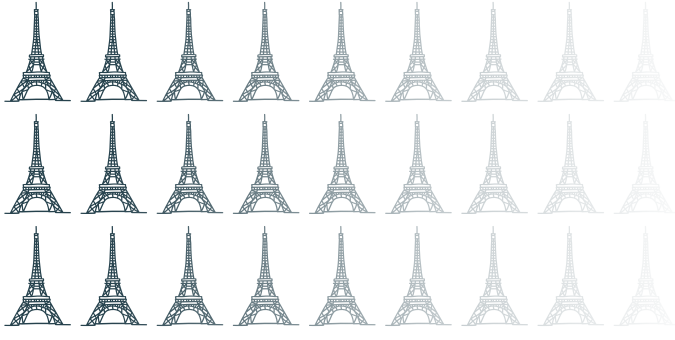


Revolutionizing Steel Production

Steel is the foundation of our world, but steelmaking is extremely carbon intensive and accounts for about 10% of global CO₂ emissions. To reach net-zero carbon emissions, the steel industry needs a direct, scalable solution.

About 2 billion tons of steel are produced each year.

This is as much steel as **285,714** Eiffel Towers.¹



Or **24,096** Golden Gate Bridges, enough to wrap halfway around the world.

→ PROBLEM

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

This is equivalent to emissions generated from:³



403,081,545
homes' energy use
for one year



689,501,545
gasoline-powered cars
driven for one year

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



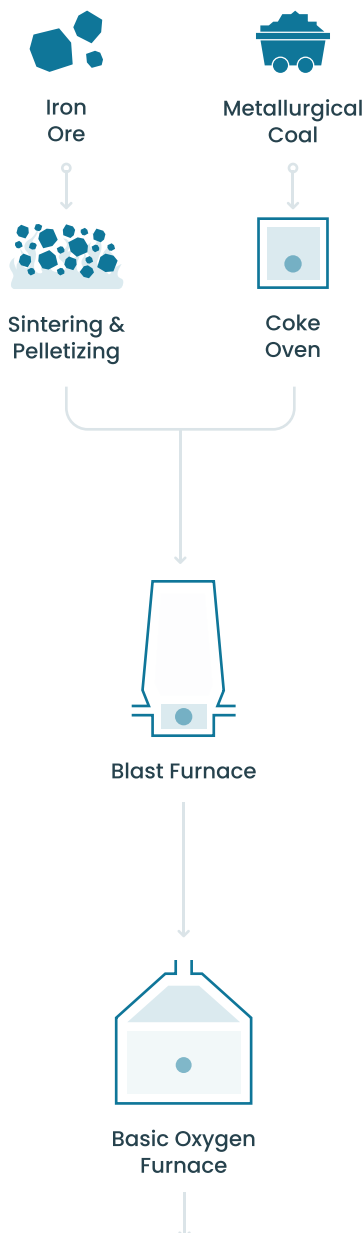
→ SOLUTION

MOE: A Net Zero Future for Steel

Boston Metal is leveraging the power of electrochemistry to decarbonize primary steelmaking and drive real impact. Molten Oxide Electrolysis (MOE) is a cost-efficient, one-step process that will green the most important engineering material in the world.

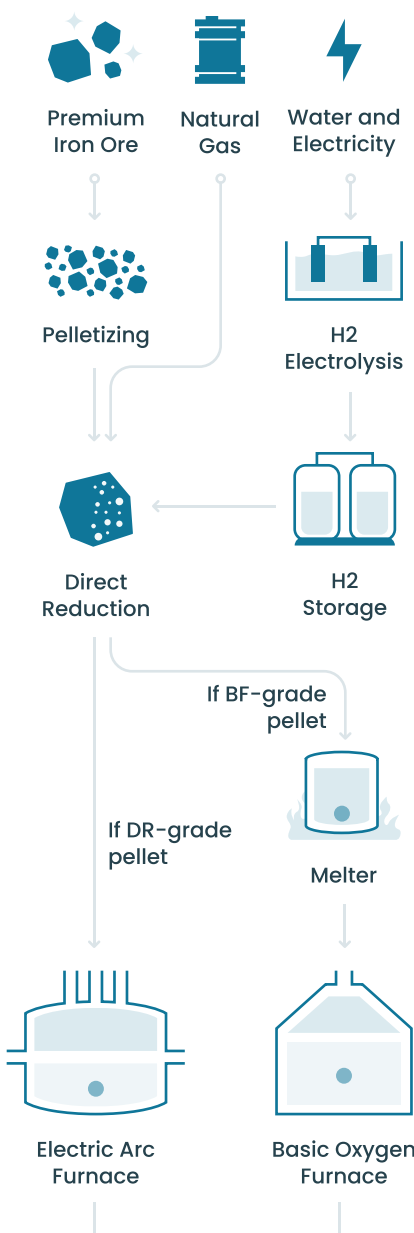
Integrated Steelmaking (traditional method)

Blast furnace requires coal and coke, multiple processing steps, and is a heavy emitter of CO₂ emissions.



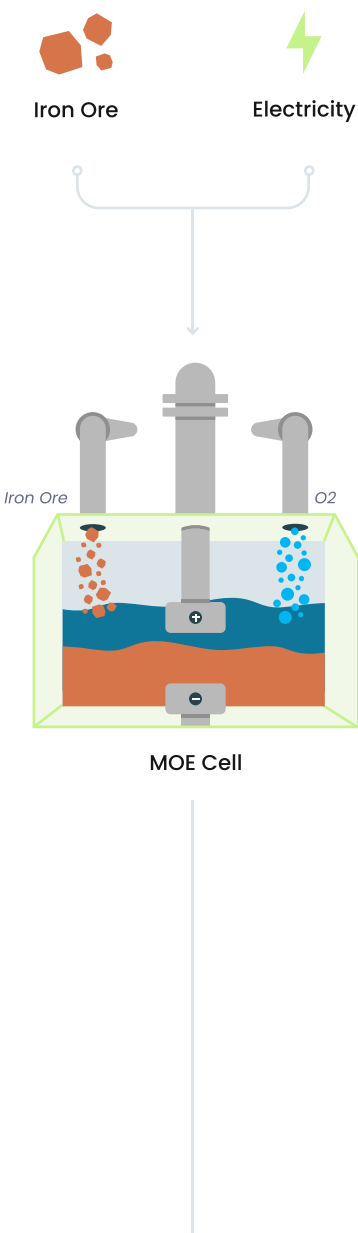
Hydrogen Direct Reduction

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



Boston Metal's MOE Steel

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



Ladle Metallurgy, Casting, Rolling

Key MOE Advantages



Effective with all grades of iron ore not just premium ores



Simple, scalable infrastructure: no carbon capture or storage involved.



Does not require process water, hazardous chemicals or rare-metal catalysts.



Liquid metal from MOE cell goes straight to downstream steelmaking, no reheating required.

Sources:

1: <https://www.statista.com/statistics/267264/world-crude-steel-production#:~:text=In%202021%2C%20a%20total%20of,crude%20steel%20were%20produced%20worldwide.>

2: <https://betterenergy.org/blog/gpi-hosts-us-delegation-on-steel-carbon-capture-to-united-arab-emirates-belgium-and-netherlands/>

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

4: <https://www.carbonclean.com/blog/steel-co2-emissions>