

# The California Carbon Market

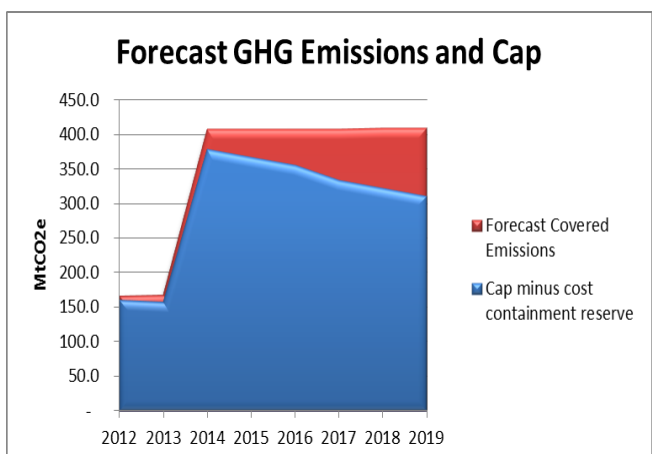
## Implications for Forest Carbon Offset Investment

*New Forests has actively invested in the California carbon market for several years through its joint-venture Eco Products Fund, which has financed some of the largest forest carbon projects being developed for the California market, and Forest Carbon Partners, a New Forests fund vehicle that finances and aggregates projects with family forest owners. Our San Francisco office closely tracks carbon offset policy development in California and engages with regulators to support the implementation of a robust market for forest carbon offsets. In this article, New Forests summarizes the opportunity presented by the California carbon market for forest carbon offset investment.*

### Introduction

In 2006, the State of California enacted the “Global Warming Solutions Act” (AB32), which established a program to significantly reduce California’s greenhouse gas emissions by 2020. A core element of the implementation of AB32 is the creation of a cap and trade emissions market in which major emitters must submit a permit (known as an allowance) or offset for every tonne of greenhouse gases they emit – their compliance obligation. The number of allowances made available by the government is limited and declines over time, creating a declining cap on emissions. If a regulated business invests in technology or practices to reduce the greenhouse gas emissions of their operations, they reduce their compliance obligation and associated costs of allowance and offset purchases. They may also be able to sell allowances or offsets surplus to their needs. Businesses in certain sectors of the economy that do not have a regulatory compliance obligation may generate offsets to sell to regulated entities. The system is designed to create incentives for businesses throughout the economy to find and invest in the least-cost opportunities for emissions reductions.

In October 2011, the California Air Resources Board (ARB) formally adopted the regulations that will govern the cap and trade system, which commenced in January 2012 with coverage of the electric power sector and major industrial emissions. The first compliance deadline is in 2013. Liquid transportation fuels enter the system in 2015. The system requires reductions of approximately 273 million metric tonnes of carbon dioxide equivalent (MtCO<sub>2</sub>e) through 2020 as compared to business as usual, representing a reduction in capped emissions to 15% below 2012 levels.



New Forests Pty Limited  
ABN 76 114 145 274

**Location**  
The Zenith Center, Tower A  
Suite 1901, Level 19  
821 Pacific Highway  
Chatswood NSW 2067  
Australia

**Contact Details**  
Phone +61 2 9406 4100  
Fax +61 2 9406 4199

**Mail Address**  
PO Box 5334  
West Chatswood 1515

**Website**  
[www.newforests.com.au](http://www.newforests.com.au)

**AFSL Number**  
301556

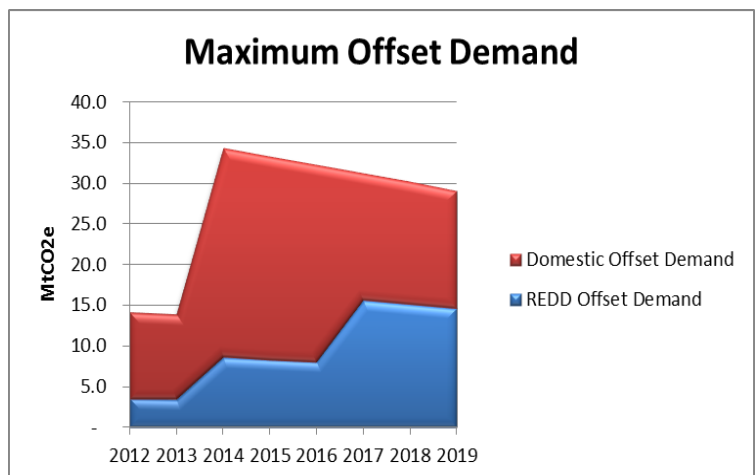
### The Offset Market

Offsets are credits produced through voluntary emission reductions in sectors of the economy that do not have a compliance obligation, such as forestry and agriculture. Businesses in such sectors can implement offset projects to reduce emissions in exchange for the issuance of offset credits. When sold to a regulated electric power or transportation fuels company, the use of offset credits results in net zero emissions within the system. Offsets are included in the cap and trade system to contain the overall cost of emission reductions, as policymakers expect that offset projects will often be able to reduce emissions more cost effectively than some internal emission reduction investments available to regulated businesses.

Under the California cap and trade system, regulated businesses may meet up to 8% of their compliance obligation with offsets within each triennial compliance period. Most private and public analyses of the system predict that businesses will make full use of offsets as one of the least-cost emissions reduction opportunities available. Maximum offset demand through 2020 in the system is approximately 218 MtCO<sub>2</sub>e. Current offset supply eligible for use in the California market is approximately 10.1 MtCO<sub>2</sub>e.

At present, ARB has approved only four offset project types for use in the California market: domestic U.S. forestry (including avoided conversion, reforestation, and improved forest management), urban forestry, livestock (manure/methane) management, and the destruction of ozone depleting substances (ODS). ARB will grandfather 2005-2014 vintage offsets issued under the voluntary Climate Action Reserve (CAR) protocols for projects of these types registered with CAR before January 1, 2014 (known as early action offsets). After that date, all offset projects must be developed according to protocols adopted by ARB, which closely track the CAR protocols. In late 2011, ARB announced that it is planning to adopt new ARB protocols related to fertilizer application and rice farmland management. In addition, California is developing a pathway for the admission of offset credits from sector-wide emissions reductions in developing countries, beginning with Reduced Emissions from Deforestation and Degradation (REDD).

The table at right illustrates New Forests' calculations of the maximum offset use allowed under AB32 for the first three compliance periods. During the first two compliance periods, sector-based offsets, such as from REDD, can be used for up to 25% of the total volume of allowed offsets. In the third compliance period, the limit increases to 50%. These maximums as well as the 8% limit apply to each regulated business' annual and triennial compliance obligation. For example, if a regulated entity has a compliance obligation of 10MtCO<sub>2</sub>e in 2012, it may submit up to 800,000tCO<sub>2</sub>e of offsets of which 200,000tCO<sub>2</sub>e may be sourced from REDD. As offsets and allowances can be banked, entities can strategically manage their liability from year to year and across compliance periods. Because the 8% limit on offset use cannot be rolled over into subsequent compliance periods, New Forests expects that most regulated entities will aim to maximize offset use in each period and bank allowances for use in the later years of the system.

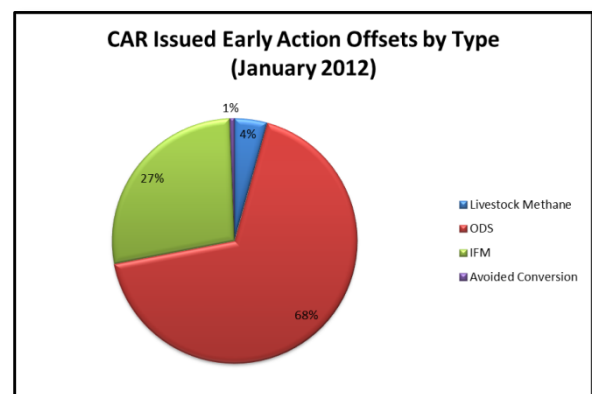
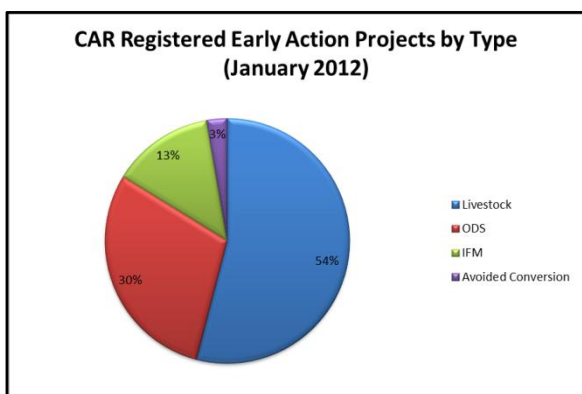


### Estimated Maximum Offsets Allowed in California Cap-and-Trade System, 2012-2020 (MtCO<sub>2</sub>e)

	Year	Allowance Budget <sup>1</sup>	Max Offsets <sup>2</sup>	Max Sector-based Offsets
1st Compliance Period	2013	162.8	14.2	3.5
	2014	159.7	13.9	3.5
2nd Compliance Period	2015	394.5	34.3	8.6
	2016	382.4	33.3	8.3
	2017	370.4	32.2	8.1
3rd Compliance Period	2018	358.3	31.2	15.6
	2019	346.3	30.1	15.1
	2020	334.2	29.1	14.5
<b>Total</b>		<b>2,674.4</b>	<b>232.6</b>	<b>80.7</b>

### Forest Carbon in the California Offset Market

California’s cap and trade market is the first compliance carbon market in the world to accept forest carbon offsets,<sup>3</sup> and the market will likely rely extensively on forest carbon offset supply. Only domestic forestry, ODS, and international Reduced Emissions from Deforestation and Degradation (REDD) projects can deliver the necessary volume to the market. The charts below illustrate this reality by comparing the number of projects eligible for early action registered with CAR to the volume of early action offsets issued by CAR as of January 2012. Domestic forestry and ODS projects have provided 95% of the early action offset volume to date, while representing only 43% of all early action projects registered. Forestry projects alone have provided 27% of early action offset volume to date, while representing only 13% of all early action projects registered. As REDD is likely to supply 25% of the market and domestic forestry projects can supply high volumes of offsets per project, domestic forestry and REDD could capture a 50% share of the California



<sup>1</sup> These figures do not subtract for the cost containment reserve, which increases from 1% to 4% to 7% in successive compliance periods. ARB will release these allowances only if auction prices reach certain thresholds.

<sup>2</sup> Maximum offset demand is calculated by assuming available allowances meet 92% of compliance obligations and offsets are used to cover 8% of compliance obligations.

<sup>3</sup> Forestry offsets (tCERs) in the Kyoto Protocol’s Clean Development Mechanism represent less than 1% of market volume and are not accepted in the EU ETS. Forestry is significant in New Zealand’s Emissions Trading Scheme as a capped sector, not a provider of offsets. In November 2011, Australia passed legislation enabling a carbon price mechanism with an emissions trading scheme starting in 2015, which will include forest carbon offsets from the country’s Carbon Farming Initiative.

offset market through 2017 and a higher market share thereafter. ARB envisions a fully developed REDD market in operation by 2015 that will include activities both at the project and state level, involving both government led and private sector investment.

### ***New Forests' Market Position***

New Forests has been an early and active investor in the California carbon market for several years through its joint-venture Eco Products Fund, which has financed some of the largest forest carbon projects being developed for the California market, and Forest Carbon Partners, a New Forests fund vehicle that finances and aggregates projects with family forest owners. New Forests Asia is also developing REDD projects in Indonesia that will protect intact tropical rainforest, aiming to deliver high volumes of low-cost offsets to the California market, and New Forests has worked in Brazil on developing forest carbon opportunities for large landowners, aiming to catalyze new models for conservation finance in the Amazon region.

Forest carbon offset investment represents an opportunity to capitalize on a significant regulatory shift in the California economy while simultaneously accomplishing meaningful forest land conservation. New Forests will continue to be a leading investor and project developer in the California cap and trade market over the coming years.

For further information on our California-compliant forest carbon investment programs please contact:

**Brian Shillinglaw**

New Forests

[bshillinglaw@newforests-us.com](mailto:bshillinglaw@newforests-us.com)

Note: Commentary is current as of February 2012.

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