FiniteCarbon

Chesapeake Bay Program
Science. Restoration. Partnership.

Forest Carbon Offsets: Status and Opportunity

USDA Chesapeake Bay Program Forest Finance Friday #4

February 28, 2020

Corporate GHG Reduction Commitments (this month!)

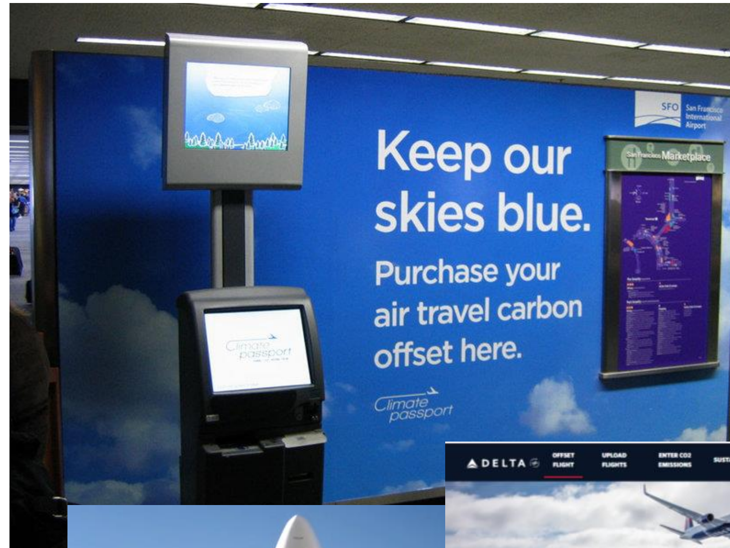
SUSTAINABLE ENERGY

Oil giant BP says it wants to have net-zero emissions by 2050

PUBLISHED WED, FEB 12 2020·7:58 AM EST | UPDATED WED, FEB 12 2020·9:17 AM EST

BP Quits Oil Lobby Groups in its Pursuit of a Zero-Carbon Future

The oil and gas giant continues moving further away from its peers in its efforts to reduce carbon emissions.



BLACKROCK

Activists cheer BlackRock's landmark climate move but call for vigilance

Divestment decision by the world's biggest fund manager called a breakthrough - but only a first step

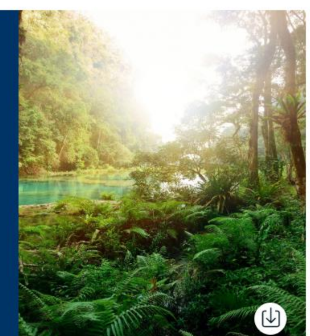
▲ Hundreds of youth climate activists staged a demonstration outside of the BlackRock offices in San Francisco as part of a nationwide youth climate strike in December. Photograph: Justin Sullivan/Getty Images

DELTA

ARTICLE | ENVIRONMENT

Delta commits $1 billion to become first carbon neutral airline globally

Staff Writer | Feb 14, 2020 7:00am



IN SUMMARY
Airline sets vision for meaningfully reducing emissions and advancing sustainability.

Be an Informed Consumer!

Companies now making major GHG reduction commitments

Global and domestic offset market in significant period of transition

Many different offerings are being pitched to landowners

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- Deal structure: **guaranteed vs option payments** or **full consignment**; who pays for what **costs** and when; offtake terms (i.e., pricing, volume, term, fees)?
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Why Landowners Consider Carbon Offset Projects

Land management and acquisition costs are significant

Stewardship

- New cash flow on conservatively managed working forests
- Largely in line with mission and current forest practices
- Income for stewardship costs

Conservation Capital

- Forestland acquisition
- Leverage traditional funding to advance economic development
- NR/forestry jobs; ed. scholarships

Finite Carbon Forest Carbon Projects

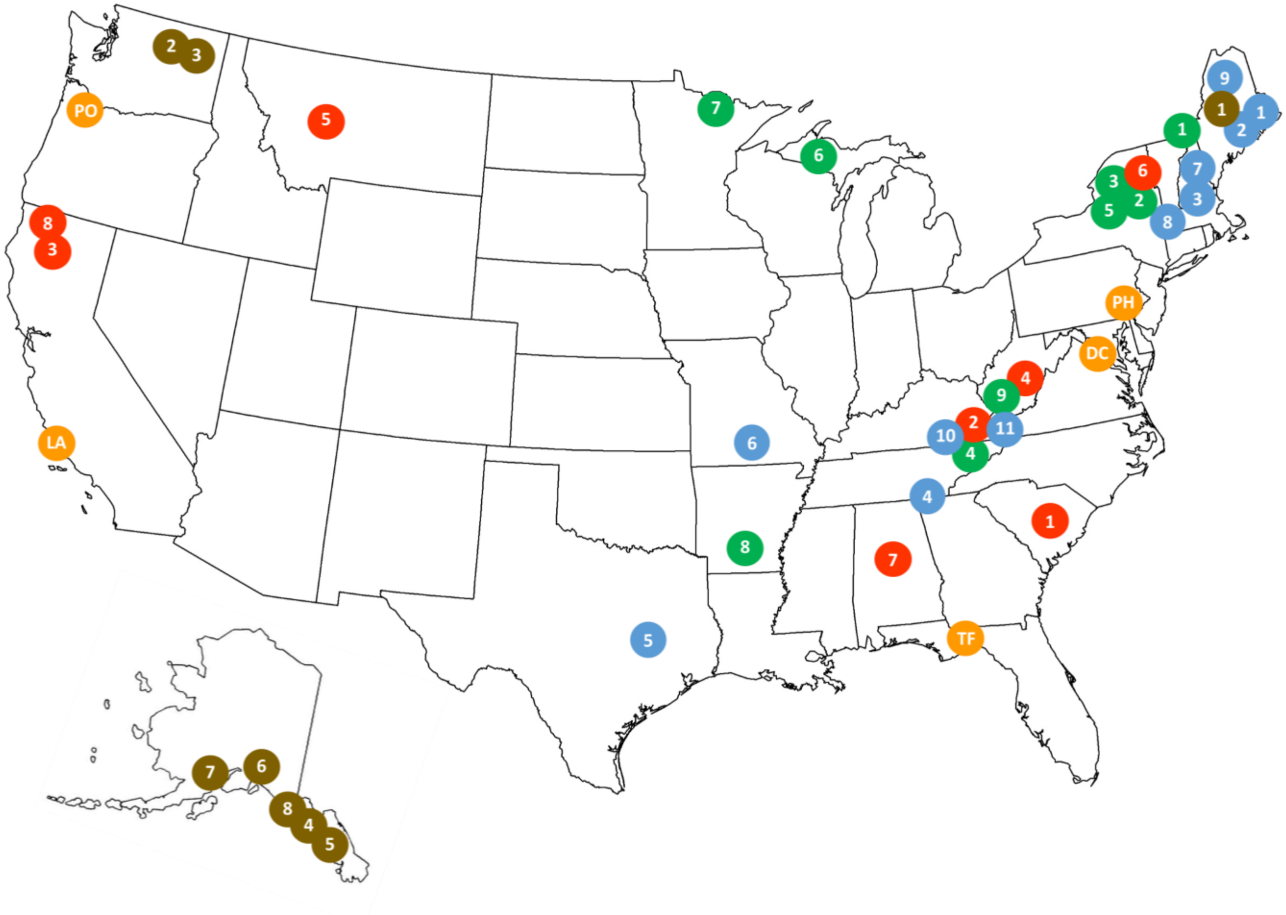
43 IFM Projects • 2.9 million acres

Land Trust and Non-Profit

1. Downeast Lakes LT Farm Cove
2. Downeast Lakes LT Grand Lake Stream
3. NEFF Hersey Mountain
4. TN River Gorge Trust
5. Cooks Branch Conservancy
6. UCC Shannondale
7. Lakes Region Conservation Trust
8. Mass Audubon
9. AMC Silver Lake
10. TNC Ataya
11. TNC Highlands

TIMO and REIT

1. TFG Connecticut Lakes
2. TFG Chateaugay
3. Molpus Champion
4. Molpus Little Brimstone
5. Molpus Adirondacks
6. Molpus Ned Lake
7. Molpus Meriwether
8. PotlatchDeltic Moro Big Pine
9. Lyme Logan



Tribes and Alaska Native Corps

1. Passamaquoddy
2. Colville
3. Spokane
4. Sealaska I
5. Sealaska II
6. Ahtna
7. Tyonek
8. Huna Totem

Corporate and Family

1. Norfolk Southern
2. Alma Land Company
3. Berry Summit LLC
4. Rowland Land Co.
5. Sieben Live Stock Co.
6. ATP Upper Hudson
7. TCT Birmingham
8. GDR Humboldt

Finite Carbon Office

DC. Washington DC
LA. Los Angeles
PH. Philadelphia, PA (HQ)
PO. Portland, OR
TF. Tallahassee, FL

63 million offsets issued • $750 million revenue

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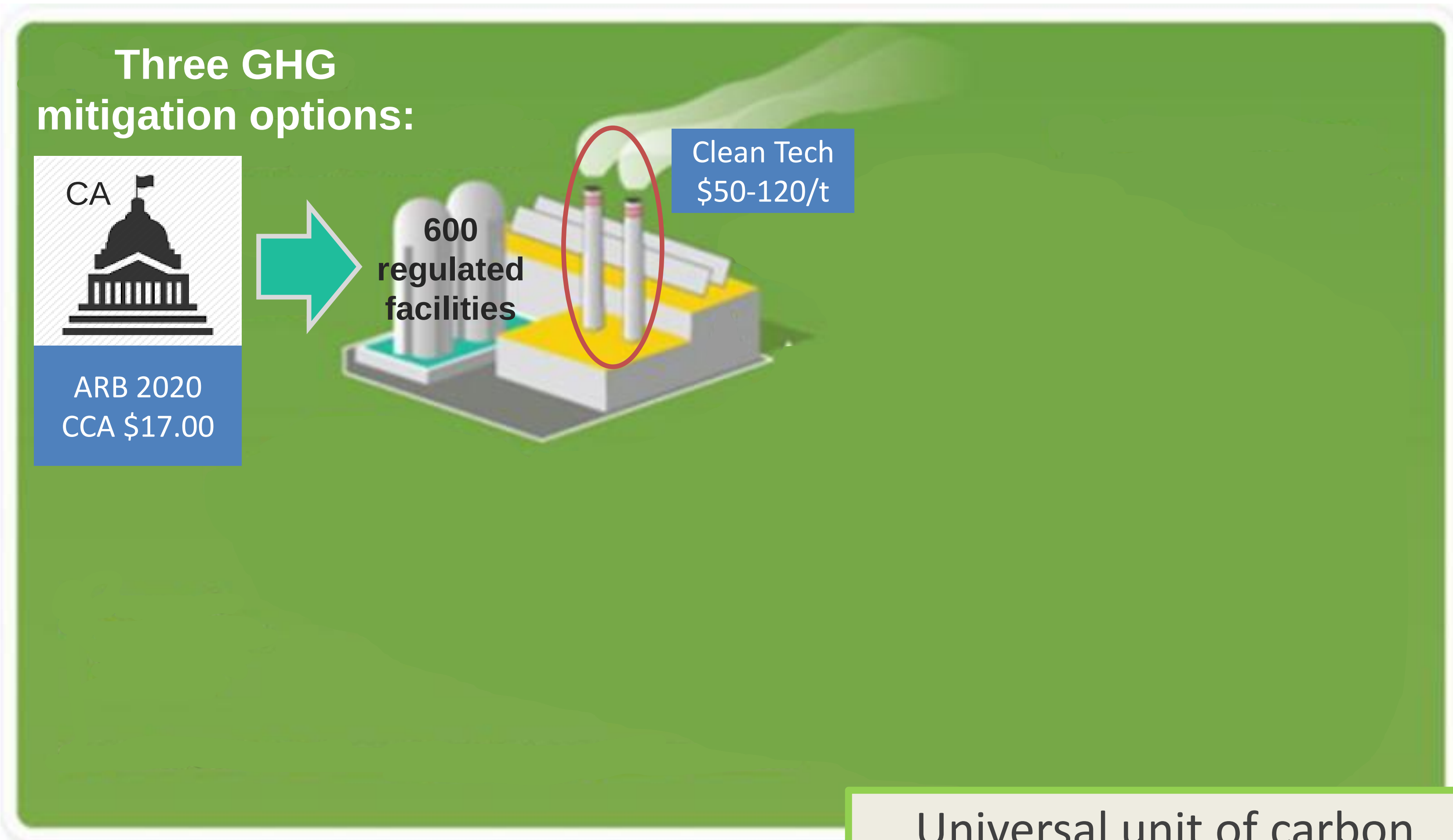
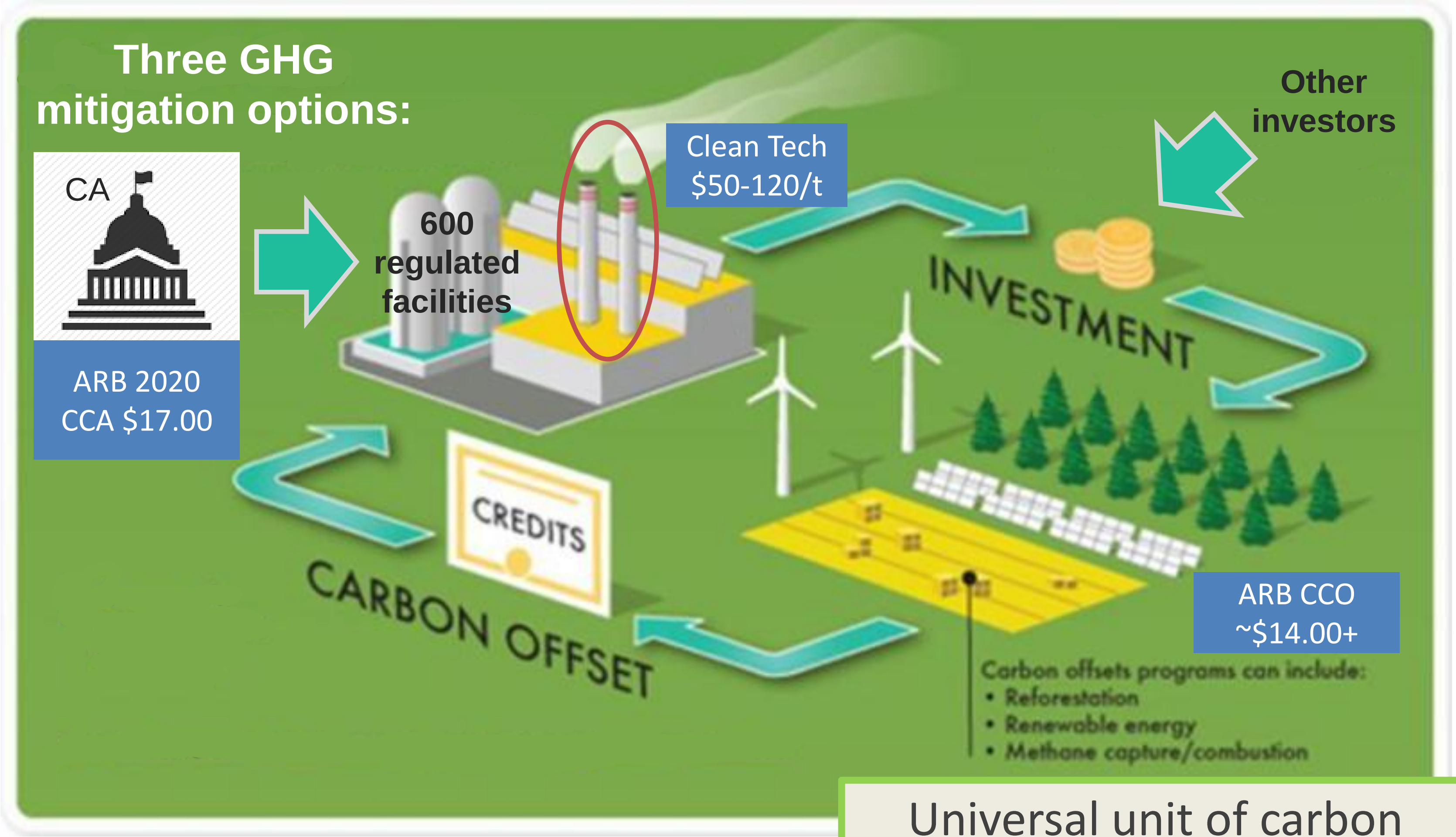


Universal unit of carbon trade is the “carbon offset” (aka “credit”) = 1 $mtCO_2e$

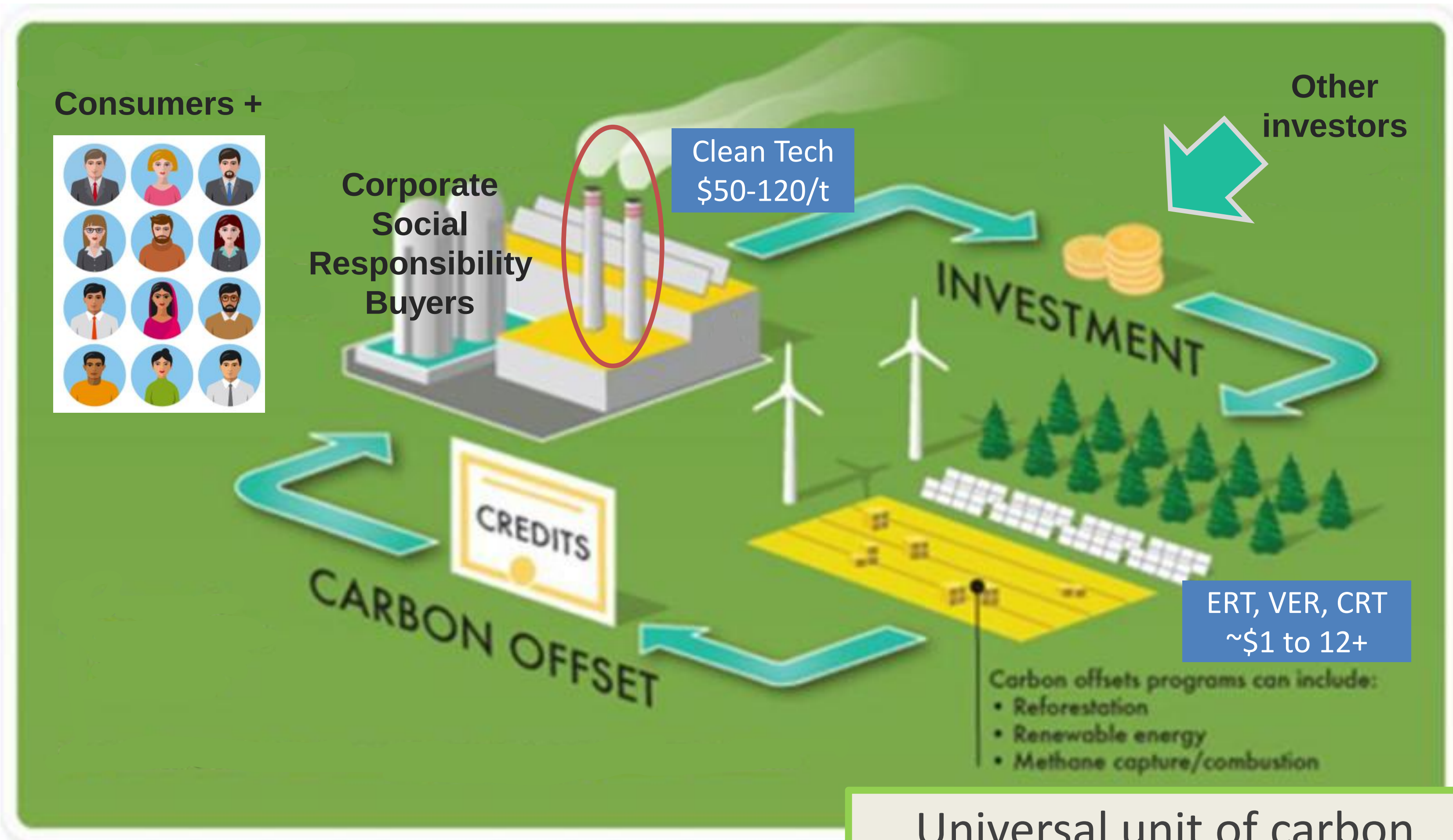
How Do Compliance Offset Markets Work?



Offset use is capped at: 8% (through 2020); then, 2+2% (2021-25) and 3+3% (2026-30)

Universal unit of carbon trade is the "carbon offset" (aka "credit") = 1 $mtCO_2e$

How Voluntary Do Offset Markets Work?



Hundreds of CSR buyers + millions of consumers with voluntary GHG reduction commitments

Universal unit of carbon trade is the "carbon offset" (aka "credit") = 1 $mtCO_2e$

Offset Market Dynamics

Compliance (CA/Quebec Western Climate Initiative)

- 162M offsets issued for 180M+ total demand (2013-2020 period fully subscribed)
- Strong pricing, now $14+/offset outside CA; $16+ for CA
- CA C&T/offset program reauthorized for 2021-2030 period, but:
- Allowed offset use reduced from 8% to 4% of emissions, and
- Established "direct environmental benefits" (DEBs); 50% of offsets must now be sourced from DEBs projects, i.e., CA (+ adjacent geographies?)
- Existing (already registered) offset projects will supply majority of non-DEBs offsets from annual issuances **= *very limited opportunity for new projects outside CA***

Voluntary (ACR, VCS, and CAR)

- ACR = 40-year project life; CAR = 100 years
- Corporate social responsibility (CSR) buyers = lower, more sporadic demand and smaller offtake agreements
- Lower pricing relative to compliance ($4 to 10/offset)
- Potential for sector-level game changing demand (e.g., international aviation and shipping), but this doesn't mean better pricing

Show me the money!

Compliance

Region	1st Year	Annual
California/PNW	$800-1200	$20-40
Coastal Alaska	$300-1000	$10-20
Inland West	$200-1000	$10-20
Southeast Hardwood	$200-800	$10-30
Southeast Softwood	$150-200	$10-20
Lake States	$100-400	$5-20
Northeast	$100-250	$5-10

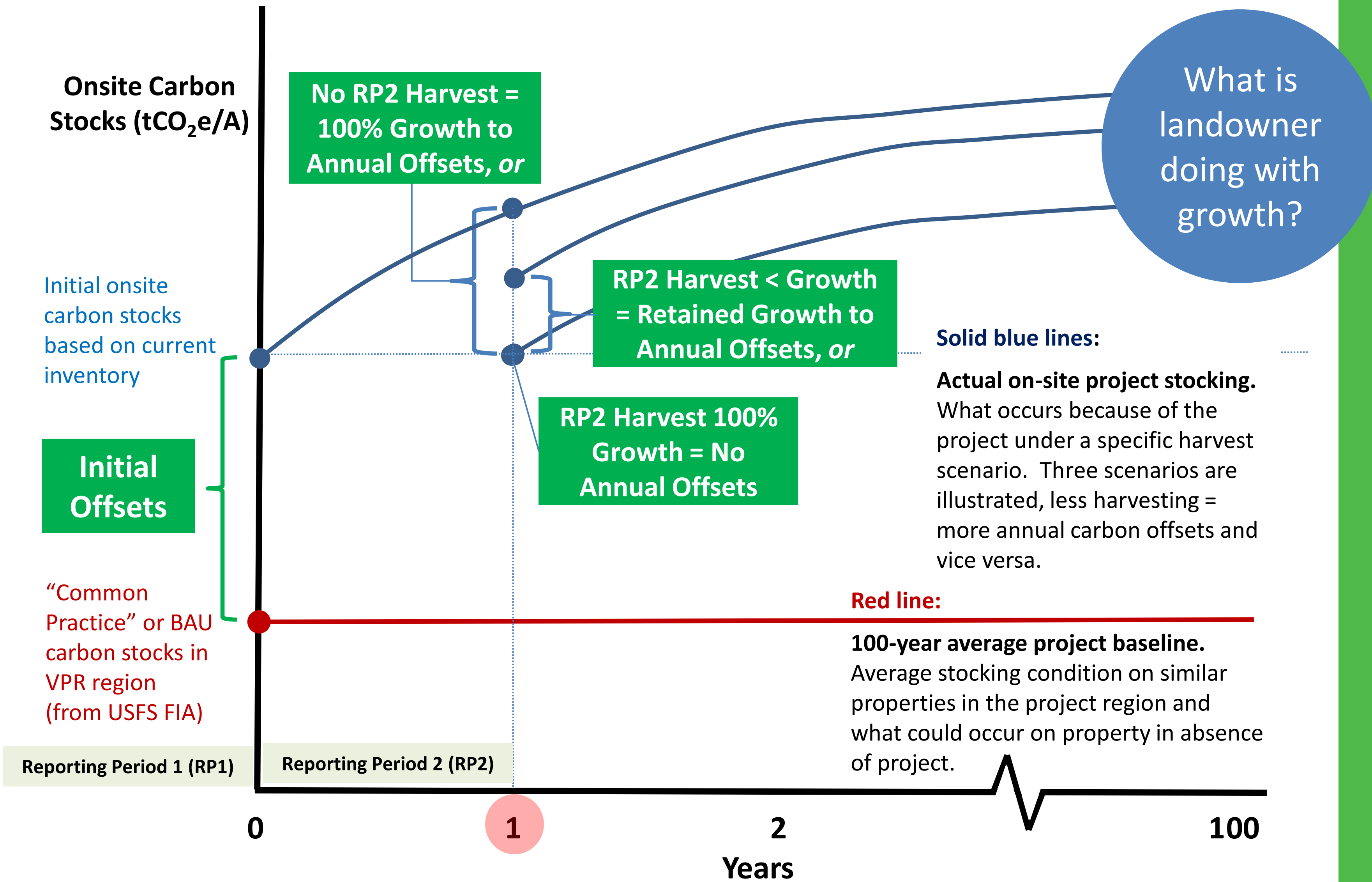
Voluntary

At $6 to 8 pricing, $150 to 450 per acre total net to landowner over first five years, then $5 to 10 per acre per year thereafter

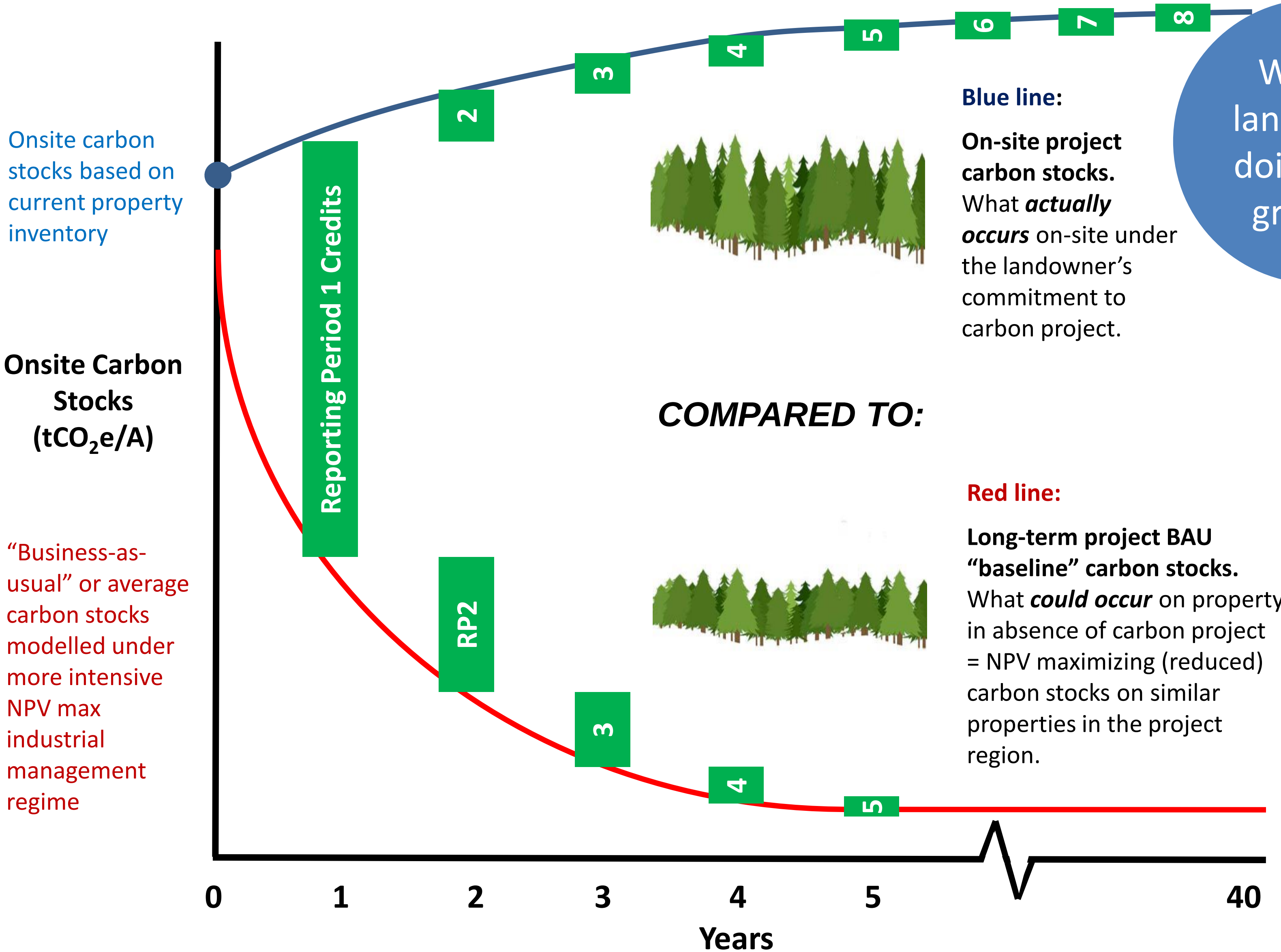
Landowner Commitments: *Compliance vs Voluntary*

California ARB	ACR IFM
"Golden Rule" Harvest <= Growth Natural forest management Even-aged harvest = 40 acres max <50BA	"Golden Rule" Harvest <= Growth Natural forest management No additional harvest restrictions
If commercial harvesting, then SFI, FSC, ATFS or state/fed approved plan	If commercial harvesting, then SFI, FSC, or ATFS
Audits • Harvest updates + desk review (~annual) • Field verify **every 6 years**	Audits • Harvest updates + desk review (~annual) • Field verify **every 5 years**
100+ yrs	**40 yrs fixed**
Re-inventory **every 6 years** Long term OM costs (~$350k++)	Re-inventory **every 10 years** Long term OM costs (~$200k)
Limited waiver of sovereign immunity BIA Section 81 review letter	No additional requirements Non-federal public forestlands participate

Quantifying *Compliance* IFM Project Performance

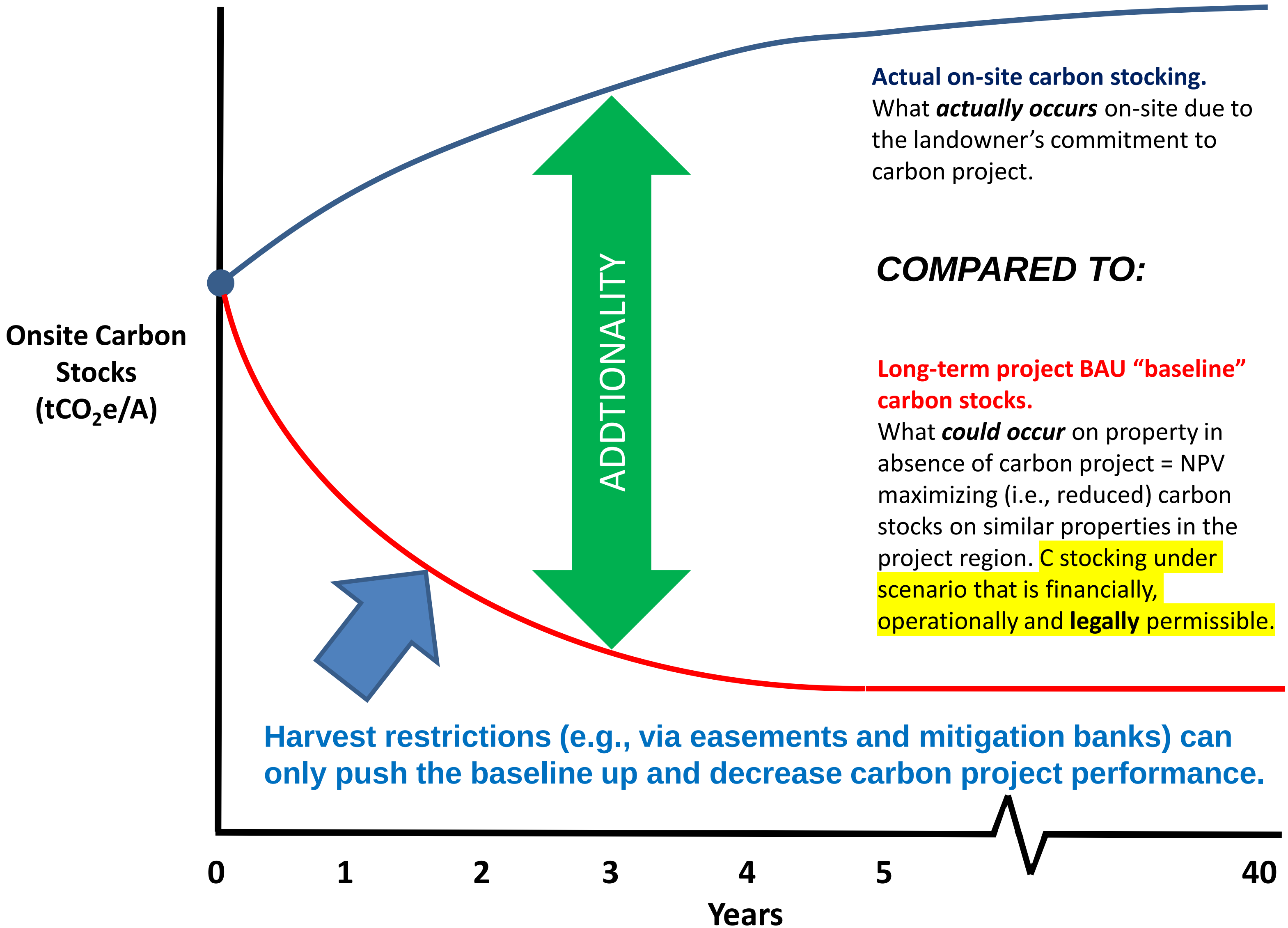


Quantifying ACR IFM Project Performance



What is landowner doing with growth?

Easements and Carbon “Additionality” (Voluntary)



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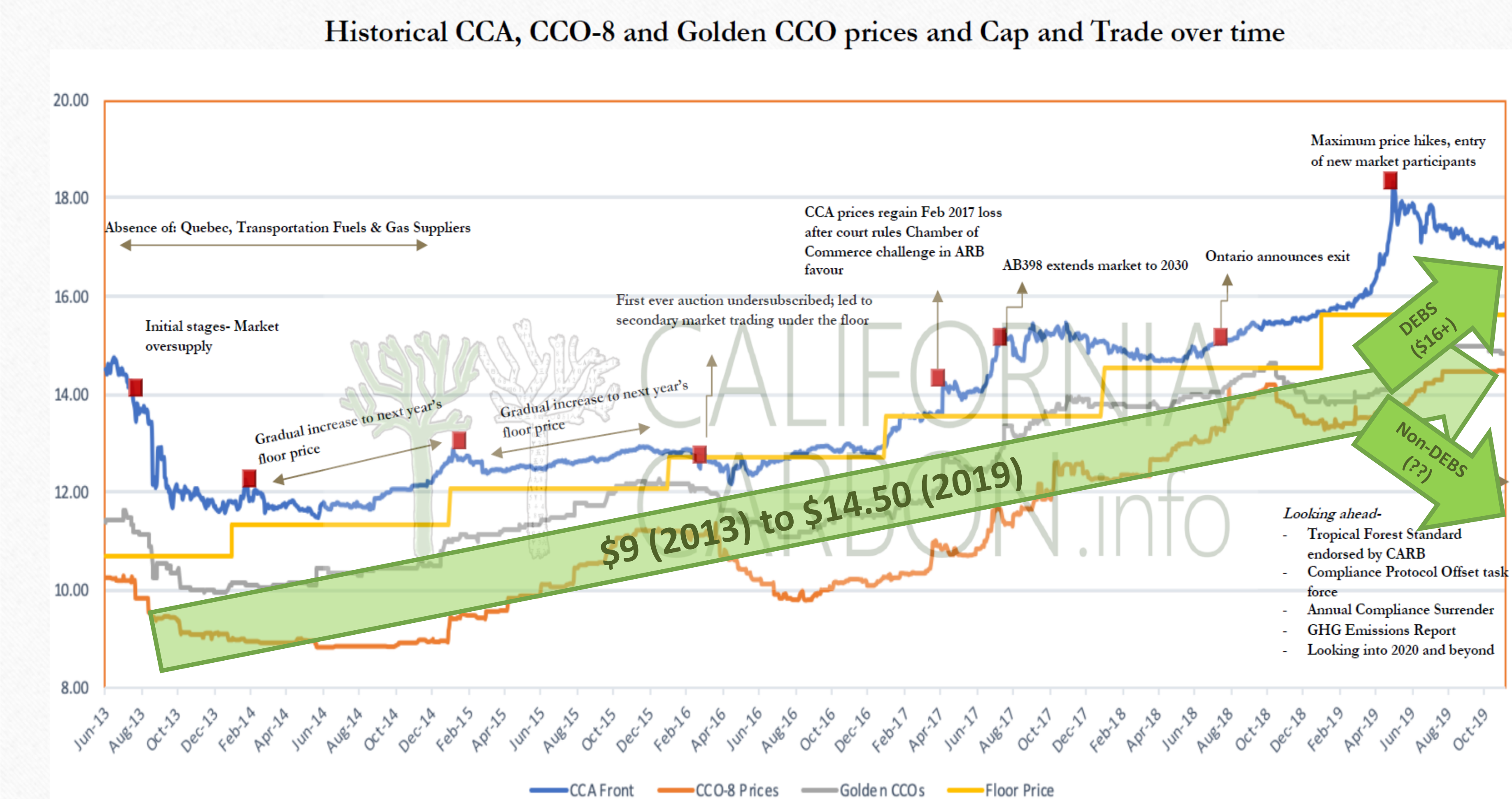
Carbon Project Development Cycle

~12 (voluntary) to 18+ (compliance) month development process

- **development costs + risk (varies)**
- **Long term O&M carbon project costs (varies, usually landowner)**

Compliance Offset Pricing



Source: **californiacarbon.info**

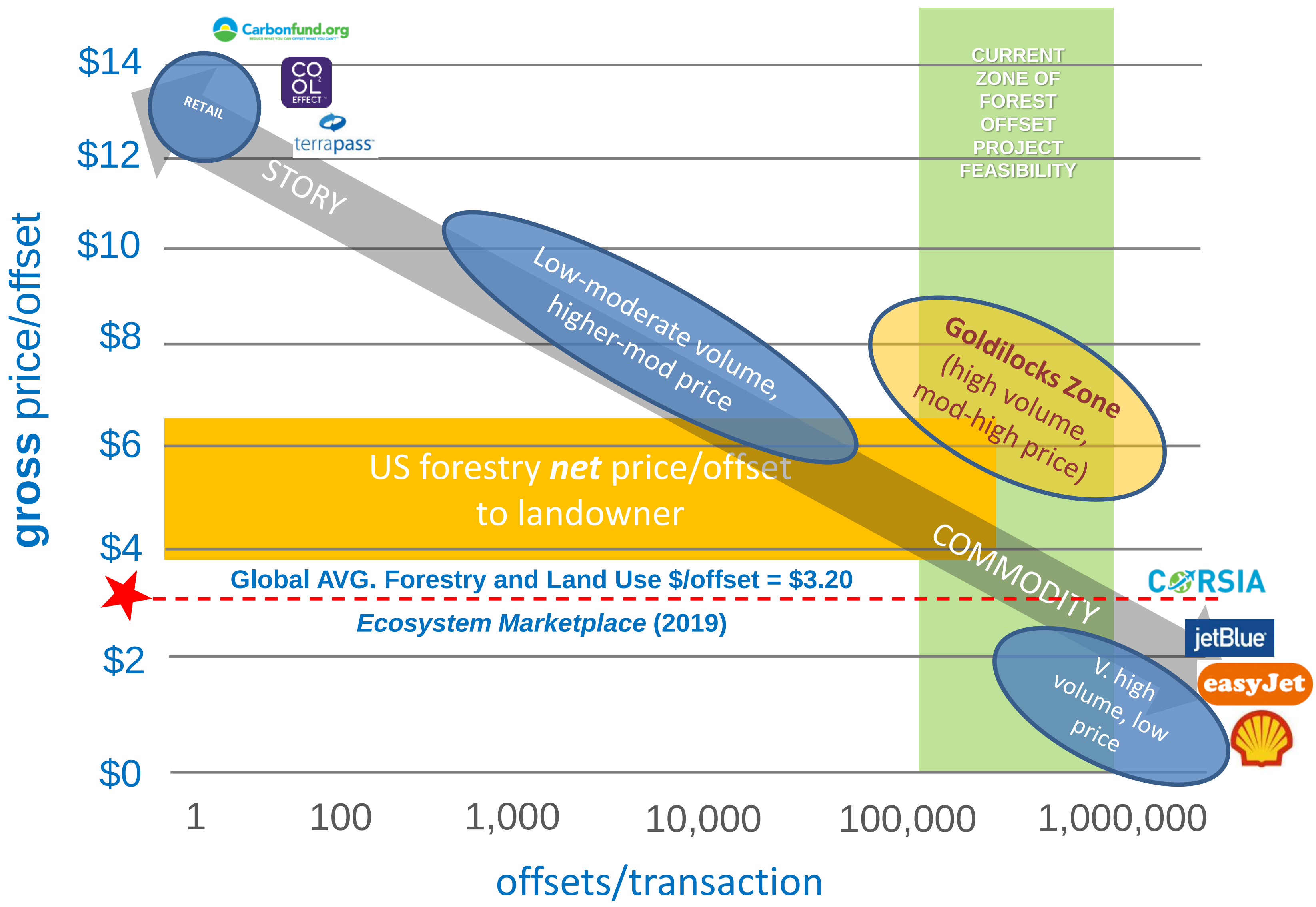
Voluntary Offset Pricing

	2017			2018		
	VOLUME $MtCO_2e$	AVERAGE PRICE	VALUE	VOLUME $MtCO_2e$	AVERAGE PRICE	VALUE
FORESTRY AND LAND USE	16.6	$3.4	$63.4M	50.7	$3.2	$171.9M
RENEWABLE ENERGY	16.8	$1.9	$31.5M	23.8	$1.7	$40.9M
WASTE DISPOSAL	3.7	$2.0	$7.4M	4.5	$2.2	$10.0M
HOUSEHOLD DEVICES	2.3	$5.0	$11.8M	6.1	$4.8	$29.5M
CHEMICAL PROCESSES/ INDUSTRIAL MANUFACTURING	2.6	$1.9	$4.9M	2.5	$3.1	$7.9M
ENERGY EFFICIENCY/ FUEL SWITCHING	1.1	$2.1	$3.3M	2.8	$2.8	$7.8M
TRANSPORTATION	0.1	$2.9	$0.2M	0.3	$1.7	$0.5M

Source: **Ecosystem Marketplace (2019)**

Voluntary offset demand increasing, but prices flat

"I heard some landowners are getting $10/ton?" Yes, but…



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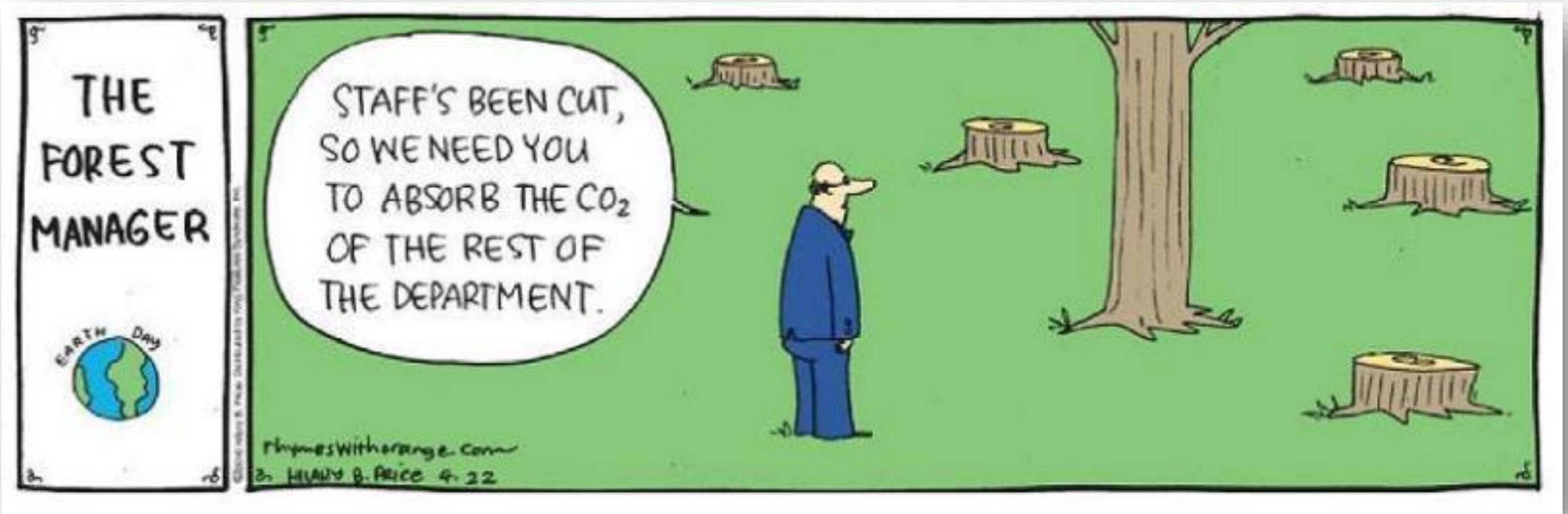

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