

Dear Working Group on Forestry Offsets,

Thank you for providing the Climate Action Reserve Updated Forest Project Protocol for our review and comment. Before we provide our comments on the proposed protocol, I would like to briefly introduce our firm and provide some background on our work in the area of carbon markets, and specifically forest carbon offset project development.

FORECON EcoMarket Solutions, LLC, (FORECON EMS) a wholly-owned subsidiary of Forecon, Inc., provides a range of carbon, water, and conservation-related asset management services and market-based approaches for addressing climate change and accessing financial ecosystem service markets.

Our carbon team has worked extensively in the area of forest carbon offsets and forest carbon quantification since 2004. Much of this experience has been in the development of forest offset projects for the Chicago Climate Exchange (CCX). To date, FORECON EMS has developed numerous managed forest offset projects for this market. As a leader in the advocacy effort for workable forest carbon policy in the US, FORECON EMS has worked with most of the other voluntary carbon markets, programs, and standards over the past years as well. The maturation of these additional programs has diversified the opportunities for forest owners. As these programs have evolved, so has the experience and knowledge base at FORECON, EMS.

Since 2004, FORECON EMS has worked with many, if not most of, the forest carbon protocols in both the voluntary and mandatory carbon space. This has included millions of acres of analysis projects, considering the costs and benefits of various carbon rule sets for managed forests in the US. This would include the consideration and analysis of protocols similar to those proposed by the working group for the Regional Greenhouse Gas Initiative (RGGI) in the Eastern US. As a result of our detailed work in this area, we have written extensively in journals, articles, and periodicals, participated in advocacy and consulting work for carbon programs and professional organizations, and advised forest owners on the requirements of the variety of options available to them.

We commend the Working Group and CAR for developing a clear, organized, and transparent program for forest offsets. The Protocol addresses all key components of a complete carbon rule set.

Based on our extensive expertise and experience in this space, our comments are focused on the technical accuracy, economic feasibility, and practical applicability of the CAR Updated Forest Project Protocol (*Public Draft*) as a workable national opportunity.

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Comments:

3.5 Use of Native Species and Natural Forest Management Practices

The consideration of carbon as a product of sound management provides an opportunity to impact the quality of sustainable practices on forest lands. This opportunity has been addressed by the Working Group in item 3.5. It is however, concerning to see that the policy makers have chosen to dictate the use of only “uneven aged practices” as “environmentally responsible”. The Working Group should recognize that frequently, even aged practices are necessary and vital to the proliferation and maintenance of natural forest ecotypes and natural habitats in many regions of the U.S. Restricting landowners to uneven aged techniques appears to over step the objective of encouraging environmentally responsible and sustainable practices.

Also of concern is the Working Group’s requirement that these management programs must be “sanctioned and or monitored by a state or federal agency.” It is entirely possible to operate responsibly without the oversight and monitoring of a public entity. In fact, the third party verification of sustainable forestry standards by private interests is common practice in this country in a variety of programs including; FSC, SFI, ISO 14001, American Tree Farm, and others. The Working Group should not limit the oversight of a responsible management program strictly to a public entity. Not only does this requirement discourage landowners from participating, this infrastructure does not exist uniformly across the country, and is therefore especially onerous.

4. Identifying a Forest Project’s Geographic Boundary

As a developer of carbon offsets since 2004, FORECON has learned a great deal about the costs of carbon. Specifically, we have a firm grasp of the costs of project development implementation, verification, and monitoring under various protocols. Based on the approach advocated by the Working Group, using multiple assessment areas, there are opportunities for project owners to have tracts or parts of tracts in multiple areas. In item 4, the Working Group has required that in the event a project occupies multiple areas, each area is to be addressed individually, submitted as separate projects. It is our opinion that this practice will unnecessarily drive project development costs beyond the reach of many landowners, making this a non opportunity especially for smaller < 1000 acre landowners (which make up most of the NIPF lands in the country!). Limits on the requirement to submit separate project documentation for these areas are highly suggested, and may be most valuable to small project owners.

5. Defining a Forest Project's GHG Assessment Boundary

The Working Group has included the consideration of mobile combustion emissions in the list of those emissions required for reporting. In many cases in the private and public sectors, the mobile combustion sources associated with forest management are not under the control or ownership of the landowner. The Working Group should include a more detailed clarification on this circumstance and the requirements of the project owner in this scenario.

6. Quantifying GHG Emission Reductions

It is evident throughout the Protocol that the Working Group has chosen to meld the Business As Usual (BAU) policies of clean technology and industrial emissions accounting to terrestrial forest offsets. This has been a commonly embraced approach to measuring and reporting additional carbon from forests in the emerging voluntary carbon protocols, and one that presents significant challenges for forestry offsets.

There are strong opinions that carbon sequestration that would (or might) have happened in any event should not be allowed to offset industrial emissions. Often referred to as BAU, this scenario applies well to industrial emissions but much less well to land-based sequestration practices, where natural ecosystem dynamics and unpredictable future human actions make any projection highly uncertain. Changing forest management objectives, markets for alternative land uses, timber prices, and ecosystem service prices (e.g., the price of sequestered carbon) all contribute to a high level of uncertainty when defining a baseline under the BAU scenario. There are no credible field methods to separate the effects of management actions on a forest from the impacts of environmental conditions over time.

For example, it is often assumed that a forest will grow and add carbon naturally without human interference or management. In an unmanaged system between catastrophic natural disturbance cycles, that may be an accurate characterization, at least for some time. If that forest suffers a major disturbance, like an insect or disease epidemic or a wildfire, the assumption will not be valid.

A major uncertainty that discredits any effort at 100-year BAU projections is the potential for climate change to disrupt the underlying environmental conditions that have driven forest growth in the past. If temperature or moisture conditions change significantly, the forest growth patterns of the past may be completely altered in the future, and 100-year growth projections become highly uncertain.

Managed forests coexist with growing and increasingly demanding human populations, and their future is also uncertain. A future owner may turn a forest into a subdivision, or

harvest the trees without regenerating a new forest of equal value, or establish a harvest system that reduces forest biomass significantly. All of those actions may be legal and may be more economically rewarding to the owner. To encumber the property with a long-term carbon management commitment is one way to prevent potential carbon losses, but it creates economic constraints that future owners may find difficult or impossible. Given current trends in land-use change, any estimate of BAU should factor in the risk that the forest will be converted. Any long-term baseline should therefore include not just growth estimates but also a risk assessment of the likely future forest fragmentation or land-use change.

In some states, programs to prevent forestland conversion to other uses, usually accompanied by tax incentives and high payback provisions, may reduce the risk of land conversion. Some states require reforestation following timber harvests, and a few have fairly strict forest management requirements. In those states, a case can be made that the BAU is defined by the likely forest response if the owners adhere to the existing regulations. Again, however, the likelihood of policy change over 100 years is very high.

Forests also face the risk of catastrophic wildfire, and in many places (such as low-elevation forests across much of the West) this risk has been heightened by past management actions that have changed forest condition and structure such that wildfires are more destructive than in the historical fire regime. Wildfires release huge quantities of CO₂, as well as N₂O and other greenhouse gases.

Reducing wildfire risks is a major challenge to today's forest managers on both private and public lands. Where this can be successfully done, and more normal fire regimes reintroduced to the landscape, total CO₂ emissions can be significantly reduced while many other environmental, economic, and social benefits accrue. Again, however, quantifying these emissions reductions is a challenge, since it requires a credible calculation of the risk reduction achieved. With a stochastic process like forest wildfires, estimating risk reduction at a particular project level is difficult, although models are being tested. With more research and experience with fire-safe forest management practices, a credible emissions reduction calculation may be feasible. If that is accomplished, a baseline calculation should include the risk of catastrophic loss, and a project that measurably reduced that risk could be eligible for emissions reduction credits.

Using a more stringent interpretation of additionality, some have proposed that a landowner prove that the financial incentive connected with forest carbon credits was essential to implementation of the forest project. This form of "financial additionality" requires a determination of future landowner intentions and financial capability—a dubious exercise. Landowners may sign a waiver saying the money was needed to do

the project, but that is ripe for abuse.

All of these compounding uncertainties make BAU a very difficult concept for establishing the likely future of a forest system. Attempts to accommodate these uncertainties by constantly adjusting the baseline mean that past carbon credits may be rendered non-additional at some future point. That uncertainty creates a disincentive to participation by forest landowners.

Foresters can measure forest carbon at one point in time, then measure it again at some future point and calculate the difference. Because those measures require no guessing about people's intentions or future actions, several carbon programs have taken this approach. A "base year" measurement is made when the carbon management project is launched. A periodic measurement is then done with the same methodology, and the difference is calculated.

What cannot be calculated, however, is the cause and effect behind those changes. Was growth enhanced by a sustained period of better-than-average weather between the measurements? Or diminished by an adverse period? How much did the silvicultural work of thinning or fertilization affect the biomass measurements? The answer to these questions, generally, is that one can guess but not calculate a certain number. This makes achieving the Kyoto Protocol's demand for measuring only "human induced" change technically impractical.

In some of the emerging climate programs, the assumption is that all the changes (both negative and positive) on a managed forest are a result of management activities. To make these estimates most valid, all of the forests under the management unit program should be included, so that the owner cannot claim carbon credits on the increasing portion of the forest while ignoring losses on any areas of decrease. The forest-wide approach captures all planting, growth, natural mortality, thinning, and harvests and provides a net assessment of the carbon dynamics in the management unit over the measurement period. This approach has been termed a "base year" approach because the carbon content of the forest in the base year is established as the baseline from which additionality is calculated.

The other advantage of the base-year or stock change approach is that it can be easily verified as needed by independent third-party auditors because it involves repeatable measurements and reviewable calculation methods. The BAU approach based on assumptions of people's future intentions or actions, as well as environmental and policy trends, by definition, create a counterfactual situation that cannot be verified; that is, it never existed. If the baseline cannot be quantified with confidence and cannot be verified, it is difficult to argue that any changes are credible as climate mitigation benefits.

The base-year approach, as defined by 1605(b), CCX, and RGGI, is by far the most scientifically based and valid method of determining forest carbon changes. Any system that requires a prediction of future environmental, economic, social, or legal conditions is inherently uncertain, and amounts of carbon may be very difficult, if not impossible, to quantify and verify in the future.

Improved Forest Management Projects

The use of the Improved Forest Management concept infers that only forests that are currently managing poorly or unsustainably can benefit from carbon finance opportunities. In other words, the consideration of carbon from management programs that have been poorly implemented are given a financial incentive to change their ways, while responsible forest managers that have minimal opportunity to create paradigm shifts in management for carbon are denied the opportunity to participate. This is a significant programmatic inequity and a discriminatory policy under this Protocol.

Determining Common Practice on Similar Landscapes:

As previously mentioned, FORECON EMS has completed extensive forest carbon modeling and policy analysis work since 2004. Most recently, this has included a test of the use of USFS FIA data for the establishment of regional, eco-region, county, and state forest carbon baselines for private land in the Eastern U.S. Our analysis revealed numerous challenges in this approach. These items are bulleted below:

- **Equity.** The use of neighboring properties to establish performance criteria for a project site is not equitable. Individuals manage their lands or do not manage their lands based on situations, values, knowledge, and interests that are unique to them. Limiting or crediting carbon participation on a project site in proportion to the performance of its neighboring lands is at best, an arbitrary exercise and does not consider the real climate change benefits of the subject tract. In addition, the climate benefits equally when a ton of CO₂ is sequestered by a forest above or below the regional average. By putting those project owners below the regional average at a calculated disadvantage, the program reduces the opportunity to improve sustainability and preserve forest land use and its associated benefits on these lands for the future by reducing potential for carbon revenues. Therefore, the use of regional baselines to establish performance thresholds creates a situation where those that have not been in a position to cut their timber are favored. This is a gross inequity of the draft Protocol.
- **Accuracy.** While analyzing the use of FIA data for multiple northeastern states, we found the FIA data process to be variable in procedure, chronology, and intensity from state to state. As such, using FIA data for this purpose (one for

which it was not intended) will result in variable estimates based solely on the quality and quantity of the data for the area considered. FIA data is also coarse in resolution. States as large as California may be able to stratify the data by eco region and maintain statistically relevant results per region. Most other states cannot adequately stratify within political boundaries without experiencing wide ranging statistical results for volume estimation due to small sample size. Without reliable estimates, the calculation of financial instruments from project sites could vary enormously from one FIA measurement period to another based solely on data error and variability.

Regarding the CAR requirements under this approach, it is additionally concerning that reference is made to the previous 10 years sequestration as the determination of project carbon. In many cases, forest owners will not have access to these types of records, forcing them to go through a back growing modeling exercise that is often fraught with inaccuracies. The further distinction of using 80% of the highest tons in preceding 10 year period also seems contrived and/or arbitrary (why not 75% or 85%?).

The end result of this set of calculations and policies is a regional approach to control carbon storage and uptake, rather than an approach that addresses, regulates, and rewards project specific calculations and qualities. We feel that addressing each individual project on its own capacity, limitations, climate benefits, and performance through site specific baselines is the only equitable, verifiable, and accurate approach.

6.2.1.2 Improved Forest Management Baseline for Public Lands

Interpretations and methodologies for considering additionality from forests are as varied as the number of voluntary standards and programs themselves. To date, the least debated interpretation of additionality from mandatory and voluntary programs has been regulatory additionality. As is defined in the Protocol, conservation easements, use restrictions, forest regulations, and other forms of law, restrict the carbon considered additional and marketable. To date, no public lands have been permitted under mandatory or voluntary programs to participate as true offsets. Public lands have been used to help municipalities realize their climate change objectives or caps, but we are aware of no instance where a public entity has been permitted to market its carbon from forests in a retail or open market transaction. This is for one reason...the management of public lands is governed by laws of the public good. Therefore, they are in inherent conflict with requirements of regulatory additionality. We strongly encourage the reconsideration of the participation of Public lands as offsets in any capacity in this Protocol.

FORECON EMS appreciates the opportunity to provide this feedback to the Working Group regarding this draft Protocol. With approximately 80% of the nation's forest land

in private ownerships, we feel strongly that any carbon reduction program must recognize the climate change benefit potential and limitations of this critical group. Provided the policy structure for forest offsets is designed in a manner that is technically accurate, scientifically credible, and economically feasible, forests can be a significant part of the solution for US greenhouse gas reductions.

We applaud the efforts of the CAR to seek such wide ranging stakeholder interests. In conclusion, we would like to thank you for the opportunity to offer our assistance on the issue of carbon reduction legislation as policy makers move forward on this significant undertaking.

Best Regards,

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