

California Cap-and-Trade Regulation on Greenhouse Gas Emissions

Authority. The California Global Warming Solutions Act of 2006, Assembly Bill 32, authorized the Air Resources Board (ARB) to adopt regulations to reduce greenhouse emissions. Pursuant to that authority, in 2011 ARB adopted the California Cap on Greenhouse Gas Emissions and Market-Based Compliance Mechanisms (Regulation), CCR title 17 §95801 et seq. This regulation is commonly referred to as a cap-and-trade program. It went into effect on January 1, 2013.

Subject greenhouse gases (GHGs) are those specified in the Kyoto Protocol (CO₂, CH₄, N₂O, SF₆, hydrofluorocarbons, and perfluorocarbons) plus NF₃ and other fluoridated greenhouse gases.

Applicability. The cap-and-trade program applies to large electric power plants and large industrial plants. In 2015, the program will extend to fuel distributors (including distributors of heating and transportation fuels). At that stage, the program will encompass around 360 businesses throughout California and nearly 85 percent of the state's total greenhouse gas (GHG) emissions. Subject businesses are those with prescribed North American Industrial Classification System (NAICS) codes.

GHG emission limits. The GHG emissions of applicable businesses are subject to limits. The limits will decrease by 2% per year through 2015, and 3% per year through 2020 (when presumably the goal will be met).

Allowances. Businesses must hold enough emission *allowances* to cover their permitted emissions (i.e., those emissions below the limit). Emission allowances are allocated to individual businesses. Once allowances have been allocated, businesses may buy and sell them on the open market—this is the “trade” part of cap-and-trade.

Increasing emission limits. There are three ways in which a business can increase the limits placed upon its GHG emissions beyond its allocated allowance: (1) buy allowances from other businesses, (2) earn offset credits, and (3) buy offset credits earned by other businesses.

Offset credits. An *offset* is a credit that represents a reduction or removal of greenhouse gases by an activity that can be measured, quantified, and verified—and is achieved in sectors or sources not covered by the cap. Individual offset projects can be implemented by businesses to generate offset credits, which can then be sold and used by a covered entity as a compliance instrument in the Cap-and-Trade Regulation. Offsets may be used to satisfy up to 8% of a business's total compliance limit for each compliance period.

Offset projects must follow a particular Compliance Offset Protocol. A business proposes an offset project, registers it, and then it is monitored for GHG emission reductions. When the project satisfactorily achieves the stated reductions, the business is issued offset credits.

ARB adopted five Compliance Offset Protocols that may be used to generate ARB offset credits, including the U.S. Forest Projects Compliance Offset Protocol. This protocol is defined at <http://www.arb.ca.gov/regact/2010/capandtrade10/copusforest.pdf>

Forests as source of offset credits. The US Forest Protocol applies to projects located any place in the US and that are designed to increase removals of atmospheric CO₂ or reduce emissions of CO₂ to the atmosphere through increasing and/or conserving forest carbon stocks. There are three types of eligible projects: (1) reforestation, (2) improved forest management, and (3) avoided conversion (to non-forest land use). The project area can be contiguous or separated into tracts. Modeling of the forest project's baseline carbon

stocks must meet all legal constraints. Avoided conversion projects must show that the project area is suitable for conversion and the converted use has a higher market value (at least 40% higher) than forestland; there is no requirement for any governmental approvals which must be obtained prior to the conversion. Avoided conversion projects that may never be actually convertible can thus generate income from the sale of offsets.

Forest projects involving improved forest management that employ even-aged management practices, harvesting must be limited to stands no greater than 40 acres.

When commercial harvesting is planned or initiated within a Forest Project Area, it must be “demonstrated” that the forest owner employs and demonstrates sustainable long-term harvesting practices on all of its forest landholdings. The release of CO₂ during and as a consequence of the harvesting is not a factor in the suitability of proposed forest projects.

The increase of GHG emissions or decrease in GHG sequestration from the shifting of harvesting activities from a project area to other forestlands is considered “leakage” and classified as a secondary effect. Offset projects must account for secondary effects. IFM-14 is the corresponding rule that defines the accounting for leakage.

While certain forest management practices are advocated, such as involving native plants and multi-age populations, there are no protections for old-growth forests.

The Urban Forest Projects Compliance Offset Protocol addresses tree planting and maintenance in service to GHG reduction (“removal enhancement”). There are three types of urban forest projects: (1) in municipalities, (2) on educational campuses, and (3) by utilities. Offset projects may be in the US or its territories.

Forests and Greenhouse Gases. The ARB does not consider logging to be an activity that increases CO₂ emissions. Instead it considers forests, clearcut or otherwise, as carbon sinks regardless of how they are treated. As such, the forest sector becomes a potential source of offset credits (see below) for the cap-and-trade market.

Contrary to the ARB’s belief that all forests sequester carbon, a clearcut forest has virtually no plant material that can sequester carbon and a forest that is subject to logging is releasing CO₂—that is widely known in scientific circles. Forestry is reported to generate 17.4% of the world’s CO₂ emissions. The California Department of Parks and Recreation reports “Twenty percent of greenhouse gas emissions come from deforestation and other forms of land use change.” (www.parks.ca.gov/?page_id=26107)

Furthermore larger, older trees hold more carbon than young, small trees. This was reported in an article “Rate of tree carbon accumulation increases continuously with tree size” published online in the journal *Nature* in January 2014. This is a strong reason to eliminate the logging of old-growth forests.

My Concerns

1) The logging of California forests is presently outside the scope of businesses subject to GHG emission reductions. This is a serious oversight. The ARB understands that forests sequester carbon, but that is only when trees remain—clearcutting removes the carbon sink. Worse, logging releases CO₂—this is widely known in scientific circles. Forestry is reported to generate 17.4% of the world’s CO₂ emissions. The California Department of Parks and Recreation reports “Twenty percent of greenhouse gas emissions come from deforestation and other forms of land use change.” (www.parks.ca.gov/?page_id=26107)

- 2) A full-court press to the atmospheric GHG situation could include not only a reduction in emissions, but also an increase in carbon sinks. Because plants that practice photosynthesis sequester carbon, they may be the best, and certainly the most natural, way to increase the sequestration: increase the mass of such plants. Trees are the plants that sequester the most CO₂, so any efforts to increase the size and age of forests will increase the amount is sequestered CO₂.
- 3) Why may US forest and urban forest projects be allowed in locations outside of California? This suggests that they exist solely to generate for-sale offset credits, and not for any GHG emission reduction within the state of California. Forest projects to generate offset credits essentially allow forest owners to gain in two ways: from the sale of the credits and from their continued logging on other parcels. They can clearcut a parcel for gain, then convert it into a forest project for even more gain. I see no net benefit to California in this practice.
- 4) Why is the release of CO₂ during and as a consequence of logging (“harvesting”) not a factor in the suitability of proposed forest projects?
- 5) Logging of old-growth forests is not sustainable: the forests cannot grow replacement mature trees within 100 years (the timeframe used by the Forest Protocol). Logging of old-growth forests thus permanently reduces the size of the forest’s carbon sink while at the same time emitting GHGs. This works at cross purposes to the Global Warming Solutions Act of 2006.
- 6) Why is the logging of old-growth forests either within forest project areas or on the project owner’s other holdings allowed? Such logging within California should be prohibited, or at the very least subject to GHG emission caps.
- 7) California’s GHG emission reduction program should limit its reach to California. There must be no linkage to any foreign programs such as the United Nation’s REDD program.
- 8) The only value I can see to the use of offset credits from forests is if they reward reforestation on California lands.
- 9) I find no evidence that the so-called “market solutions” to real problems caused by industrialism actually work. I imagine your cap-and-trade program was developed under intense lobbying by market players. Their objectives are obvious: business as usual with no impact on profit. Cap-and-trade will keep the regulators busy and looking the wrong way while GHG polluters continue their profit-seeking without regard for environmental impacts. Sweet for them, bitter for us.

I Asked the ARB

- a) Include forestry in the group of industries subject to limitations of GHG emissions.
- b) Revise the US and Urban Forestry Protocols to restrict projects to California only.
- c) Revise the US Forestry Protocol to exclude forest projects of owners who practice clearcutting or old-growth logging.
- d) Revise the US Forestry Protocol to treat offset projects as “additional,” meaning that they guarantee the sequestering or retention of carbon stocks above and beyond what would otherwise have occurred on the project land.
- e) Do not link California’s cap-and-trade program to any foreign programs such as the United Nation’s REDD program.