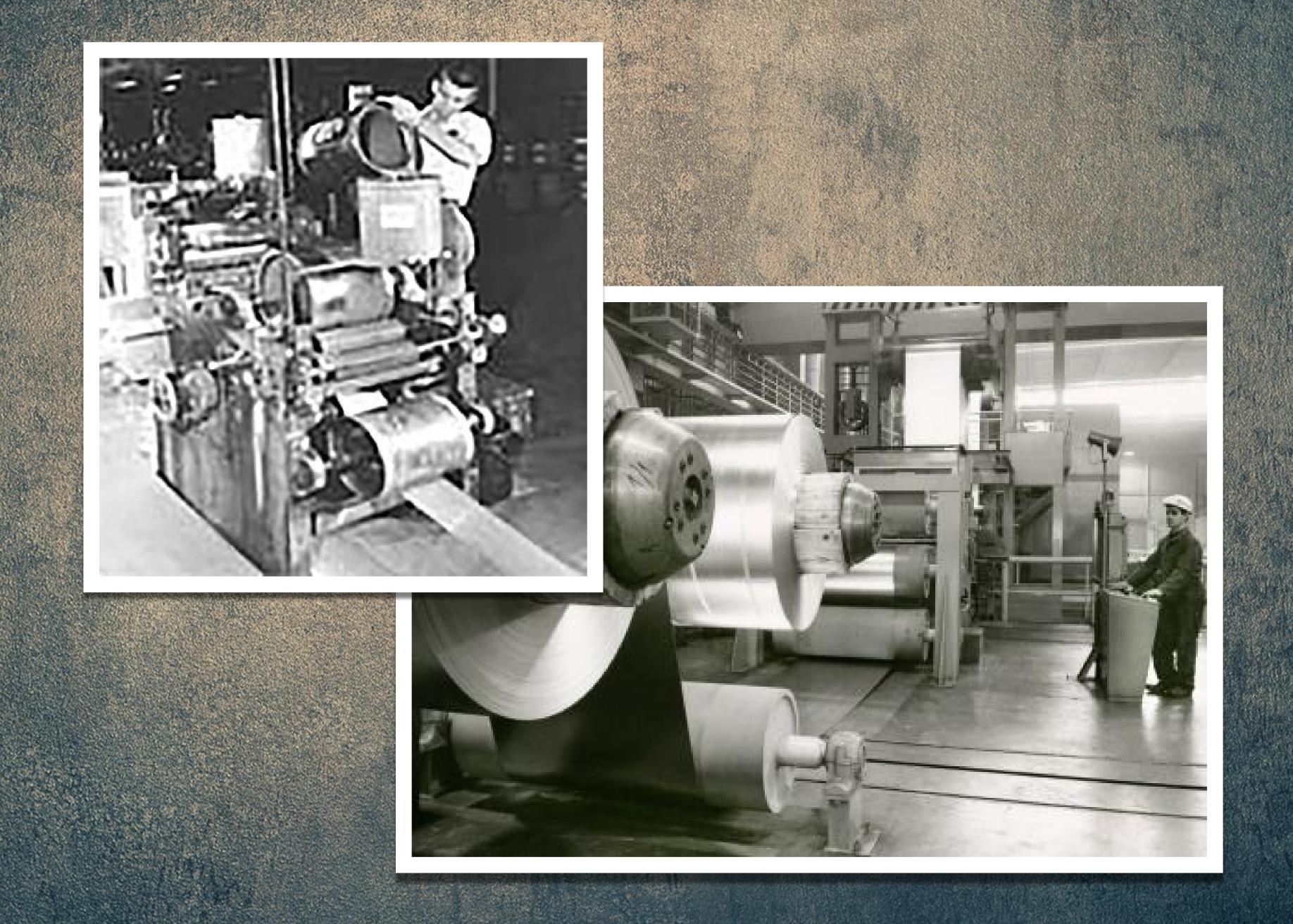
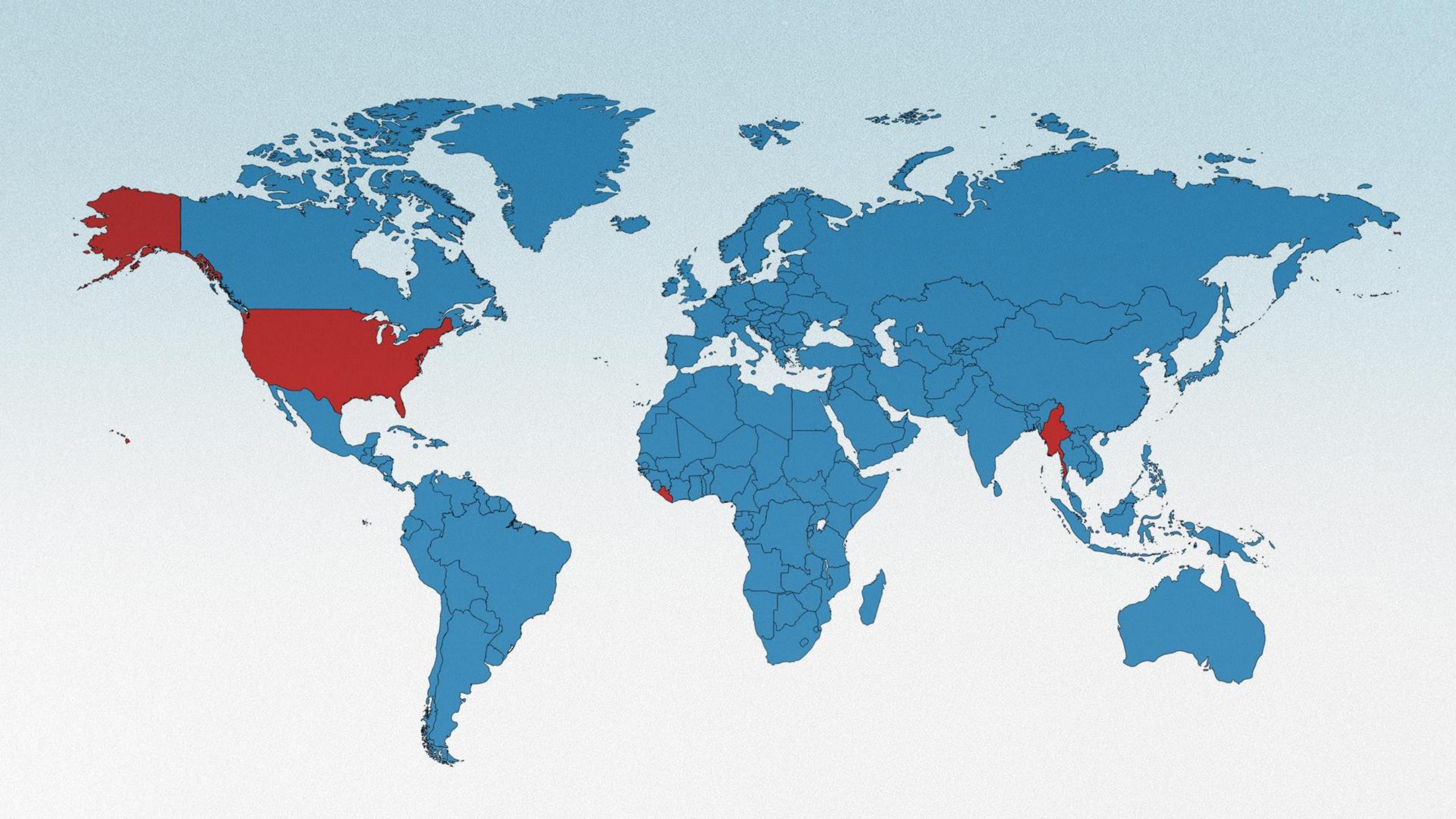




The steel industry, including coil coaters, has painted themselves into a corner.





Change is hard.

Customers, regulators and the world are demanding more.



is aiming for a 50% reduction by 2030, compared to a 2018 baseline.

e ends, SSE said it will identify and implement emission reduction projects

Although carbon neutrality is a long-term goal, the company already is well on its way, it

management; partner with local utilities to increase the use of rener

on clean energy development

North American steel manufacturer Nucor Corporation and US tech giants Google and Microsoft Corporation are to work together across the electricity ecosystem to develop new business models and aggregate their demand for advanced clean electricity technologies, including advanced nuclear.

NUCOR'





These models, they say, will be designed to accelerate the development of first-of-a-kind and early commercial projects, including advanced nuclear, next-generation geothermal, clean hydrogen, long-duration energy storage and others.

in several US regions for potential projects in need of offtake, and encourage technology providers, developers, investors, utilities

demand from three of the world's largest energy buyers, this approach aims to reduce the risks for utilities and developers Most read

AEA releases 2023

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Study highlights benef of nuclear district has lucor team up on clea

says minister

energy development

included in Australian

Nucleareurope calls fo expansion of EU hydro



May 7, 2024 · 2 min read

Bill Gates-backed startup opens its first innovative steel production plant: 'A significant step towards a cleaner, more sustainable, and circular steel industry'

Margaret Wong







DM SMITH / CLIENT SOLUTIONS / BIG RIVER STEEL ESG SUSTAINABILITY

Steel Manufacturing at an Environmental, Social, and Governance Gold Standard

IG RIVER STEEL | OSCEOLA, ARKANSAS

When Big River Steel sought to become the first steel mill in North America to certify to a new sustainability-related standard, they turned to CDM Smith.

Big River Steel, founded in 2014, prides itself on a visionary approach to the production of steel: or as the company puts it, it's "a technology company that happens to make steel." At its facility in Osceola, Arkansas-among the newest and most productive steel mills on the planet-the U.S. Steel subsidiary prioritizes achieving a level of sustainability well beyond the industry standard. These goals align with growing expectations among Big River Steet's customers that its products should meet rigorous envionmental and ethical standards that have been independently verified.

The steel industry has not been historically known for its environmentally conscious outlook, but Big River Steel sought to change that perception and affirm its commitment to sustainability by seeking ResponsibleSteel™ site certification. Based on 12 principles and more than 370 elements, this certification requires stringent compliance with environmental, social and governance ideals." assesses wide-ranging elements including material sourcing, decarbonization strateg. BloombergNEF



SCIENTIFIC AMERICAN

Light Cleaning

Sun-activated paint cleans walls—and the surrounding air

Customers

- Customers demand greener, innovative solutions •
- Leaders like SDI are setting sustainability benchmarks
- Embracing sustainability ensures market relevance



Green Steel Demand is Rising Faster Than Production Can Ramp Up

By Dr. Julia Attwood, Head of Sustainable Materials, BloombergNEF

Automakers, consumer goods and equipment providers all have targets to decarbonize their supply chain. This puts pressure on their materials suppliers to send them more low-carbon, recycled, or sustainable materials; in particular, steel. But many of the technologies that can produce green materials at scale are not yet at commercial scale. Demand for green steel from sectors that can absorb the green premium - such as transportation - should help to de-risk the financing of commercial-scale low-carbon steel plants. For the next few years at least, while industrial decarbonization policy finds its feet, it will be private sector demand that drives the decarbonization of steel.

Regulators

- Stricter regulations and accountability
- Incentives for green innovation and the circular economy
- International, climate-driven policies

Expert Blog

Buy Clean Takes Center Stage at U.S. DOT and Other Agencies

The federal government will prioritize low-carbon procurement across four major materials categories: steel, concrete, asphalt, and flat glass.

September 15, 2022



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Both the Biden administration and Congress recognize the importance of investing big in a clean and globally competitive industrial manufacturing base. A cornerstone of that effort is leveraging the federal government's purchasing power to buy cleaner concrete, steel, and other industrial materials to catalyze market transformation. The Biden



Innovation is coming. Let's lead, not follow.

Hi, I'm Bob.



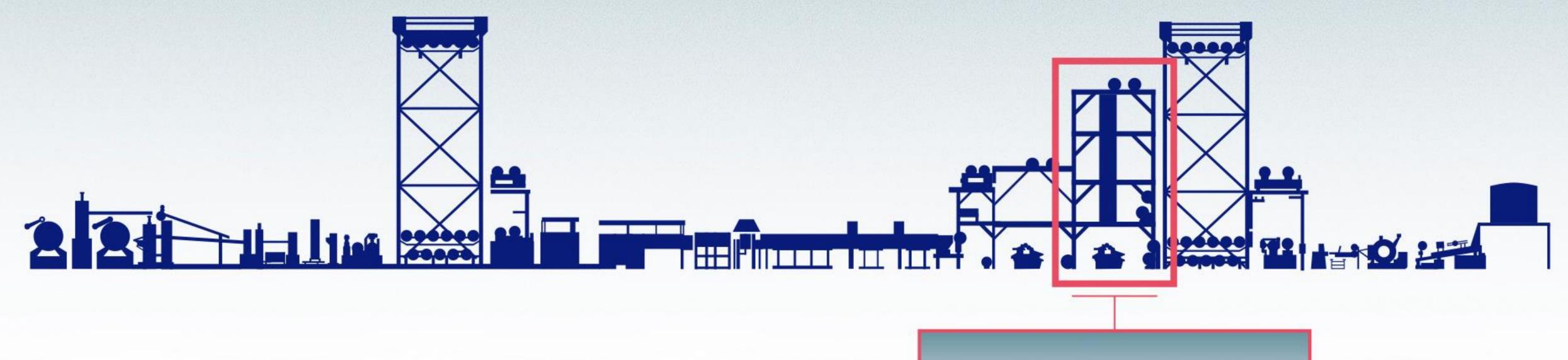
Join the Chorus



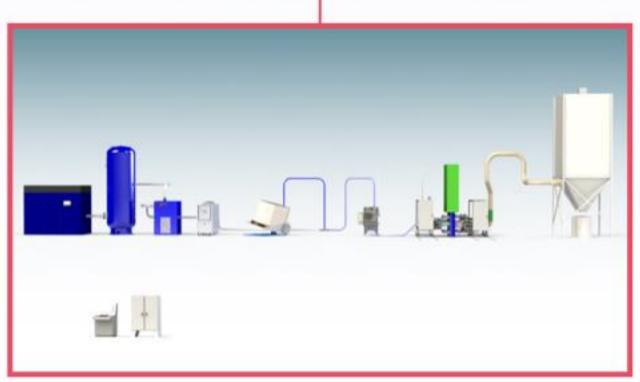
Vertical, Continuous Coil Coating Line (CCCL)



Vertical, Continuous Coil Coating Line (CCCL)



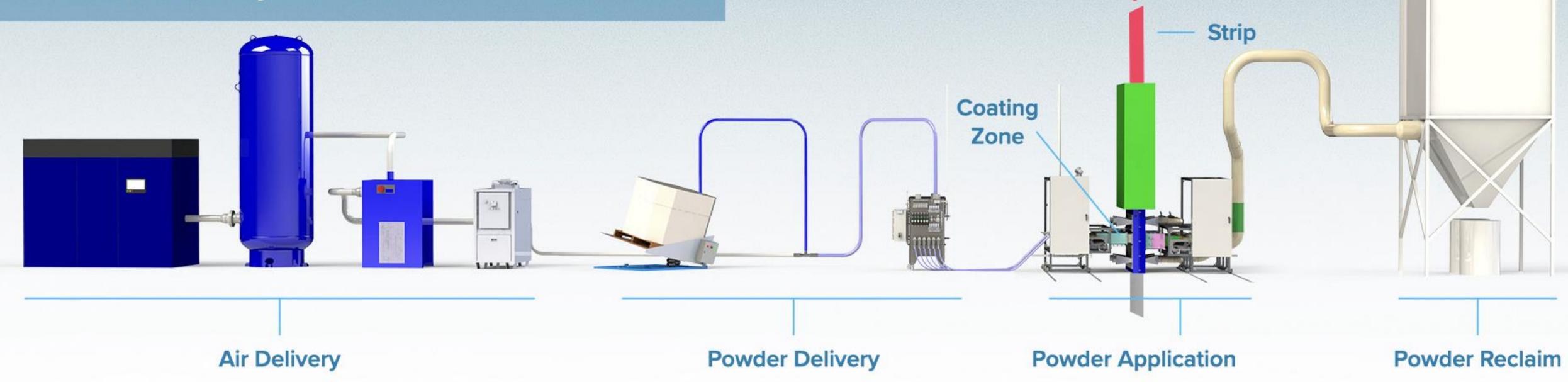
Powder CCCL Equipment



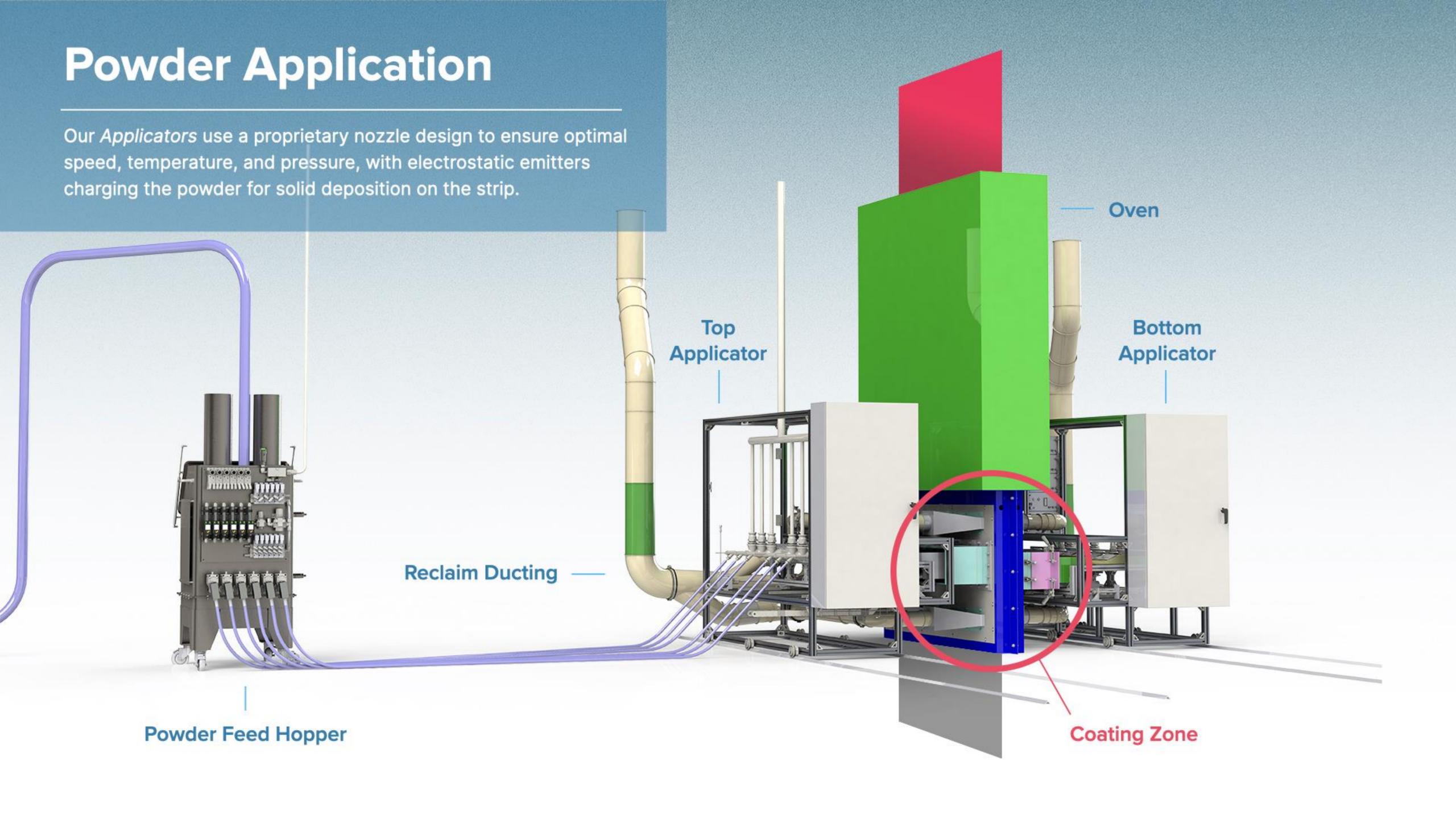
Powder CCCL* Equipment

Our patented, high-speed coating process is defined by 5 advanced systems that work seamlessly to deposit powder uniformly and at high material utilization rates.

*Continuous Coil Coating Line





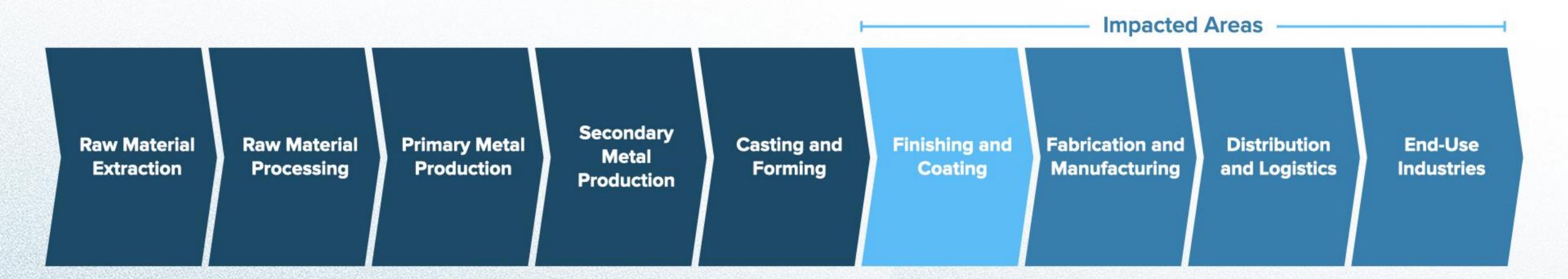






Steel and Aluminum Value Chain

The compounded effect of shifting processes like coating to earlier stages in the value chain reduces the need for fieldwork, optimizing logistics, improving quality control, and lowering the overall environmental footprint.



- Post-Painting Metal/Parts Is Not Efficient
- Liquid Paints Have Contributed
 Significantly to GHG Emissions

- Pre-Painting Metal Is Efficient
- Powder Coatings are Low/No VOC, No HAPs

Use Case: 1 mil Polyester Hybrid Powder Coating vs. Water-Based Liquid Coating

Scope 1 Emissions Natural Gas Consumption	BAU 66,705	Powder CCCL 0	Unit MMBtu per year
CH ₄ Emissions	66.7	0	kg CH ₄ per year
NO ₂ Emissions	6.67	0	kg N0 ₂ per year
CO₂e Emissions	3,612.37	0	MT CO₂e per year

Scope 2 Emissions	BAU	Powder CCCL	Unit
Electricity Consumption	3,690,327	0	kWh per year
CO ₂ Emissions	1,562	9917	MT CO ₂ per year
CH ₄ Emissions	137.3	871	kg CH ₄ per year
NO ₂ Emissions	20.09	128	kg N0 ₂ per year
CO₂e Emissions	1,719.39	10,916	MT CO₂e per year

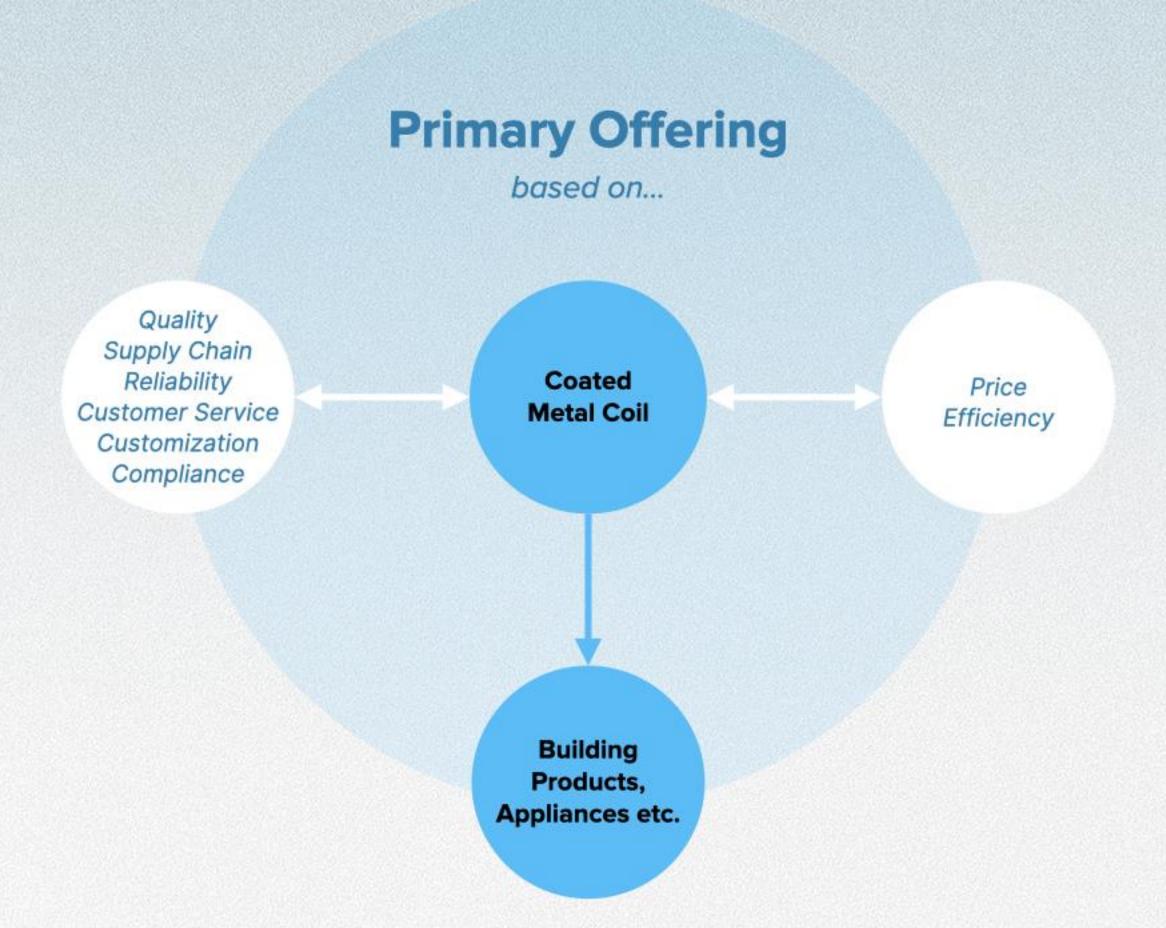
Scope 3 Emissions	BAU	Powder CCCL	Unit
Upstream - Primer	36,485	0	MT CO ₂ per year
Upstream - Paint	42,004	19281	kg CH ₄ per year
Upstream - Clear Top Coat	0	0	kg N0 ₂ per year
CO₂e Emissions	78,489	19,281	MT CO₂e per year

GHG Emissions Summary	BAU	Powder CCCL	Unit
Scope 1 Emissions	3,612.37	0	MT CO ₂ per year
Scope 2 Emissions	1,719.39	10,916	kg CH₄ per year
Scope 3 Emissions	78,489	19,281	kg N0₂ per year
Total Emissions	83,820.76	30,197	MT CO₂e per year

DIFFERENCE IN GHG EMISSIONS	53,624	MT CO₂e per year

- Powder coating provides significant GHG emissions savings in the upstream supply chain compared to liquid painting.
- 50-100k MT CO2e per line, depending on coating thickness and properties.
- Powder coating is a single pass operation, further reducing energy use and waste.
- There are no VOCs, no HAPs, and high transfer efficiency and opportunity for reuse.
- There is opportunity to accelerate the adoption of clean technologies with incentives from regulators.

Achieving Net-Zero Carbon Goals Are Difficult



Balance Essential

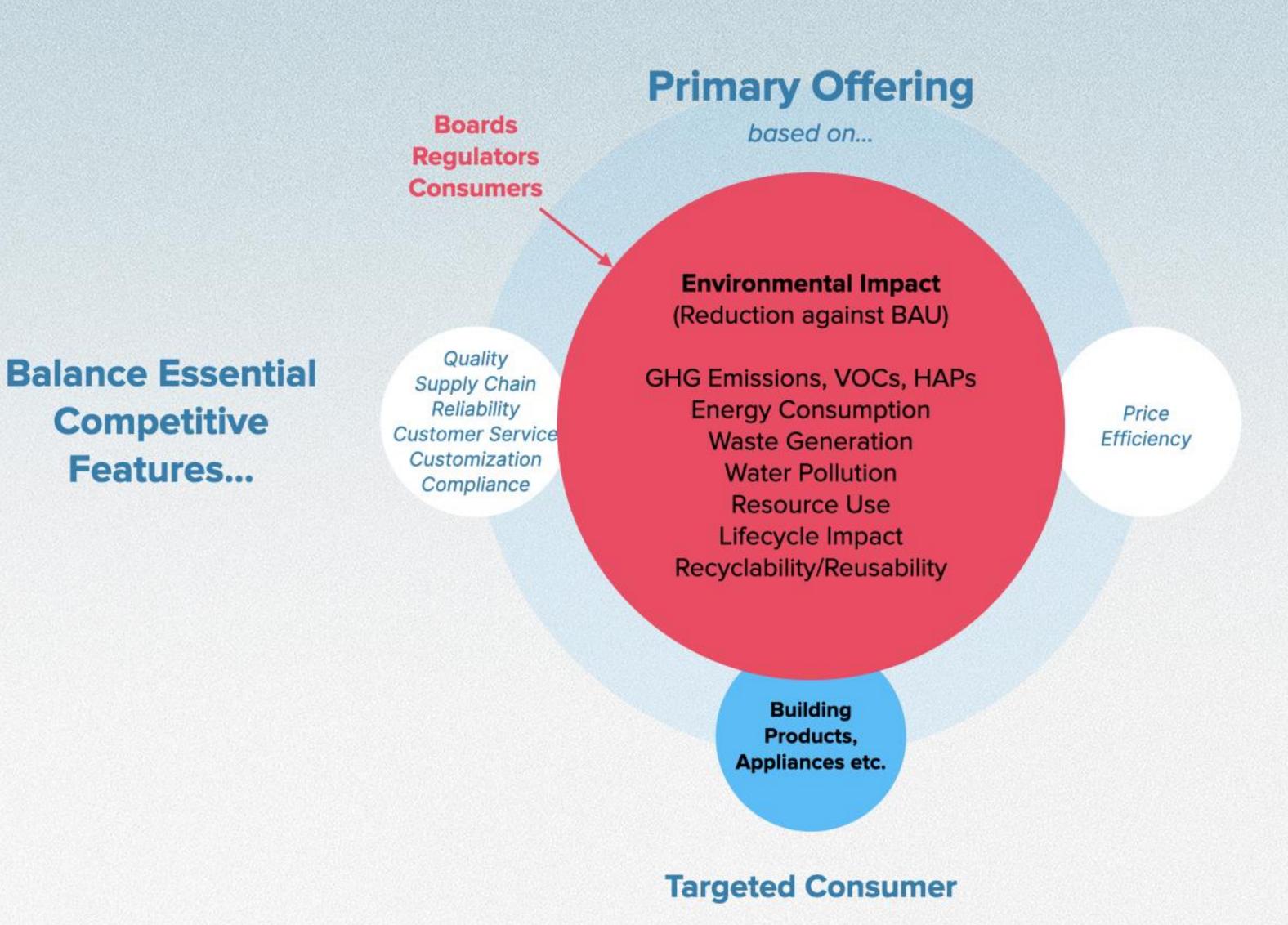
Competitive

Features...

...with Cost-Effectiveness in Our Respective Markets

Targeted Consumer

Achieving Net-Zero Carbon Goals Are Difficult



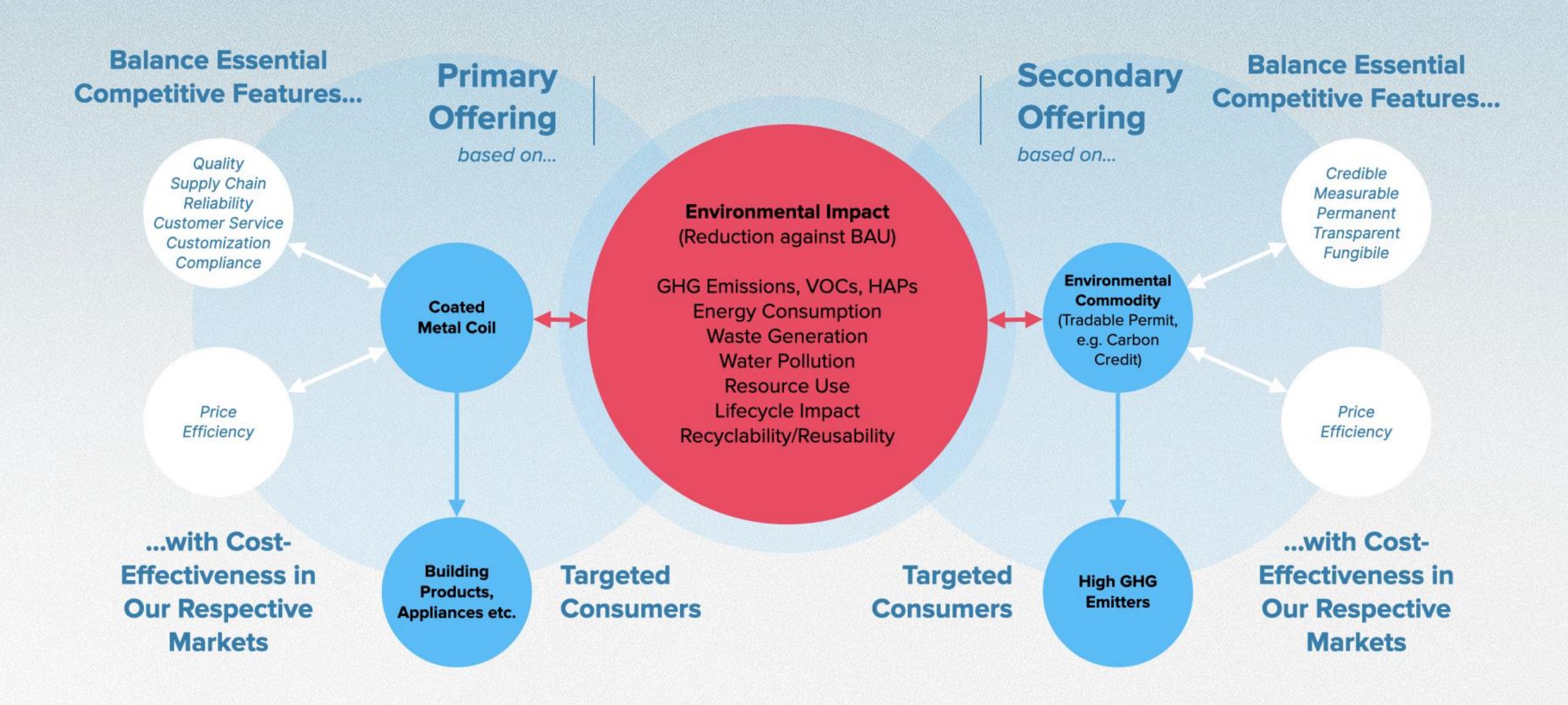
Competitive

Features...

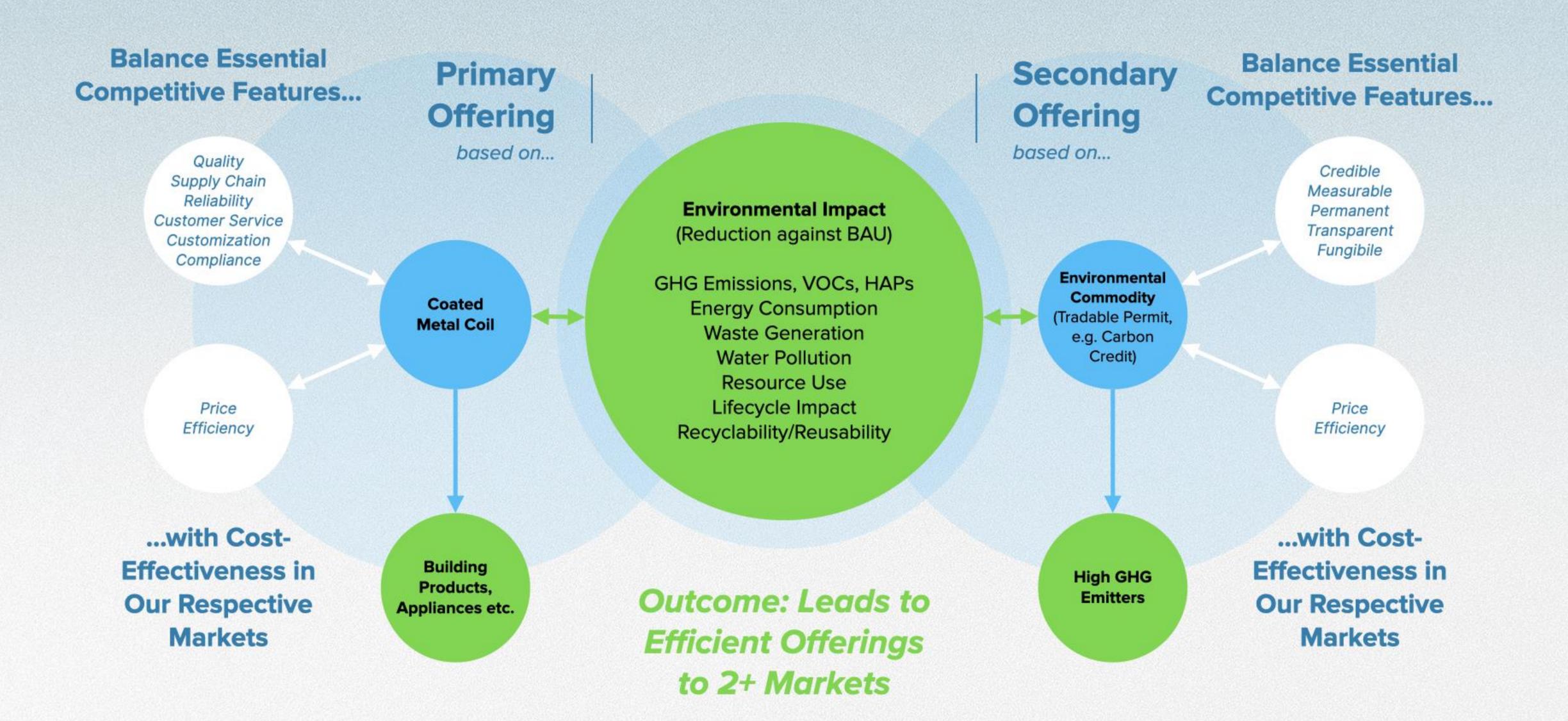
...with Cost-**Effectiveness in Our Respective Markets**

Outcome: Leads to Inefficient Offering to Niche Markets

Achieving Net-Zero Carbon Goals Are Absolutely Possible



Achieving Net-Zero Carbon Goals Are Absolutely Possible

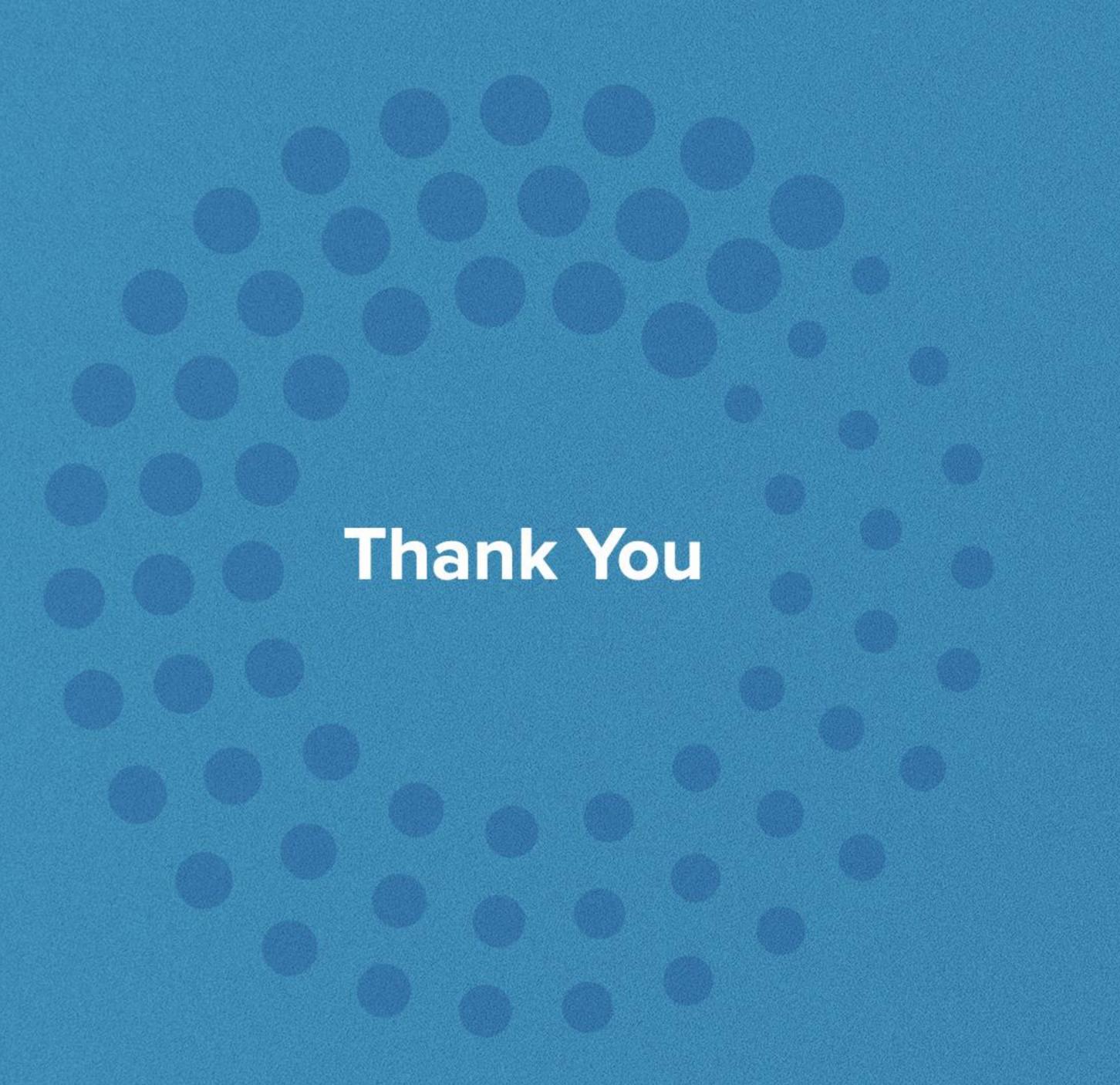


Innovation is different than evolution.

Let's lead, not follow. It's happening now.

Join the chorus.





Robert McShane

Founder & CEO rjmcshane@powdercoil.com (219) 242-1534