

Impacts: Net Zero and Equity— ‘hard to abate’ emissions

Dramatically decreasing greenhouse gas emissions in all economic sectors must occupy our attention immediately. That is work toward a ‘real zero’ goal.

Yet even if attempts at ‘deep decarbonization’ are successful, some quantity of emissions likely remain: residual emissions. They are implicit in the definition of ‘net zero’. They are the emissions to be ‘netted out’.

Most climate scientists acknowledge the imperative of minimizing the *volume* of residual emissions at the year 2030, and 2050. Mindful of the concept of ‘intergenerational equity’, agreed in the Paris Agreement, CLARA takes this approach to residual emissions a step further: we not only have a *moral responsibility* to minimize emissions in these benchmark years, we must ensure that how we achieve those remaining residual emissions is directed by planning for equity and sustainable development.

Intergenerational equity raises the question of how “residual” is defined—and who gets to define it. Answering the question is usually approached as a set of technical and economic arguments regarding what emissions are ‘hardest

to abate’. In the worst case, the ‘hard to abate’ debate simply results in the creation of new loopholes that allow for continued emission increases.

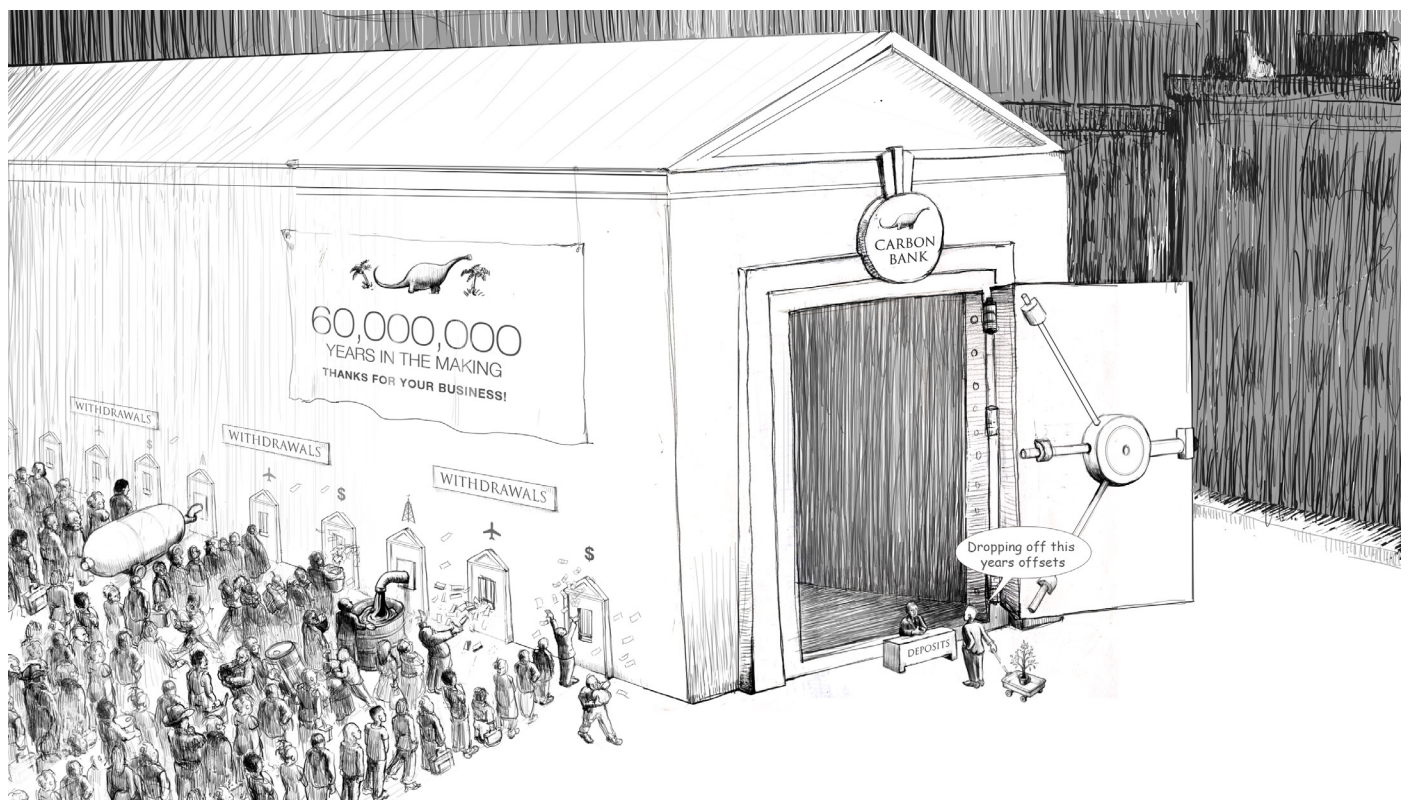
CLARA seeks to turn that question around and pose it from within an equity frame: which emissions matter most to achieve intergenerational equity and climate justice? What “residuals” must be compensated for, at what cost, and for whom? This question echoes one from an earlier phase in the climate justice debate, which looked at the existence of both *survival* and *luxury* emissions.

Why are there residual emissions?

Speaking optimistically: we should be able to push power-sector emissions down to zero through complete electrification with renewable energy. Similarly, electrification of the road transport system can drive emissions down to near zero.

The next-level challenge lies in eliminating greenhouse gas emissions in what are sometimes called ‘hard to abate’ sectors. It is inevitable that despite deep decarbonization efforts, some emissions will remain. For example, half of cement’s

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emissions are baked into the product as it cures—so even solar-powered cement production would be highly emissive. (Emissions in the agriculture sector will also remain—see ‘Net Zero and Equity—the Special Case of Agriculture’.)

Who is presently defining “residual”, or “hard to abate”?

As an example, the air transport sector argues that their emissions are ‘hard to abate’ because they can’t substitute out fossil jet fuel for another product. Energy intensive industries that require extremely high temperatures for production make a similar argument—no opportunity for *technological substitution*.

As sectors decarbonize, the costs of eliminating the last [say] 20% of emissions in that sector will likely rise sharply. Some companies are asserting their need for residual emissions based on this price-point analysis—‘it’s simply *cost-prohibitive*’ to eliminate some emissions, they argue, so these are residual.

Staying for the moment just with technical thinking about what ‘hard to abate’ means, three arguments are commonly encountered.

- Intrinsic emissions: Some emissions are intrinsic to the production process. They can’t be abated. There’s no way to get to ‘real zero’ in this sector—e.g., the above-mentioned example of the cement industry.
- ‘Hard to abate’ industrial processes are made easier through the continued application of efficiency improvements and other incremental changes. Such changes are expensive, but somewhat more predictable. How close this approach gets to ‘real zero’ depends on supportive policy environments and a much stronger signal to investors about the seriousness of minimizing residual emissions.
- Finally, in some cases, ‘hard to abate’ is an all or nothing proposition, based on hoped-for technological breakthroughs. It works or it doesn’t. A number of ‘net zero’ commitments get to zero by relying on gee-whiz technologies that haven’t even been invented yet, or not yet proven outside of laboratory conditions. It’s possible, then, that new removal technologies will indeed help get closer to ‘real zero’ goals. But if instead these are technological dead-ends, we may end up with a greater volume of residual emissions than was expected, because we didn’t incentivize or invest adequately in proven incremental approaches.

Note that this conversation about how to offset, or ‘net out’, or eliminate residual emissions is almost entirely confined to the supply side. What about changing demand? Rarely is there much consideration of what might be done to bring down

demand in key sectors like air travel, long-distance shipping, or cement. We find it ironic that so many commentators view reducing demand as a far-fetched dream, while at the same time embracing the use of totally unproven technologies to achieve ‘net zero’. CLARA partner Heinrich Boell Foundation has written about demand reduction for different sectors in a series of reports called ‘Radical Realism’, and comprehensively in a 1.5°C scenario focused on economic ‘de-growth’.

But those global elites who are committed to growth at all costs—including by ignoring planetary boundaries—use a tactical definition of ‘hard to abate’ that arrogates residual emissions to themselves. Having decided that their emissions matter more than others, they argue that ‘hard to abate’ means ‘making major changes to my business model [or consumption patterns]’—something they’re just not willing to do. (Note the number of corporate ‘net zero’ commitments that involve only modest changes to existing business models but that require huge volumes of offsets to get to net zero. This is discussed more fully in our Briefs on Fossil Fuels, and the Meat & Dairy sector.)

Residual emissions with an equity frame

A relatively simple and well-understood approach to equity within a carbon budget approach assigns shares of the limited remaining ‘atmospheric space’ to individuals, or countries, to keep warming well below 2°C. But such an approach fails to take historical responsibility for emissions into account. A ‘fair shares’ approach looks at the criteria of responsibility and capacity to respond to climate change. CLARA supports use of the ‘fair shares’ methodology found in the Civil Society Equity Review.

In determining ‘fair share’, the next necessary question to ask is—what’s in that volume of residual emissions? What effort, or failure of effort, does that volume of residual emissions represent?

Finally—is there agreement that these residual emissions are both ‘hard to abate’, *and* that the residual emissions do not drive inequity?—simply put, that they do not represent ‘luxury’ emissions.

We can’t allow ‘hard to abate’ to become residual emissions simply because a politically powerful industry has decided they cannot explain to their shareholders or financial analysts why the company or industrial sector must invest to directly reduce its emissions to ensure its continued existence. Climate change is not just an existential threat to vulnerable countries, but to all industries. Achieving residual emissions must build adaptive capacity for sustainable development, rather than embedding those emissions within a *status quo* logic of economic growth, based primarily on planning for continued non-essential or luxury consumption.