ALASKA STATE LEGISLATURE
SENATE RESOURCES STANDING COMMITTEE
February 20, 2023
3:30 p.m.

MEMBERS PRESENT

Senator Click Bishop, Co-Chair
Senator Cathy Giessel, Co-Chair
Senator Bill Wielechowski, Vice Chair
Senator Scott Kawasaki
Senator James Kaufman
Senator Forrest Dunbar
Senator Matt Claman

MEMBERS ABSENT

All members present

COMMITTEE CALENDAR

PRESENTATIONS ON FOREST CARBON OFFSET PROJECTS

FOREST CARBON 101

- HEARD

HOW FOREST CARBON OFFSET PROGRAMS COME TOGETHER

- HEARD

ALASKA FOREST CARBON OFFSETS

- HEARD

FOREST OFFSETS IN A CARBON TRADING SYSTEM

- HEARD

PREVIOUS COMMITTEE ACTION

No previous action to record

WITNESS REGISTER

HELGE ENG, PhD, State Forester and Director

Division of Forestry and Fire Protection
Department of Natural Resources (DNR)
Anchorage, Alaska.
POSITION STATEMENT: Moderated the panel discussion about forest carbon offset projects.

JOSHUA STRAUSS, Senior Vice President
Natural Climate Solutions
anew
San Francisco, California
POSITION STATEMENT: Presented Forest Carbon 101.

BRIAN KLEINHENZ, Owner and President
Terra Vera Inc.
Juneau, Alaska
POSITION STATEMENT: Presented How Forest Carbon Offset Programs Come Together.

NATHAN LOJEWSKI, Certified Forester and Forestry Manager
Chugachmiut
Anchorage, Alaska
POSITION STATEMENT: Delivered a presentation on Alaska forest carbon offsets.

CHRIS MAISCH, Immediate Past President
Society of American Foresters
Fairbanks, Alaska
POSITION STATEMENT: Presented Forest Offsets in a Carbon Trading System.

ACTION NARRATIVE

3:30:38 PM
CO-CHAIR CATHY GIESSEL called the Senate Resources Standing Committee meeting to order at 3:30 p.m. Present at the call to order were Senators Dunbar, Wielechowski, Kawasaki, Kaufman, Co-Chair Bishop, and Co-Chair Giessel. Senator Claman arrived soon thereafter.

PRESENTATIONS: FOREST CARBON OFFSET PROJECTS

3:31:26 PM
CO-CHAIR GIESSEL stated that the only agenda item was the discussion of carbon offsets, which was in preparation to hear SB 48, the governor's carbon offset program on state land. State

Forester Dr. Helge, Eng will moderate a panel of four experts She introduced the panel members.

3:32:49 PM
HELGE ENG, PhD, State Forester and Director, Division of Forestry and Fire Protection, Department of Natural Resources (DNR), Anchorage, Alaska, introduced himself and shared his more than 30-year background in forestry. He relayed that he would moderate a panel of four speakers who would discuss different aspects of forest carbon offset projects.

FOREST CARBON 101

DR. ENG introduced Joshua Strauss, the primary author of the *anew* report, who would present Forest Carbon 101.

3:34:39 PM
JOSHUA STRAUSS, Senior Vice President, Natural Climate Solutions, *anew*, San Francisco, California, reviewed the agenda for his presentation:

- About *anew*
- Compliance vs Voluntary Markets
- Components of Offset Quality
- Alaska Pilot Project Outlook
- Project Development Process
- Questions

3:35:31 PM
MR. STRAUSS stated that he had been with *anew* and its legacy organization, Bluesource, for more than a decade. His background is in forestry and the economics and policy of environmental management. He has dedicated his career to working in the forest carbon space. He reviewed the organization he works for speaking to the following:

About *anew*

- Oldest and largest carbon offset developer in North America (20+ years)
- Voted Environmental Finance's Best Project Developer (North America) and Best Offset Developer (California) for seven years running
- Dedicated forestry team: in-house finance, marketing, and legal experts, plus 30 professional foresters with unparalleled forest carbon experience

Projects 200+
Project types 20+
Million tonnes emission reductions 180+
Forest carbon projects under management 100+
Million acres enrolled in carbon projects 5+ A

3:37:19 PM
MR. STRAUSS displayed the *anew* Forestry Project Map that shows the distribution of the projects throughout the continental US, including six projects in Alaska. About two-thirds of the projects are in the voluntary market and one-third in the compliance market. He highlighted the importance of understanding the nuanced ways each of the different types of forest owners generate carbon credits.

He noted *anew*'s experience working in Alaska and described working with the state through the Department of Natural Resources (DNR) as a specialty on its own. He displayed slide 5 that lists some of *anew*'s notable partnerships.

- Alaska DNR
- Michigan DNR
- Ohio DNR
- 8 Wisconsin Counties
- 3 Massachusetts Townships
- 2 Pennsylvania Water Authorities
- 1 Public University

MR. STRAUSS conveyed that working with the Michigan DNR on a forest carbon project in the Pigeon River region was a first of a kind. It has generated more than 300,000 credits in its first issuance and sold out all credits for the first decade.

3:39:17 PM
MR. STRAUSS advanced to slide 7 and spoke to the following:

What are forest carbon offsets?

- Forests across the US sequester substantial amounts of carbon dioxide (CO2).
- By maintaining or increasing forest stocking, forest landowners can generate units of CO2 emissions reductions ("Carbon Offsets").
- Companies wishing to combat climate change are willing to pay forest owners for these Carbon

Offsets, thereby claiming credit for reducing CO2 emissions and mitigating some of the effects of climate change.

MR. STRAUSS explained how offsets are created. If a forest would otherwise be harvested or not continue to grow at the current rate, the property owner can commit to increase the rate of growth or maintain certain amounts of carbon in that forest and in exchange, quantify those units in terms of carbon credits. Those credits can be sold to organizations looking to reduce their carbon footprint.

MR. STRAUSS described the two fundamental markets where carbon credits are bought and sold. He spoke to the following on slide 8:

Forest Carbon Markets

Voluntary Market

Companies voluntarily choose to purchase offsets to reduce their emissions

- Greater variation in pricing
  - $4 to $35/ton/offset unit
- Premium value attributed to "charismatic" projects
- Less certain demand

MR. STRAUSS said *anew* envisioned the state using the voluntary carbon market. The compliance market is not a preferred option on public lands given the rules and credit generation process. The price range in the voluntary market is broad because there are universes of methods of generating credits. Any legitimate credit generally represents one metric ton of carbon dioxide equivalents, but other attributes add charisma. Forestry is sometimes favored because it implies a benefit to things like erosion control, habitat, air or water quality, all of which increase the credit value. He conveyed that *anew* currently was seeing credits for their forest units selling around $17-$25.

Compliance Market

Companies purchase offsets to help meet their legally mandated emissions targets (CA & Quebec)

- More consistent pricing
  - $15 to $20/ton/offset unit
- Built-in demand through 2030

Additional Compliance Programs
- Washington
- CORSIA (international aviation)
- Canada (Federal and Provincial)
- Oregon

3:44:12 PM
MR. STRAUSS directed attention to the names and logos of nine credit buyers that *anew* had worked with in the past, and explained that the buyers generally could be anybody in the Fortune 500. He noted that in the last year many organizations had made substantial commitments to meeting certain emission reductions through offsets by 2030 and 2050.

He turned his attention to the obligations and meaningful commitments of landowners who choose to participate in forest carbon projects. To get the credits, the commitments must be meaningful. He directed attention to the chart of monitoring obligations on slide 10 and explained that when he discusses voluntary forestry programs he's primarily referring to the American Carbon Registry (ACR) Voluntary program. The company *anew* has dozens of projects registered with ACR and that's the program *anew* identified in its report for DNR.

MR. STRAUSS discussed the key components of the ACR Voluntary and ARB Compliance programs, the first of which is the length of the project commitment. For this ACR Voluntary program, the monitoring period is 40 years. By comparison, the California ARB Compliance program is over 100 years. After that, the monitoring obligations for the two programs are much more similar.

He emphasized the importance of the following landowner obligations to ensure that sustainable forest practices are maintained, noting that DNR's Forest Management Plan was by nature approved by the state.

- Harvesting should not exceed growth
- Must maintain certification (FSC, SFI, ATFS) or have state approved Forest Management Plan

MR. STRAUSS described verification, inventory, and reporting as the pillars of maintaining an accurate accounting of the forest

carbon credits and integrity in a project. Under the ACR voluntary program, the state will have to establish a detailed forest carbon inventory that calculates the carbon on the landscape. After the reports are set up and the inventory is collected, it will be necessary to have a third-party verifier review the work and confirm that the inventory and calculations are correct. Verification is done every five years and the inventory must be updated every decade. In addition there is the annual report to the registry of the updated carbon documentation; it tracks harvest that has occurred and updates the models that track the carbon growth.

3:49:30 PM
SENATOR CLAMAN asked if it was fair to say that the companies that are purchasing offsets are fuel refineries, power plants, and factories that consume a lot of energy, whereas those selling offsets are largely in a non-development stage.

MR. STRAUSS clarified that the companies purchasing offsets represent all sectors of the economy. The producers of the offsets have substantial forest or grassland assets and are involved in the reduction of methane emissions.

3:51:03 PM
MR. STRAUSS displayed slide 11 and discussed the key components that differentiate offsets:

Key Components of Offset Quality

- Additionality - Does the activity that is generating the carbon credit actually create a legitimate unit of emissions reduction? A project whose landowner intended to plant a forest, but without motivation in terms of the carbon benefit would have low additionality. By comparison, a landowner who isn't planning to plant a forest but is motivated by the potential of generating carbon offset credits will achieve additionality for that project.

- Permanence - This concept looks at how long the emission reduction or sequestration activity will go on. The American Carbon Registry protocol has a four-year permanence or project life. The California Compliance Program has a 100 plus year commitment to permanence.

- Verification and Monitoring - Without third-party verification, there is no reason to accept the veracity of

the claimed emissions reduction. All major carbon programs require regular verification and monitoring.

- Registration and Serialization - Several significant bodies manage the voluntary and compliance carbon space. These organizations serialize the units being produced through carbon projects and allow them to be traded, sold, and retired. Key organizations in the US are Climate Action Reserve (CAR), American Carbon Registry (ACR), the Verifying Carbon Standard (VCS) and the Air Resources Board (ARB). These platforms are essential to ensure that the credits that are generated are carefully accounted, can be traded, can be retired, and will never be double counted. If credits aren't on one of these registries, there is reason to question the legitimacy of those credits.

- Leakage - This refers to an emissions reduction that is shifted or leaked into another area. An example in forestry is committing to reduce emissions on property A by not cutting trees but increasing the harvest on property B because of the commitment on property A.

- Reversals - This is idea of credits that have been claimed and emission reductions that have occurred that are then lost, either intentionally or unintentionally.
  - A reversal is intentional if a landowner chooses to harvest beyond the levels they committed to maintain of the forest stocks. Under any of the major programs, that bad actor would be obligated to pay back the credits.
  - An unintentional reversal is anything that happens that is outside the landowner's control. Examples are any natural disaster such as fire, wind damage, ice damage, or pest infestations.

- Buffer Pool - This is where unintentional reversals are handled. Any strong carbon program requires a pooled insurance system. Every time credits are issued the projects must submit a certain amount of the credits into that insurance pool to cover catastrophic loss from natural disasters.

3:57:17 PM

MR. STRAUSS advanced to slide 12 and discussed the Alaska DNR Pilot Projects. The state map depicts the key areas in Tanana, Mat-Su, and Haines. He spoke to the following points:

- Three areas were selected as pilot projects due to their carbon stocking, accessibility, and timber marketability
- Three projects could collectively generate ~10 million offsets over 40-year life
- >$80 million in revenue over 1st decade alone

3:58:40 PM
MR. STRAUSS directed attention to the flowchart on slide 14 that illustrates the seven-step process to develop a carbon credit project. He noted that as a turnkey project developer, *anew* takes landowners through the following steps:

1. Project Feasibility Analysis
2. Contracting And Listing
3. Inventory
4. Modeling And Documentation
5. Verification
6. Credit Registration And Issuance
7. Credit Sale

4:00:45 PM
MR. STRAUSS displayed the Development Timeline on slide 15, stating that while it is a detailed process, the most optimal outcome is to get to execute contracting, registration, and credit sale within 18 months. However, a more typical timeline today is closer to 24 months given the constraints on the number of verifiers in the marketplace and staff at the various registries.

4:01:33 PM
CO-CHAIR BISHOP requested a more detailed explanation of how *anew* models 100,000 acres of forest land.

MR. STRAUSS said the first step is to do an on-the-ground survey to establish a grid network across the property, and then measure a significant number of trees to get an idea of the number of trees on the property. He continued to explain that if there are 350 plots on the 100,000 acres, each might be one-tenth of an acre in size. Every tree in that plot is measured to the nearest tenth of an inch at breast height and to the nearest foot for height. Each tree is identified by species; dead trees, including the level of dead and decayed material associated with those stems, are identified; and general decay or carbon loss is identified in the living trees. These detail points are used to extrapolate across the landscape what they expect to see.

4:03:30 PM
SENATOR CLAMAN asked what structure *anew* uses to charge for its services.

MR. STRAUSS explained that *anew* is a partner with the landowner. They do all the work to generate revenue for the landowner and take a percentage. The percentage varies widely depending on the size and complexity of the project and the value of the offset that is generated. On large-scale projects, it is seldom more than 25 percent and on very large-scale projects it can be single digit percentages.

HOW FOREST CARBON OFFSET PROGRAMS COME TOGETHER

4:05:32 PM
DR. ENG introduced Brian Klienhenz who is the president of the natural resources consulting firm Terra Vera.

4:06:05 PM
BRIAN KLEINHENZ, Owner and President, Terra Vera Inc., Juneau, Alaska, stated that Terra Vera Inc. is a consulting forestry company that operates throughout the Pacific Northwest. They specialize in fieldwork, putting in tens of thousands of forest survey plots each year. They have installed thousands of the plots in Alaska for various purposes, and are very good at putting in plots that meet the needs of forest carbon projects.

MR. KLEINHENZ stated that he would discuss on-the-ground know-how and the costs and revenues from a practitioner's standpoint. He conveyed that he is a certified forester who has worked in traditional timber markets and forest carbon markets for nearly 20 years. He has worked with a lot of landowners across the Pacific Northwest to blend these two approaches to timber management.

4:07:39 PM
MR. KLEINHENZ displayed slide 1 and spoke to the following:

The timeline for Alaska based projects is commonly 24 months from listing to sale of credits

- Fieldwork can only happen in the summer
- Alaska projects are always remote and logistics are challenging

- Verification and final modeling must always be after the field work, which can cause delays due to weather

MR. KLEINHENZ highlighted that on average a typical Alaska project takes two to two and one-half years from the decision to move forward to selling the credits. He opined that the state was still in the factfinding phase.

Size of Alaska projects

- Alaska projects are typically at least 6,000 acres in size
- Large voluntary projects are around 100,000 acres
- Compliance projects can be larger in size
- A 250,000 acre project on the voluntary project would be considered very large
- The smallest Alaska projects are about 300,000 credits (over $3 million)
- The largest Alaska projects are over 15,000,000 credits (over $150 million)

The State of Alaska would be a very large player on the voluntary forest offset market!

4:10:44 PM
MR. KLEINHENZ advanced to slide 2 that outlines the three major cost centers involved in creating forest carbon offsets. He directed attention to the pie chart that illustrates that one-quarter of the revenue generally goes to putting the project together. He spoke to the following cost centers:

Compliance and Contracting:

- Third party listing
- Third party verification

Forest Survey and Tree Inventory

- Mapping of Forests
- On the ground field survey
- Logistics (trucks, boats, helicopters)

He noted that plots in Alaska cost from $1,000 to $3,000 and a single project can have several hundred plots.

Retail Sale, Computer Modeling and Calculations

- Often paid for with a commission fee per credit
- Includes management of regulation and paperwork
- Calculation of current carbon
- Long range forest growth modeling to establish carbon over time

4:12:44 PM
MR. KLEINHENZ reviewed the common questions on forest carbon offsets that he hears from his friends and neighbors.

~ Is the land locked up? What are the restrictions? What about hunting, fishing, mining and subsistence?

He said there are many different kinds of offset markets, some good and some bad. The good systems do not lock up the land; they just sell the value of the trees without cutting them down.

~ Would the State still own the land? What about the trees?

MR. KLEINHENZ explained that in all the different schemes, the state would still own the land. The timber right is given up, but not the fee title to the land.

~ What if the trees burn down?

Mr. Strauss conveyed that the insurance pool would cover the loss of burned trees. Very fire-prone areas would change the insurance market, but the registries are designed to cover that type of loss.

~ Is a landowner getting paid for something they are already doing?

MR. KLEINHENZ explained that the landowner signs a contract stating their intention to do something. The bridge between intention and contract is what creates the value.

~ Who is buying these credits?

MR. KLEINHENZ said Mr. Strauss thoroughly discussed who is purchasing the credits.

~ Is there a real climate benefit, is this greenwashing?

MR. KLEINHENZ said he couldn't answer this question, but it was changing behaviors. Companies and organizations are spending money with the intention of addressing climate change. He acknowledged that the programs aren't perfect but they are well-vetted and third-party verified.

~ Why is forestry so often used to create carbon offsets?

He said there has been a lot of traction on forest carbon in particular because it's easy to understand and verify. A tree is tangible.

4:17:29 PM
SENATOR DUNBAR referenced the question about whether a landowner will get paid for something they are already doing. He said the example Mr. Strauss cited seemed reasonable because Michigan has such a well-developed timber market, but he wondered about that in Alaska given that an overwhelming majority of the forest land can never be economically harvested.

MR. KLEINHENZ said that goes to the point about the difference between what somebody intends to do and is doing compared to what they are promising they will not do. He said many of these markets are a commitment to not do something in the future.

DR. ENG suggested Mr. Strauss offer his perspective and he would weigh in after that.

4:19:11 PM
MR. STRAUSS said not every acre will generate meaningful carbon credits but there are a lot of acres under the state's purview that could qualify. The reason his organization was able to get the numbers for the DNR pilot projects was because they went through detailed analyses that looked at the distance from infrastructure, the topography to ensure accessibility, whether the products were high value, and how a commitment to maintaining and increasing stocking would compare to what a reasonable actor could do given market constraints. Take all these things into account and then have the third-party verifier look at how much the material would be worth, how much would it cost to remove, and whether infrastructure was available to make the project viable. If the project doesn't pass that test, it won't generate credits. He said Alaska has a lot of acres where it won't work and it has a lot of acres where it will, in the context of the state's holdings.

4:20:55 PM
DR. ENG added that without a credible threat of timber harvest, there isn't additionality. He relayed his belief that a combination of the existing state forests will play a central role in reinvigorating the timber industry. This will lead to greater access to wood processing facilities and, over time, develop the carbon offset market.

SENATOR DUNBAR asked if he was saying the state needs to develop a more active timber industry to create the threat of potential harvest in order to sell the carbon credits.

DR. ENG clarified that the concept of additionality arises from building the inventory of carbon over time by not harvesting trees. The bill only creates the process by which supply and demand will determine whether projects will pencil out in various areas of the state.

4:22:59 PM
SENATOR WIELECHOWSKI asked if a typical carbon contract would obligate the state to expend resources to fight forest fires that it would otherwise have let burn.

MR. STRAUSS answered no; carbon credits are contributed to the overall insurance pool, but it is the landowner's prerogative whether to take measures to deal with a fire that is detrimental to the carbon stock. Landowners in fire-prone areas may take action to reduce fire danger, and some programs award better insurance rates for taking such measures, but there is no obligation.

4:24:41 PM
SENATOR CLAMAN said he was challenged by the notion that there is the potential for additionality on state forest lands. He asked for the basis of that theory, given the current landscape.

MR. STRAUSS said the reason his organization identified three pilot areas was to look at different regions where DNR has holdings. The report pointed out that the best opportunity right now is in the Haines and Southeast Alaska area. Another way of thinking about it is that meaningful additionality is generated when trees on a property that are growing in size and value over time are under a 40-year commitment to not reduce that stock. Access, infrastructure, and market availability are all considerations for timber harvesting, but there is stronger motivation to harvest once trees reach the next size level.

ALASKA FOREST CARBON OFFSETS

4:27:41 PM
DR. ENG introduced Nathan Lojewski who would talk about Alaska forest carbon offsets. He is a certified forester who holds the Native Corporation seat on the Board of Forestry.

4:28:00 PM
NATHAN LOJEWSKI, Certified Forester and Forestry Manager, Chugachmiut, Anchorage, Alaska, stated that Chugachmiut is a 501(c)(3) nonprofit that provides trust services on Native allotments in Alaska. The people he works for primarily value the land for subsistence and traditional uses. With this in mind, he began researching carbon offsets in early 2012. It was a "shot in the arm" in 2015 when the State of California allowed Alaska to participate in that compliance market. Since then, he's worked on four carbon projects, gone through six verifications, and participated in four inventory efforts. He stated that the picture he displayed was near Carbon Mountain on the Chugach Alaska project.

4:29:29 PM
MR. LOJEWSKI directed attention to the numbers on next slide that provide an idea of the scale of Alaska's participation in carbon (CARB) markets. The numbers came from checking three main registries: American Carbon Registry (ACR), the Climate Action Reserve (CAR), and Terra. He spoke about:

- Alaska's contribution to the carbon market (as of 2/8/2023) CARB Projects - 47,942,013 offset credits issued to the compliance market in California.

- Voluntary Projects - 1,392,920 offsets issued in the voluntary markets.

- CARB total compliance issuance [by the State of California] - 219,539,070 of which 47,942,013 are from Alaska forest carbon projects or 22 percent of the entire market.

4:30:24 PM
MR. LOJEWSKI displayed a picture of four people from the Port Graham Corporation running a skiff on their land, and highlighted the following data:

- 17 Alaskan Forest Carbon Projects Registered on ACR, CAR, and VERRA registries

- ~ All are on Alaska Native Corporation lands
- ~ 11 CARB compliance [projects with the California Resources Board]
- ~ 4 Voluntary projects
- ~ 2 projects are inactive

4:31:11 PM
MR. LOJEWSKI displayed a picture of three people and two snow machines sitting in a field of grass to make the point that climate change is real and that a forest carbon project is something that a landowner can do to try and address climate change.

He said the next picture is of a stream on Port Graham Corporation land. It illustrates buffers on riparian areas. State law requires 66 foot buffers, but Fort Graham Corporation opted to leave 400 foot buffers on riparian areas to protect fish and water quality. He noted that some areas on PGC land outside the 66 foot buffer were enrolled in carbon projects. He conveyed that some Native corporations have gotten into carbon projects because they can generate a significant amount of revenue and also protect subsistence resources and the environment.

4:32:28 PM
MR. LOJEWSKI said the pictures on the next slide show PGC shareholders being trained to do a forest inventory. This led to seasonal employment opportunities to maintain the project. He noted the absence of roads in the pictures; the areas are primarily in Coastal Alaska and are difficult to access. He said an oversight of these areas show old clearcuts, which is one way to demonstrate the economic feasibility of harvesting. However, the timber wasn't milled in Alaska; it was exported to other markets.

MR. LOJEWSKI spoke to landowner obligations.

- ~ There is a 40-100 year commitment for the landowner to maintain the trees under contract.
- ~ The landowner is required to monitor and verify the inventory every 10 or 12 years. The verification process is intense and thorough.
- ~ Third-party forest certification will likely be required for landowners who are also engaged in traditional forestry uses such as logging. A cost is associated with this.

~ A landowner is restricted from harvesting more than when they entered the carbon project. The contract requires maintaining a certain inventory on the land.

4:35:33 PM
MR. LOJEWSKI directed attention to the picture of himself holding a drone and a helicopter in the background. He described drones and carbon offset projects as beneficial new tools in a land manager's toolbox.

MR. LOJEWSKI displayed a picture of a frost-covered meadow surrounded by forest land to make the point that with careful thought and planning, carbon credit programs and traditional forestry uses like logging and timber can be compatible.

4:36:36 PM
MR. LOJEWSKI advanced to the last slide and explained that it is a picture of himself on Port Graham Corporation lands that are inholdings in the Kenai Fjords Park. The corporation enrolled in the carbon credit project to be a good neighbor to the park. It also aligned with a management goal of preserving the esthetic quality and recreation potential of the land.

4:37:35 PM
DR. ENG mentioned the overflights of old clearcuts and asked Mr. Lojewski to address the question of additionality if the land does not have road access.

MR. LOJEWSKI answered that the old logging operations he mentioned required setting up a logging camp, potentially putting in an airstrip, and building a barging facility. The logs were either put on barges or rafted and towed to a log ship and exported, usually to Asia. This is how logging was done for decades in Alaska, sometimes in very remote areas. The verifiers stumbled over the question of additionality and how some areas could be logged, until they flew over the old clearcut areas and talked to Alaskans who had been involved in those logging operations. He also pointed out that timber markets change, and what might not be feasible today for harvesting timber will almost certainly have greater value in the future and likely be logged by a private landowner who wants to pay dividends to shareholders.

FOREST OFFSETS IN A CARBON TRADING SYSTEM

4:39:38 PM

DR. ENG introduced Chris Maisch who is the retired state forester and the immediate past president of the Society of American Foresters. He will discuss national policy in the forest offset carbon trading system.

4:39:56 PM
CHRIS MAISCH, Immediate Past President, Society of American Foresters, Fairbanks, Alaska, stated that his forestry career spans about 37 years, the first 15 of which were specialized in inventory in the boreal and coastal forests. He clarified that his comments were his own as a certified forester who has practiced in Alaska.

4:40:51 PM
MR. MAISCH began the presentation with a historic look at carbon markets. He spoke to the following points:

- Carbon markets have been around since the 1990s, as a way for those emitting Greenhouse Gases to "offset" their own emissions.
- Forest carbon markets like CCX and VCS rose to prominence in the late 2000s, in response to potential climate legislation for "cap and trade".
- In lieu of federal legislation, regional climate efforts became the primary option.
- With recent focus on climate solutions, but no sign of federal legislation, the private sector has grown with many different voluntary market forest carbon opportunities.

4:42:45 PM
MR. MAISCH displayed the slide 3, Market Types and Common Terms, noting that these were discussed earlier.

- **Regulatory** (aka compliance) vs. **Voluntary** Markets
- **Additionality** - a project must sequester carbon that is in addition to what would have occurred in the absence of the project.

MR. MAISCH explained that additionality is measured through some sort of a baseline, depending on the protocol and registry. It is the key way to generate a delta between business as usual activity and activity that generates that will be sold.

- **Baseline** – How one measures additionality. Could be business as usual, regional averages, counting from a base year, or other methods.
- **Leakage** - when a carbon sequestration project causes unintended increases or decreases in GHG emissions elsewhere.
- **Permanence** - the degree to which sequestered carbon is "permanently" removed from the atmosphere.

4:43:32 PM
MR. MAISCH advanced to slide 4, Who Sells/Buys Voluntary Forestry Offset Credits and Why?

- Private companies that want to make sustainability or net carbon neutral claims concerning their operations
- Companies will use a strategy of: avoid emissions, reduce emissions and mitigate emissions – forestry offset credits
- New opportunity for non-federal public lands to become sellers, many states considering projects with sales completed in MI- Pigeon River Project (Josh), MN, TN, NM, MA
- Key Point- the offsets need to be real, additional, quantifiable, verifiable and permanent to the desired project life time horizon (1,40,100 years)

MR. MAISCH said the strategy companies employ to improve sustainability and work toward carbon neutrality is threefold: avoid emissions from their activities, reduce emissions, or mitigate emissions. Forest offset credits are employed to mitigate emissions. He emphasized the importance of the last bullet.

4:44:55 PM
MR. MAISCH directed attention to the next slide that lists the websites and names of project developers that have been in business for 10 years or more. He noted that *anew*, formerly known as bluesource, was on the list. These are the companies that make it possible for landowners to develop a project in both the compliance and voluntary markets. Perusing their websites will show the different approaches.

4:45:24 PM

MR. MAISCH said the next slide shows the prices and types of offset forestry projects. *The company anew* has proposed an Improved Forest Management project, but other methodologies include extended rotation projects, deferred harvest projects, afforestation/reforestation projects, and avoided forest conversion projects. It depends on the registry, developer, and strategy that's used to generate those saleable credits. He noted that the prices listed for the voluntary market range from $0.01 to $70.00/metric ton of CO2 equivalent (MtCO2e) because they reflect both national and international prices. He acknowledged that Mr. Strauss cited prices specific to his company's projects in the US. Price estimates in the regulatory market range between $14.00 and $19.00/MTCO2e.

He read the statement near the bottom of the slide because he thought it was worth repeating:

> For a quality offset, whatever you do needs to generate "additional" carbon on the landscape compared to a "baseline", which achieves a level of "permanence" desired by the buyer.

4:47:30 PM
MR. MAISCH said Mr. Klienhenz included questions and answers about the forestry carbon offset market and the following points add to the discussion:

> Some Points to Consider
>
> From a Landowner Perspective
> - What kind of commitment am I making? For how long? (1 ,20,100 years)
> - How does it impact other values and uses for my land (ie – aesthetics, wildlife, timber supply, etc)?
> - Does it make financial sense? Does it make ecological sense?
> - Is it too good to be true?
>
> From a Forestry Perspective
> - What impact might carbon markets have on timber markets? At what price point?
> - Do carbon markets align with promoting a healthy and sustainable forest resource?

- Are we losing sight of other ecosystem benefits/markets (ex - water quality other ecosystem services) in focus on carbon?
- Are we maintaining public trust in our sector/profession?

MR. MAISCH pointed out that the two headlines near the bottom of the slide illustrate that forestry carbon offset projects have their critics.

4:49:31 PM
MR. MAISCH concluded his presentation by highlighting the role of the Division of Forestry and Fire Protection in the forest carbon offset market. He spoke to the following:

- **State agencies should build on what they currently do best** - providing professional management of public forests for a range of benefits and products, and being a trusted source for landowner education, information and technical assistance.
  - Evaluate opportunities for public land participation in forestry offset markets while continuing to support the wood needs of the timber industry.
  - Develop publications and other communication tools to strengthen employee knowledge and understanding about carbon sequestration and how to engage in carbon markets.
  - Provide localized information about regional carbon storage demand and supply to assist landowners in price negotiations. (forest inventory- FIA, GIS databases of forest lands)

He emphasized the importance of supporting the needs of the existing industries.

4:50:59 PM
DR. ENG summarized the following points:

~ Timber and carbon are complementary; there's no need to choose one over the other.
~ The governor's carbon offset bill creates the opportunity for carbon offset projects by establishing the process.

- ~ Supply and demand in the private market will determine what projects will materialize and where.
- ~ The repeated discussion of additionality is indicative of the history of these projects.
- ~ The voluntary market is difficult to quantify. Verifiers had to do flyovers to realize that hard to access areas had previous activity.
- ~ There are examples that willing buyers in a voluntary market may be willing to pay for charismatic carbon projects. He asked what could be more charismatic than Alaska.
- ~ The example from Michigan of Ernest Hemmingway hunting and fishing demonstrates that additionality has more elements than just a calculated business decision.

4:53:25 PM
SENATOR CLAMAN commented that whether or not to harvest timber in the boreal forest is a market decision, and the pitch the governor's office is making is that the state should give itself the opportunity on state land to see what the market for carbon looks like.

4:54:44 PM
DR. ENG agreed that you don't know until you try. He also noted that the state forest within the Fairbanks timbershed has about 1.8 million acres and that a Canadian company was interesting in setting up a sawmill in that area. He said the wonderful thing about the private market is that it will ultimately provide the answers.

4:55:37 PM
CO-CHAIR GIESSEL referenced the slide that talks about prices and types of projects and asked for an explanation of a project that has carbon stored in wood products.

MR. MAISCH explained that it's a concept of generating credits by using wood products to build structures or manufactured products like furniture. Carbon is stored in those buildings or pieces of furniture. Some registries are working on protocols that would allow credits to be generated and sold using that methodology.

SENATOR GIESSEL asked if that potentially would be another type of credit if it was possible to harvest the timber and quantify how much was turned into durable products.

MR. MAISCH said it could be, but the chain of custody protocol isn't fully developed for where the wood goes and the type of durable product it will go into. Discussions about this are ongoing and one idea is to use block chain technology to track the wood. He deferred further comment to Mr. Strauss.

4:57:48 PM
MR. STRAUSS said it's a good point, but it's important to understand that the programs that are being discussed, and the examples that both he and Mr. Lojewski gave, all track the wood products. It's essential because 100 percent the carbon in a tree that's harvested isn't immediately emitted into the atmosphere. That is accounted for in both the project and the baseline scenario. He also mentioned that the materials left on the forest floor and the materials that generally goes to make pulp and paper are not long lasting.

CO-CHAIR GIESSEL thanked the presenters.

5:00:22 PM
There being no further business to come before the committee, Co-Chair Giessel adjourned the Senate Resources Standing Committee meeting at 5:00 p.m.