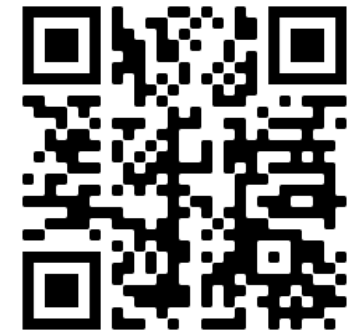




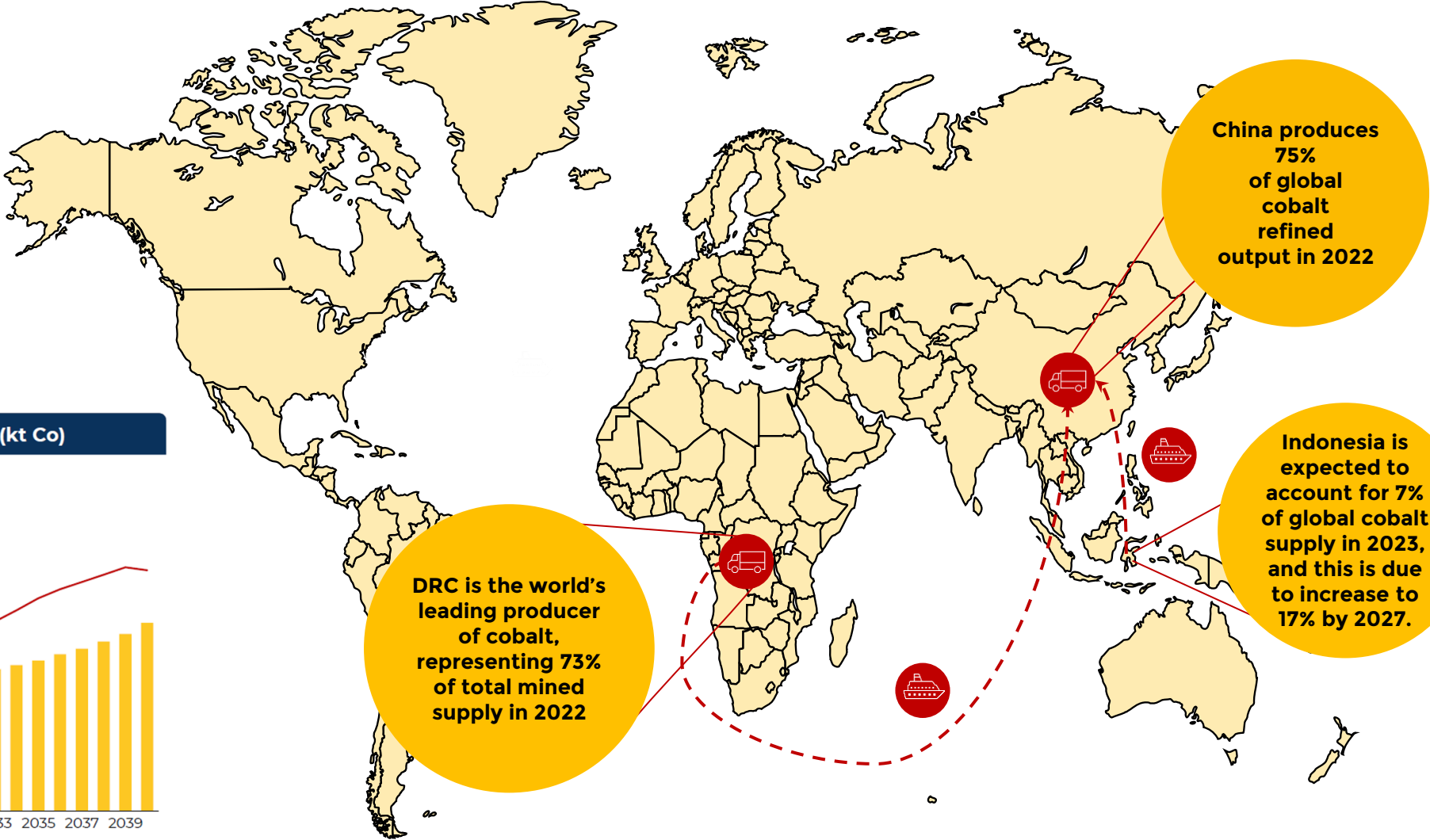
COBALT SUPPLY – SUSTAINABILITY OVERVIEW

Bruna Grossl, *Senior LCA practitioner*
Benchmark Mineral Intelligence

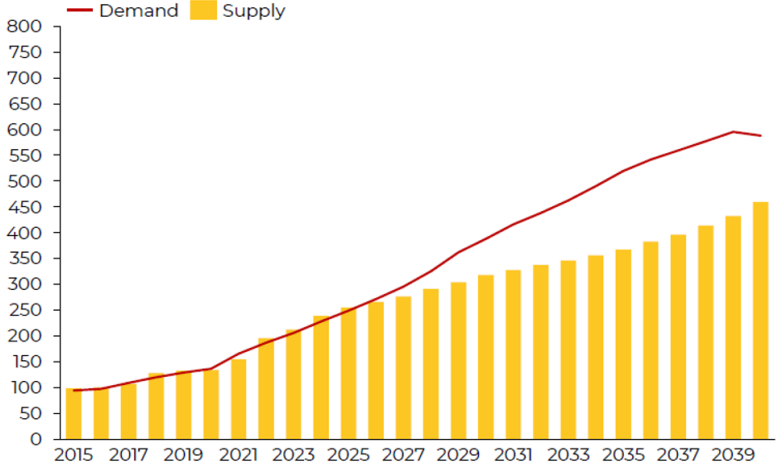
Cobalt Congress 2023 | Istanbul, Turkey
Thursday, 11th May 2023



Demand and global supply



Base Case Cobalt Demand Forecast (kt Co)



Regulatory push and the geopolitical agenda



◦ Inflation Reduction Act (IRA) & EU Green Deal



◦ Battery passport & % recycled content








◦ Mineral Security Partnership & Critical Raw materials Club

*“As Chinese financed assets ramp up new cobalt supply across the DRC and Indonesia, Benchmark data demonstrates that Chinese firms will have a stake in **>50% of cobalt supply** by the end of the decade; a level of supremacy that the West is unlikely to be seriously be able to pose a **challenge in the medium-to-long term.**”* Benchmark Cobalt Q1-2023 Forecast

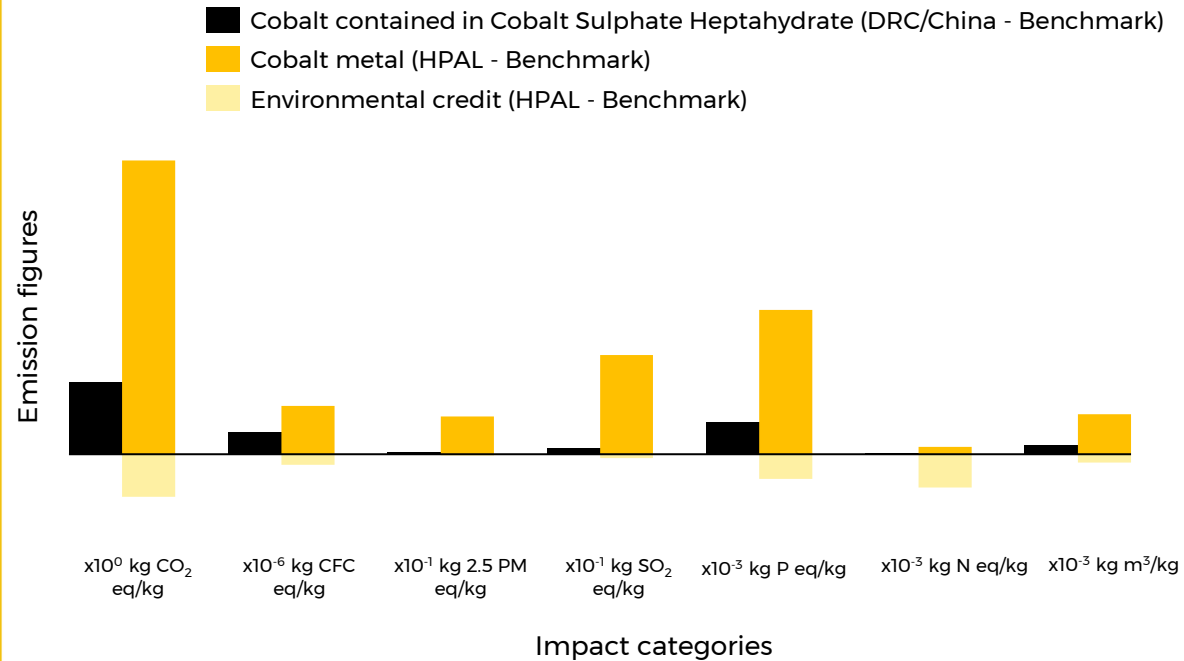
Forecast

LCAs as a tool to evaluate environmental impact

Alongside GWP, LCAs can evaluate a range of impacts, including:

-  Freshwater and marine eutrophication
-  Water consumption
-  Stratospheric ozone depletion
-  Terrestrial acidification
-  Fine particulate matter formation

Cobalt Global LCA results

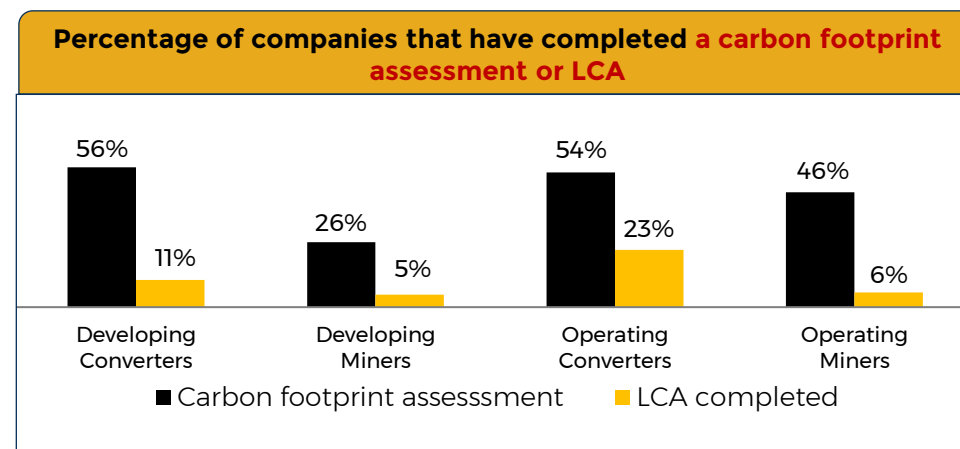
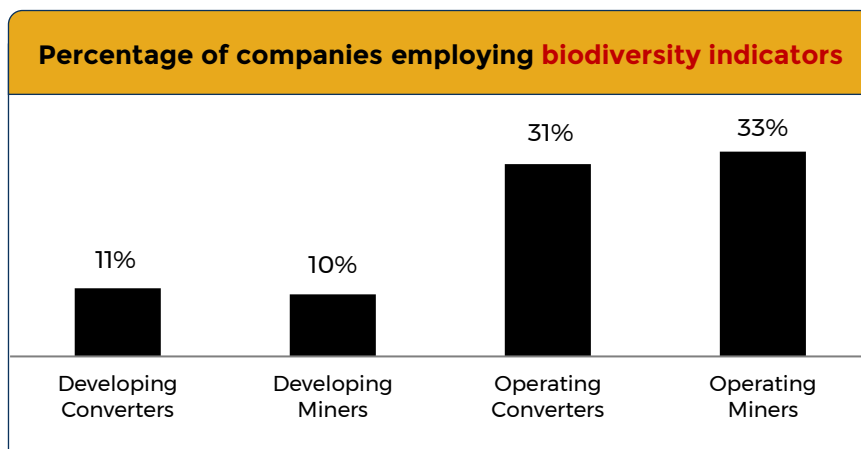
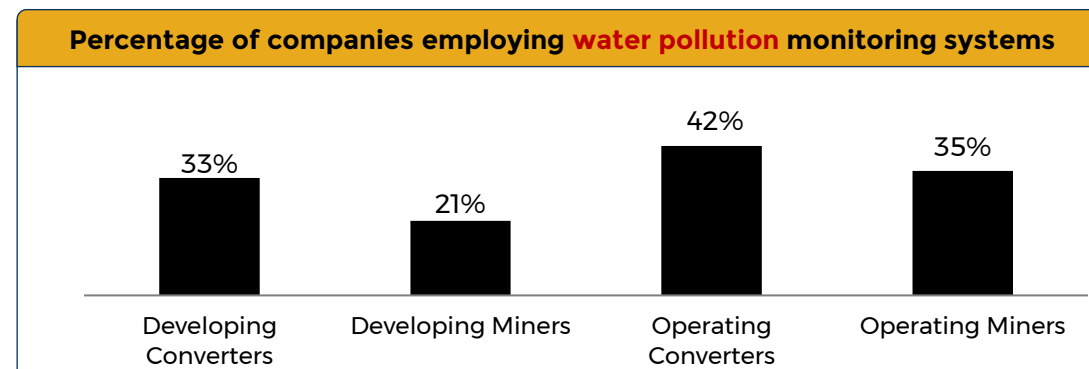
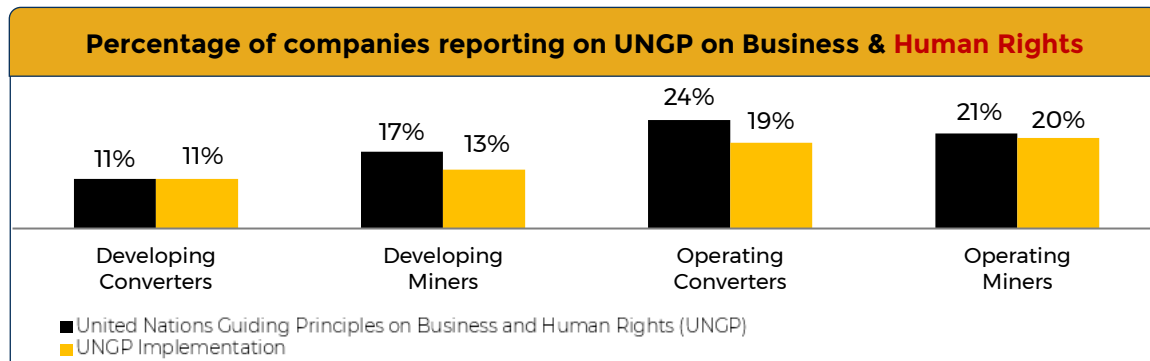


Understanding the full environmental effects of cobalt means looking **beyond carbon.**

Conducting an LCA helps companies assess and quantify impacts, as well as identify environmental hotspots, and opportunities for emissions reductions.

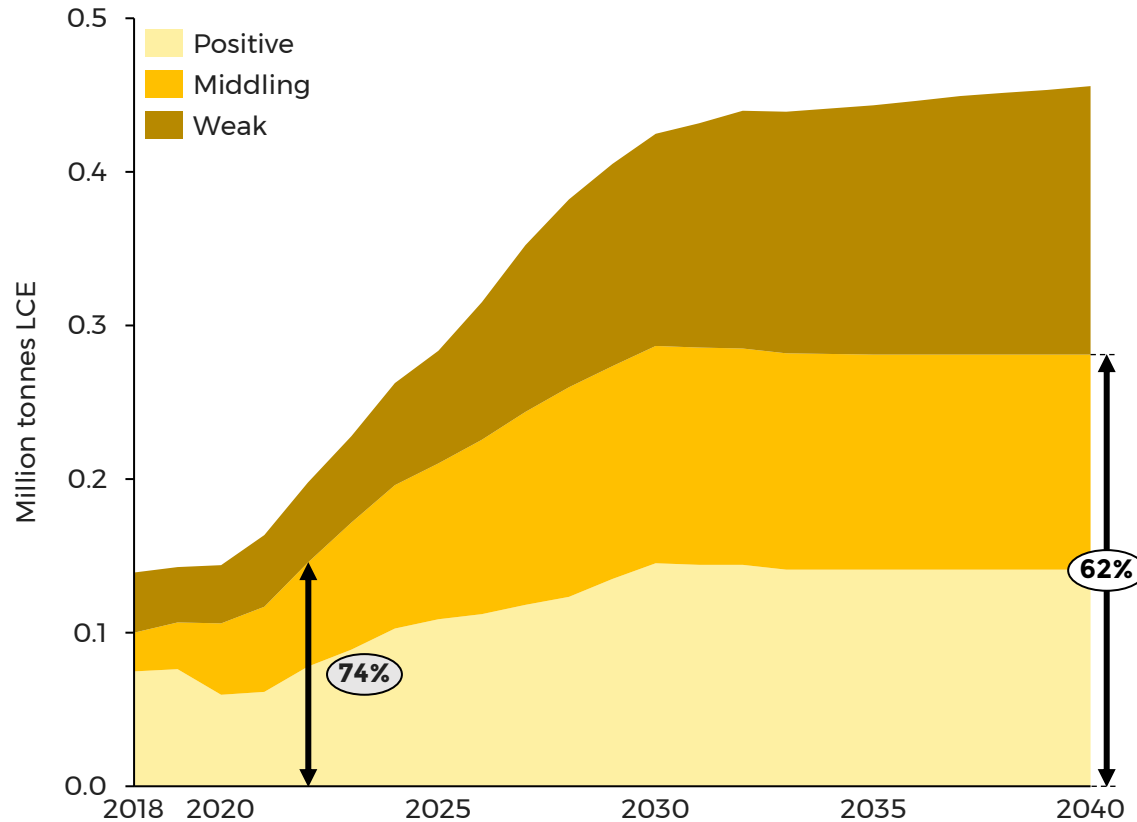
Electricity use is one, but not always the primary, contributing factor towards GWP. Depending on the route, direct emissions can account for more of the GWP.

Responsible sourcing: comparable and robust sustainability reporting



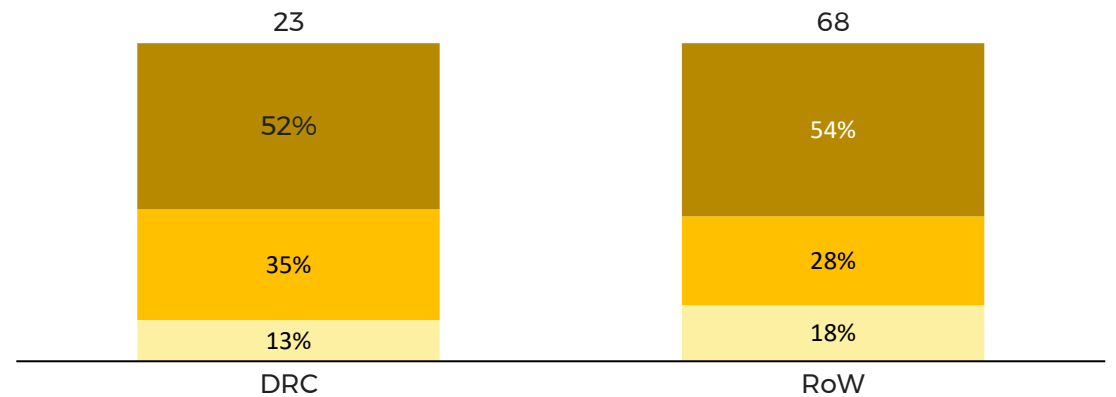
Three quarters of globally-mined cobalt tonnage is conducted with a middling-to-positive level of ESG consideration

Global mined cobalt production by BMI ESG tier



- DRC's ESG considerations are not that different from the rest of world supply when considering both miners and juniors.
- The forecasted level of ESG does not consider future legislation.
- This raking is evolving in nature. As indexes mature and materiality topics become more or less salient over time, we expect the levels of ESG consideration to change.

Positive Middling Weak



ESG Tiering definitions: **Positive** meet all criteria being measured OR meet all criteria bar one metric and must have publicly available ESG report and committee in place; **Middling** if an Operator, must have publicly available ESG report and fulfil at least one other criteria; OR, if a developer must have ESG engagement or have ESG committee in place and fulfil at least two other criteria; **Weak** have no ESG engagement; **In Progress** are those which Benchmark's ESG team are processing. Full definitions of criteria available in attached appendix.

FOR ANY QUERIES, CONTACT US :



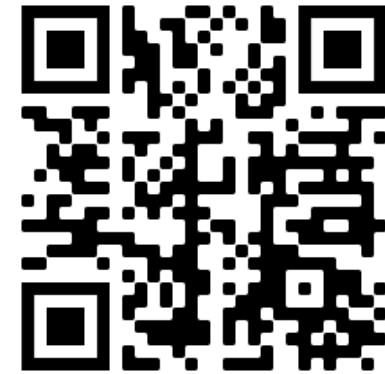
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