

By Patrick White

At Work Developing Carbon Offsets with Finite Carbon

Carbon has gotten a bum rap lately. Once called the fundamental building block of life, it's now better known as the thing that's going to destroy the planet. As if this weren't confusing enough, at the same time carbon is being demonized it's also an asset – something of value that someone else will pay money for.

This is the world that Finite Carbon works in. As a “developer of forest carbon offsets,” the company helps landowners get paid for the carbon that's stored in their trees by selling carbon credits through the State of California's cap-and-trade program. To grossly simplify the backstory, California requires heavily polluting companies (think large petroleum and electric companies) to offset their emissions by buying carbon permits from the state or carbon offsets from landowners who have been issued credits for verified projects. Typically, the offsets sell for a little less than the state permits, so most companies buy as many as they can – up to eight percent of a company's total emissions obligations can be met this way.

Unlike past carbon offset offerings that were voluntary (helping companies to bolster their environmental cred), the California Air Resources Board program is compliance-based, which creates a more-or-less guaranteed demand for off-

set credits – estimated to be about 200 million credits (\$2 billion, at current prices) between now and 2020. While the requirement applies only to companies doing business in California, the program will issue offset credits to verified forest projects anywhere in the continental U.S. For forestland owners in the Northeast, this creates an opportunity to sell carbon credits, though it's an expensive and painstaking process.

That's where Finite Carbon comes in. “We provide all of the capital and all of the expertise,” explains Sean Carney, the president of the Pennsylvania-based company and one of its three co-founders. “It costs a couple hundred thousand dollars for every project we do to get it off the ground, and it takes a lot of effort to do this work. We provide all of that up front, so it's a turnkey solution for the landowner. At the end of the day, they receive credits and we sell those credits for them. They get paid, and we get a percentage of the credits that we create for them.”

While there are other types of offsets (like agricultural methane gas destruction) accepted by the California program, Finite Carbon works exclusively with forestland. Although the California program is now just a little over two years old, Carney says there is growing knowledge among larger landholders about just how it works. The very early adopters of the carbon offset marketplace tended to be land trusts, he notes. The New England Forestry Foundation and the Downeast Lakes Land Trust were two of the first groups that Finite Carbon worked with. “They were the ones who really wanted to be at the forefront and show that this could work,” says Carney. “When the Downeast Lakes Land Trust held up that check and said, ‘Look, money came out of these trees for practicing responsible forestry,’ that was a big day.”

Seth Clifford of Fountains Forestry works on the inventory for the Downeast Lakes Land Trust's Farm Cove project; developed by Finite Carbon in 2013, it was one of the first forest carbon projects to be issued offset credits by the California Air Resources Board.



Once the program was shown to work, other entities – including large timber investment and publicly traded forestry companies – followed suit. In the last two years, Finite Carbon has worked on projects with The Forestland Group, Lyme Timber, Molpus Woodlands, and Potlatch, among others. The Forestland Group, for example, had two projects – one on 102,899 acres in the Adirondacks and another on 141,062 acres in northern New Hampshire – successfully registered with the California offset program in 2014. Together, these projects were awarded roughly 1.3 million offset credits, which generated nearly \$12 million in revenue. The Passamaquoddy Tribe of Maine is currently working with Finite Carbon to have a 99,000-acre parcel accepted into the California program, and the expectation is that it, too, will generate more than one million credits.

While the payoffs are big, so is the commitment required to get the credits. One of the first steps is to be sure a particular parcel of forestland is suitable for the program. For starters, it needs to be big in order to make economic sense. Figure a bare minimum of 2,500 acres, and usually much larger than that, given all of the costs involved.

The forestland also really has to start with above-average stocking levels because part of the initial credits issued will essentially be a reward for past behavior. For example, if a forest has 100 tons of carbon per acre and the comparison level is 80 tons per acre (based on U.S. Forest Service Forest Inventory and Analysis datasets for similar forests), then the landowner will receive credit for 20 tons per acre.

There are different ways that forestland owners can earn offset credits in the California program: Avoided conversion projects are those that keep land that otherwise might be cleared or developed in forestland. Improved forest management projects, which are the most common, are based on forest owners managing in a way that will sequester more carbon than would normally be the case. That's what creates the offsets.

Once the land is deemed suitable, the real work begins, starting with the mother of all inventory jobs. "When a traditional forester looks at an inventory, they think merchantable product," says Carney. "We're thinking about a merchantable product, too. Except that our merchantable product is carbon." A carbon inventory is focused on biomass, he explains. "That's everything – the roots, the stumps, the tops, the branches, all of that gets factored in. When we go out to do a measurement, we're looking to calculate total carbon, not just board feet or cords. So within every plot being sampled we have to measure diameter on every tree one inch DBH and up; we have to measure the merchantable tree height and the total tree height on every tree. As you can imagine, when you're in an eastern hardwood forest, this is not an easy task at all." Even standing dead trees are accounted for.

Finite Carbon's own foresters design the inventory and bid the job out to local forestry firms who have been trained in the nuances and precision of the work, which can take several months. Field crews as large as 10 people are not uncommon, with

Finite Carbon's foresters overseeing everything in conjunction with the local firms. "Quality control is incredibly important. Because after we finish all of our work, a verifier who has been approved by the state of California comes out into the field and does a random sample of all the plots that we measured and goes through them tree by tree," Carney explains. "Failing on even one tree in a plot can cause you to fail the verification."

While a typical inventory is capturing just a snapshot in time, a carbon inventory needs to be a tool that can be used to monitor that forest for a 100-year timeframe – the life of a carbon project. Plots are mapped, marked with rebar, and will be monitored regularly for the next century.

It's not only the carbon identified in the inventory, but also the management plan that will ultimately determine how many offset credits California will issue to a project. "It becomes a calculation of how much of your growth you're harvesting. The golden rule of a forest carbon project through the state of California is that you don't harvest more than annual growth," says forester Dylan Jenkins, the company's vice president of portfolio development. "You can absolutely actively manage these forestlands. Almost all of our projects are actively managed for a mix of forest products and forest carbon offsets. So the revenue a forest landowner receives [for carbon] can be additional. It's not necessarily alternative revenue."

Once a project has been completed and verified, the state of California issues a certain number of compliance offsets (credits), based on all of the parameters of the project. These credits can then be sold directly to an individual buyer. Here again, Finite Carbon handles the process for the landowner, which is good because the big buyers are mostly the big oil companies – Chevron, BP, Shell, and so on – and negotiating with multinational corporations is beyond the expertise of most landowners. "There are some pitfalls you want to avoid, and having extensive transactional experience helps us look out for our sellers and protect them," says Carney.

At the moment, Finite Carbon has 18 projects under development across the U.S. on over 1.3 million acres generating over 20 million offsets through 2020. Given the built-in demand coming out of California, Carney expects the number of carbon offset projects to increase. But will the program ever make sense for smaller landowners, say those with a 500-acre woodlot? "I really hope it will. But since we started in 2009, the cost of doing these projects has increased dramatically," he explains. "I would say the cost to verify a project has doubled, and the cost to inventory a project has quadrupled. So things are going in the wrong direction, and the minimum size requirements just keep going up." He hopes that, in the future, there may be different sets of program requirements for different-sized projects, allowing those with smaller parcels to get paid for their carbon.

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