

Why Have Steel Emissions Policies Forgotten About Recycling?

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Steelmaking currently accounts for approximately eight percent of global greenhouse gas emissions. The only way to achieve net zero goals is to significantly reduce steel emissions worldwide. And there is no way to do that without recycling. The emission intensity of recycling-based steelmaking through an electric furnace is roughly 70 percent lower than integrated ore-based steelmaking in a blast furnace. If we are to achieve the ambitious emissions reductions needed to meet Paris Agreement 2050 steel sector targets, then recycling-based, circular steelmaking will have to play a substantial role.

Why then do many leading international institutions and steel manufacturers argue for emission policies that discourage recycling altogether? ResponsibleSteel, for instance, advocates for a sliding scale approach, which applies different emissions levels to steel products based on the percentage of recycled steel scrap used to produce them. That is, if you recycle less and you use less scrap, you are held to a more lenient emissions standard. From a climate perspective, this makes no sense. Recycling is irresponsibly penalized, and companies are rewarded for relying on mining and high emissions production processes. This is not only unfair to the steel producers with the lowest emissions, but it also undermines the incentive for companies to transition towards existing low emissions processes or develop newer and better technologies.

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Those campaigning for anti-recycling emissions policies would appear to be acting on little more than self-interest. ResponsibleSteel and others are not pushing this agenda because it is the quickest path to lower total emissions, but rather because it allows the blast furnace producers behind these policies to maintain their high-emitting production routes for as long as possible. The industry knows that blast furnaces in their current form are not viable in a decarbonized steel sector. But steel mills and steelmaking equipment can have very long lifespans. And given their enormous capital costs, companies are reluctant to shut down or transition even the highest emitting facilities before the end of their useful lives. So, it should come as no surprise that emissions policies, such as sliding scales, are being proposed that favor carbon-inefficient and ore-based blast furnaces in the context of government procurement programs, global emissions standards, and elsewhere. These are just last-ditch efforts to delay the inevitable transition to lower emitting technologies that enable greater use of recycled materials.

No matter what advocates of sliding scales and similar policies say, the market knows that recycling is fundamental to steel decarbonization. Steel producers around the world are investing billions of dollars in decarbonization projects, including those based on hydrogen, direct reduced iron, and breakthrough ironmaking and furnace technologies. However, while the future of steelmaking will require a variety of technologies, the common thread in developed countries is that investment is flowing almost exclusively towards projects using electric furnaces and away from coke ovens and blast furnaces. In other words, when the market invests in the future of steel, it is betting on recycling as a core raw material. Why discourage that?

Of course, there will always be a need for some virgin material in steelmaking. But there is no need to over-incentivize the production and use of iron ore and other virgin materials. Yet, that is exactly what a sliding scale would do. By treating ore-based production more favorably than recycling-based production, a sliding scale actively promotes the use of high emissions, extractive virgin iron units beyond what is required. Emissions standards should let markets choose the raw material mixes and production routes that meet market demand and result in the lowest absolute levels of emissions.

Policymakers know the importance of recycling too. The Biden Administration frequently touts recycling projects as a means of achieving its laudable climate goals. And the idea of “Reduce, Reuse, Recycle” is axiomatic in the environmental community. Recycling should be a core tenet of all climate and industrial policies, and circular steelmaking should be promoted (not disincentivized) by decarbonization and emissions programs.

So how has recycling become a dirty word when it comes to emissions policy in the steel sector? Recycled steel contains far lower emissions. And recycling is not the only answer, but it is hard to imagine meaningful decarbonization where circular steelmaking does not comprise a growing part of the industry. We should not let our emissions policies become captured by the interests of companies with high-emitting production methods that will be phased out over time. Emissions standards should be focused on the lowest per-ton emissions. If reducing actual emissions is the goal, then nothing else matters.

As industry leaders and policymakers continue to discuss steel decarbonization strategies, it is vital that emissions policies that support recycling form the cornerstone of such conversations. At the very least, emissions policies should not be anti-recycling. Far preferable to a sliding scale is a single emissions standard that applies equally to all steel producers regardless of their production process, raw material mix, or starting point. This encourages low emissions steelmaking through electric furnaces and other recycling-based processes. And as new, lower emitting processes are developed, a single standard will incentivize the deployment of whatever raw material mix or technology results in the lowest emissions.