STEELWATCH
Bringing climate urgency to steel

Sunsetting Coal in Steel Production

Report Summary

The steel industry's climate impact is a global risk.

Emissions from the steel sector are driving climate change and jeopardising chances of stabilising at 1.5°C of warming. The steel sector contributes to at least 7 percent of global greenhouse gas emissions each year - equivalent to the annual emissions of India. As the industrial sector with the fastest-growing CO_2 emissions over the last twenty years, steel is simply off-track for a stable planet.

Coal is the culprit.

Coal drives 86 percent of the steel industry's emissions. Globally, 70 percent of steel is new, primary steel that is produced from iron ore using coal-based processes. Each tonne of primary steel requires 0.77 tonnes of metallurgical coal, which is used in a blast furnace as iron ore is made ready for steel production. Each tonne of steel produced through the coal-based blast furnace route is responsible for 2.3 tonnes of CO2 emissions and for over 3 tonnes of CO_2e when the methane from coal mining is included.

A clear and present danger looms, risking locking in coal-based technology.

In the next 7 years, around 71 percent of the 400 steel facilities globally that are responsible for most of the coal-based steel production will be due for a refurbishment known as 'relining'. Whether or not a company decides to use that investment opportunity to begin transitioning away from coal will be critical to the future of the industry and the planet. In addition, there are at least 125 new projects in development that involve new coal-based blast furnaces and that number is likely to grow unless there is collective action by the industry.

These real-time investment decisions will make or break the steel industry's ability to prevent its emissions from breaking the planetary climate boundaries. By 2050, a business-as-usual approach to coal-based steel production will see it eat up almost a quarter of the carbon budget that remains for the entire planet to have half a chance of stabilising at 1.5 degrees of warming. As the sun sets on outdated and polluting practices, it is imperative to shift our focus towards ending investment in metallurgical coal-based steelmaking.

Clean alternatives to coal-based steelmaking are rapidly emerging, from recycled steel to new technologies that replace coal with green hydrogen. By transitioning to coal-free steel production, we can preserve a liveable climate and build a stronger steel industry. This is a not-to-be-missed opportunity to build a transformed steel sector that offers quality jobs while eliminating toxic emissions.

This report is calling for a red line on coal-based steel production:

- **No investment in any new or relined coal-based blast furnace facilities in OECD countries or by OECD based companies, from today.**
- **No investment in relining existing or building new coal-based blast furnace facilities that go on-line from January 2028, in emerging economies.**

In OECD countries, current relining projects must be abandoned, while in emerging economies companies cannot plan for new relining and building projects. The no-building and no-relining red line requires bold commitment from both governments and companies.

This needs to be accompanied by a red line on new investment in metallurgical coal - most of which is used by the steel sector. The attention that has been paid to thermal coal for power needs to now be applied to metallurgical coal.

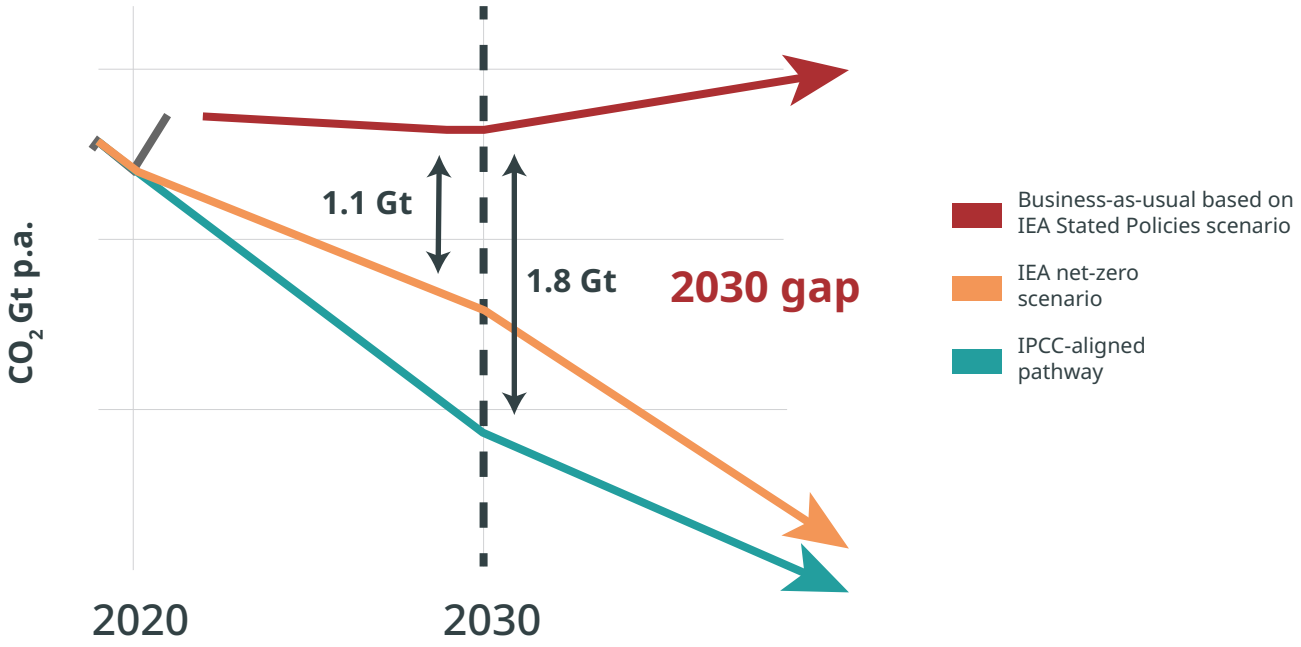
The transition away from coal-based steel will also need vigilant attention and action on multiple key parameters:

- **Scale Clean Electricity:** to ensure a sufficient supply of clean electricity to meet the rising demand associated with green hydrogen production.
- **Avoid Gas Lock-in:** Steel companies may look to delay the full transition away from fossil fuels by developing "hydrogen-ready" DRI that runs on fossil gas in the interim time period. New investments in fossil gas risk new infrastructure lock-in (pipelines to facilities being one such example) and stranded assets. Clear criteria will be needed to prevent misuse of the 'hydrogen-ready label.'
- **Worker Protections:** Governments and companies need to work with unions, workforce training programs, and other stakeholders to minimise disruption and create opportunities for workers and communities that rely on the steel industry for jobs and tax revenue.
- **Environmental Clean Up:** Remediation and restitution plans for past and current air and water pollution impacts from the steel industry are needed. Going forward, green and responsible steel will need a transparent, accountable value chain upstream and downstream. with free and prior informed consent (FPIC), and without any violent or coercive methods.
- **Green Buyers and Investors:** Steel buyers (e.g. car companies, wind power companies, government procurement) will need to make formal commitments and investors set clear requirements, so as to drive market signals and cost competitiveness for zero emissions pathways for steelmaking by 2030.
- **Government Support:** Strong policy support and financial incentives from governments will drive the transition at pace. Clear conditions attached to public support will need to ensure accountability for delivery of promises. Companies need to use their considerable political power to constructively support such policy shifts, rather than to block and delay.

The decline of coal-based steel production is the key metric for whether the steel industry can get on track for a 1.5°C warming trajectory or will break planetary climate boundaries.

The sector needs to shift sharply by 2030 from a business-as-usual pathway to emissions decline

Steel sector CO_2 Emissions



The red trajectory shows business-as-usual based on IEA Stated Policies scenario. By 2030, total steel sector emission p.a. will be 1.1 Gt above where they should be on the IEA net zero pathway (orange line). And 1.8 Gt away from a faster reduction in line with IPCC global emissions reduction for 1.5 degrees (green line).

For full report visit www.steelwatch.org