WHITE PAPER

Emission critical:

From grey to green for hard-to-abate

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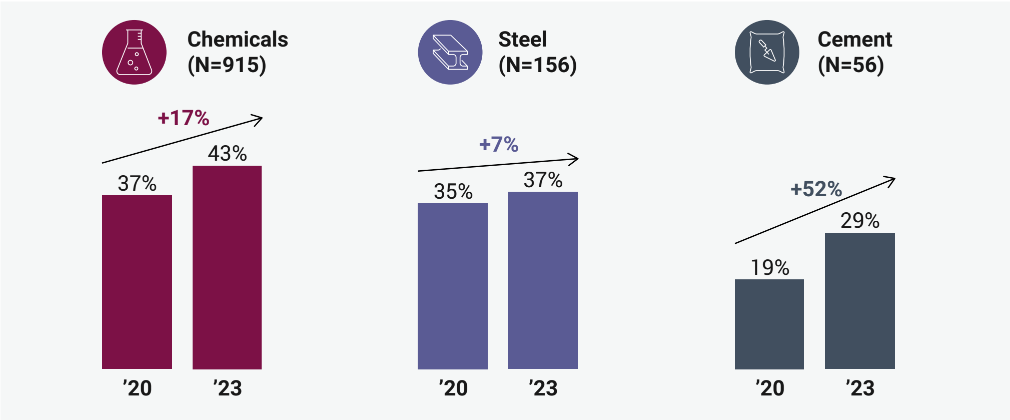
The joint analysis conducted by CDP and BCG traces the progress and lingering challenges within the hard-to-abate sectors: Chemicals, Steel, and Cement, which collectively account for approximately 20% of global emissions. This paper and the underlying analyses are exclusively focused on firms from these three hard-to-abate sectors that are disclosing with CDP.

The firms from these sectors disclosing with CDP have recorded an 18% surge in Scope 1 and 2 target[1] setting since 2020, reflecting a positive stride towards action and accountability.

Exhibit 1 - % respondents with Scope 1 and 2 targets, by reporting year



+18%

increase in target setting across Chemicals, Steel and Cement sectors since 2020

These firms have also achieved a 4% YoY reduction in absolute Scope 1 emissions in 2023 at a global level. However, regional disparities persist with European firms advancing in reducing Scope 1 emissions at a pace up to seven times faster than firms in APAC region, exposing the latter to forthcoming emission mechanisms and regulations.

Exhibit 2 - % change YoY ('22-'23) in Scope 1 emissions by industry and by region of Scope 1 emission

Industry	Emissions Region: APAC	Europe	North America	South America	**Total**
Cement	-5%	-11%	1%	-10%	**-6%**
Chemicals	-5%	-9%	-4%	-1%	**-4%**
Steel	2%	-7%	-7%	-5%	**-3%**
Total	**-1%**	**-8%**	**-4%**	**-6%**	**-4%**

Higher reduction — Higher emission

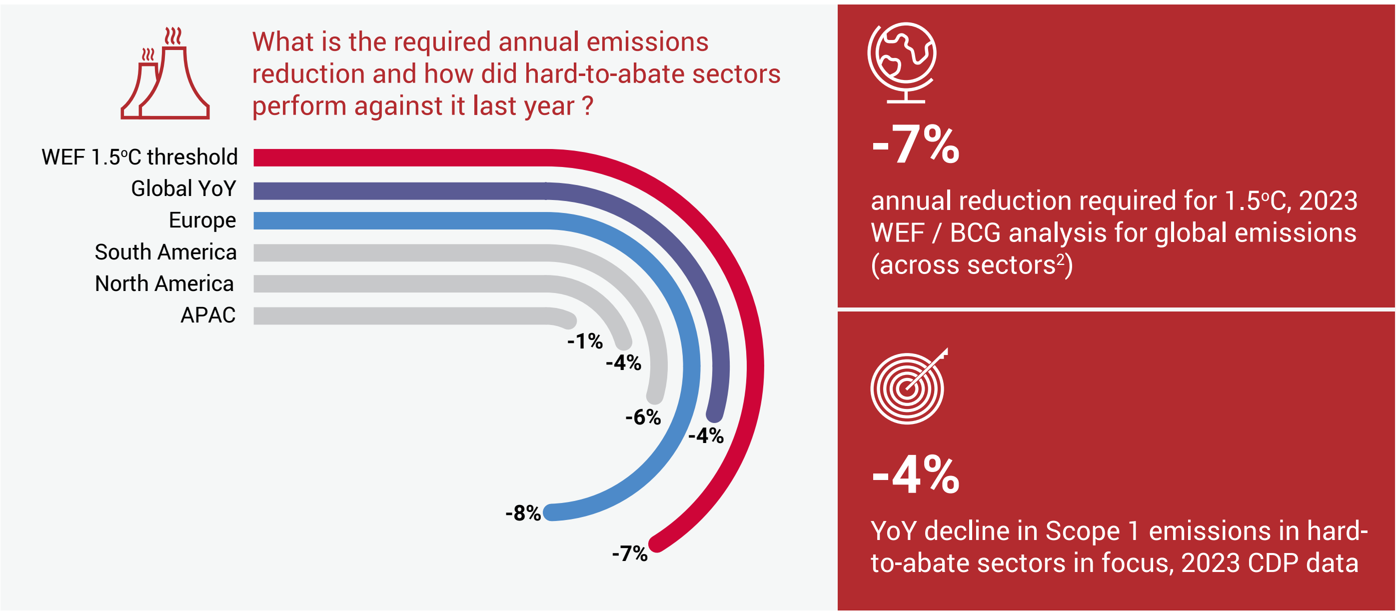
1. Scope 1 and 2 constitute the majority of emissions for this segment, with Scope 1 accounting for ~90% of Scope 1 and 2 emissions.

Sample set

- CDP's 2023 database used in the analysis covers 1,127 respondents across Chemicals (~81%), Steel (~14%), and Cement (~5%).
- The sample set excludes Oil and Gas companies.
- 50% respondents are based in APAC (~20% in China), 25% in Europe, 15% in North America, and remaining 10% in rest of the world regions.
- A subset of ~600 companies was used for emission trends analysis, representing one-third of global emissions across chemicals, steel, and cement sectors.

As these regional disparities persist, the pace of change is yet to match the requisites of the 1.5⁰C target at the global level. European firms are leading the vanguard by achieving an 8% YoY reduction in Scope 1 emissions in 2023. However, the rest of the regions fall behind the pivotal 7% emission reduction threshold delineated by the World Economic Forum (WEF[2]) as the minimum requirement to align with 1.5⁰C targets.

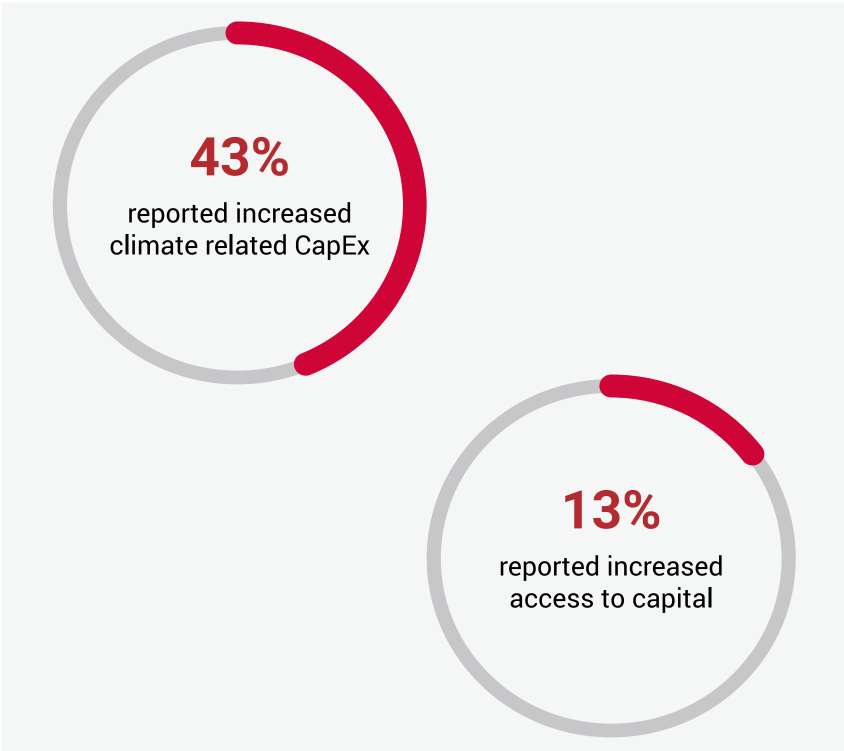
Exhibit 3 - % YoY ('22-'23) reduction in Scope 1 emissions by region of emission vs. WEF 1.5°C threshold



The challenge unfolds as a financing gap hinders the acceleration of major decarbonisation projects. While 43% of respondents report an uptick in climate-related capital expenditures, a mere 13% witness an improved capital access, underscoring the critical financial barriers especially in the APAC region where only 8% of respondents report increased access to capital compared to 17% in Europe.

European firms are ahead by two-fold in increasing access to capital for decarbonisation projects compared to their peers in APAC. It is beneficial to learn why European financiers were able to achieve their required returns, and identify which elements of their models are applicable globally. However, with only 17% of European respondents reporting improved capital access, it's clear that improvement in this area is needed across all regions.

Exhibit 4 - Increasing exposure to financing risk (% of respondents)



2. *"Cut Emissions by 7% Every Year to 2030 to Maintain 1.5°C Global Warming Limit"*, report from BCG and the World Economic Forum's Alliance of CEO Climate Leaders (November 2023)

The regional divergence is further mirrored in Scope 2 absolute emissions dynamics, where declines in North America and Europe are overshadowed by a rise in both APAC and South America.

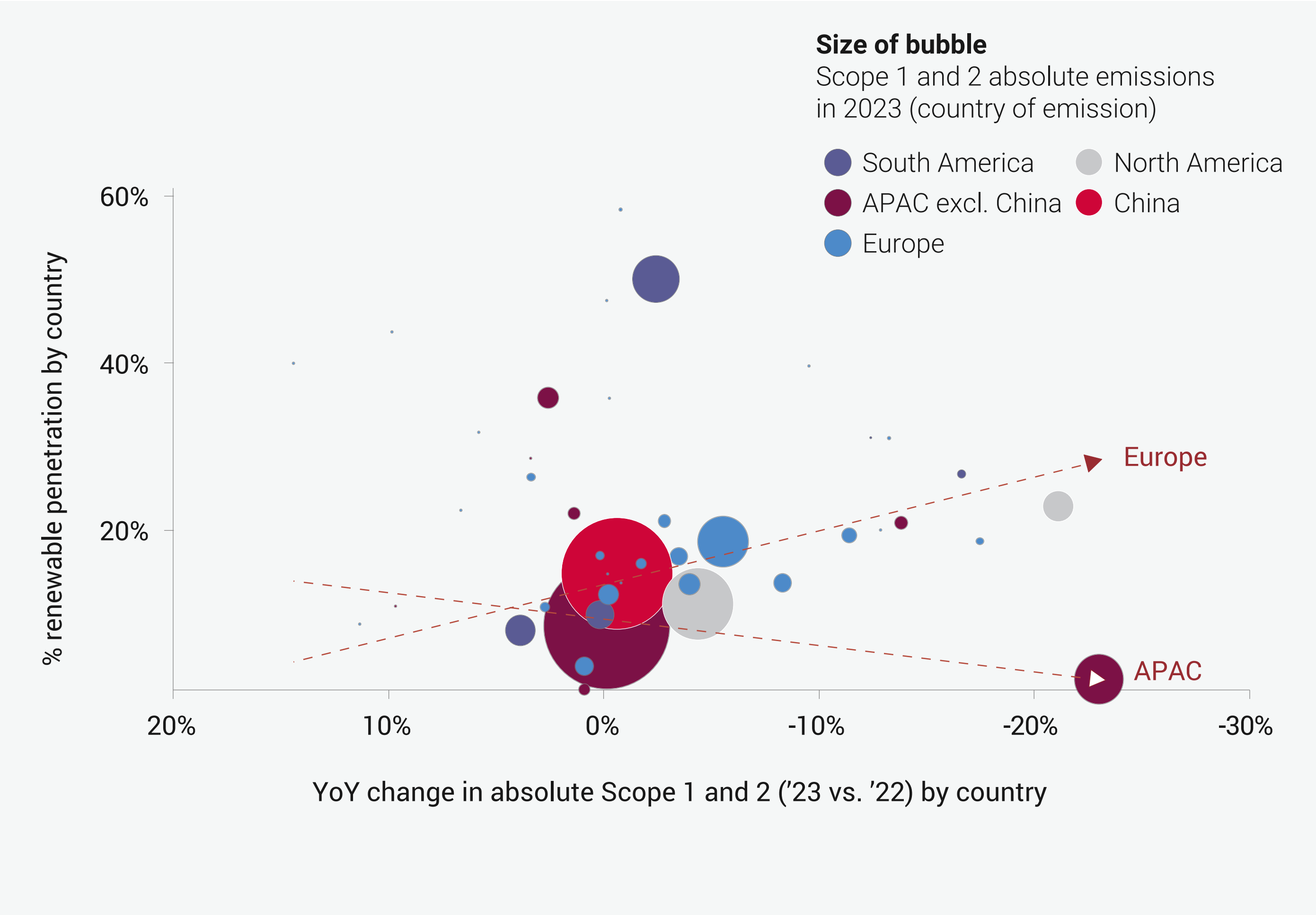
Firms based in APAC and South America are disproportionately challenged with access and utilisation of renewable energy sources, highlighting the regulatory and renewable energy access gaps that need bridging.

Exhibit 5 - % change YoY ('22-'23) in Scope 2 emissions by region of emission

Region	YoY Change
North America	-7%
Europe	-2%
APAC	+3%
South America	+3%
Global	**+2%**

In Europe, respondents from countries with a higher uptake of renewables report a more substantial reduction in emissions. In APAC, however, uptake is likely limited by access to renewables and insufficient incentives to transition to greener sources.

Exhibit 6 - % YoY ('22-'23) change in absolute Scope 1 and 2 emissions vs. penetration of renewable energy[3]



3. WorldBank data used for renewable penetration ; Companies in sample set have emissions data for both 2022 and 2023

Despite financing and renewable energy access challenges, a mere 9% of firms are actively funding Paris-Agreement aligned advocacy and research efforts. Only 23% of firms engage directly with policymakers, highlighting a significant opportunity for increased dialogue across stakeholders in the ecosystem.

Exhibit 7 - Policy engagement by responders, 2023

23%

firms are directly engaging with policymakers

9%

firms are actively funding Paris-Agreement aligned policy advocacy and research efforts

We stand at a pivotal juncture, as companies exhibit an anticipation of forthcoming regulations and a discernible shift towards a greener trajectory. Four unlocks are brought forward in the report for the broader ecosystem.

Call for action - four unlocks

The hard-to-abate sectors need to join forces through industry coalitions and associations to amplify target setting, collaborate on decarbonisation measures, and accelerate regulatory support.

As a joint force, each sector needs to actively engage with financial institutions and government bodies. Sectors can provide details to the financiers about shifting risk and likelihood, informing fit-for-purpose financial instruments with investment return expectations aligned with net-zero targets. This will unlock funding for low-carbon R&D and investments to scale existing proven technologies.

Hard-to-abate firms are encouraged to continue to disclose comprehensively to meet the demands of investors and customers, uncover risks and opportunities, and track and benchmark progress.

Hard-to-abate firms are required to ramp up advocacy efforts to enable policymakers to define conducive regulatory frameworks, which are instrumental for mitigating system-level barriers – bridging financing gaps and providing incentives for R&D and low-carbon technologies.

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CDP

CDP is a global non-profit that runs the world's environmental disclosure system for companies, cities, states and regions. Founded in 2000 and working with more than 740 financial institutions with over $136 trillion in assets, CDP pioneered using capital markets and corporate procurement to motivate companies to disclose their environmental impacts, and to reduce greenhouse gas emissions, safeguard water resources and protect forests. Over 24,000 organizations around the world disclosed data through CDP in 2023, with more than 23,000 companies – including listed companies worth two thirds global market capitalization - and over 1,100 cities, states and regions. Fully TCFD aligned, CDP holds the largest environmental database in the world, and CDP scores are widely used to drive investment and procurement decisions towards a zero carbon, sustainable and resilient economy. CDP is a founding member of the Science Based Targets initiative, We Mean Business Coalition, The Investor Agenda and the Net Zero Asset Managers initiative. Visit cdp.net or follow us @CDP to find out more.

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