

AB 32 – CA Global Warming Solutions Act Shamelessly cribbed from EDF
Climate Change Scoping Plan

California Air Resources Board (CARB) implementation plan for AB 32

- Develops a state-wide cap-and-trade program.
- Expands and strengthens energy efficiency programs and building and appliance standards.
- Sets a statewide renewable energy mix target of 33% by 2020.
- Establishes targets for transportation-related greenhouse gas emissions for regions throughout California, and pursues policies and incentives to achieve those targets.
- Adopts and implements direct measures to reduce emissions and protect public health, like the Low Carbon Fuel Standard.

CARB began enforcing the AB 32 cap-and-trade program in January of 2013. Short-term target of 1990 emissions levels by 2020. Long-term target of 80% below 1990 emissions levels by 2050.

Cap-and Trade is one prong of CA's overall carbon strategy.

Components of the Cap-and-Trade System

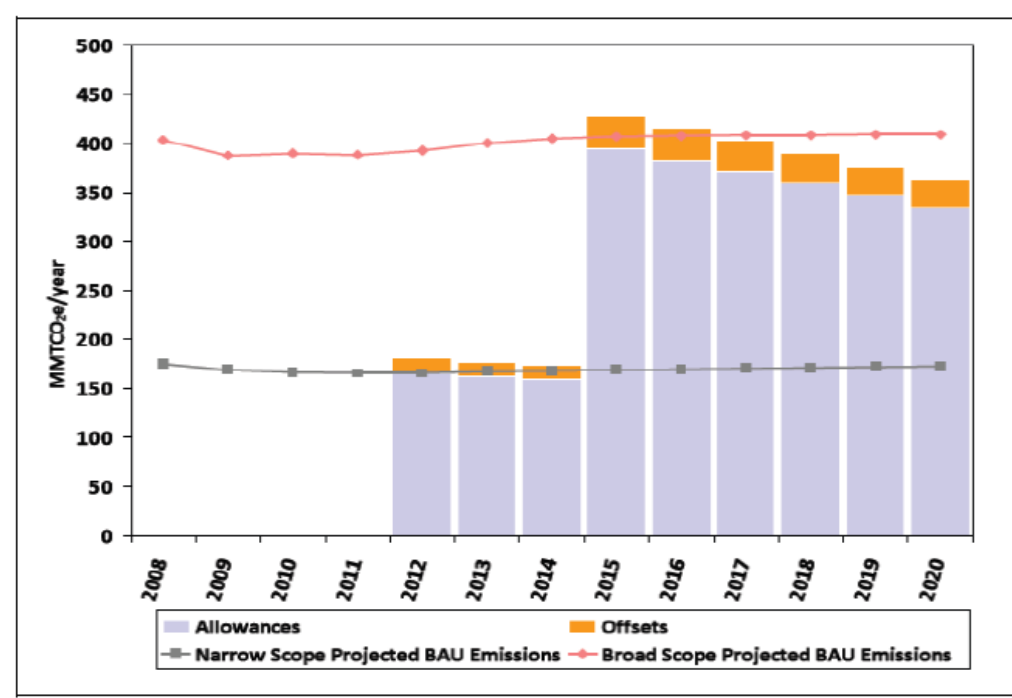
A cap: The maximum allowable level of pollution; penalizes companies that exceed their emission allowance.

- **The cap is a limit** on the amount of pollution that can be released, measured in billions of tons of carbon dioxide (or equivalent) per year.
- **Covers all major sources of pollution.** The cap should limit emissions economy-wide, covering electric power generation, natural gas, transportation, and large manufacturers.
- **Emitters can release only limited pollution.** Permits or “allowances” are distributed or auctioned to polluting entities: one allowance per ton of carbon dioxide, or CO2 equivalent heat-trapping gases. The total amount of allowances will be equal to the cap. A company or utility may only emit as much carbon as it has allowances for.
- **Industry can plan ahead.** Each year, the cap is ratcheted down on a gradual and predictable schedule. Companies can plan well in advance to be allowed fewer and fewer permits – less global warming pollution – each year. (In CA, the cap drops approximately 3-4 percent each year.)

Trading: Some companies will find it easy to reduce their pollution to match their number of permits; others may find it more difficult. Trading lets companies buy and sell allowances, leading to more cost-effective pollution cuts, and incentive to invest in cleaner technology.

- **Companies can turn pollution cuts into revenue.** If a company is able to cut its pollution easily and cheaply, it can end up with extra allowances. It can then sell its extra allowances to other companies.
- **The option to buy allowances gives companies flexibility.** On the other hand, some companies might have trouble reducing their emissions, or want to make longer-term investments instead of quick changes. Trading allowances gives these companies another option for how to meet each year's cap.
- **The same amount of pollution cuts are achieved.** While companies may exchange allowances with each other, the total number of allowances remains the same and the hard limit on pollution is still met every year.

Figure E-3: Projected GHG Emissions Relative to Allowance and Offset Levels

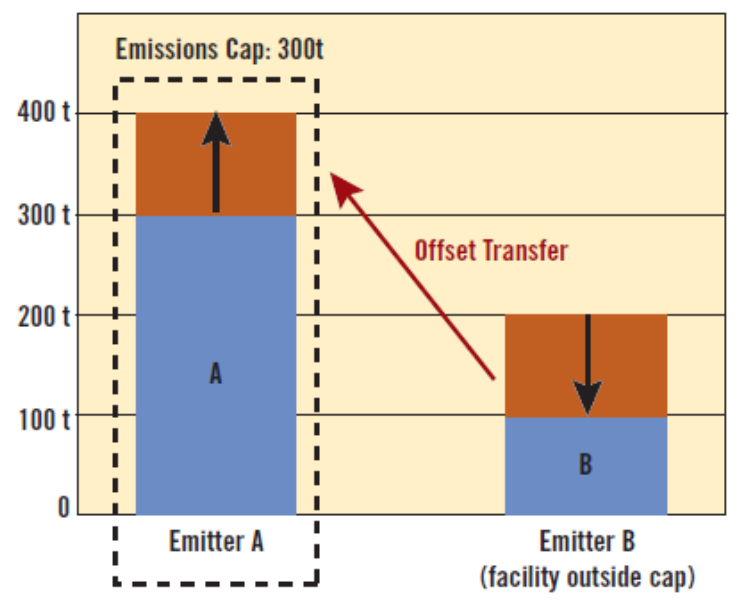


Source: CARB, California Cap-and-Trade Regulation Initial Statement of Reasons, Appendix E: Setting the Program Emissions Cap, <http://www.arb.ca.gov/regact/2010/capandtrade10/capv3appe.pdf>

Regulated entities can use offsets to meet 8 percent of their emissions target. Additional regulated sectors were added in January, 2015.

Figure 3
Offsets

From C2ES: <http://www.c2es.org/docUploads/climate101-captrade.pdf>



An offset represents an emission reduction credit generated by an entity not included under a cap that can be sold to capped entities and used in the same manner as an allowance. In Figure 3 above, Emitter A is included under a cap-and-trade system with an overall cap of 300 tons. If offsets are permitted under the program, an entity outside of the cap (Emitter B) can make an emission reduction of 100 tons, creating 100 reduction credits that can be purchased by Emitter A to offset a 100 ton increase in its own emissions. Although emissions from the capped entity total 400 tons, Emitter B offsets 100 of those tons, so that, on net, the same emission reductions are achieved.

Offset Project Types Allowed in CA

From CA ARB

- U.S. Forest
- Urban Forest
- Livestock
- Ozone Depleting Substances (ODS)
- Mine Methane Capture (MMC)
- Rice Cultivation

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.

Project Type	ODS	Livestock	U.S. Forest	Urban Forest	MMC
Compliance	3,996,482	378,190	13,774,091	--	280,667
Early Action	6,183,259	1,349,970	7,158,925	--	768,633

<http://www.arb.ca.gov/cc/capandtrade/offsets/offsets.htm>

Forest Offset Project Types

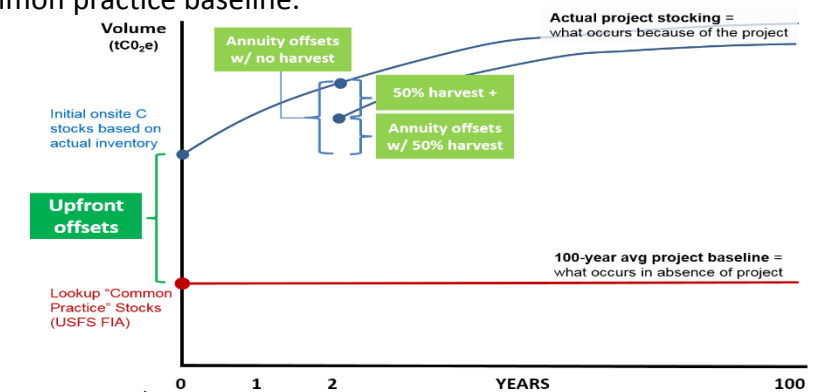
- Reforestation – restore tree cover on land that is not at optimal stocking levels, and has minimal short-term (30 years) commercial opportunities
- Improved Forest Management – activities that maintain or increase carbon stocks on forested land relative to baseline levels of carbon stocks
- Avoided Conversion – prevent the conversion of forestland to a non-forest land use by dedicating the land to continuous forest cover through a qualified conservation easement or transfer to public ownership (excluding transfer to federal ownership)

To be eligible, a project must meet several criteria:

- Natural forest management (no plantations, etc.)
- No decrease in standing live carbon stocks over any consecutive 10-year period (limited harvest is allowed)
- Location (in continental U.S., etc.)
- Additionality - Eligible offsets must be generated by projects that yield additional greenhouse gas (GHG) emission reductions or removal enhancements that exceed any GHG emission reductions or removal enhancements otherwise required by law or regulation or any GHG emission reductions or removal enhancements that would otherwise occur in a conservative business-as-usual scenario.
- Permanence – 100 years is considered permanent for the purposes of this program.
- Various reporting and other responsibilities

Improved Forest Management

Forest stocking levels are compared to condition at project start, and to common practice baseline.



Swiped from Finite Carbon

Steps Needed to List a Forest Carbon Project with the CA Air Resources Board

Description/Function	Who	Cost/Process/Documentation
Used to track all project development documentation and verification activities.	Account Holder, i.e., the landowner. An Account Manager must be designated by the Account Holder and will open the account.	\$500/year. Online and hard copy document submission. Required documents vary by registry (ACR or CAR) but include: <ul style="list-style-type: none"> Government issued photo ID for all persons authorized to manage account. Articles of Incorporation (not needed for Tribes) Letter from Officer/Board/Council authorizing Account Manager to execute Terms of Use and manage account for Account Holder.
Used to receive, hold, and transact Offset Project Owner (OPO) Air Resources Board Offset Credits (ARBOCs). Two part POI/KYC process includes (a) registering at least two users, and (b) establishing landowner entity account.	<p>(a) Two registered users authorized by landowner entity (OPO)</p> <p>(b) Landowner entity (OPO)</p>	<p>No charge. Process takes about eight (8) weeks.</p> <p>(a) User Registrations (2) – about two weeks</p> <ul style="list-style-type: none"> Online and hard copy document submission for each user. Proof of identity includes: valid US drivers license or passport; paid bill showing user's address, and US bank account (with all account and financial information redacted). <p>(b) Entity Account – about 6-8 weeks and can only be completed after CITSS user accounts are established.</p> <ul style="list-style-type: none"> Online and hard copy document submission. KYC information and docs (e.g., operating names, addresses, etc.) Corporate Associations and Structures Form
CA physical address of last resort to receive documents from ARB; required for OPO's who do reside outside of CA.	Contracted by OPO; many legal firms serve as process agents.	~\$300/year, varies by Process Agent.
Detailed description of project attributes including OPO, location, estimated project performance, etc.	Finite Carbon	No cost to landowner. Prepared and submitted to Offset Project Registry by Finite Carbon.

Offset Project Registry (OPR) Account
(American Carbon Registry or Climate Action Reserve)

Air Resources Board (ARB) Compliance Information Tracking System Service (CITSS) Account

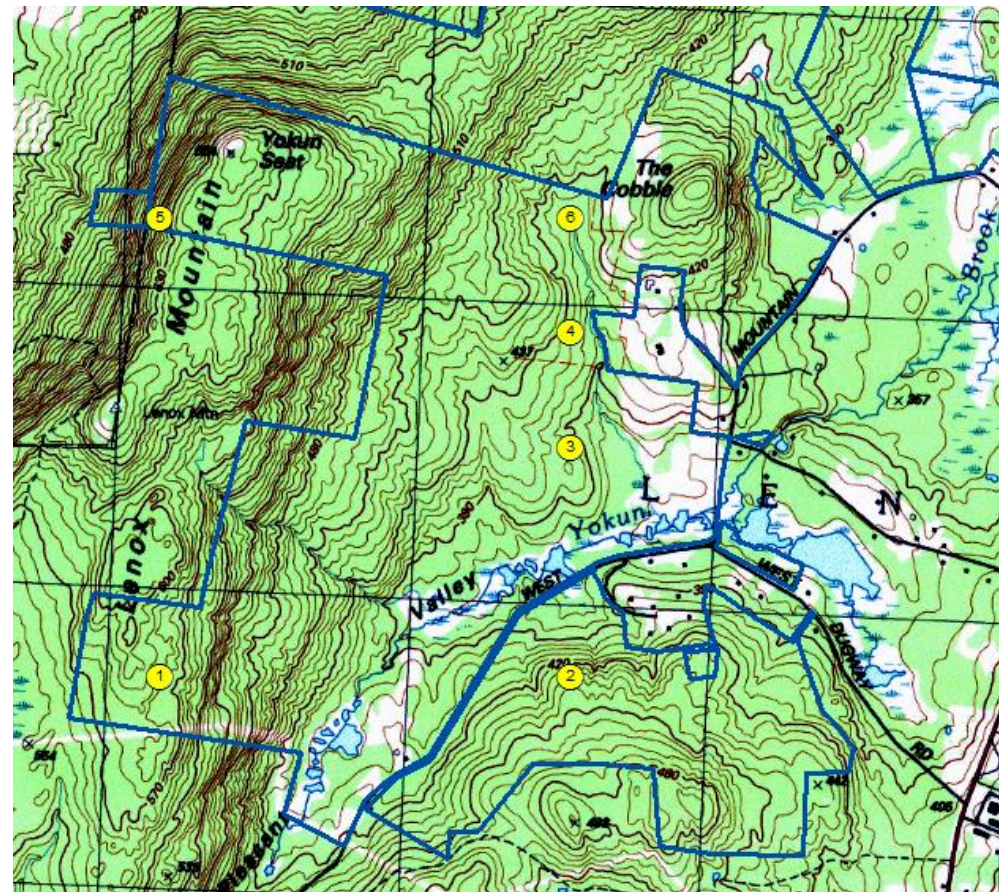
Process Agent

ARB Project Listing Form

Project Feasibility

- Based on the analysis of 50 feasibility plots, modeled under the current protocol, Mass Audubon properties are stocked at ~63 tons CO₂eq/ac above common practice for similar forest types in the region
- After forest offset protocol changes (implemented November 1), common practice for these forest types increased, resulting in a decrease of forest stocking to ~48 CO₂eq/ac above common practice.
- This protocol change did not affect our potential project, because we listed the project before the change.
- Net project performance described above assumes no harvest restrictions on the project acres.
- Assuming a listing under the current protocol (63 tons CO₂eq/ac), today's price of ~\$10+/offset, and ~5,000-7,000 acres in the final project, total first year project revenue would range between \$3 to 4.5 million.
- Actual forest monitoring network would probably be on the order of 90 to 100 permanent plots.

Site	Forested Acres
1 Whetstone Wood	2,497
2 West Mountain	2,078
3 Moose Hill	1,695
4 Rutland Brook	1,554
5 Ipswich River	1,424
6 Pleasant Valley	1,055
7 Assonet Cedar Swamp	938
8 Wachusett Meadow	888
9 Elm Hill	827
10 High Ledges	600
11 Cold Brook	600
12 Graves Farm	560
Total in project:	14,715
	7,184



CA Emissions Reductions

