California Cap and Trade Carbon Offsets in Alaska

Nathan Lojewski
Chugachmiut
Nathan@chugachmiut.org
907-562-4155
Seeing the value of the forest in the trees: Chugach enters California’s carbon market


An aerial view of the eastern edge of Alaska’s Chugach Range. The area is the focus of an innovative state-led initiative to safeguard old-growth forests and brown coal reserves. (Photo courtesy: David Lobel/Dyen) Preservation Council)

Instead of harvesting their forests for timber, the Chugach Alaska Corporation is selling an innovative new forest product: the carbon stored in the trees.

“Anyone who’s been to Prince William Sound can tell you it’s an area of tremendous beauty,” Josie Hickel said. Hickel is Senior Vice President of Chugach Alaska Corporation. “Glaciers, forested acres, wilderness areas. The area is full of wildlife and birdlife, and the fishing is obviously fantastic.”
California Air Resources Board Alaska Carbon Assessment Areas

Alaska Assessment Areas (Common Practice Value)
- Alaska Range Transition (37.14 mtCO2/acre)
- Gulf-North Coast-Chugach (84.9 mt CO2/acre)
- Alexander Archipelago-Kodiak (120.22 mtCO2/acre)
Who?
- Private Lands
- Non-Federal Publicly Owned
**Carbon Market Overview**

**AB32.** In 2006, the State of California enacted the “California Global Warming Solutions Act” or “AB32”, which requires a reduction in greenhouse gas emissions to 1990 levels by 2020.

**Cap and Trade.** AB32 mandated the creation of a cap and trade market to help reduce greenhouse gas emissions. This is largest carbon market in North America and the second largest in the world by value.

**Offsets.** The cap and trade market will include the use of offsets. Analysts expect offset demand of 150-200 million tonnes in aggregate by 2020.

**Supply-constrained market.** Current offset supply is constrained relative to demand.
### ARB Offset Credits Issued *(click for more information)*

<table>
<thead>
<tr>
<th>Project Type</th>
<th>ODS</th>
<th>Livestock</th>
<th>U.S. Forest</th>
<th>Urban Forest</th>
<th>MMC</th>
<th>Rice Cultivation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compliance</td>
<td>10,039,901</td>
<td>2,734,417</td>
<td>66,235,639</td>
<td>-</td>
<td>1,998,414</td>
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<tr>
<td>Early Action</td>
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<td>1,695,029</td>
<td>13,276,494</td>
<td>-</td>
<td>2,879,684</td>
<td>-</td>
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</tbody>
</table>

*Table includes all offset credits issued including offset credits placed in ARB's Forest Buffer Account, offset credits returned to an Early Action Offset Program’s forest buffer pool, and offset credits subsequently invalidated.*
Table 3: 2018 Annual Auction Reserve Prices

<table>
<thead>
<tr>
<th>Auction</th>
<th>CA Annual Auction Reserve Price (USD)</th>
<th>QC Annual Auction Reserve Price (CAD)</th>
<th>ON Annual Auction Reserve Price (CAD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current Auction</td>
<td>$14.53</td>
<td>$14.35</td>
<td>$14.68</td>
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<tr>
<td>Advance Auction</td>
<td>$14.53</td>
<td>$14.35</td>
<td>$14.68</td>
</tr>
</tbody>
</table>
Total Offset market of 150-200 million tonnes (81m issued)

Approximate un-met demand of 69-119 million tonnes

California carbon offset values range from $10-$12 per tonne or $690 million to $1.43 Billion through 2020

With Canada North American estimated demand from 2017-2030 is $4.86 Billion
How does the CA system reduce emissions?

The cap, or limit on emissions, is set by the number of allowances issued, which declines over time relative to expected emissions.

This forces investment in emission reductions, including offset projects.
Three Types of Forest Projects

**Improved Forest Management**
- Offset credits are issued for actual carbon stocks relative to a baseline plus accrued growth.
- The baseline reflects the most intensive timber management possible on the property and regional stocking averages.

**Avoided Conversion**
- A conservation easement is placed on the property preventing conversion to non-forest land use, such as housing or agriculture.
- Offset credits are issued based on carbon that would have been emitted in conversion plus accrued growth.

**Reforestation**
- Qualifying reforestation projects may be issued offset credits for carbon stored over time in planted trees.
How IFM project quantification works

Actual CO2e stock per acre estimated by forest inventory

Modeled change in CO2e stocks over time (must reflect financial and legal constraints)

Average of modeled CO2e stocks over 100 years (must be at or above Common Practice)

Completed baseline after the addition of other required and optional pools = “Project Baseline”

Average CO2e stock per acre in above-ground live trees from FIA plots = “Common Practice”

Time

Project above-ground CO2e tonnes per acre
IFM Offset Credit Issuance

Actual CO2e stock estimated from forest carbon inventory and sales of wood products

- Project CO2e tonnes per acre
- Credits issued in year 2
- Credits issued in year 1
- Credits issued in year 0

"Project Baseline"

Time
IFM Project Obligations

**Landowner Obligations**
- A commitment to maintain any carbon stocks sold for 100 years from the date of sale on the project area.
- Landowners can exit project at any time but must purchase and retire carbon offsets to replace credits issued to the project (plus some additional credits if exiting the project in years 1-50).
- Conservation easements are not required.

**Forest Management**
- Harvesting is allowed, but carbon sold must be maintained on property. If carbon stocks fall below the level to which credits have been issued, credits must be retired to cover the harvest.
- Natural forest management and sustainable harvesting of native species must be employed.
- There is no penalty for unintentional destruction of carbon stocks (e.g., fire) covered by buffer insurance mechanism.

**Monitoring and Reporting**
- Annual carbon accounting reports (desk report).
- On-site verification must occur at least every 6 years.
- Full re-inventory must be carried out every 12 years.
- Credits face invalidation risk for fraud, gross mis-measurement or illegal actions. Invalidated credits must be replaced if buyer is insolvent and unable to replace invalidated credits.
So What?
California Carbon Offset can be significant income for a large land owner.

Estimated market demand is $670 million - $1.43 Billion (not including Canadian demand).

Much of which could come from Alaska.
What about small land owners?

- It is possible
- Port Graham Corporation is working to aggregate Native allotments into one larger project
Carbon and subsistence scale use are compatible
But!

- 100 year commitment
- Certification requirements
- Land sales more complicated