Carbon Offsets: Should You or Shouldn't You?

June 10, 2021

LEARN

BENCHMARK

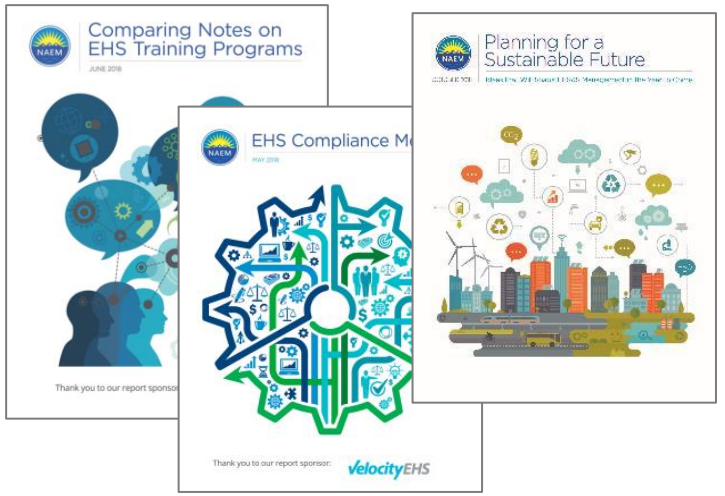
NETWORK

A Professional Community
Where You Get & Share Solutions

Delivering Knowledge & Professional Wisdom

Peer Conferences

Research Insights



Targeted Networking

Actionable strategies to empower EHS&S leaders to make an impact

120
Corporate Members

4,200
Individual Members

60
Affiliate Members

Reaching an EHS&S Community of

25K+

NAEM Connects EHS & Sustainability Leaders

Today's Speakers

Emily Damon
Vice President of Sustainability Policy & Advisory
ClimeCo

Angie Martin
Vice President
Heritage Environmental Services

David Priddy
Vice President of Business Development
ClimeCo

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Speaker Introductions

Angie Martin
Vice President

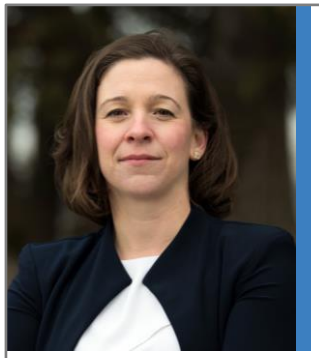
Angie is an experienced environmental professional.

- 30+ years experience in environmental engineering, regulatory services, industrial waste permitting, industrial waste management, and emergency response
- Leads Heritage's sustainability program
- Based in Indianapolis, IN

David Priddy
VP, Business Development

David specializes in business development and client relations.

- 35+ years experience in the industrial and environmental business sectors
- Broad knowledge and understanding of carbon markets
- Based in Atlanta, Georgia



Emily Damon
VP, Sustainability, Policy & Advisory

Emily specializes in ESG performance and climate strategy.

- 13+ years experience in sustainability consulting
- Supports Fortune 500s, cities, and investors to design and implement sustainability strategies
- Based in Burlington, VT

About Heritage Environmental Services

Heritage Environmental Services was founded in 1970; the same year President Nixon established the EPA. We are a private company held by The Heritage Group, which is a fourth-generation family business nearly a century old.

Heritage is involved in every aspect of the industrial waste management hierarchy: prevention, reuse, deconstruction, detoxification, treatment, and disposal.

Heritage owns and operates seven TSDFs (US EPA regulated hazardous waste treatment, storage, and disposal facilities) — including two hazardous waste incinerators, a hazardous waste landfill, an inorganic hazardous waste treatment complex, and an energy-from-waste fuels blending facility.

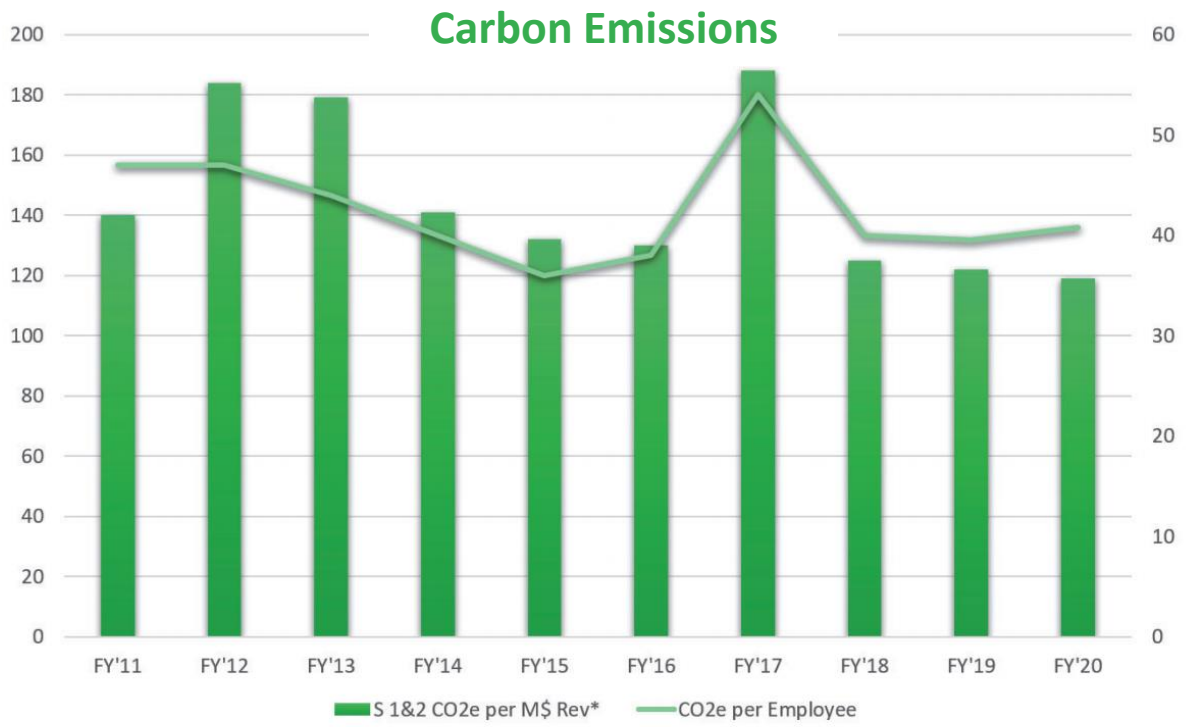
Heritage also offers a range of total waste management (TWM) services through an integrated waste management platform. Primarily managing industrial waste, Heritage Interactive manages vast numbers of customer locations under a single contract, utilizing a network of over 3,000 vendors.

Types of TSDs

Long-standing Sustainability Program

HERITAGE *Sustainability Initiative*

People | Planet | Profit | Patrons



*Metric tons of GHG per million dollars of sales
** NOTE: the increase in 2017 was the result of a major acquisition

- ✓ Long history of measuring climate impacts
- ✓ Recent concluded materiality assessment with climate a continued priority
- ✓ Ready to start reducing climate impacts
- ✓ Carbon offsets: should we or shouldn't we?

About ClimeCo

ClimeCo is a boutique sustainability, climate change, and environmental commodities firm.

ADVISORY

- Sustainability strategy
- Target-setting and reporting
- Compliance optimization
- Regulatory consultations & government negotiations
- Classic air quality consulting

TRANSACTIONS

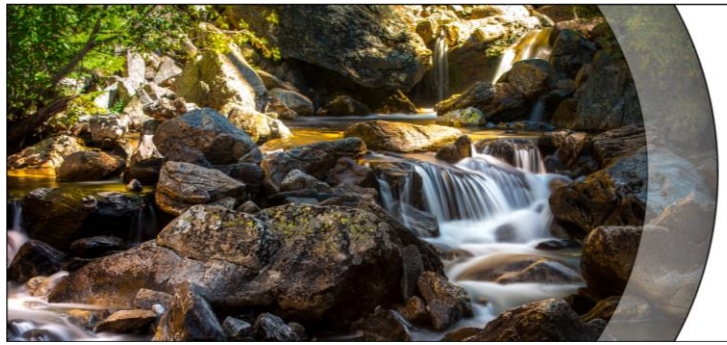
- Environmental commodity sourcing, marketing, & trading
- RE100 fulfillment
- Environmental commodity commercial expertise
- Hedge strategy optimization
- Management process development

PROJECT DEVELOPMENT

- Environmental commodity creation
- Project development, implementation, & operation
- Project finance
- Protocol & methodology development

OUR CLIENTS

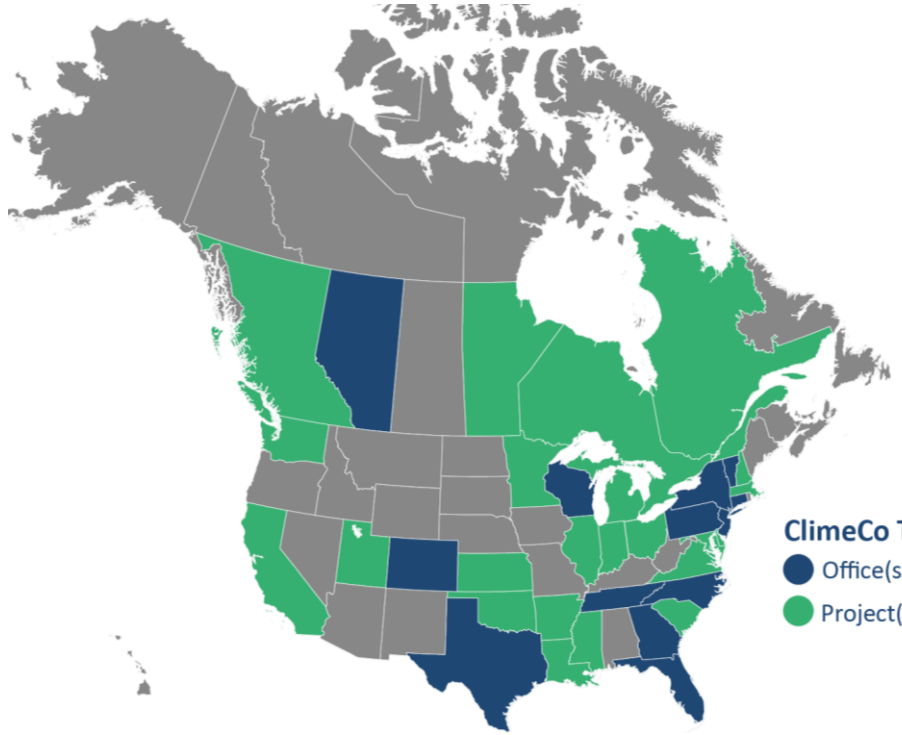
Southern California Edison, Shell, RENTECH Nitrogen, Air Products, CF Industries, Buzzi Unicem, BASF, PSEG, GP, Georgia-Pacific, FPL, TPC Group, WM Phoenix Open, PG&E, NextEra Energy Resources, just energy, bp, Norriseal, Guardian, AEPCO, WellMark



ClimeCo

Three Time Project Developer of the Year Winner
2018, 2017, and 2015

Climate Action Reserve

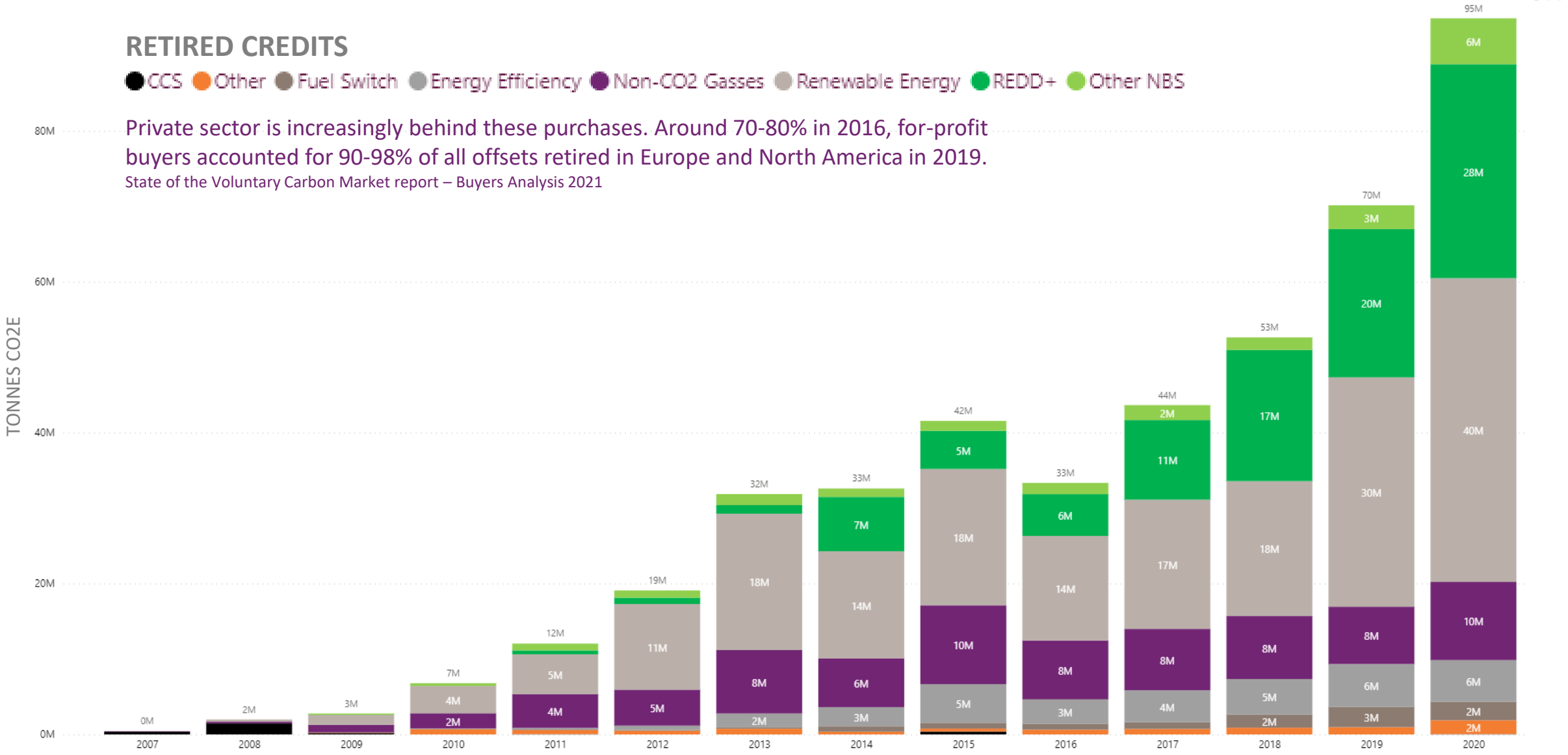


America's Fastest-Growing Private Companies — Inc. 5000

ClimeCo Team & Project Locations

- Office(s) /Project(s) Locations
- Project(s)

Carbon Offsets: Historical Usage



Definitions

DECARBONIZATION: reduction of greenhouse gas emissions.

CARBON OFFSET: greenhouse gas emission reduction of 1 metric tonne of carbon dioxide equivalent (CO2e). Reductions must be real, intentional, additional, permanent, quantifiable, and verified.

METHODOLOGY/PROTOCOL: a framework document that defines the quantification and parameters that are required to generate carbon offsets throughout the life of a project.

CARBON REGISTRY: organization that tracks offset projects and issues credits. Examples include Climate Action Reserve (CAR), American Carbon Reserve (ACR), Verra (VCS), and Gold Standard.

CARBON TRADING: a transaction of a carbon offset, such as a sale from the offset producer to a purchaser, who can then claim the reduction as their own by retiring the offset or can sell it to someone else.

OFFSET RETIREMENT: a carbon offset can't be claimed as an emission reduction until it is retired. It can be traded several times between creation ("issuance") and retirement.

Poll Question

- How familiar are you with carbon offsets? *(multiple choice, choose one)*
  - Very familiar
  - Somewhat familiar
  - Not familiar
  - I've never heard of them

Definitions

NET ZERO

- Own emissions abated by ~90% (2010-2050 timeframe)
- Residual emissions (remaining ~10%) are matched by an equal amount of permanent “removals” (extracting GHGs from atmosphere)

CARBON NEUTRAL

- Own emissions continue at any level
- Ongoing emissions are matched by an equal amount of carbon offsets purchased

OTHER TARGET TYPES

- Climate positive
- Carbon negative
- Science-based target
- 100% renewable
- And more…

Carbon Offsets: Foundational Logic

Carbon offsets facilitate the reduction of greenhouse gas emissions at the lowest global cost.

Scenario 1a: Company 1 voluntary target	Units	Company 1 Reducing emissions alone	Company 2
Emissions	tonnes	100	-
Target emissions	tonnes	50 (voluntary target)	-
Reductions needed	tonnes	50	-
$/tonne to reduce	$/tonne	$75	-
Reduction capacity	tonnes	1,000	-
Reductions implemented (abatement)	tonnes	50	-
Reductions purchased (offsets)	tonnes	-	-
Reduction cost	$	$75*50 = $3,750	-

Carbon Offsets: Foundational Logic

Carbon offsets facilitate the reduction of greenhouse gas emissions at the lowest global cost.

Scenario 1b: Company 1 voluntary target, using offsets	Units	Company 1 Purchasing offsets	Company 2 Reducing emissions, selling offsets
Emissions	tonnes	100	-
Target emissions	tonnes	50 (voluntary target)	-
Reductions needed	tonnes	50	-
$/tonne to reduce	$/tonne	$75	$15
Reduction capacity	tonnes	1,000	65
Reductions implemented (abatement)	tonnes	-	50
Reductions purchased (offsets)	tonnes	50	-
Reduction cost	$	$15*50 = $750	-

$3,000 savings

Carbon Offsets: Foundational Logic

Carbon offsets facilitate the reduction of greenhouse gas emissions at the lowest global cost.

Scenario 2a: Global targets, no offsets	Units	Company 1 Reducing emissions alone	Company 2 Reducing emissions alone
Emissions	tonnes	100	200
Target emissions	tonnes	225 (25% reduction, global ambition)	
Reductions needed	tonnes	25	50
$/tonne to reduce	$/tonne	$75	$15
Reduction capacity	tonnes	1,000	65
Reductions implemented (abatement)	tonnes	25	50
Reductions purchased (offsets)	tonnes	-	-
Reduction cost	$	$75*25 = $1,875	$15*50 = $750
		Total global cost $2,625	

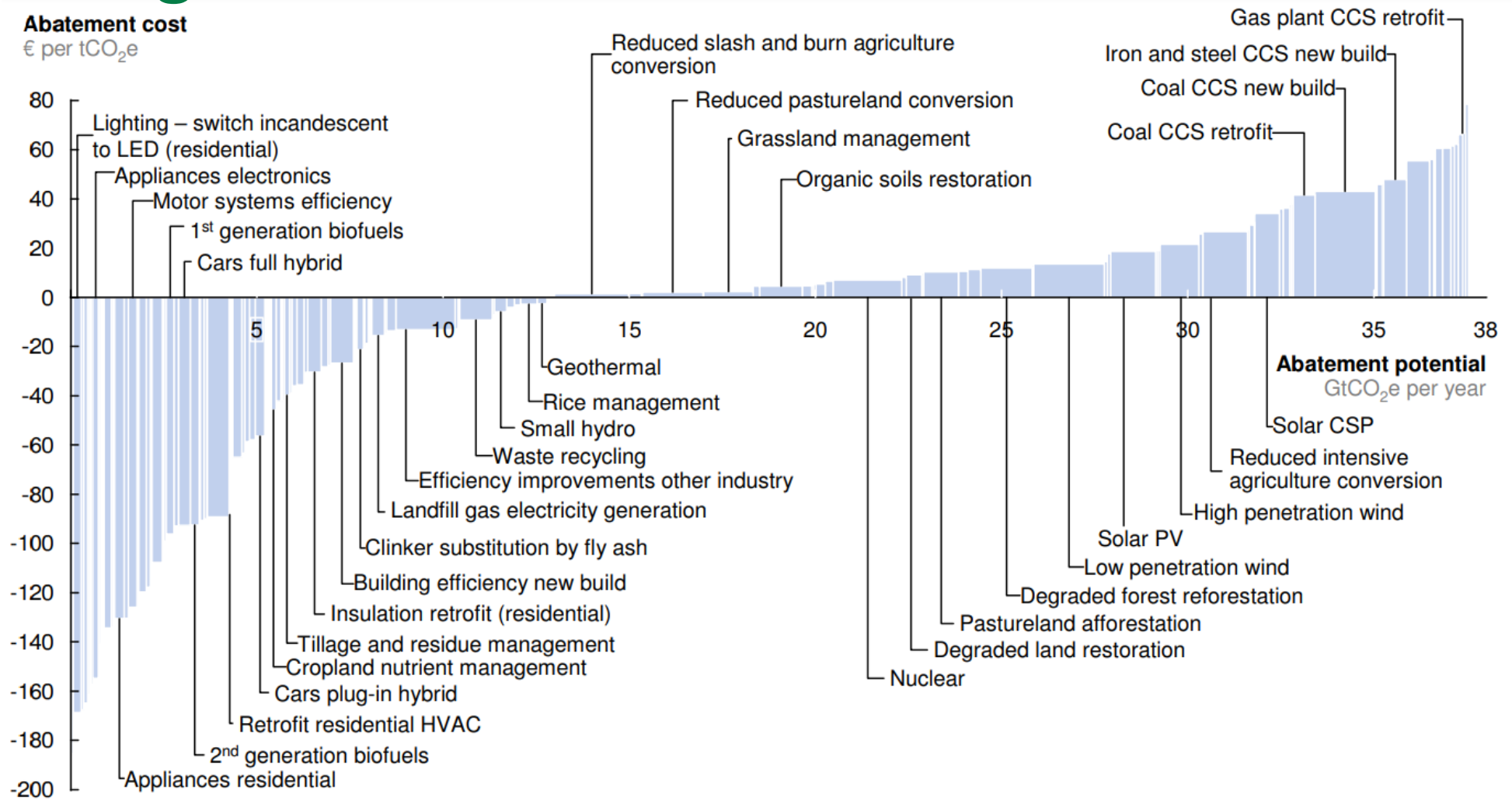
Carbon Offsets: Foundational Logic

Carbon offsets facilitate the reduction of greenhouse gas emissions at the lowest global cost.

Scenario 2b: Global targets, offsets used	Units	Company 1 Reducing emissions and purchasing offsets	Company 2 Reducing emissions, selling excess as offsets
Emissions	tonnes	100	200
Target emissions	tonnes	225 (25% reduction, global ambition)	
Reductions needed	tonnes	25	50
$/tonne to reduce	$/tonne	$75	$15
Reduction capacity	tonnes	1,000	65
Reductions implemented (abatement)	tonnes	10	65
Reductions purchased (offsets)	tonnes	15	-
Reduction cost	$	$75*10 + $15*15 = $975	$15*50 = $750
		Total global cost $1,725	

$900 savings

Marginal Abatement Cost Curve



Note: The curve presents an estimate of the maximum potential of all technical GHG abatement measures below €80 per tCO_2e if each lever was pursued aggressively. It is not a forecast of what role different abatement measures and technologies will play.

Source: Global GHG Abatement Cost Curve v2.1

Source: Version 2.1 of the Global Greenhouse Gas Abatement Cost Curve, 2010

Poll Question

- What have you been hearing about carbon offsets? *(select all that apply)*
  - ❑Companies purchasing offsets to go carbon neutral, carbon negative, or climate positive
  - ❑Offsets supporting economic viability of emerging technologies (ex. carbon sequestration)
  - ❑Carbon offset projects having social benefits
  - ❑Companies criticized for using carbon offsets
  - ❑Offset credibility questioned, counterproductive outcomes highlighted
  - ❑Other (open-ended, if possible)

Offsets: Mixed Reviews

These Trees Are Not What They Seem

How the Nature Conservancy, the world's biggest environmental group, became a dealer of meaningless carbon offsets.

Bloomberg, December 2020

The climate solution actually adding millions of tons of CO2 into the atmosphere

New research shows that California's climate policy created up to 39 million carbon credits that aren't achieving real carbon savings. But companies can buy these forest offsets to justify polluting more anyway.

MIT Technology Review, April 2021

The biggest problem with carbon offsetting is that it doesn't really work

Airlines and oil companies love talking about carbon offsetting. But to be serious about tackling climate change, they need to stop carbon emissions from getting into the atmosphere in the first place.

Greenpeace, May 2020

Stripe, Shopify, and the E-Commerce Approach to Drawing Down Carbon

The two online shopping platforms are both investing in carbon removal – and more importantly, they're showing their work.

Bloomberg, June 2021

Carbon offsets can help in the transition to net zero

At scale, they can help fund the infrastructure investment and research needed to decarbonise our world.

Financial Times, June 2021

Big Tech Drawn to New Singapore Carbon Offset Trading Market

SGX-backed platform in talks with Google, Microsoft, Amazon.

Bloomberg, May 2021

Carbon offsetting goes mainstream as producers set sights on net-zero

In the race to hit booming net-zero emissions pledges, carbon credits are seeing a surge in interest from oil and gas producers keen to offset the climate footprint of their fossil fuels.

S&P Global, May 2021

Sources: Bloomberg, MIT Technology Review, Greenpeace, Bloomberg Green, FT, S&P, Bloomberg |

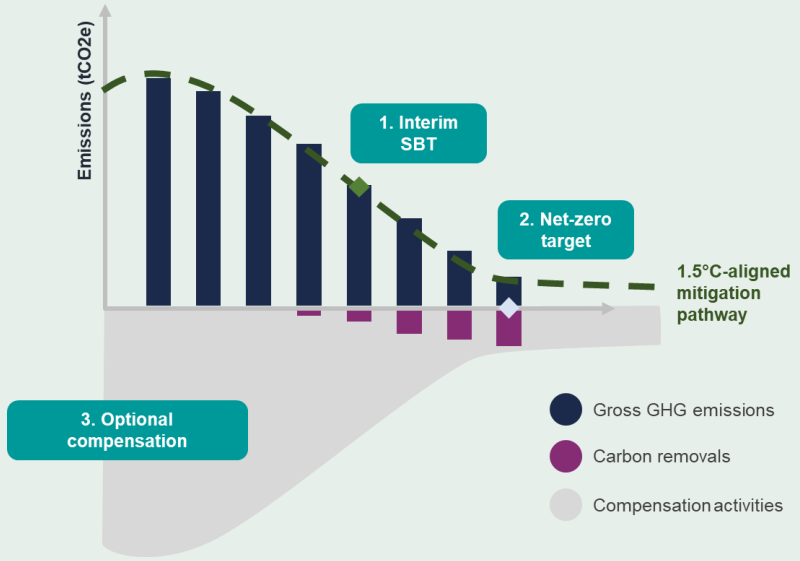
Efforts to Improve Offset Outcomes Underway

TASKFORCE ON SCALING
VOLUNTARY CARBON MARKETS

SCIENCE BASED TARGETS

DRIVING AMBITIOUS CORPORATE CLIMATE ACTION

01-12 NOV 2021
GLASGOW
COP26
IN PARTNERSHIP WITH ITALY



Poll Question

- How do carbon offsets fit in with your company's overall sustainability strategy? *(multiple choice, choose one)*
  - Used offsets in the past, will continue
  - Haven't used offsets before, but will do
  - We do not intend to use offsets
  - Considering their use
  - Haven't considered offsets and would like to learn more
  - Not sure
  - I am so confused!

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CARBON OFFSETS – SHOULD WE OR SHOULDN'T WE?

- Stay aware: things are changing quickly
- Join the conversation: you can help shape effective markets, programs, and policies
- Short-term: use high-quality offsets to accelerate the market and make an impact now. From a warming perspective, one tonne avoided today is worth more than one tonne avoided in 30 years.
- Long-term: combine abatement and offsets based on cost of abatement, your company's commitments, and global ambitions.

Questions?

SOLVE-ITs

- Maximizing Sustainability Reporting
  - August 11, August 18
  - IMPACT: August 26-27
  - Sept. 1, Sept. 8

Collaborating with Peers & Industry Experts to Solve EHS&S Management Challenges

Great Monthly Webinars on EHS&S Management

Birds, Bats and Bees:
Using Ecology to Support Corporate Sustainability Metrics
July 22

What to Expect When Expecting an Environmental Project
August 12

Linking Employee Wellness and a Culture of Health with ESG Reporting
September 9

2021 Conferences

Virtual

Women's Leadership Roundtable
July 13-15

Sustainability Impact
Aug 26-27

EHS&S Management Forum

Oct 19-22
Tucson, AZ

Please visit our website for more information naem.org

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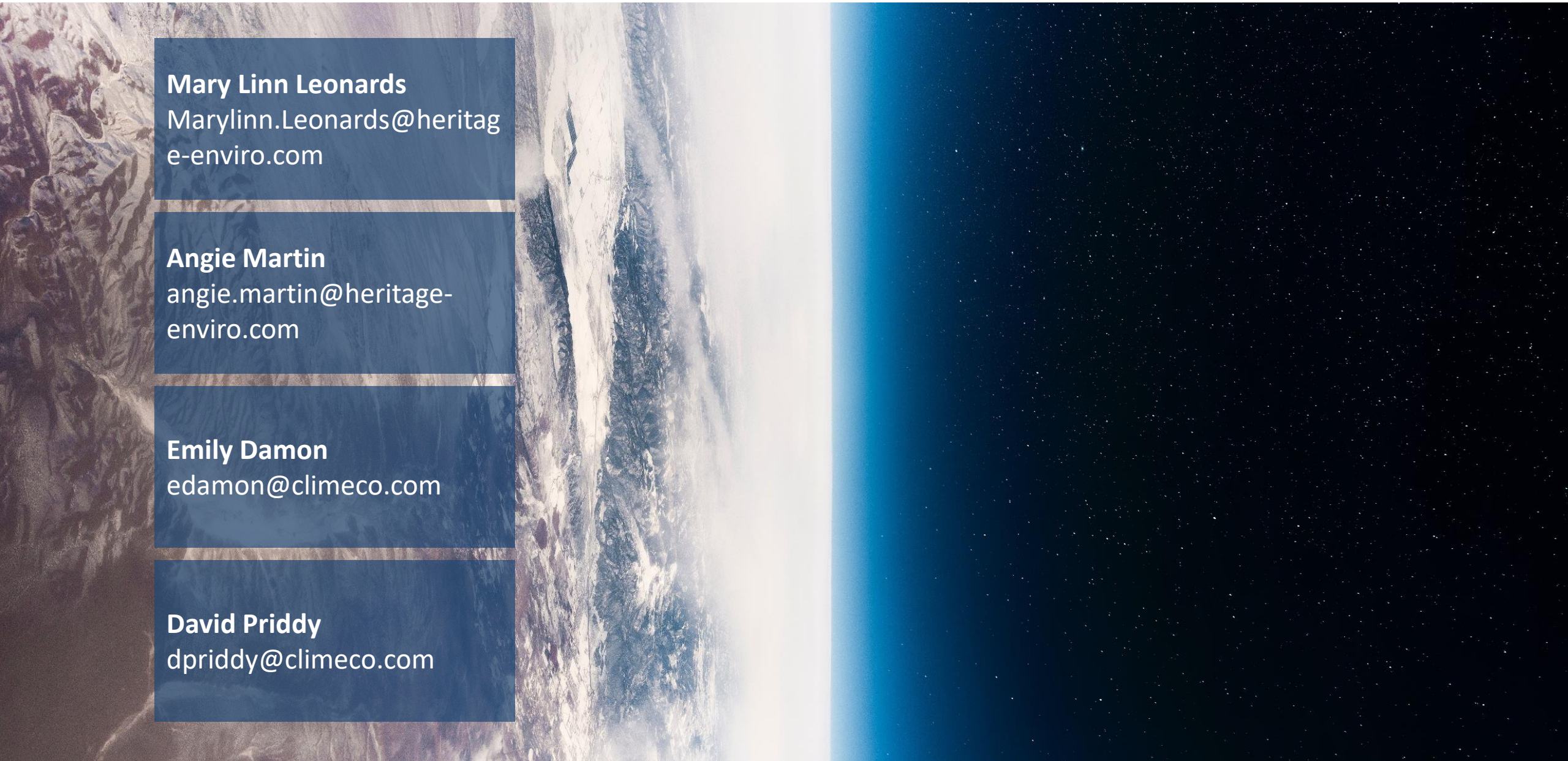
  - LinkedIn: https://www.linkedin.com/company/naem

Thank you for Attending!

A recording will be available in 3-4 days. You will receive an email once it's posted to our site.

Have a safe & healthy day!

CONTACTS



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