

# Biochar Protocol Development

Keith Driver & Peter Weisberg

2012 US Biochar Conference

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The  
**ClimateTrust**<sup>®</sup>



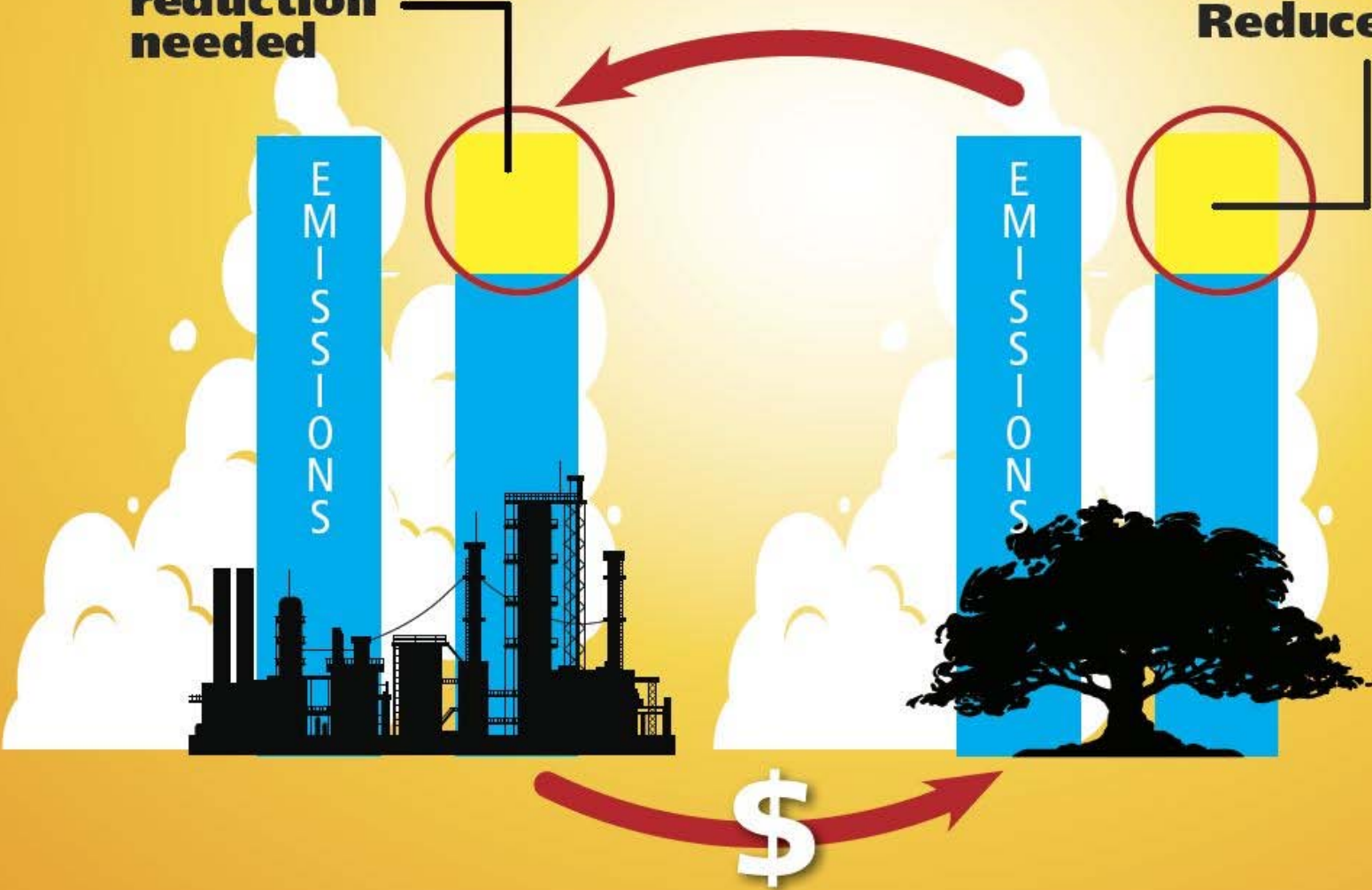
# Contents

- What is a carbon market protocol?
- Introductions
- Previous protocol history
- Introduction to carbon markets
- How will a biochar protocol work?
- Timeline

# OFFSETS

Emission reduction needed

New Emissions Reduced



# GHG Offset Protocol: Qualify and Quantify

- **Qualify** projects-
  - What types of biochar projects are eligible to generate offsets?
  - Where? What technologies? What uses of the biochar?
- **Quantify** GHG reduction
  - How many offset credits?
  - Comparison of baseline vrs. project scenario GHG emissions

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# Funding & Project Partners

- **The Climate Trust**
  - Peter Weisberg
- **International Biochar Initiative**
  - Debbie Reed, Miguel Rodriguez
- **The Prasino Group**
  - Keith Driver
- **Carbon Consulting LLC.**
  - John Gaunt
- **Blue Moon Fund**

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The  
prasino  
Group



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# Previous Protocol History

- Original protocol efforts presented to the public at the 2010 US Biochar Conference

***Goal: To develop a universally applicable biochar offset protocol for the Alberta Offset System (AOS) and then Voluntary Carbon Standard (VCS)***

- Addressed a variety of project scales, diverse feedstocks, and process technologies

[www.biocharprotocol.org](http://www.biocharprotocol.org)



CARBON  
WAR ROOM





# Previous Protocol History

- Protocol development created 2 primer documents:
  - Biochar Science, Feedstocks and Technology 101*
  - Carbon Policy & Markets 101*
- Webinars on primer materials presented to public
- Technical Stakeholder Review Workshops hosted to address outstanding science and carbon policy issues. Feedback collected for protocol revisions:
  - IBI Rio de Janeiro 2010 workshop
  - Free public webinars summer 2010



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# Previous Protocol History

- Protocol drafted and entered AOS evaluation and approval process
- Technical Stakeholder Working Group assembled for transparent protocol review process
- AOS identified need for Alberta-specific biochar research and applicability prior to protocol approval
  - Alberta research group making progress on biochar use and application
  - Protocol re-submittal part of this initiative
- Further gap for pursuing VCS approval
  - Enter IBI, The Climate Trust and Blue Moon Fund



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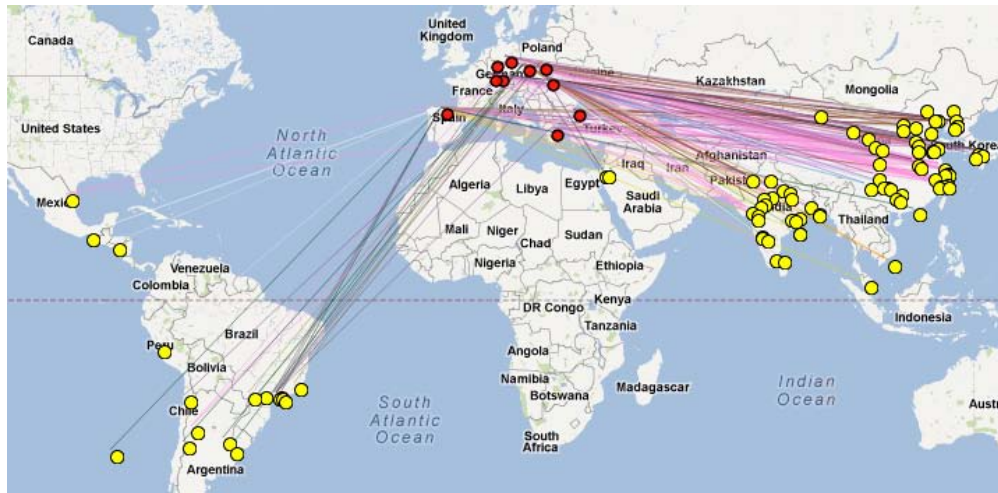
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# Carbon Market Landscape: Compliance

International:

Clean Development Mechanism



Regulatory driver:  
Kyoto Protocol

Domestic:

California Carbon Market



Regulatory driver:  
Cap-and-Trade in 2013

# Carbon Market Landscape

## Voluntary



## Pre-Compliance



Registries that certify projects:

- Climate Action Reserve
- American Carbon Registry
- Verified Carbon Registry

# Carbon Market Prices

Voluntary market	Pre-Compliance Market	Compliance Market
\$4/credit	\$8/credit	\$15/credit

Back of the envelope:

1 ton of biochar = ~2.35 credits

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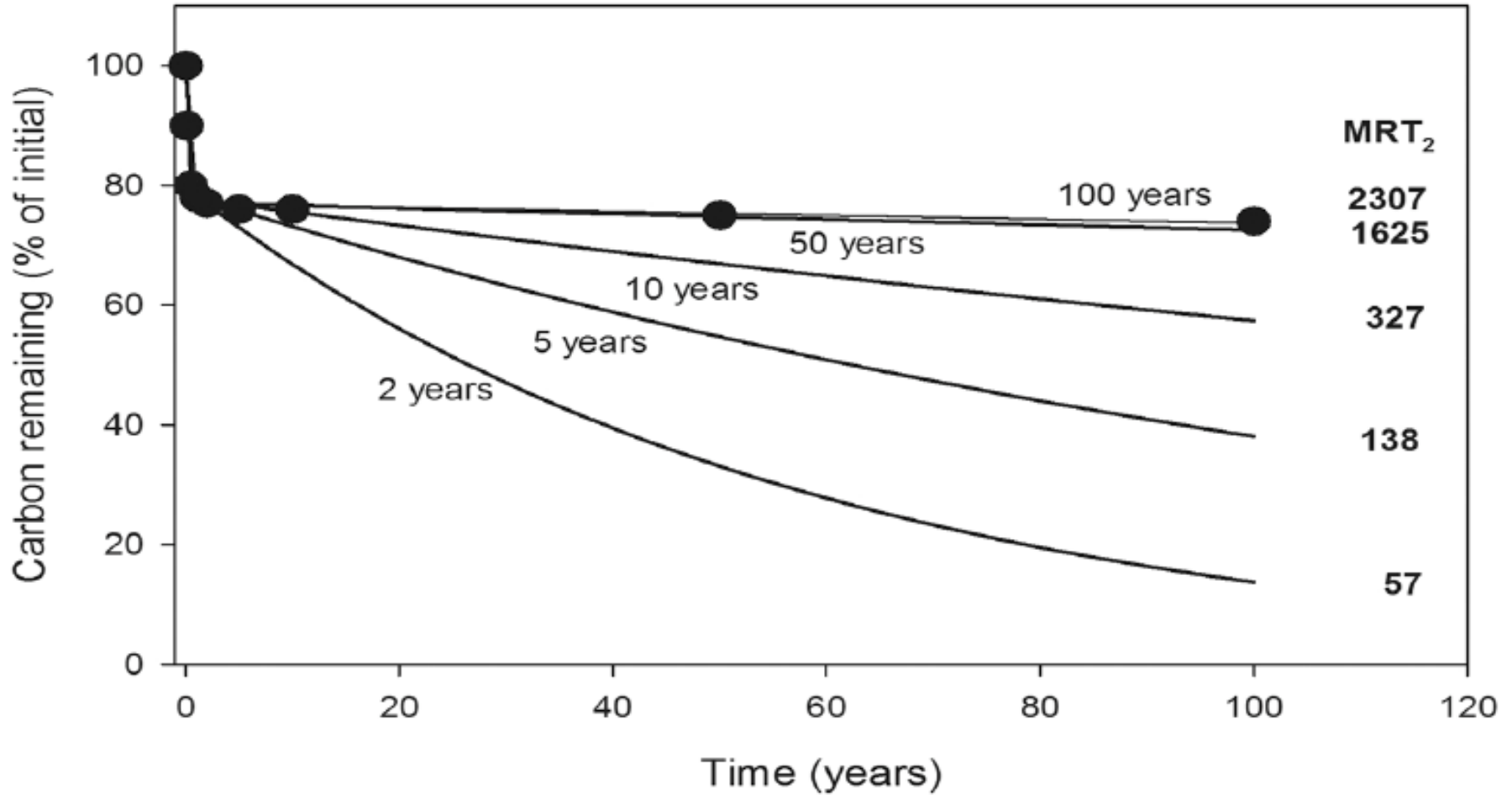
- What is a carbon market protocol?
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- Previous protocol history
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- How will a biochar protocol work?
  - Scope
  - Carbon stability test
  - Technological benchmark
  - Ownership of credits
- Timeline



GHG Reduction	Project GHG Reductions <sup>1</sup>	Qualify for Carbon Finance in Developed World
<b>Carbon sequestration (CO<sub>2</sub>)</b>	50-65%	Yes. No current methodology.
Renewable energy (CO <sub>2</sub> )	20-40%	No. Emissions are capped.
<b>Waste diversion (CH<sub>4</sub>)</b>	0-20%	Yes. Existing CDM methodology.
Soil emission reduction (N <sub>2</sub> O, CH <sub>4</sub> )	~0-5%	No. Expensive to measure/model.
Fertilizer manufacturing reduction (CO <sub>2</sub> , N <sub>2</sub> O)	~0-5%	No. Emissions are capped, reductions are indirect.

<sup>1</sup> Estimates from Weisberg et al. 2010. "Carbon market investment criteria for biochar projects." California Energy Commission.

# Carbon stability



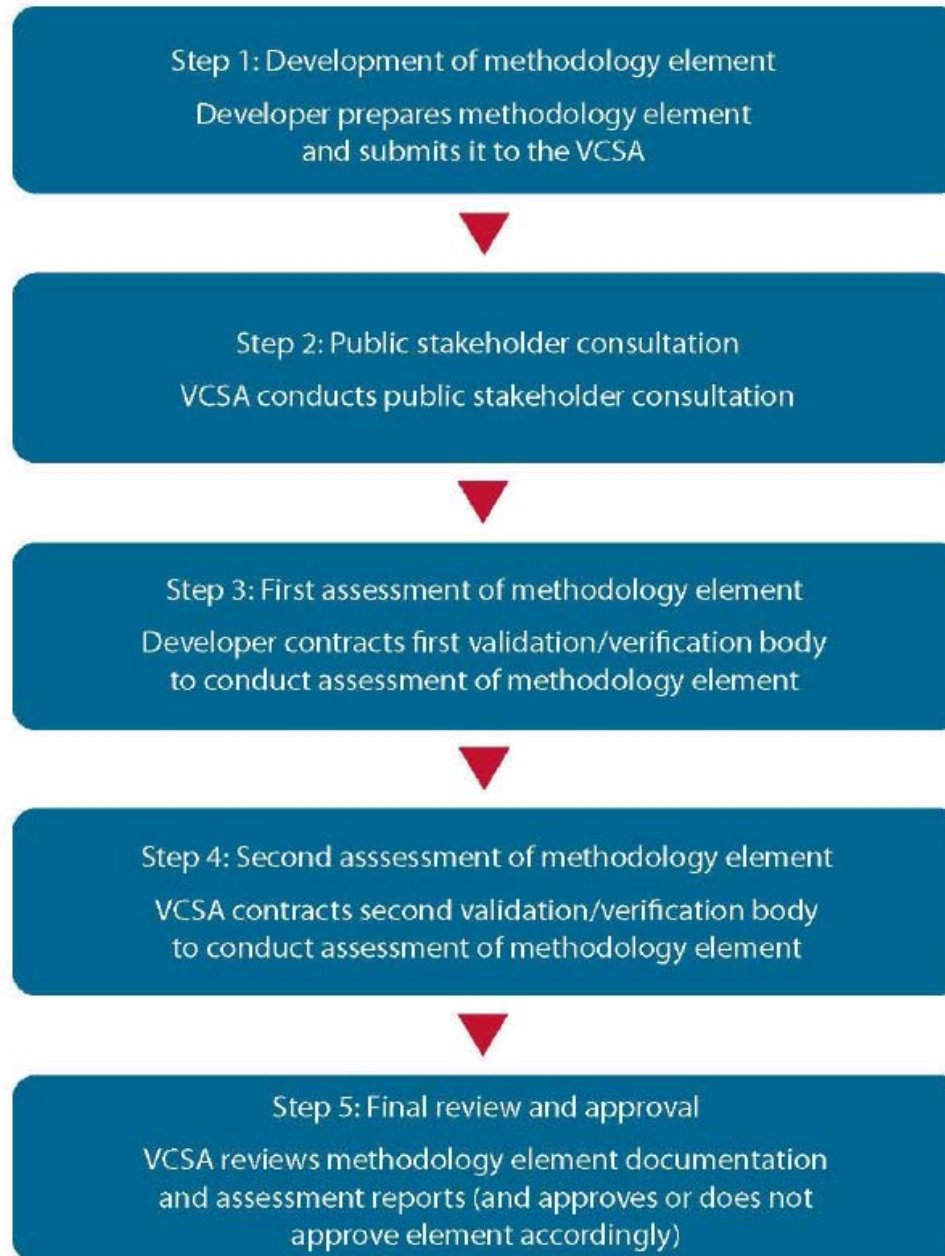
# Technological benchmark

- Offsets must “do no harm.”
- How can the protocol assure proper emissions controls?
- Current approach:
  - Biochar in soils must be certified according to IBI’s “Standardized Product Definition and Product Testing Guidelines”
  - Projects must be in industrialized countries and pass all air emissions standards

# Ownership

- Producer OR final user of biochar can claim ownership of emission reductions.
- Must clearly document that the other has given them the right to do so.

# Verified Carbon Standard



# Anticipated Timeline

- **September 2012**- Draft methodology (without carbon stability test) completed.
- **November 2012** – Methodology for testing carbon stability finalized by expert group.
- **December 2012**- Release draft methodology for public comment through the IBI.
- **March 2013**- Submit methodology for validation with the VCS.
- **End of 2013**- Final approval of the VCS methodology.

# Thank you!

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