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On Behalf Of:
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Concrete is one of the most widely used materials in infrastructure projects and is also a primary contributor to embodied carbon in the built environment. Similarly, the US steel industry is responsible for 104.6 MMT of CO₂ emissions annually, a contribution that makes up 2% of total US emissions. Steel destined for the built environment is responsible for 46 MMT of CO₂ emissions annually, nearly half of the total annual emissions from the steel industry.

A recent case study analysis by RMI shows that simply by specifying concrete and rebar products with lower CO₂e content, the embodied carbon of those products can be reduced up to 33% and 10% (respectively), and even more in infrastructure projects.

Both concrete and steel offer opportunities for embodied carbon reduction. Each of concrete's constituent materials offers opportunities for reductions in embodied carbon, the high embodied carbon of concrete is primarily driven by the manufacture of one key ingredient—ordinary Portland cement. Portland cement is the most common cementitious binder used in concrete mixtures in the US, and the US cement industry is one of the most significant contributors to US-borne emissions at 68.3 million metric tons (MMT) of CO₂ eq. per year. The construction industry's demand for concrete accounts for an estimated 51% of total Portland cement produced in the US.

Oregon can drive significant embodied carbon reductions by implementing regulations that address the reduction of CO₂e in concrete used in infrastructure. Including embodied carbon considerations in specifications will not only decrease the carbon impact of Oregon's construction industry but will also support local economic development towards low carbon business models.

While I support the Oregon Department of Transportation in establishing a pilot program to reduce greenhouse gas emissions since concrete and steel are the infrastructure products with the highest amount of embodied carbon, a GWP limit per material should be required. Providing EPDs creates awareness and is a great educational tool, but it does not necessarily lead to specific GHG reductions. Therefore, as part of this plan, I would like to see ODOT adopt a GWP threshold approach, similar to US General Services Administration's approach, but with regionally studied and set targets (<https://www.gsa.gov/about-us/newsroom/news-releases/gsa-announces-actions-to-reduce-emissions-from-building-materials-02152022>.) Setting GWP limits supports quantifiable GHG emissions reduction for concrete and steel products.

I continue to study the impacts of reducing embodied carbon on the built environment, and it's clear that to reach Oregon's GHG emission reduction goals, both operational and embodied emissions must be addressed in the built

environment. In addition, I have reviewed thousands of concrete and steel EPDs to propose nationwide GWP limits for concrete and steel in the International Building Code. The number of EPDs are increasing daily, and the data exists to set GWP limits. Procurement policies are moving the market, and when this policy is enacted, the market will have evolved faster to meet lower GWP targets for concrete and steel materials. Oregon manufacturers will be prepared to show the nation our environmental leadership, driving economic opportunities to the state.