Comment: To make net zero add up through carbon markets we need to learn from accountants

By Alicia Seiger

Last month, an independent council charged with giving integrity to carbon credits issued long-awaited principles intended to build trust and increase investment in the voluntary carbon market (VCM). The VCM is a means by which companies and individuals can offset their climate pollution by paying a third party to reduce or remove greenhouse gas (GHG) emissions from the atmosphere.

The VCM has been making headlines, with negative stories questioning credit quality and the use of proceeds (even John Oliver weighed-in). With the release of its Core Carbon Principles, the highly respected members of the Integrity Council for the Voluntary Carbon Market (ICVCM) were striving for a resolution to what offset buyers and sellers see as the market's biggest question: what credit-quality thresholds will mobilize finance?

Many experts received the CCPs with a collective "meh". I was among the underwhelmed. In my view, the ICVCM and its stakeholders are asking the wrong question. The path to integrity is not through more precise definitions of credit quality, it is through more precise accounting.

Those interested in driving investment in climate solutions at speed and scale should be asking: how can we move from a marginally effective voluntary regime to a viable market capable of making net zero add up? The answer starts with carbon accounting and follows the path of emissions liability management. Let me explain.

I helped to build TerraPass, one of the first U.S. carbon offset retailers, nearly 20 years ago. We strove to deliver high-quality credits, and invested significant resources to collaboratively build standards knowing our fledgling sector would be judged by its worst actors.

Back then, our customers were primarily deep-green individuals and brands looking for ways to do their part to "restore the balance". Today, 128 countries and 40% of Fortune 500 companies have set targets to achieve net-zero GHG emissions, with a whopping 88% of global emissions covered under a decarbonization pledge. While the potential demand for offsets has changed dramatically, the idea that defining credit quality will unlock massive capital flows remains a mirage.

Reaching net zero (typically by 2050) is now the dominant organizing principle for climate action. While some net zero targets are codified in regulation at the national or state level, most of the net zero story is taking place in the private sector, where actions are voluntary.

Firms set targets, count their emissions, and attempt to reduce emissions through the most efficient means possible (a core promise of the VCM). Notice I said "count" emissions. Now let's imagine a world where firms *account* for GHG emissions, and discover how that foundational shift builds the backbone currently missing from the VCM.

Carbon accounting looks like cost accounting, but instead of passing costs, each product or service in a supply chain passes embodied carbon emissions from seller to buyer. The reporting entity combines its direct emissions with supply chain emissions and passes its emissions liability downstream. Faculty at Harvard and Oxford have proposed such a system, it's called e-liability accounting.

Using the "scopes" lexicon of the GHG Protocol, e-liability accounting captures allocated scope 1 (direct) emissions, combined with upstream scope 3 (other entities') emissions. Scope 2 emissions, or purchased heat and electricity, are just a special case of upstream scope 3.

E-liability accounting, like financial accounting, reflects GHG flows. When emissions flows are accurately accounted for and understood as a liability, firms can then begin the process of emissions liability management (ELM). That's where the climate action story gets interesting.

Corporate balance sheets cumulate cash flows into stocks of assets and liabilities. ELM cumulates emissions flows into stocks of carbon liabilities, carbon assets, and measures of emissions solvency. Emissions liabilities persist for incredibly long durations. Exactly how long depends on complicated carbon cycles but with high probability they outlive firms and households. ELM forces emitters to internalize the cost of the (essentially permanent) liability of warming the planet.

What does ELM have to do with offsets? By adopting ELM, investors, companies, and regulators will have the tools and incentives necessary to scale investment in operational and supply-chain emissions reductions, drive demand for removal assets (both nature- and technology-based) and inform verifiable net zero claims.

In other words, ELM provides the foundation on which a rapid scale-up of investment in avoided emissions and removals can flourish with integrity. Under ELM, rather than trading avoided emissions credits (which 30 years of experience has taught us is fraught with measurement and gaming challenges), activities like fuel-switching, methane capture, and climate-smart agriculture simply lower the amount of e-liabilities passed on to downstream purchasers of goods and services. Rather than buying avoidance credits with advertising or philanthropic dollars, firms can capitalize investments that reduce supply-chain emissions in the form of lower e-liabilities.

Few firms will be able to meet their net-zero targets on operational efficiencies alone. They will need to balance remaining liabilities with assets that remove emissions. Today, the market for nature-based removals is losing ground because of relentless bad press over questionable forestry projects, while demand for technology-based removals remains limited to mostly a handful of forward-thinking firms making advanced market commitments. Under ELM, demand for fixed-duration, nature-based removals rises substantially. Technology-based removals also

become more attractive, especially because ELM supports the efficient determination of prices, as markets develop methods to correctly trade-off temporary and permanent removals.

Importantly, ELM provides the foundation on which emission reductions and removals can be capitalized. Under ELM, asset quality will be judged by whether the removal: (1) matches the duration of the corresponding liability, (2) can be verifiably delivered, and (3) maintains appropriate impairment adjustments (for example when a forest burns, owners must adjust the value of the original asset and new direct emissions must be assigned.)

And consider this: ELM provides much-needed clarity to evaluate corporate and investor net-zero claims. Matching only current-year emissions does not capture the true cost of climate pollution. Until firms accept the obligation to duration-match emissions liabilities and removal assets, they fall demonstrably short of true net zero.

When I was leading business development at TerraPass, I was often frustrated by outsiders (usually academics, always the press) making the perfect the enemy of the good. I felt their arguments lost sight of our good intentions, and they either failed to offer a better alternative or their suggestions felt too "academic".

It is too late on the carbon clock to pretend we can fix carbon markets with the same tools that have come up short for decades. It is time to change course. Emissions accounting and liability management is neither academic nor out-of-reach. With its parallels to financial accounting, it is, quite conveniently, business-as-usual.

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