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Cc: David Howard
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Follow Up Flag: Follow up
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Attached please find a short submission from Cement Manufacturers Ireland on the Eastern & Midlands Draft Regional Spatial and Economic Strategy.

Please do not hesitate to contact me if you have any questions.

Best Regards
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CMI is a business association in Ibec representing Ireland's cement industry.



The Eastern and Midlands Regional Assembly

**Draft Regional Spatial &
Economic Strategy**

Submission by

Cement Manufacturers Ireland

January 2019

Executive Summary

The member companies of Cement Manufacturers Ireland (CMI) welcome the publication of the Eastern and Midlands Draft Regional Spatial and Economic Strategy (RSES) and the opportunity afforded to stakeholders to provide further submissions.

The current Draft of the RSES does not recognise the fundamental role of cement manufacturing, as essential to the long-term sustainable development of the region, and the country as a whole. In simple terms, it is the cement industry that utilises the Region's abundant natural resources and transforms them into cement, the first building block essential to deliver the key development ambitions as set out in the 'Strategic Vision' of the RSES.

- **The members of CMI would welcome recognition in the RSES of the fact that the cement and concrete industries in Ireland are committed to ensuring sustainable management of our natural resources; to building climate resilience and to supporting the transition to a low carbon economy by 2050.**

The RSES Regional Policy Objective **RPO 7.40**: states '*Support and promote structural materials in the construction industry that have low to zero embodied energy & CO2 emissions.*'

- **The good news is that concrete is a low carbon, low embodied energy construction material that continues to deliver on the Assembly's objective while at the same time providing the Region with resilient and resource-efficient buildings and infrastructure. Concrete is a locally sourced and manufactured material which is essential to the provision of 'healthy and attractive places to live, work, visit and study', in the Region and throughout the country.**
- **CMI members would urge that the RSES support sustainability standards and regulations, such as public procurement policies, that are "material neutral" and take a "whole-life" approach, looking at the performance of the whole building rather than its individual components. In addition, recognition that to achieve the ambition of carbon neutrality in the built environment requires a collaborative approach across the whole construction value chain.**

CMI members look forward to engaging with the Assembly as the Regional Spatial & Economic Strategy is developed to ensure appropriate acknowledgement of the significant role our members play in enabling the ambitious vision of a prosperous, carbon neutral future for all.

Introduction

Cement Manufacturers Ireland

Cement Manufacturers Ireland (CMI) was established in Ibec in 2003 and has three members in the Republic of Ireland; Irish Cement, Lagan Cement and Quinn Cement and an associate member in Northern Ireland - Lafarge Cement.

The members of CMI support 2,000 direct and indirect jobs in Ireland. The members compete on the island of Ireland to supply cement products to the domestic construction market and are also involved in the export of cement products to other European markets. The industry has invested in modern manufacturing facilities and operates to the highest international and European standards. CMI is a member of the European Cement Association, CEMBUREAU and an affiliate member of the Global Cement and Concrete Association.

Discussion

Draft Regional Spatial and Economic Strategy

CMI has already provided a short submission on the Initial Public & Stakeholder Consultation Issues Paper, in which we called on the Assembly to acknowledge the importance of the cement industry and other primary industry to the continued balanced development of the Region. Our members are disappointed that the current draft of the RSES makes no specific reference to primary manufacturing industry.

There are a number of references throughout the Draft to 'manufacturing' but primarily in the context of 'high-tech', 'advanced', or 'smart' and therefore the opportunity to recognise the vital role the modern cement and concrete industries play in building a balanced future for the Region has been missed.

Cement manufacturing is a highly regulated industry, it is a high-tech, high temperature operation carried out in modern well equipped factories. In Ireland our members have continuously invested and upgraded their factories over recent years so that today they now rank among the most energy efficient cement factories in Europe. Our cement products are independently certified by NSAI to European and National Standards and innovation is also evident with the advent of 'CEM II' new lower carbon cements. While the cement industry in Ireland can trace its roots back to 1938, it can be rightly considered 'high-tech', 'advanced' and 'smart' and making a vital contribution in our modern and vibrant Regions.

Section 4.8 'Rural Areas' of Chapter 4 of the Draft does reference 'natural resources'; *Rural areas in the Region, including the Gaeltacht area, contribute to Ireland's unique culture, and provide significant natural resources, biodiversity, environmental qualities and landscape features. In terms of economic development, the agri-food and tourism sectors are key employers in rural parts of the Region. The draft RSES supports tourism development and promotional branding to ensure that areas like the Midlands and Lakelands are developed and promoted to tap into the economic potential of rural areas.*

Our members' cement factories are predominantly located in rural locations where they provide stable local employment for a skilled labour force as well as significant positive economic benefits to the wider Region. The RSES should recognise the critical role primary industry, like cement manufacturing plays in developing Ireland's natural resources and in underpinning the secondary and tertiary construction, manufacturing and service industries throughout the country.

There is an oblique reference to our sector in Chapter 7 'Environment' of the Draft that *'The Region's natural capital can be defined as our stock of natural assets from which people derive a wider range of services, called ecosystem services, which includes clean air and water, the food we eat, and the resources we use for fuel, **building materials** and medicines. [emphasis added].*

The role of 'building materials' and construction is so essential to meeting the Region's housing and infrastructure needs that it is disappointing that more reference to the fundamental importance of the sector is not made.

Our cements, and the concrete and concrete products derived from it, are central and essential elements in achieving the **Vision and Guiding Principles** as set out in the **Strategic Vision**. The vision identifies the central need for the RSES to be people focussed', as *'quality of life encapsulates strong economic output and stability, good environmental performance and a good standard of living for all'*.

The three key principles of this vision are outlined in the Draft and we would draw the Assembly's attention to the fact that cement and concrete can be viewed as essential elements in delivering these key principles for the Region.

The 3 Key Vision and Guiding Principles are:	Cement and Concrete the essential elements
<p>Healthy Placemaking</p> <p><i>To promote people's quality of life through the creation of healthy and attractive places to live, work, visit and study in.</i></p>	<p>'healthy and attractive places to live, work, visit and study' cannot be achieved without cement and concrete, these are the core elements in the fabric of our built environment.</p>
<p>Climate Action</p> <p><i>The need to enhance climate resilience and to accelerate a transition to a low carbon economy recognising the role of natural capital and ecosystem services in achieving this.</i></p>	<p>Concrete is unrivalled when it comes to providing resilient and durable defences as our town and cities adapt to more extreme weather events predicted for the future. In addition concrete is a low embodied carbon construction material.</p>
<p>Economic Opportunity</p> <p><i>To create the right conditions and opportunities for the Region to realise sustained economic growth and employment that ensures good living standards for all.</i></p>	<p>Our members' cement factories are predominantly located in rural locations where they provide stable local employment for a skilled labour force as well as significant positive economic benefits to the wider Region.</p>

The Draft RSES sets out Regional Policy Objective (RPO) 7.40 which states;
Support and promote structural materials in the construction industry that have low to zero embodied energy & CO2 emissions.

Building Standards Energy Performance. The design, construction and operation of new buildings has a significant role to play in reducing energy demand and increasing energy efficiency into the future. Careful consideration should also be given to the adaptability of buildings over time, to enable the building stock to be retrofitted or refurbished to meet higher energy efficiency standards into the future.

Cement and Concrete: the essential elements

Concrete is crucial to building our carbon neutral future. Be it the foundations and towers of wind turbines, hydro or tidal power projects, energy efficient buildings, new transport infrastructure or projects aimed at adapting to climate change; concrete delivers performance, resilience, and durability.

The recent Chatham House Report '*Making Concrete Change, Innovation in Low-carbon Cement and Concrete*' confirms that concrete has low embodied CO₂ compared to most other construction materials¹. Few other materials provide the versatility, resilience, safety, and durability as well as high thermal mass, which makes concrete a highly energy efficient construction material. Thanks to their durability, concrete structures can last 100 years or more, which means resources and emissions are dramatically reduced compared to other structural materials with shorter lifetimes. Concrete is a local material available in the Region and at the end of its life, concrete is 100% recyclable.

Buildings are responsible for 36% of CO₂ emissions in the EU and 40% of the energy consumption². For this reason, examining the entire life-cycle of buildings and infrastructure, to drive emissions reductions is essential in order to move the building sector towards full carbon neutrality. The Global Alliance for Buildings & Construction³ identified several levers available to achieve this, including: nearly-zero energy buildings (nZEBs), deep renovation, better building management, and production of low-carbon energy. They identified that cement and concrete have a very significant role to play in each of these.

Concrete for efficient heating and cooling

Conventional buildings use 150-200 kWh/m²/year. By contrast, today's modern concrete buildings, thanks to thermal mass, long-lasting air-tightness, and other measures, can be designed to use 50 kWh/m²/year or less⁴. "Thermal mass" refers to concrete's unique ability to store energy and release it over a daily cycle, leading to reduced energy for heating and cooling, and more comfortable indoor spaces. Thermally activated concrete, where heating or cooling is delivered through pipes embedded in the concrete, further enhances the thermal mass effect.

¹ *Making Concrete Change: Innovation in Low-carbon Cement and Concrete, Chatham House Report June 2018.*

² <https://ec.europa.eu/energy/en/topics/energy-efficiency/buildings>

³ <https://www.globalabc.org/>

⁴ *Thermal Mass. The smart approach to energy performance by CEMBUREAU (2015)*

As Ireland decarbonises its electricity supply by moving to more renewable sources, and as buildings become increasingly heated and cooled by efficient, electrically driven heat pumps, concrete offers the best way to take advantage of this low-carbon energy. This is because, as well as making buildings more energy efficient, the thermal mass of concrete buildings can be used to store energy and better match the energy demand with the natural fluctuations in availability of supply from renewable energy sources. This is known as “demand response”. A study by The Concrete Initiative⁵ showed that the flexibility provided by the thermal mass of buildings could lead to significant savings both at the level of the electricity grid (e.g. by a reduction of the need for excess capacity to cover demand peaks up to 50%) and at the level of individual buildings, with a resulting higher penetration of renewable energy and CO₂ emission reductions (up to 25% CO₂ savings per structure).

Concrete structures built to last

When it comes to renovation of existing buildings, concrete is the material of choice. Thanks to its durability, concrete structures can last several renovation cycles without the need to be rebuilt. This being said, it is worth remembering that overall renewal of the building stock to make it more energy efficient also includes the option of rebuilding – which in many cases can be the preferable option from an economic, energy efficiency, and social point of view.

Smart concrete

At the individual building level, “better building management” which includes both user behaviour and automation of controls can achieve higher levels of comfort and improved efficiency. “Smart” (automated) control of heating and cooling through thermally activated concrete, in communication with the smart electricity grid, is one of the best ways to manage supply and demand, fully use all available renewable energy and also take advantage of natural passive solar gain.

Concrete for renewable energy production and low CO₂ transport solutions

The description of whole-life CO₂ savings of concrete buildings above can also be applied to the use of concrete in infrastructure, thanks again to its durability and resilience. Concrete bridges and tunnels reduce emissions from vehicles by providing more efficient and faster routes for traffic, while renewable energy infrastructure such as dams and onshore and offshore wind farms would not be possible without concrete.

Concrete is also essential in the Region to ‘Build Climate Resilience’, one of the Regional Strategic Objectives set out in the Draft. Concrete has a vital role to play in coastal protection works and local flood relief schemes as the Region adapts to deal with expected increased flooding and coastal erosion risks.

Innovative future concrete solutions

If the construction sector is to become carbon neutral, technology and innovation during both the construction and use phase of the built environment need to play an important role. This is why, in addition to the more conventional contribution to

⁵ *Structural Thermal Energy Storage in Heavy Weight Buildings, Analysis and recommendations to provide flexibility to the electricity grid (2016) by 3E for CEMBUREAU*

reducing lifecycle emissions described above, the cement and concrete sector continues to innovate to achieve additional life-cycle CO₂ savings.

Like other industries and services, the construction sector will be transformed by digitalisation. From greater precision thanks to industrialised production and progressive innovation from 3D printing, integration of embedded sensors and computer chips to supply chain optimisation, carbon emissions throughout the construction sector will be driven down further. In addition, when planning the life of a building, architects also innovate to develop designs that allow for greater modularity of a construction. This means that a building could be adapted to new uses through its lifetime. Consequently, building elements, or even entire buildings, could become modular and re-usable. The advancement of solutions that reduce the amount of materials needed, that reduce waste, and therefore increase material efficiency, can be expected to increase as construction becomes 'smarter'. Concrete proves to be a material of choice for that purpose.

The challenge ahead

The challenge is there for all industry, including the construction sector, to be carbon neutral, circular, and yet remain competitive. Our members are working with our customers in the concrete industry to continue to reduce the carbon footprint per tonne of concrete by using low-clinker cement, using it more efficiently, optimising the concrete mix, aggregate packing, and fine-tuning additives within the concrete, whilst helping to deliver the same performance and strength.

It is clear that cement and concrete solutions can and must effectively contribute to a carbon neutral society in the Region; we can change the way we build; ensure technology and low carbon innovations can be adopted across the construction value chain, and improve concrete re-use and recycling. This can be achieved by focusing on a material neutral and life-cycle performance-based approach that considers the whole value chain of our built environment.

Summary

The cement industry in Ireland is an indigenous primary industry with a long heritage. It is a modern manufacturing industry providing local employment, maximising resource efficiency and producing certified high quality cement products needed to make concrete, the essential foundation for Ireland's built environment.

The industry is continually improving and the domestic construction sector today benefits from more sustainable cement products as a result of three primary cement industry initiatives and investments:

1. Energy efficient cement plants operating to Best Available Technology
2. Fossil fuel replacement programmes using alternative fuels derived from residual waste generated here in Ireland. CMI members used over 220,000 tonnes of alternative fuels in 2017, and
3. Clinker substitution in the manufacture of CEM II lower carbon cements in line with the European Cement Standards.

Taken together, these initiatives are allowing the industry to transition effectively to a low-carbon and climate resilient future which directly benefits our modern built environment, through lower carbon concrete.

Concrete is a fundamental requirement in any modern developed economy. Concrete is a low carbon, low embodied energy construction material that is essential for resilient and resource-efficient buildings and infrastructure. Concrete is a locally sourced and manufactured material which enables the provision of 'healthy and attractive places to live, work, visit and study', in the Region and throughout the country.

As a key tenet of Ireland's economic growth and development, we would look for the Eastern and Midlands RSES to recognise the role of primary industries, and specifically, our members cement factories in underpinning employment in the local, regional and national economy.

CMI members would urge that the RSES support sustainability standards and regulations, such as public procurement policies, that are "material neutral" and take a "whole-life" approach, looking at the full life-cycle performance of the building.

CMI members look forward to remaining engaged with the Assembly as the Regional Spatial & Economic Strategy is developed. In addition, we would be delighted to host a visit to one of our members cement factories if that was of interest to members of the Assembly.