



Better Metal

The manufacture of steel is one of the largest industrial sources of greenhouse gas emissions. Overall greenhouse gas emissions would go down around 10% if we could make steel cleanly. In this video, we learn how Boston Metal is using a revolutionary process called molten oxide electrolysis to make steel stronger while making the process of making steel cleaner.

0:04

Video clips of steel manufacturing.

Video clips of Boston and Boston Metal.

Boston Metal Co-Found, Donald Sadoway.

Boston Metal CEO, Tadeu Carniero.

Video clips of steel manufacturing.

Manufacturing steel is one of the largest industrial sources of greenhouse gas emissions. If it could be done in a carbon-free way, it would revolutionize the industry and help fight climate change.

There's a company in Boston trying to do just that.

If we can cut greenhouse gas emissions from steel, that's almost 10% of CO₂ emissions. That's worth going after.

Boston Metal's mission is to manufacture metals in a clean way, and a competitive way.

No one's going to pay a premium for green metal. It's got to be better, cleaner, cheaper. Conventional process to make steel, it's a chemical reaction. The blast of air goes in, passes over a form of carbon, and converts to a carbon-monoxide gas. And that gas reduces the iron oxide to iron. So, for every ton of iron you make, you make several tons of CO₂.

1:08

Animation of Boston Metal's production process.

Video clip of molten oxide electrolysis.

Boston Metal uses a process called molten oxide electrolysis. It uses electricity instead of using carbon from the coal. You got iron oxide. You dissolve that into a mix of other oxides. And by the passage of electric current the iron oxide is decomposed, and it produces liquid iron. The oxygen out of the iron oxide comes off as oxygen gas. The production of CO₂ is zero. The electricity can be produced sustainably without CO₂ emissions.

We've got ample data that indicate that we make better metal, at lower energy consumption rates, and without any greenhouse gas emissions. In big industry, capital intensive, risk averse, disruption in those industries does not come from within the industry, it comes from outside the industry. So, we're the disruptors.



OER Project aims to empower teachers by offering free and fully supported history courses for middle- and high-school students. Your account is the key to accessing our standards-aligned courses that are designed with built-in supports like leveled readings, audio recordings of texts, video transcripts, and more. Offerings include a variety of materials, from full-year, standards-based courses to shorter course extensions, all of which build upon foundational historical thinking skills in preparation for AP, college, and beyond.

To learn more about The OER Project, visit www.oerproject.com