we are pleased to offer our insights and recommendations in response to the draft policy and roadmap.

We look forward to receiving your acknowledgement of this submission and to ongoing engagement with the Department on the development and implementation of Ireland's **Second Whole of Government Circular Economy Strategy**.

Yours sincerely,



Sara Guigui

Director,

Zero Waste Alliance Ireland

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1. Introduction

1.1 Context and Purpose of the Consultation

On 24 September 2025, the Minister of State at the Department of Climate, Energy and the Environment launched a **public consultation on Ireland's Second Whole-of-Government Circular Economy Strategy 2026–2028**. This consultation represents an important milestone in the ongoing national transition toward a sustainable, resource-efficient economy that decouples growth from resource depletion and environmental degradation.

The public consultation seeks contributions from organisations, communities, businesses, and individuals to help shape the final version of the Strategy before its formal adoption. The deadline for submissions is **Wednesday, 5 November 2025**, marking the close of a six-week consultation period.

ZWAI welcomes the opportunity to participate in this process. As an organisation that has consistently advocated for the principles of zero waste, circularity, and sustainable resource use for over two decades, ZWAI views this consultation as an essential mechanism for influencing public policy at a critical moment in Ireland's environmental and economic trajectory.

1.2. Overview of the Draft Circular Economy Strategy 2026–2028

The draft strategy, titled **Whole-of-Government Circular Economy Strategy 2026–2028 – Accelerating Action**, sets out a comprehensive programme aimed at embedding circular principles across the economy. It builds upon the

foundations laid by Ireland's first Whole-of-Government Strategy (2022–2023), the Waste Action Plan for a Circular Economy (2020–2025), and the Circular Economy and Miscellaneous Provisions Act 2022, which established a legal basis for circular economy actions in Irish law.

At its core, the 2026–2028 Strategy seeks to achieve five interlinked objectives:

Raising Ireland's Circular Material Use Rate (CMUR) by at least **two percentage points per year**, increasing the share of materials being reused or recycled within the economy rather than disposed of as waste.

1. **Driving innovation, competitiveness, and job creation** by positioning Ireland as a **European leader in circular business models** and green technologies.
2. **Decoupling economic growth from resource use**, thereby reducing the material footprint of production and consumption while maintaining prosperity.
3. **Embedding circularity as a design principle** in products and services, ensuring that durability, repairability, and recyclability are integral from conception to end-of-life.
4. **Empowering citizens and communities** to participate actively in the circular transition, fostering cultural and behavioural change towards reuse, sharing, and sustainable consumption.

The Strategy outlines a range of **sectoral actions** and **cross-cutting initiatives** designed to operationalise these objectives. These measures are intended to accelerate Ireland's circular transition while ensuring coherence with EU policy frameworks, including the European Green Deal, the Circular Economy Action Plan, and the Waste Framework Directive.

1.3 Policy Background and Institutional Foundations

Ireland's movement towards a circular economy has evolved steadily over the past decade, driven by environmental necessity, EU obligations, and increasing recognition of the economic opportunities inherent in resource efficiency. The **Waste Action Plan for a Circular Economy (2020–2025)** first articulated the government's commitment to move beyond waste management toward resource preservation.

This shift was institutionalised through the **Circular Economy and Miscellaneous Provisions Act 2022**, which formally enshrined the circular economy in Irish legislation and mandated the preparation of whole-of-government strategies to implement it. The Act also required that specific targets and actions be established for six priority sectors: construction, agriculture, retail, packaging, textiles, and electronic equipment.

Complementing these national measures, Ireland's **Regional Waste Management Planning Offices** released in 2024 the **National Waste Management Plan for a Circular Economy (2024–2030)**, setting detailed local authority targets and operational guidelines. At the same time, the **EPA's Circular Economy Programme (2021–2027)** continues to act as the coordinating and monitoring mechanism at the national level, ensuring alignment between policy, implementation, and public engagement.

The **Circularity Gap Report Ireland (2024)** underscores the urgency of this work. It reveals that Ireland's material consumption remains inconsistent with its circularity and climate goals, largely due to growing demands for housing, infrastructure, and manufactured goods. The report concludes that a more circular model—keeping resources in use longer through repair, reuse, and recycling—can simultaneously reduce waste, enhance resilience against global supply shocks, and create sustainable economic opportunities.

1.4 Relevance to ZWAI's Work and Previous Contributions

ZWAI has long championed the principles underpinning the circular economy (waste prevention, reuse, repair, redesign, and recovery). Our consistent advocacy and submission work provide a rich foundation for engaging with the current consultation.

ZWAI's **previous submissions** demonstrate both the depth and continuity of our expertise in this area:

- **June 2021:** A detailed 33-page submission to the Department of Environment, Climate and Communications on the first Whole-of-Government Circular Economy Strategy.
- **July 2023:** A comprehensive technical submission to the Regional Waste Management Planning Offices concerning the draft Waste Management Plan for a Circular Economy 2024–2030.

These prior responses critically examined Ireland's approach to waste reduction, producer responsibility, and material circularity. Many of the points raised in those submissions remain pertinent to the 2026–2028 Strategy — particularly the need for measurable targets, transparent reporting mechanisms, and strong support for community-based reuse and repair networks.

1.5 The Broader Vision: Circularity as Economic, Social, and Environmental Reform

Minister Dillon's remarks at the launch of the consultation capture the broader vision underlying this policy initiative: the circular economy is not merely an environmental programme but also a **social and economic transformation**. It offers an opportunity to "turn waste into value," to design materials and products for longevity, and to empower local communities to lead the transition.

This vision aligns closely with ZWAI's long-standing position that **waste prevention is not only an environmental imperative but also a generator of employment, innovation, and social equity**. Repair cafés, community reuse centres, and circular start-ups across Ireland are already demonstrating that local economies can thrive when supported by enabling policy frameworks and adequate funding.

The Strategy's proposed actions—particularly its focus on extended producer responsibility, citizen engagement, and innovation funding—have the potential to reinforce these grassroots efforts. However, ZWAI also recognises that implementation challenges remain: coordination across departments, consistent enforcement of waste reduction targets, and sufficient investment in capacity-building at the community and SME level will determine the Strategy's ultimate success.

Environmental reform is also part of this policy initiative, and we therefore advocate that protection of the natural environment must be a significant component of the Whole-of-Government Circular Economy Strategy 2026–2028; we cannot and should not be aiming to achieve circularity at a cost to the natural environment, ecosystems and other species.

2. Zero Waste Alliance Ireland (ZWAI)

At this point we consider that it is appropriate to mention briefly the background, aims, activities, policies and strategy of ZWAI, and to list some of our previous submissions to Irish Government departments and to the European Commission.

2.1 Origin and Early Activities of ZWAI

Zero Waste Alliance Ireland (ZWAI), established in 1999, and registered as an Irish company limited by guarantee in 2004, is a Non-Government Environmental Organisation (eNGO) and a charity registered in Ireland. ZWAI has prepared and submitted to the European Commission, the Irish Government and to Irish State Agencies many policy documents on waste management and waste elimination, and continues to lobby the Irish Government and the European Commission on using resources more sustainably, on promoting re-use, repair and recycling, and on development and implementation of the Circular Economy.

One of our basic guiding principles is that human societies must behave like natural ecosystems, living within the sustainable flow of energy from the sun and plants, producing no materials or objects which cannot be recycled back into the earth's systems, or reused or recycled into our technical systems, and should be guided by economic systems and practices which are in harmony with personal and ecological values.

Our principal objectives are:

i) sharing information, ideas and contacts,

ii) finding and recommending environmentally sustainable and practical solutions for domestic, municipal, industrial and agricultural waste management and for more efficient and ecologically appropriate uses of natural resources such as scarce minerals, water and soil;

iii) lobbying Government and local authorities to implement environmentally sustainable waste management practices, including clean production, elimination of toxic substances from products, re-use, recycling, segregation of discarded materials at source, and other environmentally and socially beneficial practices;

iv) lobbying Government to follow the best international practice and EU recommendations by introducing fiscal and economic measures designed to penalise the manufacturers of products which cannot be re-used, recycled or composted at the end of their useful lives, and to financially support companies making products which can be re-used, repaired, recycled or are made from recycled materials;

v) raising public awareness about the long-term damaging human and animal health and economic consequences of landfilling and of the destruction by mass burning or incineration of potentially recyclable or re-usable materials;

vi) investigating, raising public awareness and lobbying Irish Government departments and agencies about our country's failure to take adequate care of vulnerable and essential natural resources, including clean water and air, biodiversity, and soil;

vii) advocating changes in domestic and EU legislation to provide for more ecologically appropriate, environmentally sustainable and efficient uses of natural resources; and,

vi) maintaining contact and exchanging information with similar NGOs and national networks in the European Union and in other countries, and with international zero waste organisations.

2.2 Our Basic Principles

Human communities must behave like natural ones, living comfortably within the natural flow of energy from the sun and plants, producing no wastes which cannot be recycled back into the earth's systems, and guided by new economic values which are in harmony with personal and ecological values.

In nature, the waste products of every living organism serve as raw materials to be transformed by other living creatures, or benefit the planet in other ways. Instead of organising systems that efficiently dispose of or recycle our waste, we need to design systems of production that have little or no waste to begin with.

There are no technical barriers to achieving a "zero waste society", only our habits, our greed as a society, and the current economic structures and policies which have led to the present environmental, social and economic difficulties.

"Zero Waste" is a realistic whole-system approach to addressing the problem of society's unsustainable resource flows – it encompasses waste elimination at source through product design and producer responsibility, together with waste reduction strategies further down the supply chain, such as cleaner production, product repairing, dismantling, recycling, re-use and composting.

ZWAI strongly believes that Ireland should have a policy of not sending to other countries our discarded materials for further treatment or recycling, particularly to developing countries where local populations are exposed to dioxins and other toxic POPs. Relying on other countries' infrastructure to achieve our "recycling" targets is not acceptable from a global ecological and societal perspective.

2.3 What We are Doing

Zero Waste Alliance Ireland has prepared many policy documents on waste management, we continue to lobby the Government of Ireland on the issue of sustainable resource management, and to express our concern at the failure to address Ireland's waste problems at a fundamental level.

In recent decades, as many older landfills were closed or became better managed (primarily as a consequence of the implementation of European Directives, Irish legislation transposing these Directives, the development of a waste licensing regime by the Environmental Protection Agency, and the establishment of the Office of Environmental Enforcement in 2003), concern about the public health effects of landfills decreased considerably.

ZWAI therefore concentrated more on the objectives of ensuring that Ireland's government agencies, local authorities and other organisations will develop and implement environmentally sustainable resources and waste management policies, especially resource efficiency, waste reduction and elimination, the promotion of re-use, repair and recycling, and the development and implementation of the Circular Economy.

As an environmental NGO, and a not-for-profit company with charitable status since 2005, ZWAI also campaigns for the implementation of the UN **Sustainable Development Goals**, including (but not limited to) Goal 12, Responsible Consumption and Production, and Goal 6, Clean Water and Sanitation (having particular regard to the need to avoid wasting water, and to wasting nutrients contained in our wastewater); and Goal 15, to protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, to halt and reverse land degradation and to halt biodiversity loss

Our work therefore became more focused on responding to public consultations, giving presentations on waste-related topics, and evaluating Irish Government and EU policies on the use, reuse, and recycling of materials and energy, on identifying wasteful practices, and on promoting the Circular Economy. Examples of our submissions and presentations include:

- How Ireland, the European Union and the Irish food industry should address the problems of single-use plastic packaging and plastic waste (March & Nov. 2019);
- Transforming the construction industry so that it could become climate-neutral (instead of being a major emitter of greenhouse gases & toxicants);
- Several observations and submissions addressing the need for recovery and reuse of the phosphorus and nitrogen content of wastewater (2019 to 2023);

- Observations to the European Commission on a proposed revision of the EU Regulation on Shipments of Waste (January 2022);
- Feedback to the European Commission on a proposed Directive on Soil Health – protecting, sustainably managing and restoring EU soils (March 2022);[1]
- Submission in response to a public consultation on the review of Ireland's security of energy supplies (October 2022);[2]
- Submission in response to a public consultation on Ireland's Fourth National Biodiversity Action Plan (November 2022);[3]
- Submission in response to a public consultation on Ireland's National Bioeconomy Action Plan 2023-2025 (January 2023);[4]
- Presentation and illustrated talk on the topic of "*One Earth for All – A Plea for Sustainability"*, given at the National Sustainability Summit, Leopardstown, Dublin (February 2023);[5]
- Submission in response to a public consultation on Ireland's draft Waste Management Plan for a Circular Economy (July 2023);[6]
- Submission in response to a public consultation on the problem of disposable vaping devices (July 2023);[7]
- Observations and recommendations on the increasing European and global problem of waste electronic & electric equipment (WEEE, Sept. 2023);[8]

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[1] https://www.zwai.ie/resources/2022/protecting-sustainably-managing-and-restoring-eu-soils/

[2] Submission to the Department of the Environment, Climate and Communications in Response to the Public Consultation on a Review of the Security of Energy Supply of Ireland's Electricity and Natural Gas Systems; https://www.zwai.ie/resources/2022/public-consultation-on-a-review-of-the-security-of-energy-supply-of-irelands-electricity-and-natural-gas-systems/

[3] https://www.zwai.ie/resources/2022/submission-to-the-department-of-housing-local-government-and-heritage-in-response-to-the-public-consultation-on-irelands-fourth-national-biodiversity-action-plan-nbap/

[4] https://www.zwai.ie/resources/2023/zwai-submission-on-irelands-national-bioeconomy-action-plan-2023-2025/

[5] https://www.zwai.ie/resources/2023/the-national-sustainability-summit-one-earth-for-all-a-plea-for-sustainability/

[6] Submission to the Regional Waste Management Planning Offices on the draft Waste Management Plan for a Circular Economy; ZWAI, 05 July 2023: https://www.zwai.ie/resources/2023/submission-on-the-draft-waste-management-plan-for-a-circular-economy/

[7] Submission to the Department of the Environment, Climate and Communications in Response to the Department's Public Consultation on Disposable Vaping Devices; ZWAI, 27 July 2023: https://www.zwai.ie/resources/2023/submission-to-the-decc-on-disposable-vapes-and-why-they-should-be-banned/

[8] Submission by ZWAI to the European Commission on Waste from Electrical and Electronic Equipment — Evaluating the EU Rules; ZWAI, 22 September 2023.

- Observations to the European Commission on a Proposed EU Directive on Soil Monitoring and Resilience (November 2023);[9]
- Observations on the Irish Government's draft Green Public Procurement Strategy & Plan (November 2023);[10]
- Observations and feedback to the European Commission on the proposed revision of the EU Waste Framework Directive (November 2023);[11]
- Observations & feedback to the European Commission on revision of Directives 2000/53/EC & 2005/64/EC on End-of-Life Vehicles (December 2023);[12]
- Submission by ZWAI to the Department of the Environment, Climate and Communications in response to the Department's public consultation on proposed amendments to the Access to Information on the Environment (AIE) Regulations 2007-2018 (January 2024);[13]
- Response to the first Public Consultation by the Department of the Environment, Climate and Communications on Ireland's draft National Energy and Climate Plan (March 2024);[14]
- Submission by ZWAI to the European Commission in response to the Commission's public consultation on the evaluation of the Nitrates Directive (91 / 676 / EEC) on Protection of Waters against Pollution caused by Nitrates from Agricultural Sources (March 2024);[15]
- Response to the second Public Consultation by the Department of the Environment, Climate and Communications on Ireland's updated draft National Energy and Climate Plan (June 2024);[16]

https://www.zwai.ie/resources/2023/waste-from-electrical-and-electronic-equipment-weee-evaluating-eu-rules/

[9] Observations and Feedback to the European Commission on the Proposed EU Directive on Soil Monitoring and Resilience; ZWAI, 03 November 2023. https://www.zwai.ie/resources/2023/submission-on-the-proposed-eu-directive-on-soil-monitoring-and-resilience/

[10] https://www.zwai.ie/resources/2023/submission-to-the-decc-on-the-draft-green-public-procurement-strategy-and-action-plan/

[11] https://www.zwai.ie/resources/2023/observations-and-feedback-to-the-european-commission-on-the-proposed-revision-of-the-eu-waste-framework/

[12] https://www.zwai.ie/resources/2023/end-of-life-vehicles-observations-and-feedback-to-the-european-commission/

[13] https://www.zwai.ie/resources/2024/submission-to-the-decc-on-the-proposed-amendments-to-the-access-to-information-on-the-environment-aie-regulations-2007-2018/

[14] https://www.zwai.ie/resources/2024/submission-by-zwai-to-decc-on-irelands-national-energy-climate-plan-necp/

[15] https://www.zwai.ie/resources/2024/submission-by-zwai-to-the-eu-public-consultation-on-the-evaluation-of-the-nitrates-directive/

[16] https://www.zwai.ie/resources/2024/draft-update-of-irelands-national-energy-and-climateplan-necp-submission-by-zwai-to-decc/

- Submission by ZWAI to the European Commission in response to the Commission's public consultation on proposed ecodesign and ecolabelling requirements for computers (July 2024);[17]
- Submission by ZWAI and the Waterford Environmental Forum to the Department of Transport in response to the Department's Public Consultation: "*Moving Together – A Strategic Approach to Improving the Efficiency of the Transport System in Ireland"* (August 2024);[18]
- Submission by ZWAI to the Irish Department of Housing, Local Government and Heritage in response to the Department's Public Consultation on Draft Proposed Additional Measures for Ireland's Fifth Nitrates Action Programme (December 2024);[19]
- Submission by ZWAI to the European Commission in response to the Commission's public consultation on the European Union Ocean Pact, emphasising the importance of Europe's surrounding seas and the Atlantic ocean, and their fundamental in sustaining life on our planet (February 2025);[20]
- Submission by ZWAI to the Department of the Environment, Climate and Communications, in response to a public consultation on Ireland's draft National Implementation Report 2025 to the Aarhus Convention Secretariat (April 2025);[21]
- Submission by Zero Waste Alliance Ireland to the Department for Infrastructure, Northern Ireland, in response to a Transboundary EIA Public Consultation on a Proposed Gold Mine Project in the Sperrin Mountains, County Tyrone (April 2025);[22]
- Submission by ZWAI to the European Commission on proposed draft amendments to Delegated Regulation (EU) 2019/1122 for the purpose of improving carbon accounting in the European Union Registry under Regulation (EU) 2018/841 for the Land use, Land Use Change And Forestry (LULUCF) Sector (May 2025);[23]

[17] https://www.zwai.ie/resources/2024/ecodesign-and-ecolabelling-requirements-for-computers-zwai-submission-to-eu-commission-ecodesign-and-ecolabelling-requirements-for-computers/

[18] https://www.zwai.ie/resources/2024/moving-together-a-strategic-approach-to-improving-irelands-transport-system/

[19] https://www.zwai.ie/resources/2024/proposed-additional-measures-for-irelands-fifth-nitrates-action-programme-nap/

[20] https://www.zwai.ie/resources/2025/eu-oceans-pact-submission-by-zwai/

[21] https://www.zwai.ie/resources/2025/aarhus-convention-national-implementation-report-2025/

[22] https://www.zwai.ie/resources/2025/consultation-on-a-proposed-dalradian-gold-mine-project-in-the-sperrin-mountains-county-tyrone/

[23] https://www.zwai.ie/resources/2025/submission-on-proposed-eu-carbon-accounting-amendments-for-the-lulucf-sector/

- Submission by ZWAI to the European Commission in response to the Commission's call for evidence on a New Policy Initiative and a New Agenda for Cities and Urban Areas (May 2025);[24] and,
- Submission by ZWAI to Department of Climate, Energy and the Environment on the draft National Policy Statement and Roadmap on Circular Textiles (July 2025).[25]

It will be clear that ZWAI is primarily concerned with the very serious issue of discarded substances, materials and goods, whether from domestic, commercial or industrial sources, how these become "waste", and how such "waste" may be prevented by re-design along ecological principles. These same ecological principles can be applied to the many ways in which we abstract and use water as a resource, and to the equivalent volumes of wastewater produced as a consequence of these uses. ZWAI is also very concerned about the effectiveness and appropriateness of Irish and EU policies, legislation, programmes and plans which are the prime determinants of how these "wastes" are managed, controlled and monitored for environmental and societal benefits.

In-depth examination and analysis of national policies have made us very aware of the many disconnections and conflicts between economic, environmental, land-use planning and social policies, frequently resulting in failure to implement necessary changes. While making the submissions listed above, we have welcomed many proposed policy changes; but at the same time we have also considered that it was very necessary to evaluate all proposals in the context of what is best for the environment and society.

ZWAI is a member of the Irish Environmental Network and the Environmental Pillar, and is funded by the **Department of Communications, Climate Action and the Environment** through the **Irish Environmental Network**.

ZWAI is also a not-for-profit company limited by guarantee (Company registration number **394205**), and a registered charity (CRN number **20057244**). Membership has been growing in recent years, and is currently slightly more than 50 individuals, and the company's affairs and activities are supervised by a 6-person Board of Management (Directors), some of whom are regular contributors to submissions, or make presentations at conferences.

In 2019 ZWAI became a full member of the **European Environment Bureau** (EEB); and a member of the **Waste Working Group** of the EEB. Through the EEB, we contribute to the development of European Union policy on waste and the Circular Economy. In November 2021, the EEB established a **Task Force**

[24] https://www.zwai.ie/resources/2025/submission-to-eu-commission-on-a-new-policy-initiative-and-a-new-agenda-for-cities-and-urban-areas/

[25] https://www.zwai.ie/resources/2025/submission-on-the-draft-national-policy-statement-and-roadmap-on-circular-textiles/

on the Built Environment; ZWAI is a member of this group, and we contribute to continuing discussions on the sustainability of construction materials, buildings and on the built environment.

3. Our Observations and Recommendations in Response to the Proposed Circular Economy Strategy

3.1 Analysis of Irish Legislation on the Circular Economy

The legislation on the circular economy in Ireland is governed by the Circular Economy and Miscellaneous Provisions Act 2022,[26] the "2022 Act", adopted on 21 July 2022. The Act, a first of its kind in Irish domestic law, provides a statutory foundation for Ireland's transition to a circular economy.

Though we are broadly supportive of the 2022 Act, we have concluded that the Department's proposed Draft Strategy for the Circular economy is indicative of a broader failure of ambition and includes disregard for some of the key instruments enumerated under the 2022 Act.

Upon analysis of the strategy, we are of the opinion that its most fundamental flaw lies in its inconsistent and often superficial adherence to the mandatory requirements enshrined under Section 7 of the 2022 Act. While section 7(6)(a)(i) of the 2022 Act, supplemented by section 7(6)(b), mandates that the circular economy strategy should set out "targets" for whatever sector of the economy the Minister sees fit, the targets set out in the Draft Strategy lack the specificity required for legal accountability and effective implementation.

For example, targets such as T11 "*Refill options to be widely available for takeaway food and beverages"* or T12 "Increase reusable packaging options" must be considered as vague, since no guidance is given as to what threshold should be fulfilled for something to constitute "widely available". Additionally, the wording of "increase" is not accompanied by a specified percentage that would pinpoint as to what constitutes this either. Read together, they come off as policy aspirations that would pose a significant hurdle to the annual reporting requirement under section 7(8) of the 2022 Act.

Furthermore, target T2 ''12% reduction of C&D waste arisings by 2030'' is profoundly inadequate when this stream constitutes around 35% of total national waste in Ireland and has a recycling rate of only 6%.[27] The target T3 ''By 2028, a minimum proportion of 10% of construction materials procured by public bodies under new (post 2025) contract arrangements comprise recycled

[26] https://www.irishstatutebook.ie/eli/2022/act/26/enacted/en/html
[27] Environmental Protection Agency. *National Waste Statistics* 2023. EPA, 2023.

materials'' is also equally unambitious and fails to create the market pull necessary to lead to meaningful change in the sector.

The 2022 Act also sets out the requirement that a Poverty Impact Assessment (PIA) be conducted, according to section 7(3)(b). However, the public consultation draft fails to mention the PIA and this would inevitably become an obstacle for stakeholders in the years to come to conduct due diligence in assessing whether the economic burdens and benefits of proposed measures such as the cost of durable goods and changes to waste collection have been rigorously evaluated for their impact on low-income households and individuals with disabilities.

Pursuant to Section 26 of the 2022 Act which provides for the redesignation of the Environment Fund into the Circular Economy Fund, the Draft Strategy lists allocations but fails to provide a comprehensive, multi-annual investment strategy directly tied to addressing the most significant barriers. It is submitted that the current approach is piecemeal and does not answer key questions about the investment plan for nationwide, standardised reuse and repair infrastructure, advanced sorting and recycling facilities for complex streams like textiles (section 7(6)(a)(i)(V) of the 2022 Act).

The Draft Strategy also notably underutilises powerful regulatory tools enshrined under key provisions of the 2022 Act such as Section 21, which is only mentioned in passing but no clear, binding timeline for its enforcement has been provided. This delay directly undermines the achievement of packaging and recycling targets by perpetuating a system that does not economically incentivise accurate waste behaviour.

Another critical omission of the Draft Strategy is its inadequate approach to Extended Producer Responsibility (EPR), an important principle of the circular economy, and one that can be implicitly inferred from the 2022 Act. While EPR schemes are mentioned in the context of future textiles, the Draft Strategy presents no coherent, overarching framework for their strengthening and rigorous enforcement across all priority sectors as mandated by section 7(6). It fails to commit to mandating robust modulation of EPR fees which are a key tool to financially reward circular design and penalise wasteful products, nor does it set out a clear, statutory path for utilising EPR revenues to fund the necessary collection, reuse, and recycling infrastructure at the scale that is needed. In essence, this is a critical failure to implement an economic instrument to shift financial responsibility fully onto the producers, thereby undermining the Polluter Pays Principle (PPP), a core aspect of EU environmental policy.

Moreover, the Draft Strategy demonstrates a large and legally negligent failure in its inability to adequately address the statutory requirement for a "*National Circular Economy Programme"* for Critical Raw Materials (CRMs) as mandated by Article 26(1) of Regulation (EU) 2024/1252, which is directly relevant to the

objectives of the 2022 Act. The strategy's actions (A48-A50, at page 79 of the draft) is unfit both in purpose and in attaining the requisite level of resources to secure Ireland's strategic autonomy and meet its EU obligations. In light of the fact that no cohesive plan for the systematic collection of CRM-rich waste streams such as electronics and batteries or for the development of domestic recycling capacity for these materials have been drawn up, it seems unlikely that this strategy would yield satisfactory results.

There is also the failure to articulate a comprehensive plan for the implementation of Section 29 of the 2022 Act (Waste Recovery Levy) which amends the Waste Management Act 1996 by inserting Section 73A. The strategy only pinpoints the levy's existence without presenting a plan for its potential expansion or increased application to decisively shift economic incentives away from partial energy recovery through incineration or co-fuelling of, for example, thermal power stations and cement production plants, and towards genuine material recycling and reuse.

This omission is in direct contravention of the EU Waste Framework Directive 2025 (amending its 2008 predecessor) which establishes the waste hierarchy for EU Member States. The waste hierarchy starts off with the most preferred option of prevention, before continuing to lesser preferable options such as reduction, recycling, partial energy recovery, and ultimately disposal.

To conclude, we are of the opinion that the Draft Strategy in its current form is unfit and inadequate in terms of the evident legal and strategic gaps. It fails to meet the basic statutory requirements of the 2022 Act, especially in providing specific and targets that can be properly adhered to. To exist in compliance with the 2022 Act and to initiate Ireland's circular transition, the final strategy requires a fundamental and ambitious restructuring to incorporate measurable and actionable targets, a strategic investment plan for the Circular Economy Fund and a decisive programme to actively implement the full range of levies, prohibitions, and market-shaping tools that the Oireachtas have explicitly provided.

3.2 ZWAI's Recommendations to Improve the Legal Aspects of the Draft Strategy

After considering the various legal deficiencies which exist, we are of the opinion that to improve the possibility of success and enforceability of the draft strategy, it is imperative that the Strategy first be amended to outline the legal status of its numerous sectoral targets (from target T1 to T38), clarifying which are legally binding and which merely function as guidance. After determining which targets should be binding in nature, the various legal loopholes highlighted in the section above should be rectified, and reference should be made to the provisions of the 2022 Act.

Next, the revised draft should strengthen the commitment under Action A56 to mandate the development of a specific policy paper that proposes legislative amendments to clarify the liability thresholds that agents are required to have in consideration. Addressing this through precise legal reform is necessary to create a predictable and proportionate legal environment that actively encourages, rather than inhibits, the growth of the repair and reuse sector.

Additionally, the proposed governance structures require formalisation to ensure their long-term success and feasibility. The composition, terms of reference, and specific decision-making powers of the Circular Economy Advisory Group and the High-Level Oversight Group should be detailed in a formal manner. A clear mandate is vital to prevent ambiguity and secure accountability beyond the political cycle and empower widespread implementation across the whole government.

In order to secure the necessary resources to achieve its ambitious goals, the Strategy should provide greater legal certainty for the Circular Economy Fund. Ideally, this should include a commitment to formally review the levy rates which support the Fund and ensure that they are set at a level that effectively disincentivises waste and generates sufficient revenue.

Finally, the wording of the Draft Strategy should be reviewed as a whole to eliminate subjective phrases that are difficult to quantify. As illustrated and mentioned above, terms such as “as appropriate”, “where possible” and ‘’proportionate’’ create notable loopholes that can be used to delay or stop action. For instance, the clause under T22, which reads as the following:

> “*By 2027, polyester fibre products procured by public sector bodies under new contract arrangements must be manufactured using a minimum recycled content of 20%, where possible and proportionate*.”

..is indicative of vague wording that could create problems for regulatory bodies in the future. By adopting more precise, mandatory, and legally-sound language throughout the entire strategy, it is possible for this plan to act as a functional document to enact change.

3.3 Construction and Built Environment: Actions and Targets

3.3.1 Develop a Circularity Roadmap for the Construction Sector

The construction sector is both a cornerstone of Ireland’s economy and one of its most resource-intensive industries. According to the EPA National Waste Statistics 2023, Ireland generated over 8 million tonnes of construction and demolition (C&D) waste in 2021, equivalent to around 35% of total national waste. Despite this scale, only 6% of materials are reused or recycled into

higher-value applications[28], revealing a critical imbalance between waste generation and material recovery capacity.

ZWAI welcomes the proposed development of a Circularity Roadmap and stresses that it must include a clear framework for transitioning from demolition to deconstruction practices. Traditional demolition destroys materials that could otherwise be reused, directly contradicting circular principles. In contrast, deconstruction, the careful dismantling of buildings, creates opportunities for reuse, employment, and significant reduction of emissions to the atmosphere.

To ensure the roadmap is actionable, ZWAI recommends that it mandate pre-demolition deconstruction audits for all major construction and demolition projects. Such audits would catalogue valuable materials and set recovery targets, providing measurable benchmarks for material reuse. For example, Brussels and Flanders have implemented mandatory pre-demolition audits and material recovery planning, achieving recovery rates exceeding 90%.[29] Incorporating similar requirements into Ireland's Roadmap would ensure measurable progress toward a low-carbon, resource-efficient building stock.

ZWAI agrees with the draft Strategy's ambition to embed circularity across all relevant sectors of the economy, but believes that the construction sector should be explicitly highlighted. The construction industry is Ireland's largest generator of material use and material waste, and it therefore requires a dedicated objective focused on transitioning the sector toward circular building and infrastructure systems. This objective should include principles such as design for deconstruction, reuse of recovered materials, buildings as material banks, and longer building lifespans through modular and adaptable design.[30] International examples from Finland and the Netherlands demonstrate that sector-specific objectives can yield significant reductions in virgin material consumption and C&D waste.[31] Ireland should follow these models to ensure meaningful sectoral progress.

3.3.2 Publication of a National Building Renovation Plan

ZWAI supports the commitment to publish a National Building Renovation Plan under the recast Energy Performance of Buildings Directive (EPBD). This plan should integrate circular renovation principles, prioritising the reuse of existing structures, components, and materials wherever possible. A renovation-first

[28] Environmental Protection Agency. *National Waste Statistics* 2023. EPA, 2023.

[29] European Commission Joint Research Centre. *Study on Construction and Demolition Waste Management Practices in Brussels and Flanders,* 2021.

[30] Zero Waste Alliance Ireland. *Submission on Circular Economy Strategy,* 2021.

[31] Ministry of the Environment, Finland; Netherlands Ministry of Infrastructure. *National Circular Economy Reports*, 2022.

approach reduces embodied carbon, preserves material value, and extends building life.[32]

To ensure materials can be effectively tracked and reused, ZWAI recommends the integration of a digital Building Materials Passport system. International examples such as the Madaster platform in the Netherlands and the Buildings as Material Banks (BAMB) initiative under the EU Horizon 2020 programme have demonstrated that digital material passports provide transparency, traceability, and enable selective reuse.[33] [34] Incorporating this system within the National Building Renovation Plan would allow architects, contractors, and policymakers to design with reuse in mind, and facilitate deconstruction at end-of-life. Integration with Ireland's Building Control Management System would further support reporting on the Circular Material Use Rate (CMUR) and ensure measurable circular outcomes.[35]

3.3.3 Support the EPA on the updating of their Best Practice Guidelines

Innovation in the built environment must go beyond materials research to include systemic design and technology integration. Pilot projects should demonstrate how buildings can be constructed for deconstruction, using modular and reversible systems that allow future adaptation, repair, and reuse. Therefore we agree with the EPA Report.[36]

According to the EPA, backfilling is the primary method of treating Construction & Demolition (C&D) waste. Prioritising high-value recovery routes can enhance sustainability in construction, but assessing the quality and separability of materials is essential for effective recovery. Incorporating certified secondary aggregates helps close the material loop, ensuring valuable resources remain in use. Upgrading backfilling practices to include controlled recovery processes not only keeps materials in productive use but also significantly reduces the demand for virgin extraction.

Furthermore, this report shows that soil, stones and dredging spoils are ending up mostly in landfills, where they are considered as "engineering materials". As the number of landfills has been greatly reduced, there is much less need for such "engineering materials", so that soil and stones from construction simply end up as waste. Clean soil and stones are used extensively for "agricultural improvement, for example, by spreading on land which is subject to flooding.

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[32] European Commission. *Recast Energy Performance of Buildings Directive (EPBD)*, 2023.

[33] Madaster. Building *Material Passport Platform Overview,* Netherlands, 2022.

[34] BAMB Project. *Buildings as Material Banks Report*, EU Horizon 2020, 2021.

[35] Eurostat. *Circular Material Use Rate (CMUR), 2024.*

[36] https://www.epa.ie/our-services/monitoring--assessment/waste/national-waste-statistics/construction--demolition/

However, it may more valuable from an natural environment perspective to leave such lands as “wetlands”. Ireland should promote reuse of inert materials such as soil and stone in public works and landscape restoration, supported by clear End-of-Waste criteria.

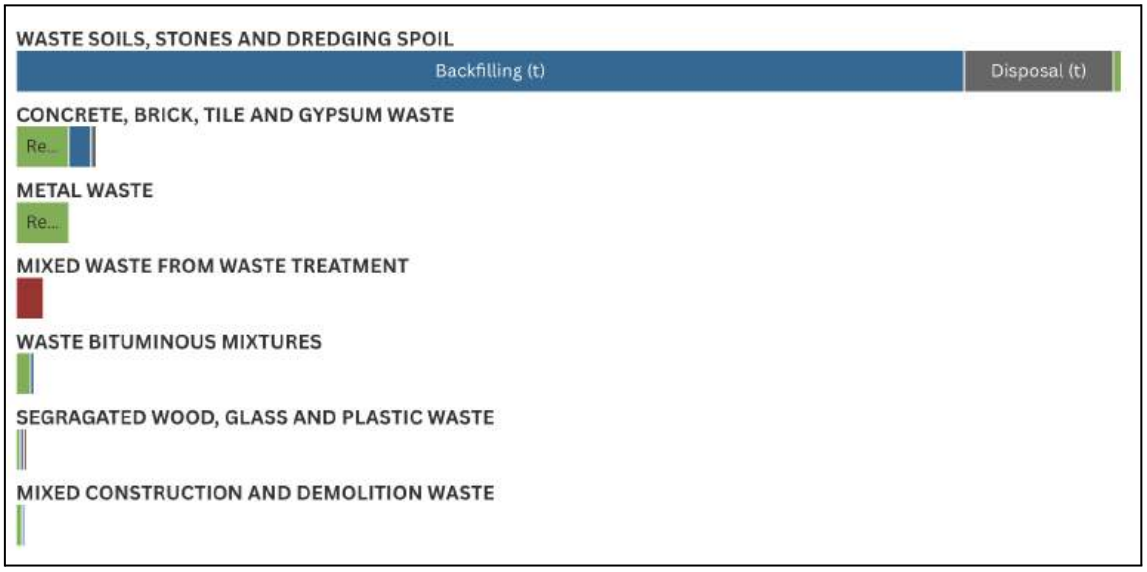

Figure 1: *Treatment of C&D waste by category, EPA (2023).*

Ireland is already moving in the right direction: demolition is being challenged and reuse must be considered. However, there is no consistent national mandate requiring full deconstruction audits or reversing the demolition incentive: the guidelines currently serve as "best practice" recommendations, rather than strict legal requirements. Additionally, the national strategy has yet to fully incorporate tax incentives related to demolition versus reuse. There should be an upgrade from “justification reports” and “waste-management plans” to a compulsory pre-demolition deconstruction audit and tax/levy system that encourages reuse.

The required research would then be to determine the appropriate level of tax or levy system that does not cause building companies to halt their work, but instead motivates them to produce less C&D waste. For example, this could include encouraging the use of certified secondary aggregates or materials like clay.

A push-and-pull system could be established to encourage companies to pursue renewable solutions. For instance, the building authority could allocate spaces to those who integrate holistic concepts and circular thinking into their building applications. Additionally, requirements such as the use of renewable energy could be mandated for new buildings in the future, provided that the structural conditions allow for this.

3.3.4 Support the EC JRC in Developing EU End-of-Waste Criteria for Recycled Aggregates

According to the European Commission's Joint Research Centre (JRC), Ireland is one of the states that did not set EoW (End-of-Waste) criteria yet. The JRC emphasises that the Member States may establish detailed criteria on the application of the conditions to specific substances or objects.[37] Without clear criteria, secondary materials such as recycled concrete or aggregates are classified as waste rather than resources, limiting their use in public projects and discouraging investment in recovery infrastructure. Current regulations make it easier and cheaper to excavate or purchase virgin or quarried materials than to verify used materials.

ZWAI recommends that Ireland accelerate the establishment of national EoW criteria for key materials such as concrete, asphalt, and aggregates in alignment with JRC work, and link these standards to digital traceability systems. Establishing clear national standards would provide confidence to the construction industry, open secondary markets for recycled aggregates, and reduce dependence on virgin resources. Aligning certification and digital data systems would also ensure quality assurance, improve transparency, and facilitate cross-border material flows within the EU circular economy. It would send an important signal to companies in the construction sector to align their corporate production and visions with sustainability in practice.

3.3.5 Develop a Plan to Support the Safe Use of Recycled Aggregates in the Construction Sector

Building circular skills and awareness is essential to making reuse and repair the norm rather than the exception. Transitioning from demolition to deconstruction requires a new skills pipeline — from architects and engineers to local craftspeople and citizens.

Ireland should view local repair and reuse ecologies as learning infrastructures, not just operational facilities. Research shows that such community-based networks are “crucial forms of infrastructure for a non-extractive future”.[38] By linking reuse hubs, schools, and digital knowledge platforms, Ireland could democratise access to circular skills and ensure small builders and self-builders can participate.

Building local skills not only supports reuse but also creates employment opportunities and strengthens regional economies. ZWAI therefore recommends integrating deconstruction and reuse modules into existing construction apprenticeships.

[37] FGP, NIGRAD, ZAG, (2021); End of Waste criteria protocol for waste used as aggregates. P. 21.

[38] Deng, C., & Erez-Henderson, E. (2025). Three local repair ecologies: The case for place-based repair infrastructures. ACSA 113th Annual Meeting Proceedings, 660–670.

Traditionally, construction education has prioritised new builds and efficiency over longevity, focusing on showcasing skills and the knowledge gained. To truly embed sustainability, training and certification must reward projects that respect planetary boundaries, invest time in durable design, and integrate traditional knowledge with modern circular practice.

3.3.6 Implement Green Public Procurement Criteria for Construction

The State remains the largest construction client in Ireland, giving Green Public Procurement (GPP) enormous leverage to drive systemic change. ZWAI welcomes the inclusion of the 2024–2027 GPP Strategy and Action Plan and recommends that it be expanded to include a minimum of 20% reused or recycled material by 2028, with additional weighting in tender evaluations for design for disassembly and lifecycle materials tracking.[39] Public procurement can be the key driver for industry adoption of circular construction practices, aligning sustainability with national infrastructure goals.

ZWAI believes that Green Public Procurement is a decisive lever to mainstream circularity in construction. By embedding minimum thresholds for reused or recycled materials and considering lifecycle impacts in procurement decisions, public projects can stimulate demand for circular products and methods. International experience from the Netherlands demonstrates that mandatory circularity reporting in public projects fosters industry innovation and reduces waste.[40] Implementing similar frameworks in Ireland would send a strong market signal and accelerate sectoral transition.

3.3.7 Support Local Authorities to Establish Material Storage Facilities and Secondary Raw Materials Depots

To ensure that materials recovered from deconstruction and renovation can be effectively reused, ZWAI advocates the creation of regional reuse hubs for construction materials such as timber, glass, fixtures, and metals. These hubs would act as both depots and marketplaces for secondary raw materials. The Rediscovery Centre in Ballymun and Community Resources Network Ireland demonstrate how reuse can be integrated with social enterprise and job creation.[41] Expanding this model to regional centres in Galway, Limerick, and Cork would create skilled employment, support SMEs, and reduce reliance on imported raw materials. Local authorities have a key role in supporting such hubs, as with proper assistance, these facilities could become local innovation

[39] Department of Public Expenditure and Reform. *Green Public Procurement Strategy and Action Plan 2024–2027*.

[40] Dutch Ministry of Infrastructure. *Platform CB'23 Circular Construction Reports*, 2023.

[41] Rediscovery Centre, Ballymun; Community Resources Network Ireland (CRNI). *Reuse Hub Operations and Social Impact Reports*, 2023.

centres for circular construction, integrating material storage, testing, and training functions.

3.3.8 Further Ideas and Conclusions on Circular Economy of the Built Environment

Cascade Use

Cascade use makes ecological and economic sense by extending each material's lifespan: freshly felled wood should not go directly into low-grade products such as toilet paper or firewood, but should first serve higher-quality purposes. Cascade use should operate within closed material cycles and must not become a pretext for downcycling.

Designing for Disassembly

The guiding principle must be: screw and plug instead of glue and mix. Components and building materials should be designed for disassembly, allowing them to be reused as often and efficiently as possible. This principle should inform every stage of product and building design — from material selection to joint detailing — to ensure that future reuse remains technically and economically feasible.

Governmental Prioritisation

If there is no alternative and a new construction project is necessary, companies seeking planning permission must demonstrate how circularity is embedded in their project design. They should show how materials can be reused or repurposed in the future and how the building can be largely dismantled or adapted at the end of its life. Local authorities and planning bodies should prioritise projects that think circularly, granting faster approval or preferential consideration to proposals that integrate deconstruction, reuse, and adaptability from the outset.

Cultural Continuity

Restoring social structures through site-specific architecture is an essential part of a circular built environment. Ireland possesses a recognisable urban identity shaped by its traditional forms and materials. Circularity should therefore not only address technical resource efficiency but also preserve and reinterpret local architectural culture. Encouraging local architecture and repair practices can strengthen community identity, support regional craftsmanship, and reduce embodied carbon by valuing what already exists. This approach is particularly important given that the average building lifespan exceeds 100 years, while most embedded technologies become obsolete after only a few years.

In conclusion, ZWAI recommends additional actions to operationalise the circular transition. Mandatory pre-demolition audits and material recovery plans

for all major projects, pilot implementation of a Building Materials Passport system, establishment of regional Circular Construction Hubs, and integration of circular requirements in public procurement are all necessary to drive meaningful sectoral change. These measures will ensure that construction practices align with circular economy principles and contribute significantly to Ireland's Circular Material Use Rate.[42]

3.4 Plastics: The Persistent Blind Spot in Ireland's Circular Economy

The draft Whole of Government Circular Economy Strategy 2026–2028 rightly builds upon Ireland's first strategy (*Living More, Using Less*, 2022–2023) by seeking to "*raise Ireland's circular material use rate by at least two percentage points annually"* and embedding circular design principles across key sectors. However, while plastics are mentioned under the draft strategy's section on packaging, this narrow treatment overlooks the broader systemic challenges posed by plastic production, use, and pollution, especially microplastics.

This omission stands in contrast to the holistic framing of other material streams (e.g. construction, textiles, bioeconomy), and fails to capture plastics' pervasive environmental and human health impacts. In the context of ZWAI's broader submission, this section complements the work on **construction** and **hemp alternatives** by addressing the lifecycle gaps of synthetic materials and advancing natural, circular substitutes.

3.4.1 Beyond Packaging: The Ubiquity of Plastics

The strategy's treatment of plastics as a subcategory of packaging oversimplifies a problem that permeates virtually every sector of Ireland's material economy. Plastics are not merely a waste stream, they are an industrial input and pollutant embedded across agriculture, construction, textiles, electronics, and healthcare.

Ireland remains one of the EU's highest per-capita producers of plastic packaging waste, exceeding 60 kg per person annually.[43] Yet only 28% is effectively recycled, and the vast majority of non-packaging plastics including films, composites, and mixed polymers end up in landfills, incineration, or the environment.

The new strategy's focus on **deposit return schemes (DRS)** and **design innovation for packaging formats** is welcome but insufficient. These

[42] Eurostat. *Circular Material Use Rate (CMUR), 2024.*

[43] Environmental Protection Agency (EPA). (2024). *National Waste Statistics Summary Report for Ireland 2023.* Wexford: EPA.

mechanisms target a small subset of plastics (primarily PET and aluminium) while failing to address:

- Industrial polymers, construction plastics, and agricultural films;
- Legacy contamination from microplastics in soils and waterways;
- The need for upstream reduction in virgin polymer production and imports.

3.4.2 The Microplastics Gap

Microplastics are entirely absent from the proposed Circular Economy Strategy, despite growing evidence of their ubiquity and potential toxicity. The omission is a significant policy blind spot.

Microplastics enter Ireland's ecosystems from tyre wear, synthetic textiles, sewage sludge, and degraded consumer plastics. The EPA's State of the Environment Report (2023)[44] noted detectable microplastic particles in over 90% of Irish coastal water samples and an increasing levels of contamination in agricultural soils via the application of biosolids. Yet the strategy provides no mechanism for monitoring, reduction, or remediation, and this must be considered a significant deficiency.

To align with the EU's Zero Pollution Action Plan (2021)[45] and the European Green Deal commitments, Ireland's Circular Economy framework should:

- **Introduce a National Microplastics Action Framework**, incorporating mandatory monitoring across water, soil, and air.
- **Ban intentional microplastic use** in cosmetics, paints, and agricultural additives ahead of the EU 2035 deadline.
- **Mandate textile filtration standards** for washing machines and industrial laundries to capture synthetic fibre shedding.
- **Fund research** under the EPA Circular Economy Programme to quantify microplastic sources and assess their health impacts.

3.4.3 Circular Alternatives: Designing Out Plastic

Circularity cannot be achieved through better recycling alone. The First Circular Economy Strategy (2022–2023)[46] acknowledged that the circular economy "*is not just about better waste management or less plastic pollution"*, yet the second iteration fails to apply this insight in practice.

[44] EPA State of the Environment Report 2023

[45] EU Zero Pollution Action Plan (2021)

[46] Ireland's First Circular Economy Strategy 2022–2023 (Department of the Taoiseach & DECC, 2021)

ZWAI advocates for a **materials transition framework** that:

- Phases out virgin fossil-based plastics through **progressive import restrictions** and **tax incentives** for biobased alternatives.
- Establishes **Extended Producer Responsibility (EPR)** for non-packaging plastics, ensuring full lifecycle accountability across sectors.
- Supports **hemp bioplastics and cellulose-based materials** as scalable, circular substitutes.
- Encourages **product redesign for disassembly**, particularly in electronics, construction, and retail sectors, where mixed polymers hinder recyclability.

3.4.4 Governance, Targets, and Policy Coherence

While the Strategy proposes 71 actions and 38 targets across sectors, none of these directly relate to reducing plastic production or pollution. This inconsistency undermines the credibility of Ireland's circular transition. ZWAI therefore recommends the following additions:

Area	Proposed Action	Target / Metric
Plastics Reduction	Introduce national targets for virgin plastic reduction by 25% by 2030 (beyond packaging).	National CMUR to account separately for plastic reuse/recycling.
Microplastics	Establish microplastics monitoring framework (EPA-led).	Annual reporting in the Circular Economy Monitoring Framework.
Circular Innovation	Support R&D in hemp bioplastics, marine biodegradable materials, and polymer substitutes.	Minimum of 10 pilot projects funded by 2028.
EPR Expansion	Extend producer responsibility beyond packaging to cover agri-plastics, textiles, and composites.	Legislative proposal under Circular Economy Act by 2027.

3.4.5 Integrating Plastics into a Systems Approach

Finally, a truly circular approach must integrate plastics within a **systems perspective** linking climate, health, and biodiversity goals. This means:

- Including plastics and microplastics within the **Circular Material Use Rate (CMUR)** and **Circularity Gap reporting metrics**.

- Mainstreaming **pollution prevention** into product design standards and fiscal policy (e.g. plastic tax revenues reinvested in reuse innovation).
- Positioning plastics policy within the **bioeconomy**, **retail**, and **construction** chapters of the Strategy ensures coherence across sectors.

3.4.6 Our Conclusions on the Problems of Plastics

The draft Circular Economy Strategy 2026–2028 is an important step in consolidating Ireland's circular policy framework. However, it continues to treat plastics as a subcomponent of packaging rather than a systemic challenge that cuts across all sectors of material use, public health, and environmental protection. This narrow framing risks undermining the ambition of the Circular Economy and Miscellaneous Provisions Act 2022, which mandates a whole-of-government transition that decouples economic activity from resource extraction.

It is our submission that if Ireland is to close its circularity gap, it must confront plastics not as a waste issue but as a structural dependency, one that binds our economy to fossil-based materials, drives emissions, and perpetuates microplastic pollution from source to sink. The absence of explicit measures on microplastics, industrial polymers, and fossil-derived inputs leaves a major gap in the Strategy's capacity to deliver on its stated goals of resource efficiency, pollution prevention, and climate mitigation.

To move from compliance to leadership, Ireland must embed a comprehensive plastics agenda that:

- **Aligns with the EU's Zero Pollution and Chemicals Strategy**, incorporating binding targets for virgin plastic reduction, microplastic monitoring, and producer responsibility beyond packaging;
- **Integrates biobased material innovation**, including hemp and cellulose alternatives, as part of a national industrial strategy for regenerative manufacturing;
- **Establishes circular design standards** across construction, agriculture, and retail to eliminate avoidable plastic use and ensure that remaining polymers are recoverable, traceable, and non-toxic.

Only by addressing plastics as a cross-sectoral priority can Ireland achieve a truly circular economy, one that restores ecosystems, safeguards public health, and fosters a regenerative materials culture. This requires political courage, coherent governance, and sustained investment in innovation but it also offers a pathway for Ireland to lead Europe in transforming the plastics economy from a symbol of waste to an exemplar of circular resilience.

In doing so, Ireland can align its Circular Economy Strategy not just with ZWAI's vision, but with a wider European mission: to live more, use less, and leave a cleaner legacy for the generations to come.

3.5 Textiles in the Circular Economy

Compared to the first Whole of Government Circular Economy Strategy (2022–2023)[47], the draft of the second Whole of Government Circular Economy Strategy (2026-2028) presents a significant improvement in the textiles section. It is much more expansive and better integrated within the regulatory context, mentioning the EU Circular Economy Action Plan (2020)[48] and the EU Strategy for Sustainable and Circular Textiles (2022)[49] as well as the Ecodesign for Sustainable Products Regulation (ESPR)[50] and the Waste Framework Directive (WFD)[51] and Ireland's Waste Action Plan for a Circular Economy (WAPCE) 2020-2025[52]. It now outlines specific actions and goals, and clearly recognises the main issues within the sector, explaining why textiles have been identified as a priority area in the strategy.

The new draft strategy has incorporated several recommendations previously made by ZWAI. This includes our submission to the public consultation for the initial circular economy strategy in 2021, as well as our feedback earlier this year on the draft National Policy Statement and Roadmap for Circular Textiles (2025).

We are particularly pleased to see that this draft addresses key recommendations, including prioritisation of data collection related to textile production and consumption (i.e. T23 in the strategy), and the importance of aligning related policies and strategies instead of allowing them to operate in isolation. In addition to the collection of baseline data, our main recommendation for the draft National Policy Statement and Roadmap on Circular Textiles (2025) was that the strategy should include more concrete commitments and clear targets. We are glad to see that the current draft includes several specific actions and targets, which we will discuss in detail shortly.

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47 https://www.gov.ie/en/department-of-climate-energy-and-the-environment/publications/whole-of-government-circular-economy-strategy-2022-2023-living-more-using-less/

48 https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:52020DC0098

49 https://environment.ec.europa.eu/strategy/textiles-strategy_en

50 https://commission.europa.eu/energy-climate-change-environment/standards-tools-and-labels/products-labelling-rules-and-requirements/ecodesign-sustainable-products-regulation_en

51 https://environment.ec.europa.eu/topics/waste-and-recycling/waste-framework-directive_en

52 https://www.gov.ie/en/department-of-climate-energy-and-the-environment/publications/waste-action-plan-for-a-circular-economy/

3.5.1 Progress Made to Date

The initial circular economy strategy provided minimal detail regarding textiles. Nonetheless, various government departments and agencies have since made progress toward establishing a circular economy for textiles. Some of these efforts are highlighted in the new draft strategy, and we will explore them in more detail below. That said, the draft strategy could have explained more about the initiatives undertaken for "sectoral capacity-building".[53]

When it comes to increasing data collection to support the transition towards a circular economy, the EPA Textiles: National Attitudes and Behaviour Study (2025)[54] was a welcome start to this effort.

One of the activities outlined in the new draft strategy is the ***Reverse the Trend*** campaign, launched in October 2024. It appears that there is limited awareness of this initiative. A brief inquiry suggests that the campaign was primarily promoted during October 2024, with most available materials dated to that time period. This is unfortunate, as the campaign could have had a greater impact with sustained visibility.

On the other hand, the Rediscovery Centre's Rediscover Fashion initiative is a good example initiative to highlight, as it contributes meaningfully to all three pillars — environmental, social, and economic. Similarly, the Relove Fashion Competition is a valuable initiative that creates a mindset of reuse and recycling among young people.

3.5.2 Main Challenges

One of the main challenges to achieving a circular economy for textiles, as stated in the draft strategy, is that "*High consumer demand for imported, low-priced, trend-driven clothing with short product lifespans drives overproduction and overconsumption."*

It is our submission that this framing is inaccurate, as it disproportionately places the responsibility on consumers while overlooking the significant role which producers play in this cycle. This approach reinforces a narrative that suggests individual consumer behaviour is the primary issue, rather than addressing the wider structural and systemic production mechanisms that perpetuate these unsustainable practices.

[53] See page 63 of the draft strategy https://www.gov.ie/en/department-of-climate-energy-and-the-environment/consultations/public-consultation-on-the-whole-of-government-circular-economy-strategy-2026-2028/

[54] https://www.epa.ie/publications/circular-economy/resources/EPA-Textiles-2nd-National-Survey-Report.pdf

Factors such as aggressive marketing strategies, planned obsolescence, and the prioritisation of profit margins over sustainable practices contribute significantly to the problem. Brands continuously push out new collections to attract consumers with the allure of novelty, often leading to the disposal of usable items. To foster a genuine transition towards a circular economy, this statement should revise its focus to reflect the shared responsibility of consumers and producers in addressing the overconsumption dilemma and acknowledge the need for systemic change in the textile industry.

The draft strategy also lists "*Aligning national actions with evolving EU regulations (ESPR, EPR, WFD)"* as a key challenge. One could argue that this issue reflects the inherent nature of government work across various sectors rather than being a challenge unique to this particular area. Government agencies routinely face the need to adapt to changing regulations and directives, which is a fundamental aspect of ensuring compliance and effective governance.

Additionally, the challenge described as a "*lack of outlets for sorted and unsorted textiles"* lacks specificity. The explanation points to several underlying factors: namely, the slow recovery of markets following the Covid-19 pandemic, the high volume of textiles currently circulating in the market, and Ireland's vulnerability to fluctuations due to its heavy reliance on exports for textile waste processing. This challenge would improve with more detailed information and actionable insights.

3.5.3 Education and Outreach

The strategy aims to enhance education and engagement efforts aimed at consumers, which is an essential part of any approach, as public awareness and support are vital for establishing a functioning circular economy. However, the visibility and impact of the *Reverse the Trend* campaign indicate that government-led initiatives of this nature may have room for further enhancement to increase their impact and reach.

Therefore, we suggest that the government allocate funding to established and trusted NGOs with demonstrated expertise in public outreach, education, and advocacy within the circular economy and waste reduction space. Organisations of this nature are well-equipped to design and implement effective, targeted campaigns for the government. They can leverage their existing community networks and experience to ensure that messaging is authentic, relevant, and impactful. This approach also enhances efficiency and continuity, as these organisations are already active in the field and can maintain engagement over time. We recognise that this recommendation may carry some inherent bias, considering our organisation's role in this field. However, we believe it offers a pragmatic approach to effectively achieving the communication and engagement objectives outlined in the strategy.

3.5.4 Proposed Actions and Targets

Overall, the proposed actions for textiles are strong. However, and this feedback could apply to the rest of the strategy as well, it feels inconsistent that not every action has a clearly defined target. This creates the impression that only those actions with associated targets will be prioritised in terms of resources and implementation, while others may be considered less critical or even optional. Establishing clear targets for all proposed actions would not only enhance transparency but also ensure a more consistent approach in driving progress and accountability within the strategy.

Targets T21 and T23 appear well-founded and strategically aligned with the rest of the strategy, but Target T22 seems somewhat arbitrary. It appears to be derived from the EPA's Green Public Procurement (GPP) Criteria for Textiles framework[55] without a clear rationale for its inclusion in this context. Additionally, it's worth noting that recycling polyester can carry a high risk of microplastic pollution if not managed properly. Any target related to textile recycling should therefore be backed by strict recycling guidelines and environmental safety regulations. If such standards are not yet in place — which seems likely — then prioritising this target may be premature.

Therefore, we suggest replacing T22 with a target focused on promoting the reuse and repurposing of textiles. For example, by committing to divert a measurable quantity of textiles from landfill each year through relevant initiatives. This approach would also contribute to the overarching goal of developing robust end markets for secondary raw materials, ultimately fostering a circular economy.

3.6 Hemp Economy

3.6.1 Hemp as an Answer to Zero Waste Strategy in Ireland

Ireland has set ambitious goals to achieve a circular economy and a zero-waste, emissions-reduction future in line with the Paris Agreement. However, to underline a crucial point: without industrial hemp, these goals cannot be fully realised. Hemp is not just a crop - it has the potential to become a multi-functional, renewable raw material capable of displacing some of the most wasteful and polluting industries of today. Implementing a hemp-based economy could significantly reduce Ireland's waste while creating green jobs, improving soil health, and positioning Ireland as a European leader in circular innovation.

[55] See Target 6, page 2 of the GPP criteria https://www.epa.ie/publications/circular-economy/resources/epa-gpp-criteria-textile-products-and-services-2024.php

Drawing on circular economy modelling frameworks and cross-sector substitution potentials identified in recent research,[56] [57] [58] it can be argued that a fully developed hemp-based bioeconomy holds the theoretical capacity to **eliminate up to 95% of Ireland's waste streams**. This estimate represents a conceptual maximum, grounded in the principle that industrial hemp can replace the majority of non-renewable and non-recyclable materials across the construction, agriculture, packaging, textile, and bioenergy sectors.

Such a transformation would align Ireland's production and consumption systems with circular bioeconomy principles, in which biological feedstocks are continually regenerated, waste is designed out of the system, and materials re-enter the economic cycle in restorative loops. While empirical quantification of this potential remains limited, this theoretical scenario underscores the potential and realisable scale of environmental and resource-efficiency gains achievable through comprehensive integration of hemp-based value chains.

The 95% waste reduction estimate is derived from a theoretical aggregation of sectoral substitution potentials achievable under a fully circular hemp-based economy. According to the EPA (2025) and the Irish Green Building Council's circular roadmap, the construction and demolition sector – which generates approximately half of Ireland's material waste, as we have pointed out in section 3.3 above – could achieve up to **50% reduction** through the replacement of conventional concrete, insulation, and plaster materials with hemp-lime and hempcrete composites. Teagasc (2025) identifies large-scale hemp cultivation potential for bio-composite manufacturing, textiles, and bio-packaging, which together could displace an additional **25% of waste** currently arising from synthetic fabrics, plastics, and short-lifecycle packaging. The remaining **20% reduction potential** is attributed to bioenergy recovery, paper substitutes, and agro-industrial applications, where hemp residues can be reintroduced into productive cycles as biomass fuel or soil amendments.

Collectively, these sectoral transformations would leave an estimated 5% residual waste - principally from non-substitutable materials, hazardous waste, or medical residues - thereby forming the theoretical upper limit of Ireland's transition toward a near-zero waste bioeconomy. Although these figures are conceptual, they illustrate the systemic potential of hemp-based circularity to

[56] Environmental Protection Agency (EPA) (2025) – Hemp Lime Bio-composite as a Building Material in Irish Construction (STRIVE Report 97). Environmental Protection Agency, Ireland. https://www.epa.ie/publications/research/waste/STRIVE_97_BESRAC_Summary_Findings.pdf

[57] Steyn, L. et al. (2025) – 'A Comprehensive Review of Hempcrete as a Sustainable Building Material', Innovative Infrastructure Solutions, Springer. https://link.springer.com/article/10.1007/s41062-025-01906-1

[58] Teagasc (2025) – The Potential of Hemp Cultivation in Ireland: A Farmers' Perspective. Teagasc Rural Economy & Development Programme, Dublin. https://teagasc.ie/wp-content/uploads/media/website/publications/2025/The-Potential-of-Hemp-Cultivation-in-Ireland---A-Farmers-Perspective.pdf

align national waste flows with the objectives of the EU Green Deal and Ireland's Climate Action Plan, positioning hemp as a cornerstone of a regenerative and resource-resilient future.

A joint report by the **Irish Fiscal Advisory Council (IFAC)** and the **Climate Change Advisory Council** warns that Ireland could face **€ 8 billion to € 26 billion** in compliance costs by 2030 if it fails to meet its binding emissions reduction obligations under EU law.[59] [60] Under a scenario in which additional mitigation measures are implemented, this cost range could fall to **€ 3 billion to € 12 billion**. Some reports frame these potential costs as "fines," though technically they reflect the need to purchase emissions allowances or compensatory credits under the **EU Effort Sharing Regulation**[61], rather than direct punitive penalties. According to The Irish Times (2025)[62], in a worst-case scenario, these costs could rise to as much as **€ 28 billion** if Ireland continues to fall short of its 2030 climate targets.

3.6.2 Why Hemp Is Essential

Industrial hemp grows rapidly, absorbs large quantities of carbon dioxide requires minimal pesticides, and regenerates soils (see Figure 2). It offers a **closed-loop system** where every part of the plant can be used - seeds, stalks, fibres, and hurds - leaving virtually no waste. This makes it uniquely aligned with the principles of zero waste and the circular economy. Moreover, by integrating hemp across sectors, Ireland can significantly reduce its carbon footprint and landfill waste. Hemp therefore represents a practical, scalable solution to help Ireland meet its 2030 climate targets under the Paris Agreement and avoid potential non-compliance fines.

[59] Irish Fiscal Advisory Council & Climate Change Advisory Council (2025) – A Colossal Missed Opportunity: Ireland's Climate Action and the Potential Costs of Missing Targets. Dublin: Irish Fiscal Advisory Council. Available at: https://www.fiscalcouncil.ie/wp-content/uploads/2025/03/Irelands-climate-action-and-the-potential-costs-of-missing-targets.pdf

[60] Reuters (2025) – Ireland may face €26 billion climate bill by 2030, councils warn. 28 May 2025. Available at: https://www.climatecouncil.ie/news/a-colossal-missed-opportunity---irelands-climate-action-and-the-potential-costs-of-missing-targets.html

[61] https://climate.ec.europa.eu/eu-action/effort-sharing-member-states-emission-targets/effort-sharing-2021-2030-targets-and-flexibilities_en

[62] The Irish Times (2025) – Ireland could face penalties of €28 bn by 2030 for failing to sufficiently reduce greenhouse-gas emissions. 29 May 2025. Available at: https://www.irishtimes.com/politics/2025/05/29/costs-of-potential-climate-penalties-rise-as-emission-cuts-fall-leaving-ireland-staring-at-28bn-bill/

CO_2 absorption comparison between Peatlands, Hemp, and Trees over a 3–4 month period

Criteria	Trees / Wood (per hectare, 3–4 months)	Peatland (per hectare, 3–4 months)	Hemp (per hectare, 3–4 months)
CO_2 Absorption	1–2.5 tonnes (varies by species and growth stage)	0.9–1.4 tonnes (extrapolated from annual rates)	8–15 tonnes; also produces 7–12 tonnes of O_2
Growth Rate	Moderate (trees take years to mature)	Extremely slow (forms over millennia)	Fast (harvested within 3–4 months)
Carbon Storage	Long-term (stored in biomass and soil)	Long-term (stored for thousands of years)	Short to medium-term (stored in hempcrete and bio-products)
Environmental Role	Provides oxygen, absorbs CO_2, and supports biodiversity	Acts as a carbon sink preventing CO_2 release	Reduces atmospheric CO_2 through photosynthesis; enhances soil health and circular bioeconomy potential

***Figure 2**: Demonstrates a comparison of CO_2 absorption, growth rate, carbon storage, and environmental roles of hemp, and highlights how it can complement peatlands and forests in delivering both short-term and long-term climate benefits.*[63] [64] [65]

3.6.3 Hemp Applications Across Sectors

Plastics Replacement

- Hemp bioplastics are fully biodegradable and compostable, unlike conventional plastics which persist for centuries.

- Hemp bioplastics and composites can replace **single-use packaging, consumer goods, car parts, and even 3D-printing materials**, offering durable, renewable, and biodegradable alternatives to petroleum-based plastics.[66] [67] [68] [69]

[63] https://teagasc.ie/news--events/daily/the-forest-carbon-tool

[64] https://www.ipcc.ie/a-to-z-peatlands/irelands-peatland-conservation-action-plan/peatland-action-plan/climate-change-and-irish-peatlands

[65] https://agriculture.ec.europa.eu/farming/crop-productions-and-plant-based-products/hemp_en

[66] Enarevba, A. et al. (2024) – A Review of Industrial Hemp Materials and Products. Materials Proceedings, 6(3), 167. MDPI. https://www.mdpi.com/2624-7402/6/3/167

[67] Shelly, B. et al. (2025) – Hemp Fiber and Its Bio-Composites: A Comprehensive Review Part I — Characteristics and Processing. Journal of Materials Science and Engineering, Springer. https://link.springer.com/article/10.1007/s42114-025-01314-0

[68] EuroPlas (2023) – The Pros and Cons of Hemp Bioplastic. EuroPlas Blog, Vietnam. https://europlas.com.vn/en-US/blog-1/the-pros-and-cons-of-hemp-bioplastic

[69] AZoM (2025) – Can Hemp Replace Plastic?. AZoM – The A to Z of Materials. https://www.azom.com/article.aspx?ArticleID=24386&utm

- By substituting plastics with hemp-based alternatives, Ireland can drastically cut landfill waste and microplastic pollution.

Energy Storage – Hemp Batteries

- Hemp-based supercapacitors are **up to 8 times more powerful than lithium-ion batteries** while being cheaper, safer, and non-toxic.[70] [71] [72]
- Hemp-based energy storage reduces reliance on scarce, geopolitically sensitive, and environmentally destructive minerals like lithium and cobalt.
- This is crucial for Ireland's renewable energy transition and energy independence.

Hemp fibres can be converted into graphene-like nanosheets for use in supercapacitors, offering a low-cost, sustainable alternative to lithium-ion and conventional graphene-based batteries. Hemp-based batteries are:

- cheaper to produce;
- faster to charge; and,
- environmentally friendly, with no reliance on rare-earth metals or toxic mining.

As supercapacitors, providing high energy density and long cycle life, making them a promising green solution for future energy storage. In addition, the use of hemp biomass in bioenergy production offers another renewable pathway, reducing dependence on fossil fuels and contributing to a truly circular energy economy.

Metals and Composites Used in Cars, Aircraft, and Other Vehicles

- Hemp fibres can replace metals and synthetic composites in lightweight materials for construction, automotive, and aerospace applications.

[70] National Research Council of Canada (2014) – Interconnected carbon nanosheets derived from hemp for ultrafast supercapacitors with high energy. NRC Research Press.
Available at: https://nrc-publications.canada.ca/eng/view/object/?id=9a408b85-8d4d-4e7f-9fe1-51a9ff2b68c4

[71] ASME (2015) – Hemp Carbon Makes Supercapacitors Superfast. The American Society of Mechanical Engineers.
Available at: https://www.asme.org/topics-resources/content/hemp-carbon-makes-supercapacitors-superfast

[72] Advanced Carbons Council (2023) – From Waste to Wonder Material: Hemp Graphene Could Be the Future of Energy Storage.
Available at: https://advancedcarbonscouncil.org/blogpost/2151389/509531/From-Waste-to-Wonder-Material-Hemp-Graphene-Could-Be-the-Future-of-Energy-Storage

- Hemp composites are durable, corrosion-resistant, and lighter, reducing energy use and emissions in transport sectors.[73]

Biofuels – Hemp as Petrol Replacement

- Hemp seeds and stalks can be converted into **biodiesel, ethanol, and biogas**, offering renewable alternatives to fossil fuels. Research shows hempseed oil can produce high-yield, high-quality biodiesel that meets international fuel standards.[74] [75] [76]
- This reduces Ireland's dependency on imported petroleum and supports decarbonisation of transport and agriculture.

In the 1930s, Henry Ford introduced a revolutionary hemp-based car made from plant-derived composites. The vehicle was ten times stronger than steel, 450 kilograms lighter than a standard car - resulting in greater fuel efficiency - and remarkably resistant to dents, as demonstrated when Ford famously struck the car's body with an axe. The material was also fully biodegradable and the car was designed to run on emp-based biofuel. Ford's pioneering vision demonstrated the potential of hemp to replace metal-intensive manufacturing and reduce reliance on petroleum, presenting an early model of a truly sustainable, circular, and carbon-neutral transport system.[77]

A similar approach can be applied to the aviation industry. Hemp-based materials could be used to manufacture lighter and stronger aircraft, significantly improving fuel efficiency through lightweight hemp fibre composites that reduce fuel consumption and emissions. By replacing conventional composites with hemp-based alternatives, airplanes would require less fuel, lowering both operational costs and carbon output. Additionally, the use of hemp-derived biofuels and hybrid systems powered by hemp-based batteries could enable zero-emission or carbon-neutral flights, creating a transformative

[73] Shelly, B., Lee, S-Yi & Park, S-J. (2025) 'Hemp Fiber and Its Bio-Composites: A Comprehensive Review Part I — Characteristics and Processing', Journal of Materials Science and Engineering, Springer. Available at: https://link.springer.com/article/10.1007/s42114-025-01314-0

[74] Yazilitaş, M., Demirbaş, A., & Balat, M. (2024) – Biodiesel Production from Hempseed (Cannabis sativa L.) Oil: Providing Optimum Conditions by Response Surface Methodology. Science and Technology for Energy Transition, 79, 166. Available at: https://www.stet-review.org/articles/stet/full_html/2024/01/stet20230166/stet20230166.html

[75] Kovačević, D. et al. (2024) – Toward an Environmentally Friendly Future: An Overview of Biofuels from Alternative Feedstocks (Hemp, Cucurbits). Agronomy, 14(6), 1195. Available at: https://www.mdpi.com/2073-4395/14/6/1195

[76] University of Connecticut (UConn) (2010) – Hemp Produces Viable Biodiesel, UConn Study Finds. UConn Today, 18 October 2010. Available at: https://today.uconn.edu/2010/10/hemp-produces-viable-biodiesel-uconn-study-finds/

[77] Center for Automotive Research (CAR), 2017. Building Capacity and Capability in the Biobased Materials Manufacturing Sector. Ann Arbor, MI: Center for Automotive Research. Available at: https://www.cargroup.org/wp-content/uploads/2017/02/Building-Capacity-and-Capability-in-the-Biobased-Materials-Manufacturing-Sector.pdf

positive impact on the environment and accelerating the transition toward sustainable, next-generation aviation.[78]

Textiles

- **Hemp textiles** are more durable than cotton, require significantly less water, and are naturally antimicrobial.[79]
- Can replace **cotton, polyester, and other synthetic fabrics** that currently generate enormous waste and microfibres.
- **Hemp-based vegan fur** represents a sustainable alternative to animal fur, offering enhanced thermoregulatory performance while eliminating ethical and ecological concerns associated with traditional fur (Ukranian patent).[80]
- **Hemp clothing, upholstery, and industrial fabrics** are biodegradable, supporting genuine circularity within the textile sector.
- As a **sustainable alternative to synthetic fibres** used in clothing, footwear, and everyday textiles, hemp provides a non-toxic, breathable, and UV-resistant option. Unlike petroleum-based materials, hemp fabrics are naturally antibacterial and ideal for sensitive skin.[81]
- Hemp cultivation requires **less water and land than cotton**, grows without pesticides, and even improves soil health, contributing to regenerative agricultural systems.
- **Replacing synthetic fibres with hemp** can significantly reduce landfill waste, microplastic pollution, and the fashion industry's overall carbon footprint.
- Additionally, hemp can be used to create biodegradable **feminine hygiene products and nappies**, which currently account for a large portion of non-recyclable waste and microplastic pollution in landfills. Due to hemp's natural antimicrobial and antifungal properties[82], these products are also much healthier than traditional alternatives, which not only harm the environment but can negatively affect human health.

[78]https://indhemp.com/hemp-based-sustainable-aviation-fuel-market-traction-and-opportunities

[79]https://bioresources.cnr.ncsu.edu/resources/antibacterial-properties-of-hemp-and-other-natural-fibre-plants-a-review

[80]https://www.euronews.com/green/2021/04/18/this-biodegradable-faux-fur-is-made-from-cannabis-plants

[81]https://bioscipublisher.com/index.php/be/article/view/3951

[82]https://bioresources.cnr.ncsu.edu/resources/antibacterial-properties-of-hemp-and-other-natural-fibre-plants-a-review

- **Bulky waste items:** Furniture, mattresses, and floor coverings made with hemp-based composites and natural fibres are more sustainable and recyclable than their synthetic counterparts, helping to reduce the volume of bulky waste sent to landfills.

Hemp Paper – A Sustainable Alternative

Hemp produces significantly more pulp per acre than trees and requires no harsh chemicals for processing. It can be used to make books, packaging, and office paper, providing a renewable alternative that reduces deforestation and paper waste (meanwhile sequestrating massively CO2).[83]

From one hectare of hemp, it is possible to obtain as much paper as from four hectares of trees. Moreover, hemp fibres can be recycled up to eight times, while wood-based paper can only be recycled about three times.[84] This makes hemp paper a cleaner, more efficient, and truly circular solution for the global paper industry.

Hempcrete – Sustainable Building and Retrofit Material

Hempcrete delivers **up to 70-90% energy savings** in heating and cooling (see figure 3 below). Its natural thermal mass and breathability eliminate the need for dehumidifiers, making it the ultimate passive and healthy building material.

No mould, fungus, pests, or termites can thrive in hempcrete walls, making it the ultimate passive, durable, and healthy building material.[85]

Hempcrete is carbon-negative, breathable, highly insulating, and fire-resistant.[86]

It replaces concrete and insulation materials that generate massive construction waste and emissions.

Hempcrete buildings store carbon over their lifetime, making them essential for decarbonising the built environment.[87]

[83] https://pmc.ncbi.nlm.nih.gov/articles/PMC10573857

[84] https://www.cannabistrades.org/pages/126-facts-about-hemp

[85] https://www.sciencedirect.com/science/article/abs/pii/S1359431124009724

[86]https://www.researchgate.net/publication/263091835_Thermal_conductivity_of_hemp_concretes_Variation_with_formulation_density_and_water_content

[87] https://link.springer.com/chapter/10.1007/978-3-031-69626-8_15

HEMP BUILD U Value Study	For HEMP BUILD LTD						by Patrick Daly April 2019			
CONSTRUCTION TYPE	EXISTING	IMPROVEMENT MEASURE								
FLOOR	Baseline	Replacement Hemp Lime floo					Upgrade Hemp Lime Floor			
		120mm	% Diff	150mm	% Diff		60mm	% Diff	90mm	% Diff
Floor										
Lime Screed - Earth Floor	0.6	0.4	33	0.34	43					
Uninsulated Concrete Slab	0.64	0.4	38	0.34	47		0.39	39	0.33	48

WALL	Baseline	Upgrade Wall									
		60 mm	% Diff	90 mm	% Diff	120 mm	% Diff	150 mm	% Diff	210 mm	% Diff
Stone											
Limestone Wall 20% Plaster Lath	1.35										
Limestone Wall 40% Lime Earth	1.72										
Limestone Wall 20% Lime Earth	*1.85*	*0.63*	*66*	*0.5*	*73*	*0.42*	*77*	*0.36*	*81*	*0.28*	*85*
Brick											
230mm Brick Wall	*2.12*	*0.65*	*69*	*0.52*	*75*	*0.43*	*80*	*0.37*	*83*	*0.28*	*87*
340mm Brick Wall	1.63										
Concrete Wall											
200mm Conc Wall	*2.59*	*0.69*	*73*	*0.54*	*79*	*0.44*	*83*	*0.36*	*86*	*0.29*	*89*
Masonry Wall											
250mm Hollow Block	*1.93*	*0.68*	*65*	*0.53*	*73*	*0.44*	*77*	*0.38*	*80*	*0.29*	*85*
325 mm Cavity Wall	*1.74*	*0.62*	*64*	*0.49*	*72*	*0.41*	*76*	*0.35*	*80*	*0.28*	*84*

ROOF	Baseline	Upgrade Roof			
		100 mm	% Diff	240 mm	% Diff
Uninsulated Roof	2.5	0.4	84	0.17	93

TGD	New 11	New 18	Exist MA & CoU	
Wall	0.21	0.18	0.35	0.55 cv
Floor	0.21	0.18		0.45
RoofCl	0.16	0.16		0.16

Figure 3: *U-value study by Daly (2019) showing that hemp-lime upgrades to floors, walls, and roofs can reduce heat loss by up to 70–90%, bringing traditional constructions close to modern regulatory standards.*[88]

Hempcrete's high thermal mass enables it to store and release heat gradually, while its hygroscopic behaviour regulates indoor humidity levels, reducing the need for mechanical heating, cooling, and ventilation. These qualities contribute to improved comfort, peak-load reduction, and resilience in energy outages - benefits that remain invisible under conventional metrics. Consequently, hempcrete often underperforms in regulatory energy models, leading to its exclusion from building certification schemes, retrofit grants, and policy incentives.

To address this gap, we propose the H-Value[89] – a holistic performance metric for natural building materials. Unlike the U-value, the H-Value integrates:

[88]Daly, P. (2019). Private report for HempBuild.ie. Unpublished manuscript, available on request.

[89]Larionova & Zero Waste Alliance Ireland (2025). Available at: https://www.zwai.ie/resources/2025/submission-to-eu-commission-on-a-new-policy-initiative-and-a-new-agenda-for-cities-and-urban-areas/

- **Thermal mass capacity** (heat storage and release)
- **Moisture buffering index** (humidity regulation)
- **Life-cycle carbon balance** (including sequestration and end-of-life impacts)
- **Circularity score** (potential for reuse, recycling, and biodegradation)

The adoption of the H-Value would align performance assessment with life-cycle thinking and EU climate policy trends, including the Whole Life Carbon Roadmap[90] and the Circular Economy Action Plan[91]. It would enable materials like hempcrete to be evaluated not solely on steady-state energy performance but on their overall contribution to climate resilience, health, and circularity.[92]

Hempcrete's Thermal, Environmental, Health, Acoustic, Protective, and Durability Performance:

1. **Thermal Performance** – Strong thermal inertia; reduces heating and cooling demand by up to 70%.[93] [94]
2. **CO_2 Sequestration** – Hempcrete absorbs and retains substantial amounts of CO_2 through the growth of hemp (photosynthesis) and carbonation of the lime binder, making it carbon-negative over its lifecycle.[95]
3. **Biodegradability** – Fully biodegradable and reusable, supporting circular construction.[96]

[90] https://worldgbc.org/buildinglife/buildinglife-roadmaps/
[91] https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:52020DC0098
[92] https://www.zwai.ie/resources/2025/submission-to-eu-commission-on-a-new-policy-initiative-and-a-new-agenda-for-cities-and-urban-areas/
[93] Collet, F. & Pretot, S. (2014). Thermal conductivity of hemp concretes: Variation with formulation, density and water content. *Construction and Building Materials, 65*, 612-619. https://doi.org/10.1016/j.conbuildmat.2014.05.039
[94] Kaboré, A., Maref, W. & Ouellet-Plamondon, C.M. (2024). Hygrothermal Performance of the Hemp Concrete Building Envelope. *Energies, 17*(7), 1740. https://doi.org/10.3390/en17071740
[95] Ansari, H., Tabish, M. & Zaheer, M.M. (2025). A comprehensive review on the properties of hemp incorporated concrete: An approach to low carbon footprint construction. *Next Sustainability, 5*. https://doi.org/10.1016/j.nxsust.2024.100075
[96] Arrigoni, A., Pelosato, R., Melia, P., Ruggieri, G., Sabbadini, S. & Dotelli, G. (2017). Life cycle assessment of natural building materials: the role of carbonation, mixture components and transport in the environmental impacts of hempcrete blocks. *Journal of Cleaner Production, 149*. 1051-1061. http://dx.doi.org/10.1016/j.jclepro.2017.02.161

4. **Healthy Indoor Environment** – Regulates humidity and improves indoor air quality; eliminates need for dehumidifiers and mechanical ventilation.[97]
5. **Acoustic Performance** – Excellent acoustic insulation; reduces noise transmission and enhances indoor comfort.[98]
6. **Safety and Resilience** – The ability of hempcrete to absorb energy from bullets and explosive blasts can be conceptually linked to findings on porous "soft" materials that dissipate shock waves.[99]
7. **Fire Resistance** – Hempcrete walls have demonstrated the ability to achieve up to 60 minutes' fire resistance and A1 flame spread classification when appropriately rendered.[100]
8. **Pest Resistance** – Hemp-based insulation exhibits natural pest resistance due to its high alkalinity and lime content, creating an environment inhospitable to termites, rodents, and insects—thus reducing the need for chemical additives.[101]
9. **Waste Management** – Helps address construction and demolition waste; 13–18% of mixed C&D waste still goes to landfill in Ireland.[102]
10. **Policy Relevance** – Recognising hempcrete in waste and retrofit strategies could advance decarbonisation and circularity goals.[103]
11. **Energy Security** – As part of a broader renewable and bio-based materials strategy, hempcrete can contribute to reducing energy demand in buildings and thus support EU goals to end dependency on Russian energy.[104]

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[97] Walker, R. & Pavia, S. (2014). Moisture transfer and thermal properties of hemp–lime concretes. *Construction and Building Materials, 64.* 270-276. https://doi.org/10.1016/j.conbuildmat.2014.04.081

[98] Daly, P., Ronchetti, P. & Woolley, T. (2012). *Hemp Lime Bio-composite as a Building Material in Irish Construction.* Available at: https://www.epa.ie/publications/research/waste/STRIVE_97_BESRAC_Summary_Findings.pdf

[99] Nesterenko, V.F. (2003). Shock (Blast) Mitigation by "Soft" Condensed Matter. Available at: https://arxiv.org/vc/cond-mat/papers/0303/0303332v1.pdf

[100] Daly, P., Ronchetti, P. & Woolley, T. (2012). *Hemp Lime Bio-composite as a Building Material in Irish Construction.* Available at: https://www.epa.ie/publications/research/waste/STRIVE_97_BESRAC_Summary_Findings.pdf

[101] Jellen, A.C. & Memari, A.M. (2025). State-of-the-Art Review of Hempcrete for Residential Building Construction. *Designs, 9*(2). 44. https://doi.org/10.3390/designs9020044

[102] https://www.epa.ie/our-services/monitoring--assessment/waste/national-waste-statistics/construction--demolition/

[103] https://www.climatecouncil.ie/councilpublications/annualreviewandreport/AR2024-Built%20Environment.pdf

[104] https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM%3A2022%3A230%3AFIN&qid=1653033742483

12. **Earthquake Resilience** – Hempcrete's low density and ductile nature make it well-suited for seismic-prone contexts, reducing crack propagation and structural damage during ground movement.[105]

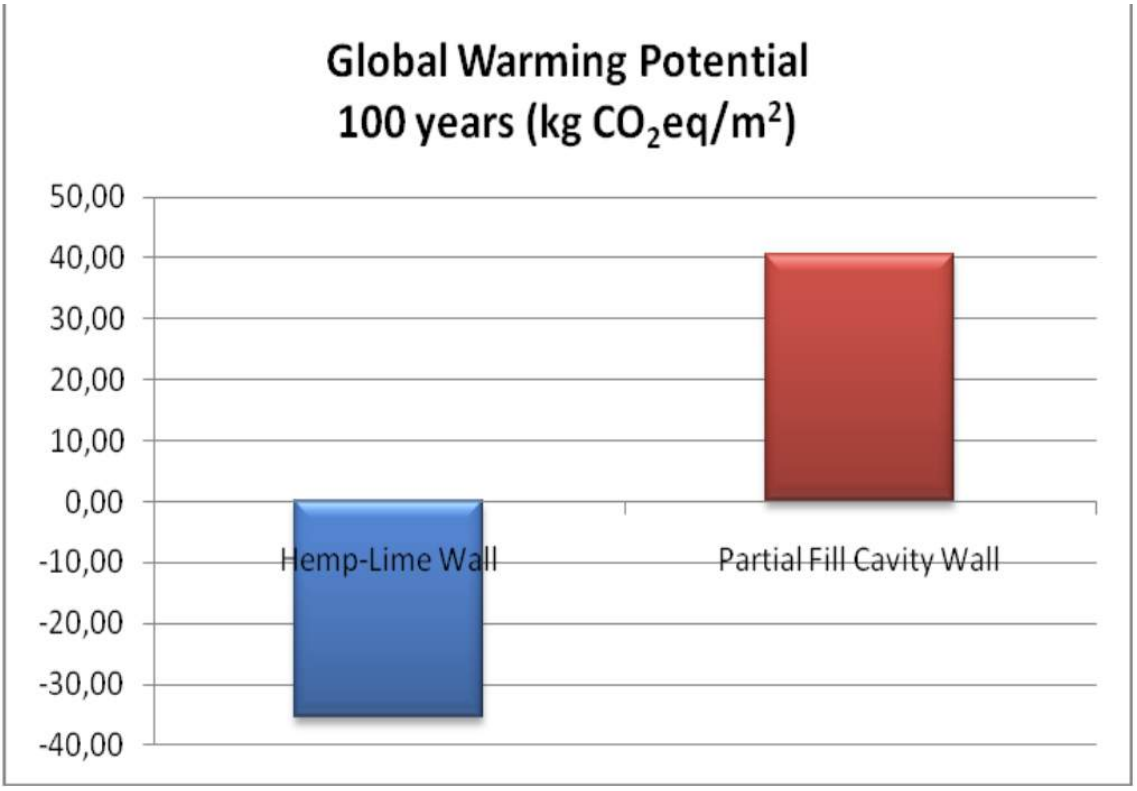

Figure 4: *Comparison of the Global Warming Potential (GWP) of a hemp-lime wall and a partial fill cavity wall over a 100-year period (kg CO_2eq/m²). The results, adapted from Daly et al. (2019), demonstrate hemp-lime's carbon-negative potential (–35 kg CO_2eq/m²) due to biogenic carbon sequestration, in contrast to the carbon-positive profile of conventional cavity wall construction (+40 kg CO_2eq/m²).*[106]

Hempcrete is more than just a building material - it is a holistic solution for decarbonising the built environment. By storing carbon, improving energy efficiency, resisting fire and pests, and preventing construction waste, hempcrete addresses multiple barriers to Ireland's zero waste and climate targets simultaneously.

Experimental research on bio-based phase change materials confirms that optimising thermal mass can improve occupant comfort, reduce reliance on active heating and cooling, and enable better integration of renewable energy sources.[107] Yet, current Irish policy and certification systems do not account for

[105] Ansari, H., Tabish, M. & Zaheer, M.M. (2025). A comprehensive review on the properties of hemp incorporated concrete: An approach to low carbon footprint construction. *Next Sustainability, 5*. https://doi.org/10.1016/j.nxsust.2024.100075

[106] Daly, P. (2019). Hemp and Lime as a Bio-Composite Material in Irish Construction. Presented at the Teagasc Premier Irish Industrial Hemp Conference, Food Research Centre, Ashtown, Dublin, 20 June 2019. Available at: Teagasc Hemp Conference Proceedings (PDF).

[107] Zadshir, M., Kim, B. & Yin, H. (2024). Bio-Based Phase Change Materials for Sustainable Development. *Materials, 17*(19), 4816. https://doi.org/10.3390/ma17194816

these performance characteristics, leaving hempcrete undervalued and underutilised in both the housing and retrofit sectors.[108]

A strategic shift combining policy reform, investment in processing infrastructure, and updated performance metrics such as the proposed *H-Value* is essential if Ireland is to unlock the potential of hempcrete as both a climate mitigation tool and a driver of rural economic regeneration.

Ukraine illustrates resilience amid war, with projects like the Ma'rijanni Hemp Industrial Park establishing the capacity to process 14,000 tonnes of stalks annually, with plans to expand alongside cultivation.[109] [110]

Once covering 150,000 hectares, Ukraine's hemp industry is being revived as part of rural economic regeneration, targeting textiles, packaging, and construction materials. Recently, Ukraine opened its largest hemp processing plant and launched the e-Hemp certification system to enhance industry transparency, traceability, and international competitiveness, marking a major step toward a modern, sustainable hemp economy.

Field studies show hempcrete walls can cut heating and cooling demand by up to 70 - 90%, particularly in temperate climates, with resilience benefits demonstrated in off-grid contexts such as Ukraine during long winter blackouts. However, standard U-value metrics overlook these dynamic behaviours, limiting recognition in certification schemes. To address this, holistic indicators like the proposed H-Value integrate thermal mass, moisture regulation, and life-cycle carbon performance.

Ukraine provides an instructive counterexample with its e-Hemp certification system, which streamlines traceability and quality assurance. This digital approach strengthens domestic market confidence, enhances export potential, and positions hemp for growth in post-war reconstruction.[111]

Implementing hempcrete can be a 'silver bullet' for Ireland's construction sector – simultaneously tackling energy demand, carbon sequestration, waste, health, and resilience. Its potential, however, is held back by regulatory inertia, infrastructure gaps, and policy silos. With holistic metrics like the H-Value, stronger cross-sector collaboration, and investment in supply chains and demonstration projects, hempcrete could move from the margins to the mainstream becoming a cornerstone of Ireland's path to climate neutrality, healthier homes, and sustainable housing by 2050.

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[108] https://www.igbc.ie/wp-content/uploads/2023/10/Analysis-of-the-National-Status-Quo-Ireland.pdf

[109] https://www.kyivpost.com/post/52998

[110] https://www.forbes.com/sites/dariosabaghi/2025/05/19/ukraine-launches-largest-industrial-hemp-processing-plant/

[111] https://www.kyivpost.com/post/52998

The fact that hemp can be grown vertically in cases of limited land, as well as on traditional farmland, and is one of the fastest-growing crops - taking only 3-4 months to harvest - can be highly beneficial for farmers, allowing them to harvest up to three times a year from the same plot of land, especially in the Irish climate.

3.6.4 Key Recommendations for Hemp Economy

1. **Integrate Hemp into the National Circular Economy Framework:** Recognise industrial hemp as a *strategic bio-based resource* within Ireland's Circular Economy Strategy. Establish cross-departmental coordination between agriculture, housing, energy, and enterprise sectors to support hemp cultivation, processing, and market development.

2. **Support Domestic Hemp Processing Infrastructure:** Provide targeted funding and incentives for regional hemp processing hubs to maximise resource efficiency and reduce transport emissions. This will enable Ireland to become self-sufficient in bio-based materials, reducing up to **95% of waste** from construction, textiles, and packaging.

3. **Develop Hemp-Based Construction Standards:** Accelerate certification and inclusion of hempcrete and hemp-based composites in national building regulations to replace carbon-intensive materials. This will support zero-carbon construction, healthier indoor environments, and job creation in rural areas.

4. **Promote Hemp Bioenergy and Biofuel Production:** Invest in hemp biomass-to-energy and hemp biofuel technologies to diversify Ireland's renewable energy mix. This will enhance **energy independence**, reduce reliance on imported fossil fuels, and contribute to a resilient, carbon-neutral energy system.

5. **Encourage Research and Innovation in Hemp Applications:** Fund research into **hemp batteries, bioplastics, and hybrid aviation fuels**, building on international advances in hemp-based technologies. Such innovation can position Ireland as a leader in sustainable materials and green energy solutions.

6. **Introduce Tax-Free Incentives and Green Procurement Policies:** Implement **tax-free status** for farmers, cooperatives, and businesses involved in hemp cultivation, processing, or manufacturing of hemp-based products. Combine this with **green public procurement** favouring hemp-based materials to stimulate market growth and circular supply chains.

7. **Neutralise Bureaucracy and Simplify Licensing Procedures:** Reform the current regulatory framework to make it **transparent, simple, and fast**, allowing farmers to easily access licences for hemp cultivation and processing. Streamlined digital procedures and clear communication between departments will encourage wider adoption and reduce administrative barriers.

8. **Raise Public Awareness and Skills Training:** Launch education and training programmes to build capacity among farmers, builders, and manufacturers in hemp-based production. Public awareness campaigns should highlight hemp's **carbon-negative, zero-waste, and regenerative** potential.

Implementing a hemp-based economy, supported by tax-free incentives and transparent, streamlined governance, will enable Ireland to achieve waste reduction, net-zero emissions, and energy independence.[112]

This approach will strengthen rural economies, promote green innovation, and align with Ireland's Paris Agreement obligations and Circular Economy Strategy 2026–2028.

3.7 Other recommendations for the Whole-of-Government Circular Economy Strategy

3.7.1 Restrict Import of Low-Quality, Non-Circular Goods

Ireland's circular strategy risks being undermined if markets continue to be flooded with low-cost, non-durable products, often imported from abroad (including single-use or poor-quality goods with short lifespans). Stronger measures are needed to:

- Set **minimum durability and repairability standards** for imports.
- Ban or heavily restrict goods that cannot be reused, repaired, or recycled within Ireland's waste management framework.
- Support Irish and EU-based circular industries, reducing dependency on "cheap but costly" imports that generate significant waste.

3.7.2 Adopt a National Plant-Based Food Strategy

Food is a major contributor to waste streams and emissions. A dedicated plant-based food strategy would:

- Promote shorter, more resilient supply chains by prioritising locally grown plant-based foods.

[112]https://www.hempfederationireland.org/news-updates/the-hemp-report?utm_source=chatgpt.com

- Encourage dietary transition toward low-waste, low-carbon diets, which reduce packaging and agricultural resource use.
- Support public procurement standards for schools, hospitals, and public offices to include more plant-based meals, cutting food waste and carbon footprint.

Amsterdam has demonstrated that systemic shifts in urban diets and food systems can significantly contribute to circularity.[113] Ireland can adapt these lessons to its own agricultural strengths.

3.7.3 Mandatory Composting Policies for the HORECA Sector and Public Waste Responsibility

Introduce mandatory composting regulations for the HORECA sector (Hotels, Restaurants, and Cafés) and strengthen public waste responsibility measures. Require all food-related businesses to separate and compost organic waste on-site or through approved collection systems.

Establish clear monitoring, incentives, and penalties to ensure compliance, and promote the use of compostable packaging and plant-based materials. Public institutions, schools, and local authorities should lead by example through transparent waste reporting and zero-landfill targets.

Such policies would significantly reduce landfill waste, cut methane emissions, and promote Ireland's transition toward a fully circular, zero-waste bioeconomy.

3.7.4 Sustainable Government: Ending Bureaucracy, Corruption, and Greenwashing

Establish a transparent, accountable, and results-driven governance framework to ensure that Ireland's Circular Economy Strategy is implemented effectively and free from bureaucratic delays, corruption, and greenwashing.

Introduce clear performance indicators, independent monitoring, and public access to data on funding, projects, and emissions outcomes. Simplify administrative procedures to make public support accessible, fast, and fair, particularly for small farmers, innovators, and community-led sustainability projects.

A sustainable government structure should prioritise genuine environmental progress over symbolic actions, ensuring that public funds directly contribute to measurable waste reduction, emissions cuts, and a truly circular, low-carbon economy.

[113] https://assets.amsterdam.nl/publish/pages/1049427/implementation_agenda_food_strategy_2023-2026.pdf

4. Concluding Summary of Our Observations

1. It is our conclusion that, if implemented with some additional features described in this submission, Ireland's Second Whole-of-Government Circular Economy Strategy 2026–2028 could be an important step in the ongoing national transition toward a sustainable, resource-efficient economy which decouples growth from continuous extraction, resource depletion and environmental degradation. The draft Strategy builds upon the foundations laid by Ireland's First Whole-of-Government Strategy (2022–2023), the Waste Action Plan for a Circular Economy (2020–2025), and the Circular Economy and Miscellaneous Provisions Act 2022, and is therefore to be welcomed.

2. We especially agree with the vision that the circular economy is not merely an environmental programme but can also become a means of social and economic transformation, offering an opportunity to "turn waste into value," to design materials and products for longevity, and to empower local communities to lead the transition. However, we also point out that circularity should not be achieved at a cost to the natural environment, ecosystems and other species which whom we share this planet.

3. The strategy for a circular economy should include living in harmony with nature, so that human societies behave like natural ecosystems, living within the sustainable flow of energy from the sun and plants, producing no materials or objects which cannot be recycled back into the earth's systems, or reused or recycled into our technical systems, and guided by economic systems and practices which are in harmony with personal and ecological values.

4. Such values must be underpinned and supported by legislation, of which the Circular Economy and Miscellaneous Provisions Act 2022 is the most important. Yet the draft proposed Strategy fails to provide a legally robust method for the the implementation of this Act – much of the expressions used in the Strategy are vague and not measurable, it does not provide answers to key questions about investment for nationwide, standardised reuse and repair infrastructure, or advanced sorting and recycling facilities for complex streams such as textiles and plastics.

5. For example, Section 21 of the 2022 Act, is mentioned only in passing, but no clear, binding timeline for its enforcement has been provided. Another weakness is that the draft Strategy presents no coherent, overarching framework for the strengthening and rigorous enforcement of Extended Producer Responsibility (EPR) across all priority sectors.

6. The draft Strategy also lacks a clear path for utilising EPR revenues to fund the necessary collection, reuse, and recycling infrastructure at the scale which is needed, especially Critical Raw Materials (CRMs). Another key failure is the absence of a fiscal or other mechanism to decisively shift economic incentives away from partial energy recovery through incineration or co-fuelling of, for example, thermal power stations and cement production plants, and towards genuine material recycling and reuse.

7. Among our suggestions for improvement of the Strategy are a commitment to formally review the levy rates which support the Circular Economy Fund and ensure that they are set at a level that effectively disincentivises waste and generates sufficient revenue.

8. By adopting more precise, mandatory, and legally-sound language throughout the entire strategy, it is possible for it to become a functional document to bring about necessary and desired changes.

9. The construction industry is Ireland's largest generator of material use and material waste, and it is our submission that this industry requires a dedicated objective focused on transitioning the sector toward circular building and infrastructure systems. We support the Government's commitment to publish a National Building Renovation Plan, but we recommend the introduction of a digital Building Materials Passport system within the National Building Renovation Plan.

10. ZWAI proposes a national mandate requiring full deconstruction audits so as to reverse the current economic and time incentives for demolition instead of deconstruction of buildings, and we advocate developing appropriate criteria and new incentives such as the allocation of sites to developers who would guarantee to integrate holistic concepts and circular thinking into their building applications.

11. Ireland should also accelerate the establishment of national End-of-Waste (EoW) criteria for key materials such as concrete, asphalt, and aggregates in alignment with JRC work, and link these standards to digital traceability systems. A revised Strategy should propose local repair and reuse systems as learning infrastructures, and not just operational facilities. Research shows that such community-based networks are "*crucial forms of infrastructure for a non-extractive future".*

12. ZWAI believes that Green Public Procurement is a decisive lever to mainstream circularity in construction, and this should apply to local authorities which should be encouraged and given the financial incentives to enable the creation of regional reuse hubs for construction materials such as timber, glass, fixtures, and metals. These hubs would

act as both depots and marketplaces for secondary raw materials, and be open to citizens who seek used materials for building projects.

13. One of the most significant problems which we have identified in the proposed draft Strategy is that it fails to consider the broader systemic challenges posed by global scale plastic production, use, and pollution, especially microplastics. Instead, plastics are mentioned only under the draft strategy's section on packaging, and this narrow approach fails to take into account the fact that plastics and their numerous uses permeate virtually every sector of Ireland's material economy.

14. Microplastics are a serious and growing problem, showing increasing levels of contamination in all environmental media, and our submission describes a number of ways in which the microplastics problem should be tackled. These include redesign of plastic products, and the integration of plastics within a systems perspective linking climate, health, and biodiversity goals.

15. This country must confront plastics not as a waste issue but as a structural dependency, one that binds our economy to fossil-based materials, drives emissions, and perpetuates microplastic pollution from source to sink. The absence of explicit measures on microplastics, industrial polymers, and fossil-derived inputs leaves a major gap in the Strategy's capacity to deliver on its stated goals of resource efficiency, pollution prevention, and climate mitigation.

16. Addressing the problem of textile waste, fuelled by the clothing industry's aggressive marketing strategies, planned obsolescence, and the prioritisation of profit margins over sustainable practices is another challenge not adequately addressed in the Strategy. The State's current approach disproportionately places the responsibility on consumers while overlooking the significant role which producers play in this cycle. Government must revise its focus to reflect the shared responsibility of consumers and producers in addressing the overconsumption dilemma and acknowledge the need for systemic change in the textile industry.

17. Our submission also focuses on hemp as a versatile multi-functional, renewable raw material capable of displacing some of the most wasteful and polluting industries of today. Creating a hemp-based bioeconomy has the theoretical capacity to eliminate up to 95% of Ireland's waste streams. While this might appear at first sight to be an impossible aim, the amount of recent research and pilot-scale projects cited in our submission demonstrates that the development of a hemp-based bioeconomy is practical and achievable.

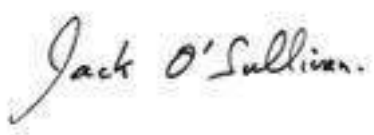
18. Industrial hemp grows rapidly, absorbs large quantities of carbon dioxide requires minimal pesticides, and regenerates soils, assisting the mitigation of climate change. The use of hemp for textiles (remember hemp ropes were ubiquitous a few decades ago) and in construction is well known (hempcrete for example), but what is less well known is that hemp fibres can replace metals and synthetic composites in lightweight materials for construction, automotive, electrical and aerospace applications, especially as hemp composites are durable, corrosion-resistant, and lighter, reducing energy use and emissions in transport sectors.

19. Almost any type of material currently made from fossil-fuel-derived plastic polymers can be made from hemp, and our submission provides a detailed assessment of the value of hempcrete as a thermal mass in buildings, yet the current Irish policy and building certification systems do not account for these performance characteristics.

20. One key suggestion advocated in our submission is that Ireland should adopt an e-Hemp certification system for buildings, which would streamline traceability and quality assurance. Such a system has already been developed and is implemented in Ukraine, a country which has become widely noted for its rapid innovation in many sectors of its economy.

21. No matter how carefully Ireland develops and implements a circular economy strategy, it will be undermined if we allow our domestic market to continue being flooded with low-cost, non-durable products, often imported from abroad (including single-use or poor-quality goods with short lifespans). It is our submission that much stronger measures are needed to address this problem, including setting minimum durability and repairability standards for imports, banning or heavily restricting the importation of goods which cannot be reused, repaired, or recycled within Ireland's waste management framework, and providing better supports for Irish and EU-based circular industries.

Either Ireland as a country is serious about implementing a circular economy, or we continue with "business as usual", producing increasing amounts of rejected or discarded materials and goods, contributing to a "mountain of waste", and to climate change.



Jack O’Sullivan

Zero Waste Alliance Ireland

05 November 2025

This submission was researched and written by Nazia Naheed Husain (ZWAI member), Sara Guigui (ZWAI member and Board member), Sarisha Harikrishna (ZWAI member), Olena Larionova (ZWAI member), Janine Boscheinen (ZWAI member and intern), Aindrila Mukherjee (ZWAI member) and Jack O’Sullivan (ZWAI founder and Vice-chair); with major editing by Sara Guigui and final editing by Jack O’Sullivan.

Rialtas na hÉireann
Government of Ireland

Appendix I

Public Consultation Whole of Government Circular Economy Strategy 2026-2028

September 2025

Prepared by the Department of
Climate, Energy and the Environment
gov.ie

How to Respond

Submissions may be made based on the questions set out in this Paper and it is not necessary to answer all questions. Additional comments outside the questions posed are also welcome.

The closing date for submissions is **5.30pm on Wednesday, 5 November 2025**

Submissions can be made by email to CircularEconomyConsultations@dcee.gov.ie or by post to:

Circular Economy Strategy Consultation

Circular Economy Strategic Policy Unit

Department of Climate, Energy and the Environment.

Tom Johnson House,

Haddington Road.

D04 K7X4

Jack O'Sullivan <jack@zwai.ie>

Fwd: ZWAI submission to the Whole of Government Circular Economy Strategy 2026-2028

Appendix II

---------- Forwarded message ---------
From: **Aaron Bayle (DCEE)** <Aaron.Bayle@dcee.gov.ie>
Date: Mon, 10 Nov 2025 at 14:44
Subject: RE: ZWAI submission to the Whole of Government Circular Economy Strategy 2026-2028
To: Sara Guigui <saraborkent2111998@gmail.com>

Good afternoon Sara,

I can confirm that we have received ZWAI's submission.

Many thanks to all of you at ZWAI for your consideration and input to the Strategy.

Kind Regards,

Aaron Bayle

Administrative Officer

Circular Economy Strategic Policy Section

An Roinn Aeráide, Fuinnimh agus Cumarsáide

Department of Climate, Energy and the Environment

Tor an Bhacaigh, Bóthar Haddington, Baile Átha Cliath, D04 K7X4

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