Transforming Steel Production

Steel is the foundation of our world. But, steelmaking is extremely carbon intensive and accounts for about 10% of global CO2 emissions. The steel industry needs a direct, scalable solution to reach net zero on the timeline society is demanding.

Each year, steel emits around 3.2 billion tonnes of CO2.2

This is equivalent to emissions generated from:

- 403,081,545 homes’ energy use for one year
- 689,501,545 gasoline-powered cars driven for one year
- Or 24,096 Golden Gate Bridges, enough to wrap halfway around the world.

The steel industry would be the 5th largest emitter of CO2 if it were a country.4

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Problem

About 2 billion tons of steel are produced each year. This is as much steel as 285,714 Eiffel Towers.1

This method can lower CO2 emissions, but requires multiple steps and premium grades of iron ore as feedstock.

MOE uses renewable electricity and all grades of iron ore to produce liquid steel with fewer steps and zero CO2 emissions.

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Solution

MOE: A Net Zero Future for Steel

Boston Metal is commercializing a revolutionary technology to decarbonize primary steelmaking. Molten Oxide Electrolysis (MOE) is a cost-effective, one-step process that will green the most important engineering material in the world.

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Key MOE Advantages

- Simple, scalable infrastructure: no carbon capture or storage needed.
- Does not require precious metals, hazardous chemicals, or rare-metal catalysts.
- Ligated metal from MOE cell can be drawn to downstream steelmaking, no reheating required.
- Premium iron ore, not just DR-grade pellet.
- Liquid metal from MOE cell goes straight to downstream steelmaking, no reheating required.

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Sources

3. https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator#results