From: deirdre@igbc.ie
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To: circulareconomy
Cc: 'Marion Jammet'
Subject: CIRCULAR ECONOMY STRATEGY: DECC - PUBLIC CONSULTATION SUBMISSION
Attachments: IGBC_Submission_Final.pdf

Follow Up Flag: Follow up
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Please find attached the submission of the Irish Green Building Council (IGBC) on the proposed Circular Economy Strategy.

I would be grateful if you could acknowledge this submission.

Best,

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INTRODUCTION

The Irish Green Building Council (IGBC) welcome the opportunity to provide feedback on Ireland's First Whole-of Government Circular Economy Strategy.

The Irish Green Building Council (IGBC) provides leadership for a sustainable built environment. IGBC is a registered charity with over 220 corporate members drawn from all parts of the value chain, from occupiers, design professionals, contractors, suppliers, academics and public authorities and affiliated with a global network of 70 national councils within the World Green Building Council. This allows us to create workable solutions and tools to deliver transformative change towards a sustainable built environment. The IGBC has run a successful webinar series on construction and circularity (Building Circularity) and is currently involve in three projects to support the transition of the industry to the circular economy: CircularLife - EPA funded, LifeLevel(s) and #BuildingLife.

SUMMARY

- The IGBC welcome the publication of Ireland's First Whole-of-Government Circular Economy Strategy and the Department's full commitment to transition to a circular economy.
- The IGBC believe that the strategy must make it clear that circularity must become the new norm. To this end the strategy should articulate its overarching vision for the Circular Economy and how it can contribute to the elimination of waste, the maximisation of resource re-use and the development of an innovative national circularity market.
- To track and monitor progress, it is recommended to include measurable circularity targets as this is already done in the Netherlands, including sector specific targets.
- The use of reused materials should be prioritised as the most efficient way to reduce CO2 emissions and waste.
- While raising awareness about the Circular Economy and its benefits is important, it won't be enough on its own to transition to a circular economy. Regulation, incentives, and tools must also be in place to support the transition.
- The construction sector has significant environmental impact: Globally buildings account for 39% of global carbon emissions of which 28% arises from the operation of the buildings and 11% from the embodied carbon. The built environment also accounts for 50% raw materials used, 40% solid waste and 30% water used. With 500,000 homes to be built in Ireland by 2040, it is critical to focus on the construction sector as a key part of the action plan.
- It is critical to avoid a piecemeal approach to the challenge and to support cross-sector cooperation. For instance, while it may be easier to develop separate construction, transport and agri-food roadmaps, there are clear overlap between these strategies that should not be forgotten.
- More specifically, in relation to the construction industry, the following actions are needed:

  - Regulating whole life carbon to support the transition of the construction industry to the circular economy.
  - Ensure new built are constructed with reuse and disassembly in mind.
  - Ensure appropriate financial and technical support is in place for reuse of the existing building stock.
  - Develop a database for reuse of construction products
- As highlighted in the document, public sector leadership in adopting circular policies and practices is critical.
- GPP must be used to stimulate and support the development of the circular economy. Procurement is also a powerful tool for experimentation. Where circularity principles are used in public buildings, these should be used as learning and demonstration tools.
- Level(s) indicators relating to circularity should be used as part of public procurement. Level(s) is the EU Framework for sustainable buildings and one of the key actions in the EU Circular Economy action plan for construction.

CONSULTATION

We set out our responses to the questions included in the consultation below. All answers reflect IGBC members' positions and are directly related to construction and circularity.

Q1. Do you agree with the draft Strategy's proposed key objectives? In your view, are there further or alternative objectives that should be included?

The IGBC support the key objectives listed in the document. **It is suggested to add an overarching objective stating that circularity must become the new norm.**

It is also recommended to **add clear, measurable targets**. For instance: The Netherlands has set its sights on a **fully circular economy by 2050** and is working towards a 50% reduction in primary raw material use by 2030 (Commission, 2021).

Additional sectoral targets should be included. For instance, in the construction industry, minimum targets should be established for using reused/reusable and recycled/recyclable products/materials in new construction and renovations. Similar minimum targets should be established for recovering reused/reusable and recycled/recyclable products/materials from demolitions and eliminating landfilling.

Q2. Do you agree with the overall level of ambition set out in the draft Strategy? If not, is further ambition needed or is the draft Strategy overly ambitious?

The IGBC support the overall level of ambition set out in the draft strategy but the need to achieve a **systemically circular economy** must be made clearer. **Measurable targets** should also be included to allow for transparent and regular tracking of progress.

Given the **huge environmental impact of buildings**, there is an **urgent need to focus more on them as part of circularity strategies and policies**. Globally Buildings account for 39% of global carbon emissions of which 28% arises from the operation of the buildings and 11% from the embodied carbon (International Energy Agency, 2018) associated with the transport, manufacture of products, materials and site operations over the building life cycle (World Green Building Council, 2019). The built environment also accounts for 50% raw materials used, 40% solid waste and 30% water used (European Union). The IGBC hence welcome the development of sectoral circular economy roadmaps, including one covering construction. However, a **cross-sectoral approach is needed to deliver a low carbon, circular economy**. In particular, the link between the construction, transport and agri-food roadmaps must be made clearer. For instance, where we build our homes will have an impact on whether resource efficient personal mobility, public transport and shared mobility schemes are possible.

Q3. Should Ireland measure its progress in achieving a more circular economy relative to its European Union peers? If not, what alternative benchmark should Ireland adopt and why?

The EU has a comprehensive circular economy strategy and tools such as **Level(s) – the EU's Framework for a sustainable built environment** - to support the transition to a circular economy. Furthermore, several member states are well advanced on that agenda. **Comparing our progress relative to our European peers** and **looking for best practice** in these markets ensures alignment across the EU and this approach is fundamental to ensuring alignment with EU climate policies at sectoral level. However, **measurable short, medium and long national targets to track and monitor progress are also needed**. As previously mentioned, the best performing EU Member State in circular material use rate (i.e., the Netherlands) has set national targets.

Q4. Would you rate Irish public awareness of the circular economy as high, medium or low? And how important do you think raising public awareness is to further developing the circular economy?

In our opinion, awareness is low amongst households and individuals but slowly increasing. It is much higher amongst the cohort of people and organisations who already demonstrate an interest and awareness of sustainability issues, including members of the IGBC. Although not yet as high as energy efficiency and carbon emissions awareness, we have seen a growing interest in our workshops, training courses, and webinars in this topic area. For instance, 570 building professionals attended the IGBC's Building Circularity webinar series, and our Whole Life Carbon Training programme has been highly popular – 117 building professionals have been trained in this topic to date. More information on these training courses here.

General public awareness of terms like Circular Economy and Circularity are noticeably increasing, but awareness of what those terms mean and the theory behind them, and awareness of the practicalities of how the Circular Economy can be achieved at an individual

personal or organisational level are much lower. We believe that it is very important not only to increase the general levels of awareness of these concepts from a theoretical point of view, but even more important to increase the awareness of both the benefits of, and the need for adopting circular practices, and clear messaging on how Circularity can be applied in practice and how this supports climate, environmental quality and employment/innovation objectives.

Finally, while raising awareness amongst households, businesses, communities and individuals about the Circular Economy is important, it won't be enough on its own to transition to a circular economy. Regulation, incentives, and tools must also be in place to support that transition – See our responses to Q8 and Q9 for further details.

Q5. What are the most effective awareness raising measures that could be taken under the Strategy?

Multiple messages, strategies and routes are needed to better engage with various segments of society. Awareness campaigns should be well targeted and avoid jargon. **Different communication channels must be used to target various groups of society**. E.g., construction professional bodies have a key role to play in informing the industry about the benefits of the circular economy, tools.

Government leadership and clear political commitment is also required. As highlighted in the document, the **public sector must play an exemplar role in promoting circularity**. In the building sector, it could showcase good high-quality solutions in public buildings and social housing. For instance, high quality case studies on how town and village centres buildings can be reused should be made available. Furthermore, **where circularity principles are used in public buildings, these should be used as learning and demonstration tools**.

In relation to the built environment, it is important to **raise awareness about the environmental impact of construction materials and oversized buildings, and to encourage reuse of the existing building stock**. This will require a sustained national awareness campaign to communicate and drive the understanding, acceptance, necessity and value of re-using buildings not just for circularity reasons but also for heritage and housing provision reasons. In addition the public should be made aware of the sustainable materials consumption, as well as considering the appropriate size of the building to ensure it achieves social acceptance as normal. For instance, 5,000 single houses represented 25% of completed houses in Ireland in 2020, but these also represent 38% of embodied emissions associated with total housing stock.

Q6. Are you satisfied with the proposed stakeholder engagement arrangements in the draft Strategy? Which additional stakeholders (if any), not already part of the Waste Action Group, do you think should be included in the Strategy's implementation?

To reach its full potential, **the strategy must be defined and implemented in a transparent, fair and inclusive way.**

The IGBC hence welcome the Department's commitment to actively seek the views of stakeholders with a view to improving policy design and avoiding negative socioeconomic outcomes. The publication of the strategy should mark the beginning of this engagement, not the end of the process. An open and collaborative co-design approach must be taken for the implementation of the strategy to provide all key stakeholders with opportunities to engage. To achieve this objective, the **Department must ensure all key players (including from specific sectors) are invited to join the Circular Economy Advisory Group**. As a membership organisation working to inform, educate and advocate for low carbon construction and circularity practices, the IGBC would be delighted to support the work of that group. **Additional stakeholders and speakers may also be invited to join these meetings on a case-by-case basis**, e.g., to share best practice and inspiring solutions.

Finally, **regular updates on the work of the Circular Economy Working Group,** through the Circular Economy Advisory Group and/or simple quarterly ezine, should be provided.

Q7. What do you see as the major economic and/or social co-benefits of moving towards a more circular economy in Ireland, so that environmental improvements also provide economic and social opportunities, and vice versa?

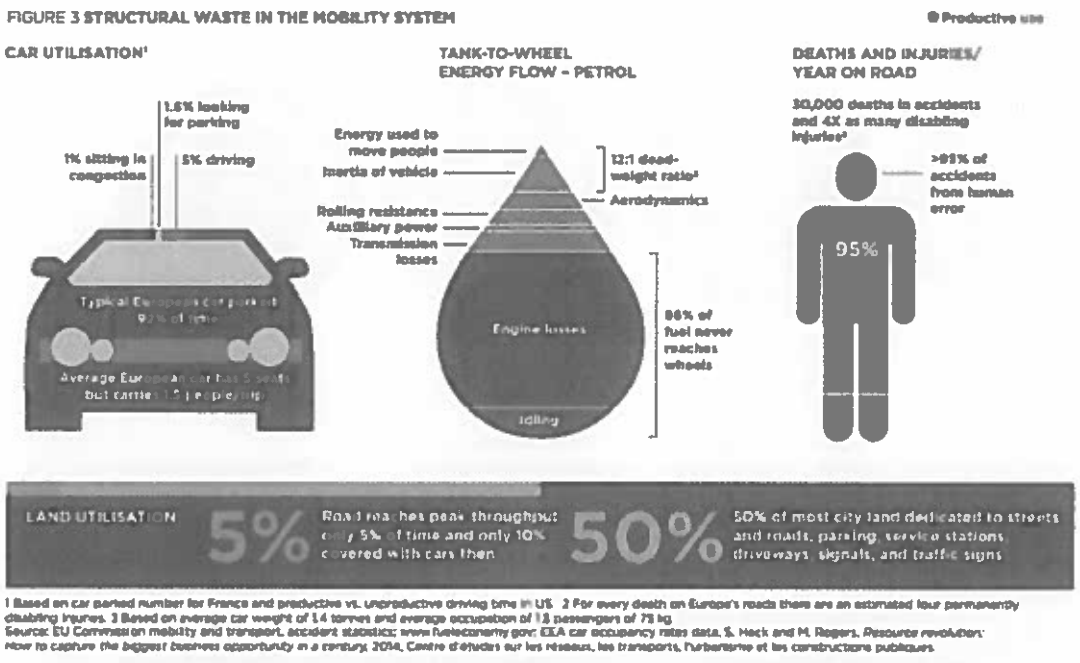
Circularity can provide an increased level of self-sufficiency and reduced risk associated heavy dependence on importation that would benefit us as an island nation that is currently depended on large quantities of imported fossil fuels products, and materials, especially considering the supply disruptions seen recently due to both Covid-19 and Brexit. Circularity could help to insulate Ireland against some of the worst impacts of volatility in future supply disruptions caused by climate change, and potential future pandemics or international trade and political instabilities.

Circular and reuse business models (e.g., industrial symbiosis, buildings as material banks) can also be labour intensive and have the potential to generate significant levels of employment in Ireland. In 2015 briefing from RREUSE shows that the job creation potential of the re-use sector is significantly higher than recycling, incineration and landfill. The report cites US figures showing that for 10,000 tonnes of waste products and materials, 1 job would be created if incineration were used compared to 6 jobs in landfill, 36 jobs in recycling, and up to 296 in refurbishment and re-use. Data from Komosie, a Belgian network of approved re-use organisations suggests even greater potential for re-use, at 800

jobs for 10,000 tonnes (RREUSE, 2015). According to more recent RREUSE figures, the potential for job creation in the social enterprise reuse sector (based on data collected from 27 RREUSE members, and 30 social enterprises) is on average 70 jobs per 1000 tonnes of waste collected (CRNI, 2021).

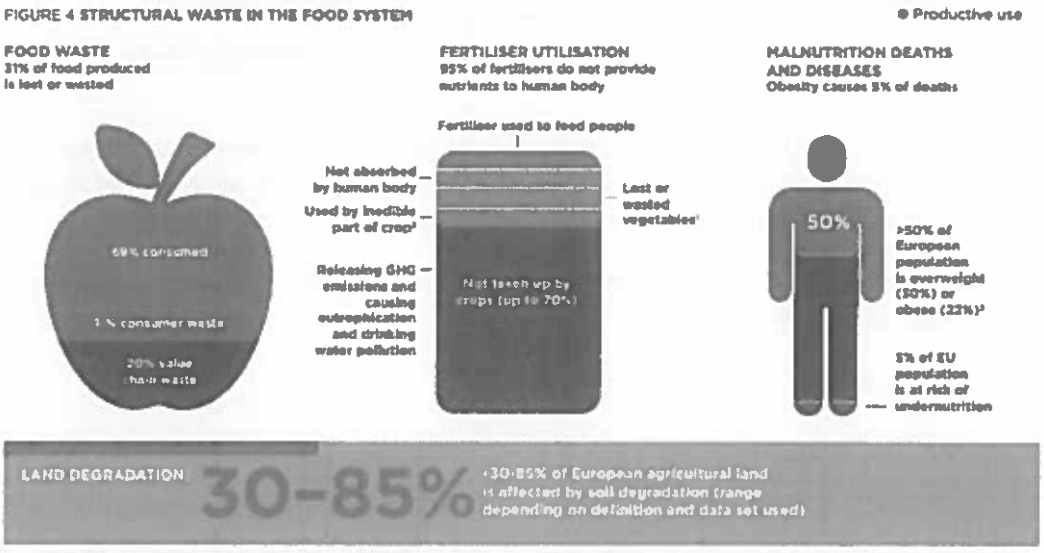
Jobs in reuse are not limited to social enterprises or charity shops and they can be across the spectrum of skill and education levels; from collection and sorting of materials, deconstruction of elements, recycling, project management, resource management, green procurement, and administration, transport, storage, and resale, to designing, maintaining and analysing databases of materials, generating materials passports and Environmental Product Declarations (EPDs), using blockchain and smart contract technology to facilitate material exchanges, and so on.

There is also potential for business to decrease their costs, increase their profits, and develop new and innovative income streams, for example, leasing instead of buying/selling high-end washing machines could save money for the customer (by one third), while also increasing profit to the manufacturer (also by one third) (EMF, 2021). There are various multiplier effects of a circular economy, for example, a report by (EMF & McKinsey, 2015) suggests that (in a Circular Economy) the disposable income of European households could be as much as 11 percentage points higher in the circular scenario relative to the current development path, or 7 percentage points more in GDP terms. A Circular Economy would tackle 'structural' waste in areas such as transport, food, and the built environment, creating better places to live and work, generating savings to the general public and the exchequer through increased health and wellbeing, and through efficiencies in systems, and better use of land, energy, and resources.



1 Based on car parked number for France and productive vs. unproductive driving time in US. 2 For every death on Europe's roads there are an estimated four permanently disabling injuries. 3 Based on average car weight of 1.4 tonnes and average occupation of 1.3 passengers of 75 kg.
Source: EU Commission on mobility and transport, accident statistics; www.fueleconomy.gov; EEA car occupancy rates data, S. Heck and M. Rogers, *Resource revolution: How to capture the biggest business opportunity in a century*, 2014, Centre d'études sur les réseaux, les transports, l'urbanisme et les constructions publiques

Figure 1: Structural Waste in the Mobility System (EMF & McKinsey, 2015)



1 In Europe ~46% of edible mass of fruit and vegetables is lost or wasted (FAO, Global food losses and food waste, 2011).
2 On average 23% of vegetable crops are not edible (peels, leaves, etc.) 3 BMI >25 (overweight) or >30 (obese).
Source: FAO, *Global food losses and food waste – Extent, Causes and Prevention*, 2011; HSE, *Overcoming obesity: An initial economic analysis*, 2014; WHO website obesity data; EEA, *Towards efficient use of water resources in Europe*, 2012; IFDC; Olle Langqvist and Frank de Man, *Under-nutrition – a major health problem in Europe*, 2008; Molly Gibbs and Meghan Salmon, *Mapping the world's degraded lands*, 2015.

Figure 2: Structural Waste in the Food System (EMF & McKinsey, 2015)

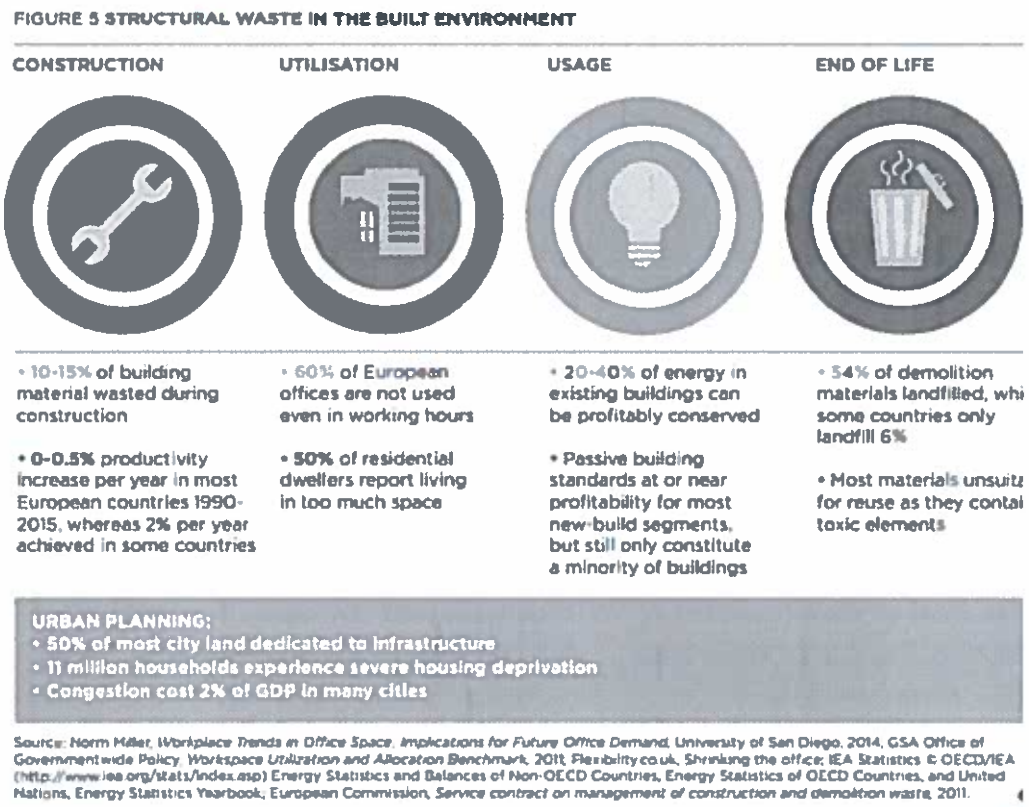


Figure 3: Structural Waste in the Built Environment (EMF & McKinsey, 2015)

Q8. What do you see as the major regulatory barriers to the further development of the circular economy in Ireland? In answering this question please feel free to address economy-wide issues or those affecting your sector in particular.

Main regulatory barriers to further development of the circular economy in the built environment in Ireland include:

- **Whole life carbon is not currently regulated**

In the same way that regulation drove a 70% improvement in energy efficiency of new houses between 2008 and 2019 and the resultant innovation from manufacturers in products to create more energy efficient products and solutions, better use of the existing stock and greater use of low carbon and reusable materials will also result from regulation. More specifically, building materials embodied carbon should be regulated in Ireland within 4 years - This is already regulated in the Nordic Countries, France and the Netherlands. In the shorter term, this agenda could be driven through the planning process and public procurement.

The planning system could be used to signal that demolition is not acceptable in development, unless there is a clear case to do so and the carbon metrics both stack up and are reported upon. In the UK for example, the London Borough of Camden's Development plan provides that a case must be made by applicants, by way of comparison of the full Whole Life Carbon calculation, of the impacts of renovation against the proposed new build, as well as other criteria such as threshold of density achieved. Mandating a reuse potential assessment (as included in the French Climate Law, 2021) and/or a Whole Life Carbon assessment as part of planning permission would also support reuse and reduce embodied emissions.

The application of Life Cycle Assessment (LCA) in public procurement could also support this transition – See Q10.

- **New Build must be constructed with reuse and disassembly in mind.**

This could be supported by mandating the use of universal design to ensure long term flexibility. It would also be worth exploring the opportunity of mandating that materials are connected mechanically in buildings so that they can easily be disassembled. Glues are often used because aesthetically they give clean lines but prevent the reuse of materials. The introduction of digital logbooks that include passports materials should also be explored (at the very least for new built) to support reuse - see the H2020 Buildings as Material Bank project for further information.

Other options to be explored include:
- Establishing minimum targets at design stage for using products/materials that are/could be reused and recycled.
- Establishing minimum targets for using reused/reusable and recycled/recyclable products/materials in new construction and renovations.
- Establishing minimum targets for recovering reused/reusable and recycled/recyclable products/materials from demolitions and eliminating landfilling.

Finally, at EU level, Ireland should support new requirements for information on circularity performance of different building components and subcomponents as part of the revision of the Construction Product Regulation.

- **Supporting the take up of new technologies**

It can be very difficult to incorporate new technologies in SEAI – DEAP software database. There is a significant delay in gaining approval for new technology products and uploading them onto the database, which act as a barrier to innovation. As this could slow down the transition to a low carbon, circular economy, introducing a fast track for new products and technologies should be considered. Alternatively, SEAI could be mandated to update the database quarterly or biannually. There is also a need to more proactively enable newer technologies, making it faster for them to get the required agrément certificates.

In fact, one barrier to innovative construction materials is TGD Part D of the building regulations and the costs of introducing new materials to the very small Irish market. For example, in the renovation sector none of the newer low carbon insulations that are recommended for use in traditional buildings can be used without additional hygrothermal analysis work to prove at the building level that they are fit for use. This is despite the fact that they already have a European Agrément from country of origin. Any additional requirements to demonstrate fitness for use in Irish climate should be proportional to the market and cost effective if we are to see more innovation and uptake of innovative materials and solutions.

Q9. What do you see as the major non-regulatory barriers to the further development of the circular economy in Ireland? In answering this question please feel free to address economy-wide issues or those affecting your sector in particular.

The main non-regulatory barriers to further development of the circular economy in the built environment in Ireland include:

- **Lack of appropriate support for reuse of the existing building stock**

The greenest buildings are almost always the ones that already exist. Yet, too often our city, town and urban centres are blighted with abandoned and underutilised buildings. Barriers to the re-use of these buildings are perceptual, technical and financial. Besides a lack of awareness of the importance of reusing buildings, there is a lack of good quality case studies and technical support – E.g., There is no one-stop-shop for retrofit and reuse of buildings in town and village centres. Existing tax incentives, such as the vacant site levy are not currently working effectively Changes to our taxation system should be explored, including:

Better connection between **retrofit grants and tax incentives** with **other schemes such as the Living City Initiative** to encourage investments in town and city centres.

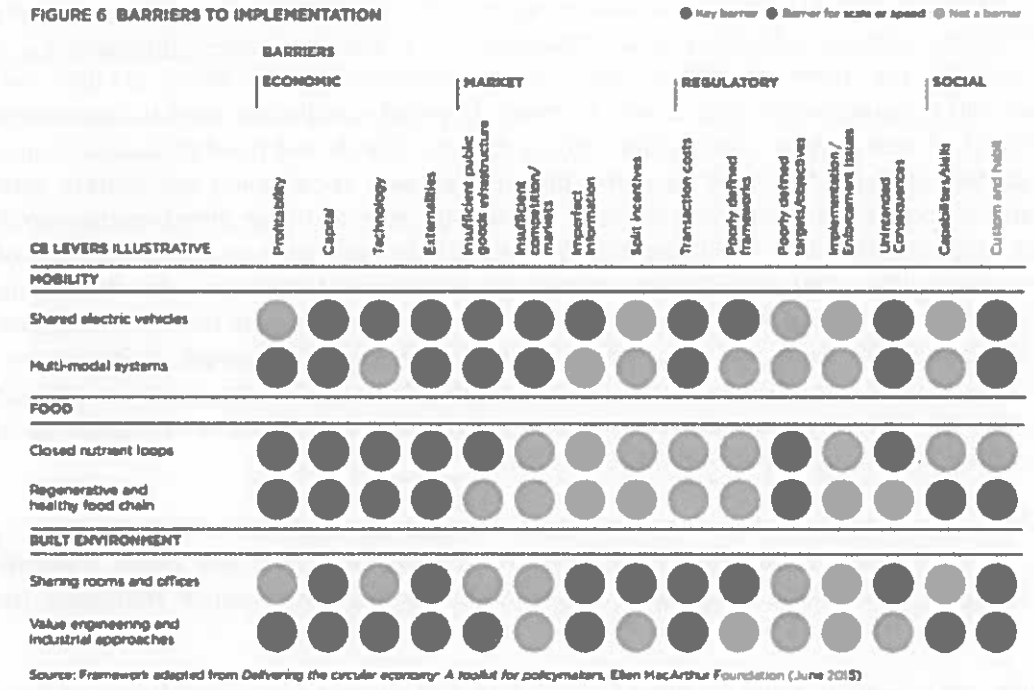
Considering **introducing higher tax on vacant and under-used properties**, as this is done in Denmark. An alternative is to **introduce site area or site-value based taxes** to encourage owners to bring to market corner sites, back lands, etc.

A database of underutilised building stock available for purchase for housing to support renovation across Ireland (see ReUsing Dublin/Space Engagers research).

- **Lack of database for reuse of construction products**

There is currently no database for reuse products in the construction sector in Ireland. Given the direction of travel in circularity, there needs to be a central platform for information on sourcing reusable construction waste in Ireland for both the public, commercial and general consumer sector. The introduction of a digital building logbook for new built, including information on materials used, could also support this transition.

FIGURE 6 BARRIERS TO IMPLEMENTATION



Source: Framework adapted from *Delivering the circular economy: A toolkit for policymakers*, Ellen MacArthur Foundation (June 2015)

Q10. How important do you consider Green Public Procurement is in supporting the development of new circular goods and services?

A substantial part of public investment in our economy is spent through public procurement. In Ireland, the Government is the largest purchaser of goods and services in the economy - and thus has the potential to provide significant leverage in seeking to influence the market and to achieve environmental improvements. Furthermore, as highlighted in the document the public sector must lead by example.

When it comes to waste prevention in the built environment, it is important to explore reuse as opposed to demolition and rebuild. The public sector could adopt a renovate first approach to avoid demolition of publicly owned building stock (including housing) and require projects to undergo a whole life carbon assessment - this will ensure that embodied carbon impact is fully factored into appraisals. As a growing number of countries now regulate embodied carbon this would encourage upskilling in the industry and support the development of new materials, which in turn would support Ireland's competitiveness.

Procurement is also a powerful tool for experimentation and market development to accelerate innovation. A high-quality case study on how buildings could be designed for circularity through public procurement would also be useful to demonstrate the feasibility of procurement of reuse construction projects.

The IGBC also believe that the Level(s) indicators relating to circularity should be used as part of public procurement. Level(s) is the EU Framework for sustainable buildings and one

of the key actions in the EU Circular Economy action plan for construction. It encourages lifecycle thinking, resource efficiency and circularity. For instance, Level(s) Indicators 2.4 and 2.3 address the need to design with future adaptability, flexibility of use and disassembly and deconstruction and re-use in mind. Level(s) specifically aims to harmonise the assessment of sustainable construction across Europe. We do not need to duplicate and localise a global problem. We need to join a global approach. By aligning our system with Level(s) (and therefore others across Europe) we will be able to make direct comparisons with similar projects overseas. The benefit is that we quickly build up a consistent picture of what good looks like, can set targets based on measurements that use the same methodology and can quickly and easily transpose ideas and methods as they are based on the same indicators – in short, we will all be working in the same framework. Furthermore, Level(s) is fully aligned with EU taxonomy for sustainable finance. The taxonomy spells out detailed technical criteria to identify sustainable activities and requires a transition to a circular economy in the built environment, under which

"at least 70% (by weight) of the non-hazardous construction and demolition waste (....) generated on the construction site is prepared for reuse, recycling and other material recovery, including backfilling operations using waste to substitute other materials (p. 166)".

Finally, public procurement could be used to stimulate and support the development of local secondary materials market and low carbon construction materials, including bio-sourced materials. Besides making Ireland more competitive as a growing number of countries regulate embodied carbon, this would support the diversification of the agriculture sector and make it more sustainable.

Useful documents:

- Guidance on criteria for circular construction procurements
- Public Procurement of Circular Construction Materials -Best practice cases from cities of the Big Buyers Initiative

Q11. What would be the most effective action the Government could take to promote/support and incentivise the further development of the circular economy?

Raising awareness about the waste hierarchy pyramid and the circular economy is critical. But this must be complemented by appropriate regulation and supporting measures to support the transition. Given the **huge environmental impact of buildings**, the priority should be to **focus more on them as part of our circularity strategies and policies**

Q12. Which sectors do you think can make the biggest contribution to making Ireland's economy more circular?

As mentioned previously, globally buildings account for 39% of global carbon emissions of which 28% arises from the operation of the buildings and 11% from the embodied carbon (International Energy Agency, 2018) associated with the transport, manufacture of products, materials and site operations over the building life cycle (World Green Building Council, 2019). The built environment also accounts for 50% raw materials used, 40% solid waste and 30% water used (European Union).

It is estimated that 500,000 homes must be built in Ireland by 2040. This will have significant environmental impacts, including on CO2 emissions, resources consumption, land use and biodiversity. For instance, the 'embodied' emissions associated with the construction of these homes will be each year equivalent to bringing a new Moneypoint coal burning power station online. It is hence critical to focus on the construction sector as a key part of the action plan.

Q13. Do you broadly agree with the policy areas listed for future development in the draft Strategy? If not, which areas would you remove/add to the list?

The IGBC broadly agree with the policy areas listed for further development and the list of circular economy sectoral roadmaps to be developed. However, it is critical to avoid a piecemeal approach to the challenge and to support cross-sector cooperation. While it may be easier to develop separate construction, transport and agri-food roadmaps, there are clear overlap between these strategies that should not be forgotten: Where we build our homes will impact the transport strategy and how we build them could impact the agri-food strategy (i.e. use of low emission construction products such as timber).

Transport is Ireland's second and fastest growing source of carbon emissions. All new developments should prioritise mobility solutions, in which walking comes first, bicycles second and public transport third. Cars, including EVs should only come in fourth place but preferably only in 'pay per use' schemes such as carsharing. All new homes must be non car dependent.

Mandating whole life carbon assessment in the built environment should drive demand for low carbon intensity construction product materials, including bio-sourced materials - Anecdotal evidence from our colleagues in Dutch and French GBCs indicate this is what has happened in their market.. The development of a bio economy is dependent on supporting farmers and foresters to grow a greater range of crops that can be used for construction materials. To date the emphasis has been on growth of biomass for fuel. Projects such as the H2020 Agri4valor have highlighted the potential for agriculture-based construction products. There is currently almost no production of bio-based materials for construction apart from OSB boards and MDF. There is a wide range of materials that can be developed in the construction sector, including fibre insulation board from wood and hemp fibre, bio fibre reinforcing to replace plastic fibres, cross laminated timber construction, etc.

Q14. Any other comments?

All the Circular Economy Sectoral Roadmaps should take a waste prevention approach, using the Lansink Ladder. Bringing stock back into occupancy, designing to right size and for re-use should hence be the priority.

Call for Case Studies

A number of case studies are included in Towards a circular economy in Construction (IGBC, 2018).

Good quality international case studies are included in the Norwegian's Think twice before demolishing report, which also includes recommendation on how to better communicate the importance of reusing existing buildings and structures.

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