# BCarbon Stakeholder Meeting February 2<sup>nd</sup>, 2023





# Agenda

- Opening remarks from Jim
- Matthew Warnken, Managing Director of Agriprove
- Dan Romito, Partner at Pickering Energy Partners
- Darrin Prescott, Partner at Grenian
- Open discussion





# **Soil Carbon Trends**

THE PARTY

**BCarbon Stakeholder Meeting** 

2 February 2023

FINANCIAL REVIEW BOSS

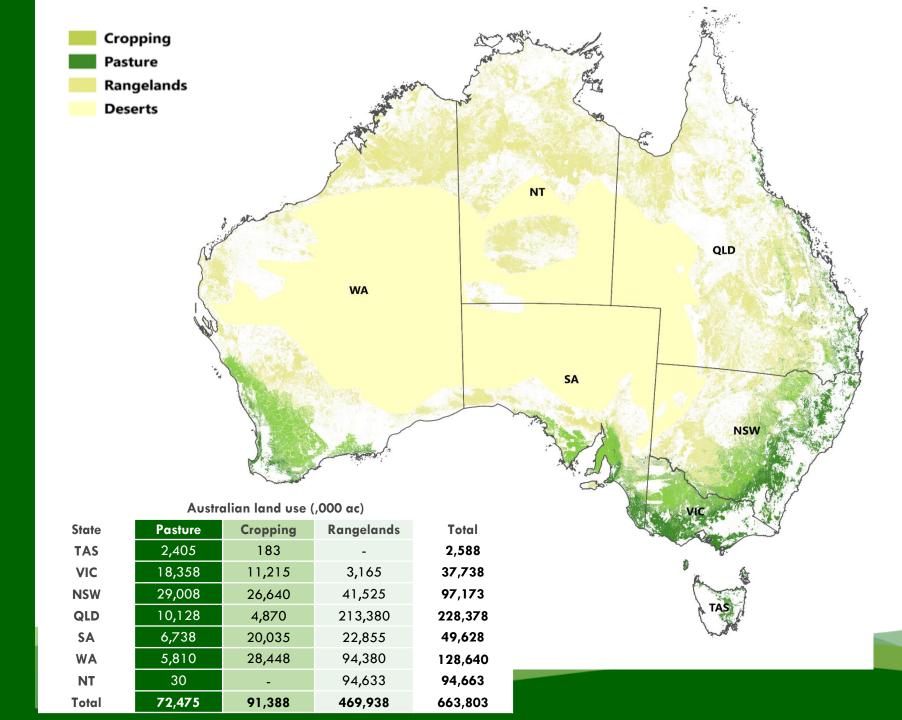
MOSTINNOVATIVE
COMPANIES





In Australia the potential for soil carbon directly relates to the millions of hectares of agricultural land.

The opportunity is to generate more than 100 million carbon credits annually from soil carbon sequestration.



# **Benefits of Healthy Soils**







# Farm Management Makes a Difference





# 2021 Australian Soil Carbon Method

# 2. Implement

Farmers implement land management strategies to maintain or increase farm productivity and build soil carbon across the project area. Eligible activities have been expanded.





# 1. Register and Baseline

Projects are registered and baselined as per ERF 2012 Method (Schedule 1). Land Management Strategy required for eligible activity to build soil carbon.



# 3. Model

Changes in carbon stocks are modelled using a variety of parameters and technologies including satellite remote sensing. It is likely that multiple technologies will need to be tested to identify the lowest cost and most accurate approach.

## 4. Model: Assist vs Based

Model assisted sampling (reduced density of sampling) or model based Measure 10% subset as per Schedule 1. Results are used to validate a predictive soil carbon model. Model is technology agnostic but could be satellite remote sensing algorithm). Discounts are applied to counter uncertainty so more accurate models are rewarded. High variance (inaccurate models) are unlikely to pick up changes in soil carbon stocks.



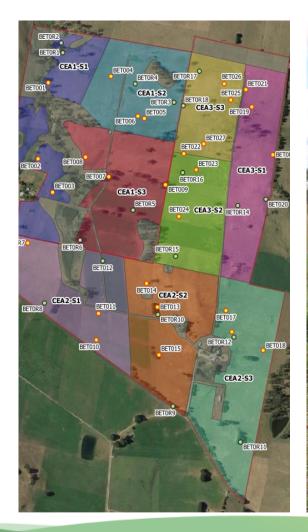
# 5. Safety Net

Should models fail to validly predict soil carbon stocks, projects are managed under the 'safety net' involving measurement as per Schedule 1 so that credits can still be issued.





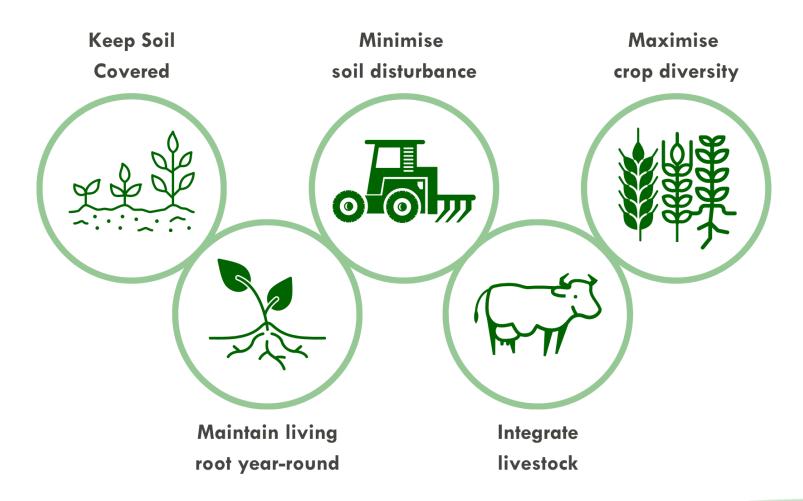
# **Baseline Soil Sampling**







# Implement Management Practices







- increases sampling
   efficiency via improved
   coring and storage
   mechanisms
- Hone NIR spectroscopy in-field digitisation
- collects on-farm data analytes
- launch date 21 Feb 2023

# •□□□□□□□ agriprove

# Next Generation Digital Soil Sampling Platform



# **Autonomous Proximal Collection**



#### Banks of Sensors

- · Temp & humidity
- · Wind speed and direction
- · Location, speed, direction
- Rainfall

#### **Solar PV Energy Harvesting**

- Trickle charge in sunlight so that it is ready for operation when required.
- Power management algorithms to optimize availability to required duty cycle
- · Recharge when not in use.

#### **Edge Computing**

Onboard DA/ML algorithms process data to minimize comms bandwidth requirements

#### **EMI System**

Electromagnetic Induction (EMI) to detect soil horizons and structure (towed behind vehicle when required)

#### All Terrain Vehicle Traction

· Electrically powered by renewable energy

#### **Telescopic Flux Tower Sensors**

- Range of sensors use eddy covariance to measure CO2 efflux and sequestration – providing a measure of SOC, soil health and soil biological activity (in partnership with Cloud Agronomics)
- · Folded down during mobile operations

#### **Communication System**

- Data stream to Digitised Landscape
- Operator instructions to Robot

#### **Multispectral Cameras**

Image capture and scanning in Visible, NIR, IR, UV enabling NDVI & NDRE, plant species and condition identification

# Ground detection and other spectrometers

- Measuring ground morphology and potential obstructions
- (details to be determined)

#### **Ground Probes**

- Soil moisture content by depth
- · Soil pH and Salinity
- · Inserted into soil



# NSCIC Grant – Multi-band Synthetic Aperture Radar (SAR) and Optics as a Novel SOC Measurement Technology

- system actively probes the earth's surface with electromagnetic radiation to make detailed spatial predictions of SOC
- active sensors contain their own energy source, whereas passive
   (optical) sensors rely on reflectance conditions on the earth's surface.
- active measurements more accurate because they elicit responses
   below the soil surface not affected by atmospheric conditions or light
- will produce SOC measurement with a spatial resolution of 0.5–1.5 metres (x400 improvement over existing methods)
- multispectral (optical) data provides monitoring of the drivers of carbon sequestration (such as chlorophyl measurement – 1.5m NDRE)
  - ML fuses data with SAR, to produce certifiable SOC measurements that can be used for crediting and for project management
- \$9.2 million grant working in partnership with EOS Data Analytics





# 3 year \$2.25m Research Project with Royal Melbourne Institute of Technology will focus in on Three Core Variables and How they Impact Soil Sampling Accuracy

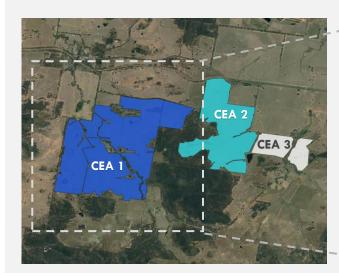


# Statistical optimisation

requires systematic
testing and validation
of Carbon Estimation
Areas (CEAs),
Stratification and
Sampling Factors within
each carbon project.

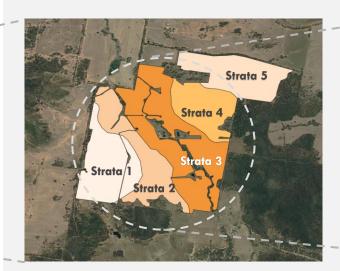
# **Carbon Estimation Area Size**

- size of project
- number and placement of CEAs within a project
- size of CEAs



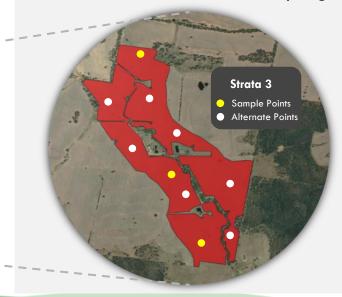
## Stratification

- alternate stratification techniques including productive capability, elevation, K gamma, biomass
- number of Strata within a CEA



# **Sampling Factors**

- review of sampling factors (number, size, depths, timing, preparation, lab testing)
- inclusion of additional sampling



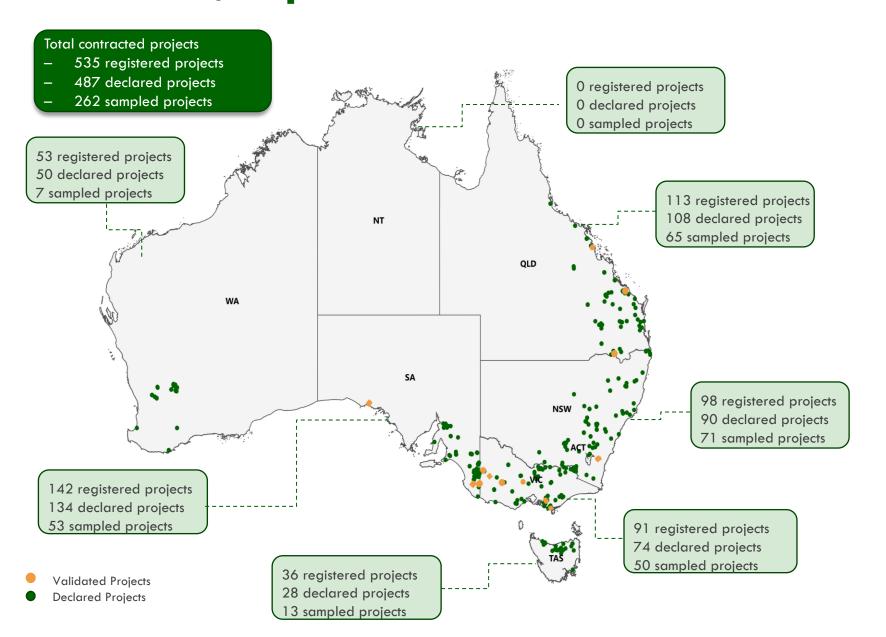






# Portfolio, Pipeline and Performance





## Global Soil Carbon project leader

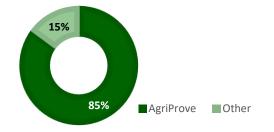
Validated increase in 15 projects  $\sim$  50,000 ACCUs

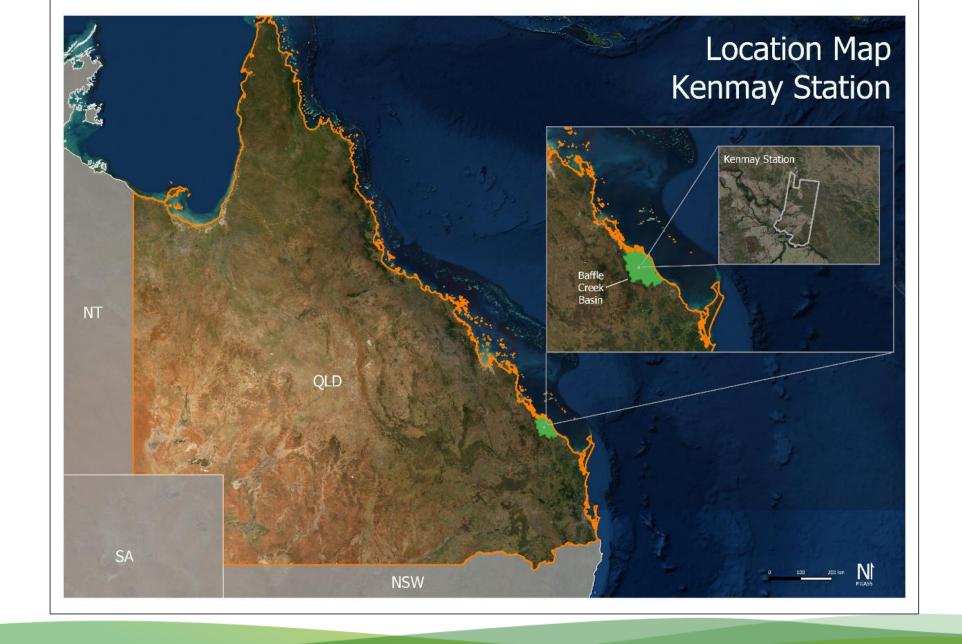
Application submitted for 3,660 ACCUs: issuance February 2023

535 projects declared with 164 additional applications in train

Growing soil carbon evidence base becoming largest with widest coverage in Australia.

# ERF soil carbon project market share









# **Project Summary**

- 983 acre (393 hectare) project area
- project declared June 2020
- baseline sampling September 2020
- multi-species pastures, holistic grazing and compost tea
- T1 sampling September 2022
- Land Restoration Fund contract with annual co-benefit payments (effective November 2022)
- T1 measured carbon stock increase 5,400 tCO₂e
- audit process October 2022
- applied 3,660 Australian Carbon Credit Units (after discounts and on-farm emissions)
- Offsets Report submitted November 2022
- currently under Clean Energy Regulator assessment.

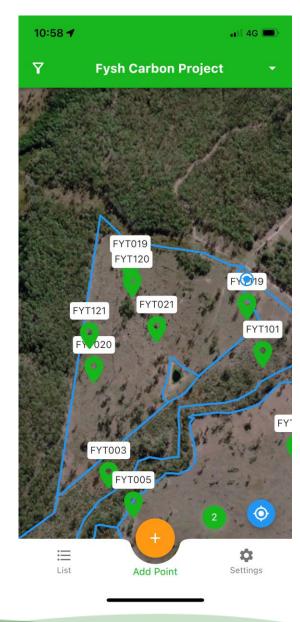












# Maryland Farm Visit June 2022







# Pilot activity with AgriProve Team in US



Kendra Kisssane
US Soil Carbon Project
Manager, AgriProve
Regenerative Agriculture Dairy
Consultant, 2 days per week



Kent Solberg
Consultant, Understanding Ag
Soil Health Consultant and Dairy
Farmer. Providing advice on
species selection etc







# The Anticipated 15 ESG-Related Trends Influencing Strategy

BCarbon Discussion - February 2023

# **Firm & Team Introduction:**

Pickering Energy Partners Commitment to Energy



# PEP Is Firmly Committed To The Broader Energy Landscape













## **Broad Subsector Coverage**



Diversified Energy



Upstream



Minerals / Commodities / Natural Resources



Alternative Energy



MLPs & Midstream



Oilfield Services



Energy Storage



Electric Vehicles and Charging Infrastructure



Refining



Power & Infrastructure



Renewable Fuels



**CCUS** 



# PEP ESG Leverages A Massive Internal Energy-Focused Mindshare

#### **PEP Team**



Dan Pickering
Chief Investment
Officer



Walker Moody
President





MacKenzie Davis Managing Director



**Lex Hochner** Managing Director



**Brian Lively**Managing Director



Ken Settles
Managing Director



Robert Mills
Director



Dean Delery
Vice President



Logan Dickinson
Associate



Tobin Gelbs
Associate



Jake Smith Associate



# Advisory



Jason Martinez
Managing Director



Scott Anderson Vice President



lan Levy Associate



Cory Miller Associate



Lucas Coapman Analyst



Kevin Jervis Analyst





**Ismail Hammami**Consulting Partner



**Dan Romito**Consulting Partner



Chris Micsak Director



Jacob Halevy Vice President



Addison Holmes
Vice President



Garrett Delk Associate



Melanie Vujovich Associate



Elizabeth Krueger Associate



Mitchell Holcomb Analyst



Winn Bartlett Analyst





Josh Martin Managing Director



Kevin Pollard
Managing Director



**Kevin MacCurdy**Director



David Smith
Vice President



Michael Cusimano
Vice President



Fernando Zavala Vice President



Jordan Stone
Business Development
Associate



Pierce Kirkland Associate



George Pumphrey Analyst



Sam Millslagle Associate



# Our Expertise & Execution Spans The Entire Capital Markets Spectrum

#### **Public Issuers**



- Effectively manage the ESG-related expectations of respective shareholders and potential investor targets
- Ensure influential ESG scores reflect economic reality
- Blueprint a pragmatic, proactive, and investorfocused ESG strategy based on the anticipated regulatory and competitive trends

## **Private Sponsors**



- Build out a consistent data reporting infrastructure that provides comparable benchmarking and aggregated data across the portcos
- Audit and validate existing portco data to ensure accuracy and alignment with external frameworks
- Optimize the capital raising process by quantitatively showcasing trends and progress across the portcos

#### **Private Companies**



- Exit strategy preparation, i.e., ESG accretion & dilution
- Utilize ESG-related data to maintain/broaden access to insurance, lending, and equity
- Prepare the company for the disclosure expectations of LPs and public markets

## **Public Asset Managers**



- Quantitatively pinpoint and address ESG-related risk within the portfolio
- Provide objective and quantifiable data to help validate anecdotal differentiators
- Monitor and track the quantitative trends and progress



# Speaker Introduction



**Dan Romito** 

# Dan Romito is a consulting partner at Pickering Energy Partners focusing on quantitative ESG strategy and implementation.

- Dan has advised several hundred private companies, public issuers, and asset managers over the last ten years on how to optimize capital deployment strategies, pursue quality pools of capital and employ ESG-related directives.
- Experience and research on ESG, Index/ETF Ownership and Shareholder Activism has been featured in Harvard Business Review, the Harvard Law School Forum on Corporate Governance, CNBC, Bloomberg, TD Ameritrade Network, Global Investor Magazine, and IR Magazine.
- Developed several key technology solutions focused on investor behavioral analytics platform, ESG Advisory Service, Insight360 Analytics, the Activist Diagnostic, Capital Deployment Scenario Analysis, and the Small Cap Investor Targeting Service.
- Dan received a BA from the University of Chicago, an MBA in Finance from DePaul University, was working on his MS in Mathematics from the University of Chicago prior to COVID-19 (became a proverbial drop-out)
- Professor at Marguette University teaching Sustainable Finance Strategies & SASB FSA certification















# **Current ESG State of the State:**

"Disclosure Burden Rolls Downhill"



# Macro ESG Trends Disproportionately Impact Smaller Companies

#### 2. Evolution of global regulatory

- SEC climate disclosure mandate
- Sustainable finance disclosure regulation
- Emissions disclosure & oversight
- Adoption of net zero

#### 3. Increased Index fund pressure

- BlackRock, SSGA & Vanguard
- Say on Climate voting policies
- Stewardship engagement & Proxy voting

# 1. Global macro pressures & trends

- Decarbonization
- Enhanced transparency
- Quantifying the qualitative
- Algorithmic analysis
- Politicization of data

#### 4. Public company disclosure

- Supply chain transparency & policies
- Net zero strategy & progress
- ESG reporting & stewardship engagement
- Quantitative disclosure of non-financial data

# Disclosure Burden "Rolls Downhill"

#### 5. Private company suppliers & vendors

- RFP eligibility & "part of doing business"
- Impact to net zero progress and trend
- Contribution to supply chain emissions
- Policy oversight and accountability infrastructure



# ESG Is Now Embedded Within The Global Regulatory Fabric

Impending SEC Climate
Disclosure Mandate



Office of the Comptroller of the Currency Updated Climate Risk Management





Europe's Sustainable Finance
Disclosure Regulation &
Corporate Sustainability
Reporting Directive



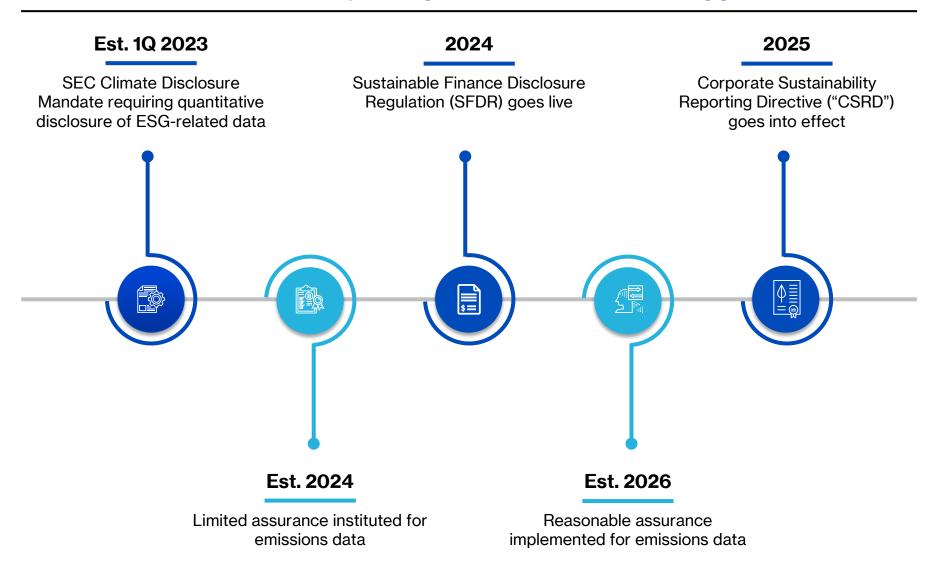
Emergence of BlackRock's Voting Choice

Continued Influence of ESG Ratings





# ESG Data Disclosure & Reporting Timelines Remains Aggressive





# The Top 15 Anticipated ESG Trends Impacting Corporate Strategy



#### 1. BlackRock's voting democratization is just the tip of the iceberg



"This option gives institutional clients in separately managed accounts (SMAs) the ability to exercise their voting decisions on the topics or at the companies that matter most to them."



Per BlackRock companies need to develop new models of engaging with asset owners on their most important voting matters



Increased likelihood to perpetuate existing biases against the Energy space



The importance of rectifying inaccurate and/or incorrect existing ESG scores



Understanding the impact of the entire supply chain is increasingly important



#### The Index Funds Continue To Lead The ESG Charge

#### Recent voting trends center on climate-related disclosure and evaluation

#### BlackRock trend:

#### BlackRock。 State

- Voted against 255 directors in the period ended June 30, 2021, up from 55 in 2020
- Failed to support the management of 319 companies for climate-related reasons in 2021, compared with 53 in 2020
- Began expanding the opportunity for certain clients to directly participate in proxy voting decisions in October 2021
- ~25% of BlackRock assets under management with respect to corporate and sovereign issuers are invested for clients in issuers with science-based targets or equivalent
  - Goal is 75% by 2030

#### **State Street Trend:**



- Announced in 2021 they will launch a targeted engagement campaign with the most significant emitters in their portfolio to encourage disclosure aligned with our expectations for climate transition plans, which covers 10 areas including decarbonization strategy, capital allocation, climate governance, and climate policy
- Beginning 2023, SSGA will "hold companies and directors accountable for failing to meet these expectations."
- Capital allocation alignment:
  - Integration of climate considerations
  - Capital expenditure on low carbon strategies
  - Carbon pricing
  - Investments in decarbonization

#### **Vanguard Trend:**

#### **Vanguard**

- "We use engagements to better understand public company boards' oversight of climate risks and opportunities, their climate mitigation plans, and whether their disclosures are effective, comprehensive, and provide shareholders with decision-useful information, including progress on the goals companies have set"
- Adopting the "Say on Climate" Approach
  - Annual disclosure of greenhouse gas emissions and progress on goals
  - Disclosure of the company's strategic plan for reducing future emissions and managing climaterelated risks
  - The right for shareholders to cast recurring votes on the company's climate plan or report



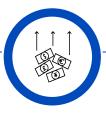
### 2. Fundraising efforts will require quantitative ESG-related disclosure



Public market expectations beginning to trickle into the private markets



ESG disclosure is increasingly becoming more embedded within the regulatory framework



ESG disclosures
within the
fundraising
process ranges
between "checkthe-box" to
strict analysis



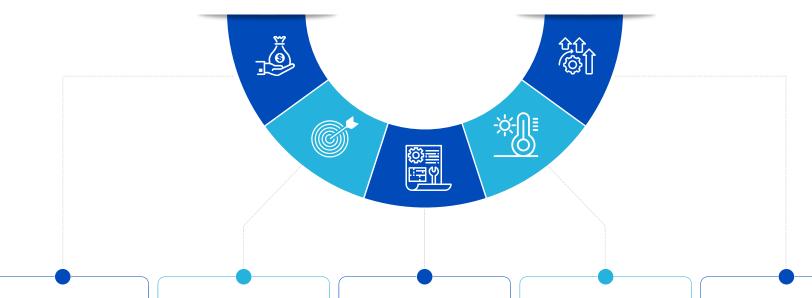
Several GPs beginning to adopt a "pencils down" mentality



Asset managers increasingly evaluating net zero targets at a more granular level



#### 3. Shareholder proposals will become more influenced by ESG data



Approximately
25% of
BlackRock's
AUM are
invested in
issuers with
science-based
targets

The goal is to aspire to hit 75% by 2030

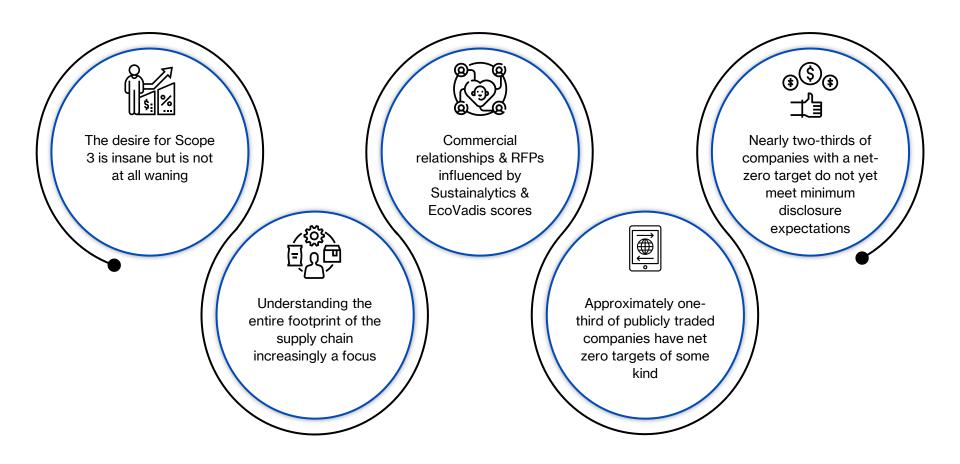
SSGA's 2023
encourages
disclosure
aligned with their
expectations for
climate
transition plans

Vanguard has backed off on net zero targets but still promotes "Say On Climate"

Expectations on improvement GHG modeling, measurement and mitigation is imminent



#### 4. Public companies will pressure private companies for their ESG data





#### 5. The generalist will begin to focus more on water than emissions



Generalist
investors (and the
public for that
matter) do not
yet realize the
industry's
reliance on water



The imminent outlook for water access and responsibility looks increasingly dire



Two of the largest reservoirs in America, which provide water and electricity to millions, are in danger of reaching 'dead pool status'



The emissions profile of the U.S. has dramatically decreased over the last twenty years



Requests for water-related disclosures from LPs has essentially doubled in the last two years



#### 6. Scope 3 will most likely NOT be included in SEC Climate Mandate











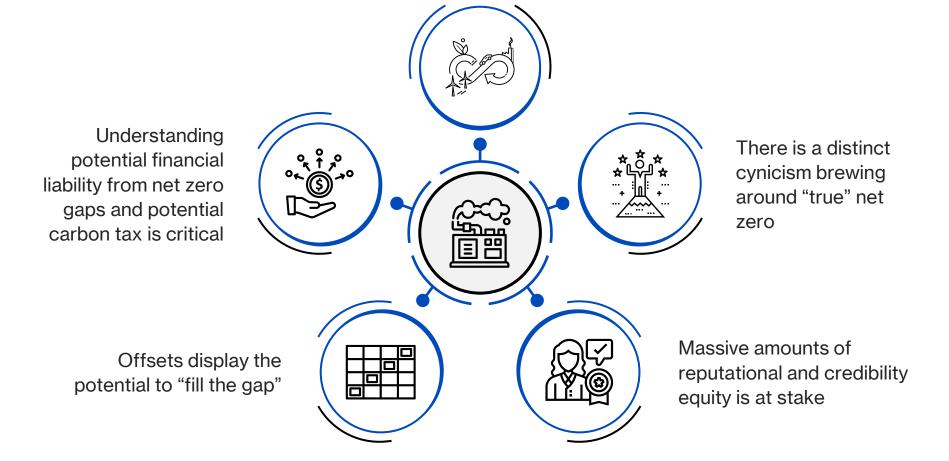
A "technical glitch"
during the
comment period
delayed the
mandate's
originally
anticipated release

The argument to report Scope 3 is disingenuous – on average, only ~6 of the 13 categories is reported Become familiar with the "Federal Supplier Climate Risks & Resilience" Rule Scope 3 not likely to pass in this release of the SEC Climate Disclosure Mandate The fanaticism for Scope 3 remains incredibly strong



#### 7. The carbon markets will increasingly influence capital deployment

The world remains fixated on decarbonization and net zero





## 8. Scope 4 could emerge as the next headache



The Paris Agreement addresses the concept of "emissions avoided"



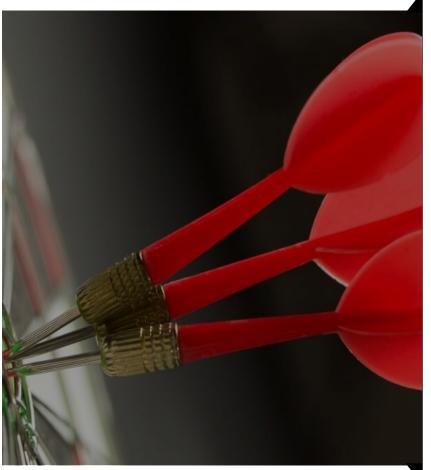
Emissions avoided is generally funny math littered with footnotes and assumptions



Subsiding the disclosure "craziness" is contingent upon showcasing progress & trend for material drivers dictating valuation premium



#### 9. ESG scores will remain influential but inherently flawed



The ESG data industry is officially a billion-dollar business



Scoring providers are more likely to double down than correct current methodologies



Proactively remedying inaccurate ESG scores is irritating but necessary



Policy management is equally as important as quantitative disclosure

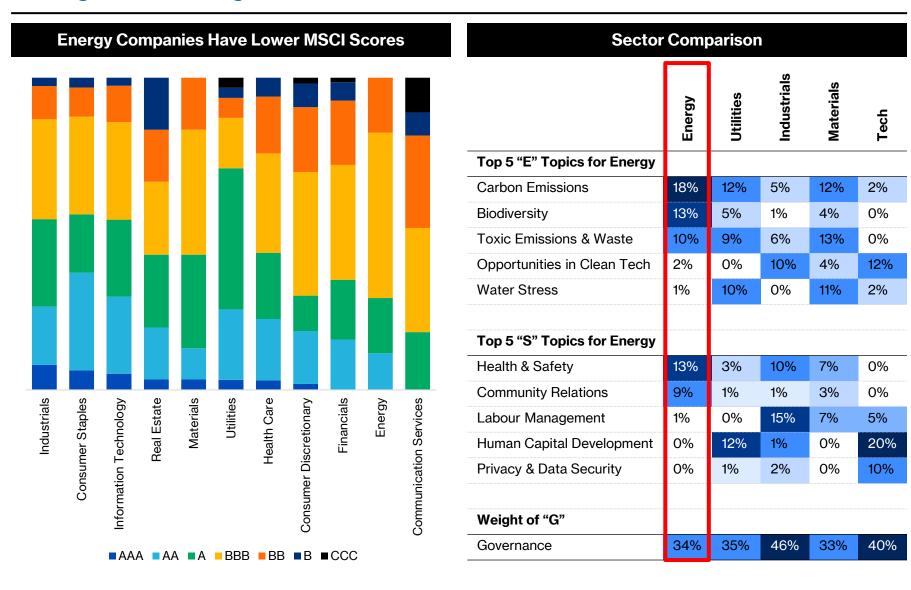


Self-defined metrics is fine if they are reconciled with external frameworks





#### Rating methodologies are skewed and biased





## 10. Greenwashing policies in the US will be influenced by "SFDR"

SFDR separates the Regulatory efforts investment universe will increasingly The onus of into three distinct Turns out that a attempt to reign in "proving" eligibility categories substantial lies with the asset aggressive percentage of ESG It is very likely the marketing efforts manager funds are not really SEC adopts a ESG funds version of SFDR 000



#### 11. Credit underwriting will be permanently revised by ESG disclosures



More banks and insurance companies are requiring TCFD-level reporting



In some cases, sustainabilitylinked financing offers more attractive terms



Given the right financial profile, debt issuance is possible for ALL industries



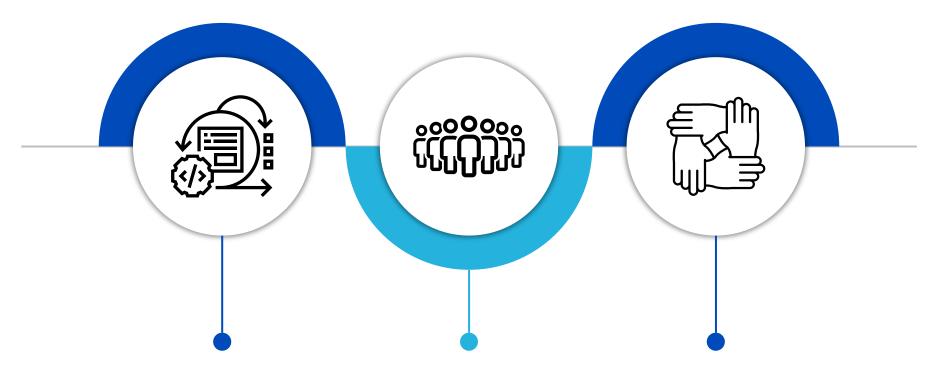
Credit raters (i.e., S&P, Moodys) have gone on an ESG-rater buying spree over the last year



The European reinsurance market is now regulatorily obligated to aggregate ESG data



## 12. Incremental HCM disclosures are on their way



Government working groups are generally academics and business-inexperienced

How the company generates incremental value increasingly derives from intangible assets Entities increasingly requesting more granular diversity and salary-related data



#### 13. Cybersecurity disclosure expectations will only increase



Regulatory focus increasingly lumping cybersecurity into ESG-related considerations

A registrant's policies and procedures to identify and manage cybersecurity risks

The registrant's board of directors' oversight of cybersecurity risk

Management's role and expertise in assessing and managing cybersecurity risk and implementing cybersecurity policies and procedures.

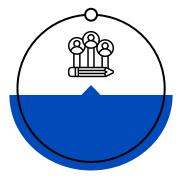
The proposal further would require annual reporting or certain proxy disclosure about the board of directors' cybersecurity expertise

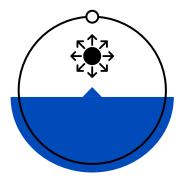


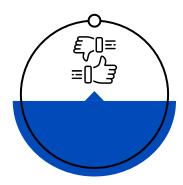
#### 14. The CDP survey will grow in utility and popularity











Coincides with the emergence and evolution of the ISSB

The basis for the ISSB and winner of the disclosure wars is the TCFD

The CDP is generally considered the scoring arm of the TCFD

The CDP is incredibly extensive

"C Equals Degree" is probably the most appropriate approach to CDP



#### 15. Investors will focus on the PURSUIT of net zero, not its achivement



Trillions of dollars will be allocated and "wasted" in the energy transition

In many cases, capital discipline and net zero are mutually exclusive





Net zero does not necessarily facilitate ROI

Not optimizing or ignoring ROI has a distinct shelf life





Global macro, socio-economic dynamics and geo-political considerations will eventually be prioritized above net zero

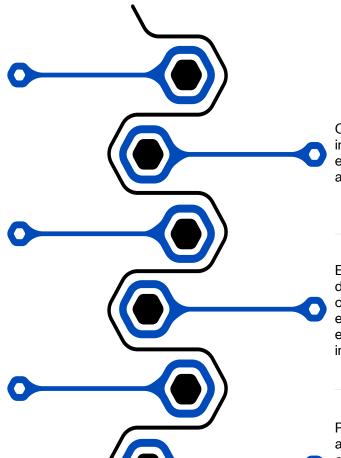


#### Controlling the narrative contingent upon six key action items

Initiate or update a bottom-up materiality assessment and employ an objective, data-driven approach to quantitatively identify and prioritize competitive differentiators and drivers of valuation premium

Implement a reporting infrastructure that allows the team to systematically track trends, progress and vulnerabilities for the data points which best represent the non-fundamental competitive drivers of the business

Proactively identify potential vulnerabilities and organize a concise narrative outlining how the company will specifically address and rectify the matter – turning a blind eye or ignoring will only prove counterproductive in the long run



Customize the materiality assessment to include vendors, customers, investors, employees, management, board members and even some industry detractors

Ensure the reporting and selected disclosures not only meets the expectations of the impending regulatory environment and existing investor base but also the expectations of aspirational generalist investors

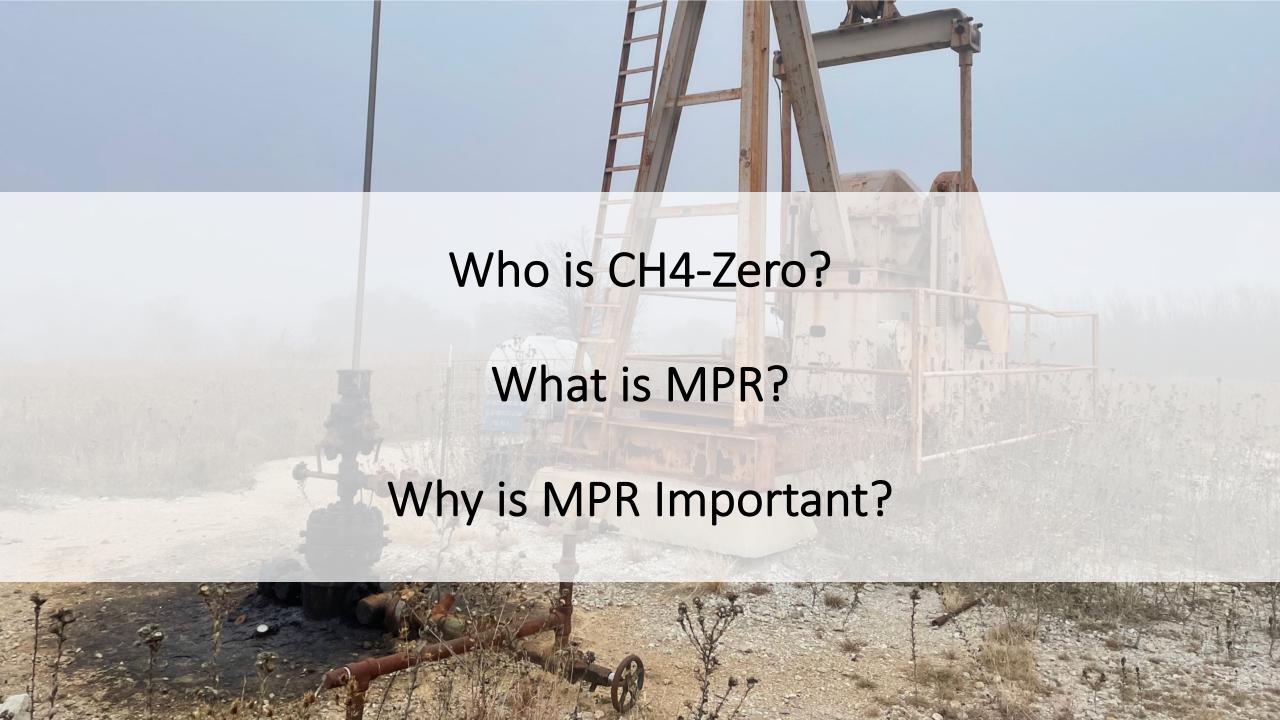
Preemptively disclose and assertively convey a strategic narrative based on what the company is anticipated to look like and what a generalist would expect as opposed to relegating perspective to the conventional energy peer class



## **Questions, Answers & Discussion**







# Team: CH4-Zero

Project Developers, Project Builders, & Risk Managers







**Rob Fuhrman** 



**Darrin Prescott** 



**Jonathan Roberts** 



**Paul Lanning** 



Joshua Greene

- Experienced, well-known investor and developer in the resource, energy, and royalty sector
- Author of 'Rise of America'
   which was a 2021 #1 U.S.
   Bestseller in total sales and
   #1 on both the WSJ and
   Amazon and the author of
   2014 New York Times
   bestseller, 'The Colder War'
- Industry leader in the carbon sector as the main financier and largest individual shareholder of Carbon Streaming Corp.
- CFA® Charterholder with over 10 years of capital markets experience across a range of disciplines and sectors, including carbon, renewables, metals and energy
- Previously was the Cofounder and CEO of Catalyst Equities, where he managed and grew an ETF and Equities focused start-up

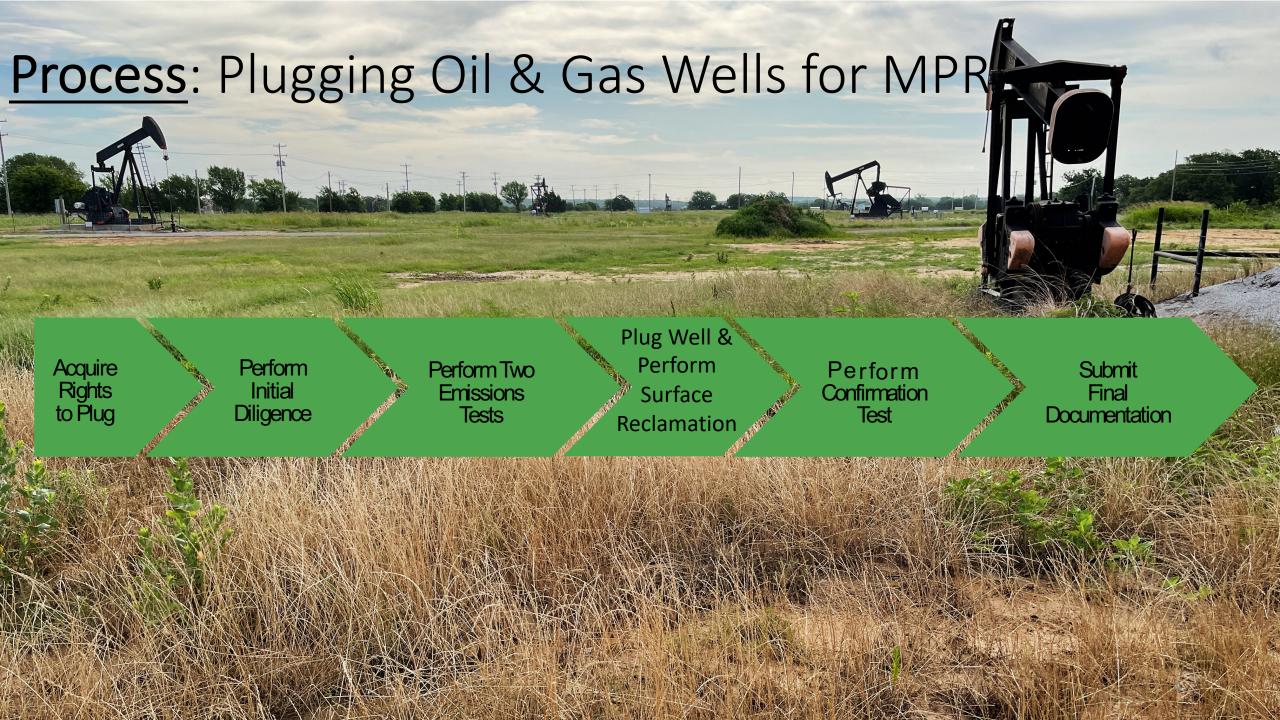
- Co-Founder of Grenian
- 25 years' experience leading and developing pharmaceutical, financial, and environmental businesses and projects
- Over the past 15 years has identified, negotiated, structured, closed, and monetized over 140 Green Project Transactions and their related Environmental Attributes.
- Has actively participated in the development of compliance and voluntary carbon regulations and protocols across several regimes.
- Founder and Managing Principal of Centerstone Partners

- Co-Founder of Grenian
- 30 years' experience originating, structuring, and executing large financial transactions using bespoke insurance and derivatives
- Raised equity and debt capital to finance the SREC revenue from over 300 MW of solar farms
- Designed, analyzed and placed over \$100 million of innovative environmental commodity price risk into the insurance industry
- Founder and President of Enterprise Re, funded by Morgan Stanley, growing it to \$400 million in AUM
- Founder of AIG Re

- 15 years' experience leading and developing energy, technology, and sustainability companies and projects
- Co-founder and CEO of Solvitect, a renewable energy and stormwater management infrastructure development company
- Founder and Chair of Lightbox, a cleantech consulting firm specializing in renewables, efficiency, resiliency, and sustainability
- Has managed more than 100 cleantech construction and feasibility projects across the United States

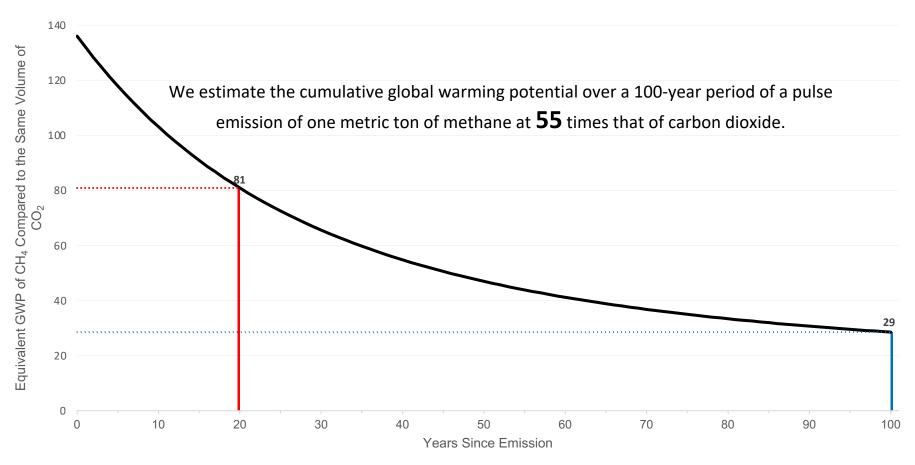
- 20 years' experience in investment and risk management
- Senior partner at COMAC Capital
- Formerly at Soros Fund Management, Oliver Wyman, and RISConsulting

CH4-Zero 3





# THE SCIENCE Global Warming Potential of Methane



Source: Grenian Environmental, calibrated to IPCC's AR6 estimates of GWP for these gases and discounted at a 3% pa social discount rate. Note: a higher discount rate increases the important of methane relative to carbon dioxide.

# First Things First

"According to one recent estimate, putting a lid on human-caused methane emissions could prevent as much as one-third of the warming expected in the next few decades."

- Bloomberg

"Sharp cut in methane now could help avoid worst of climate crisis."

- The Guardian

# THE SCOPE OF THE PROBLEM

## 3,000,000+ Abandoned Oil & Gas Wells

 Abandoned O&G wells <u>leak methane every day</u> and have been doing so for decades, with hydrocarbon gases or vapours escaping from the wellhead.

• Methane accounts for about <u>30 percent of the increase in the global temperature</u> since industrialization and emissions rose by record levels for the second year in a row last year.

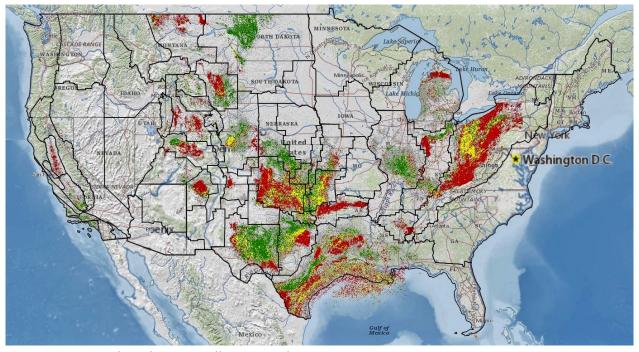
Ranges between 8.4 to 46.2 million tCO2e are released annually from abandoned O&G
 wells in the United States.

CH4-Zero

# Disease, Health and the Environment

Unplugged O&G wells are leading factor in **ground water pollution**Unplugged O&G wells are linked to **higher risk of**:

Asthma, Cancer, Low Birth Weight, and Premature Birth



USGS: Green = Oil, Red = Gas, Yellow = Combo

"Taken together, these wells are a major source of air and groundwater pollution, as they continue to leak toxic substances such as arsenic and methane even after they're no longer operational."

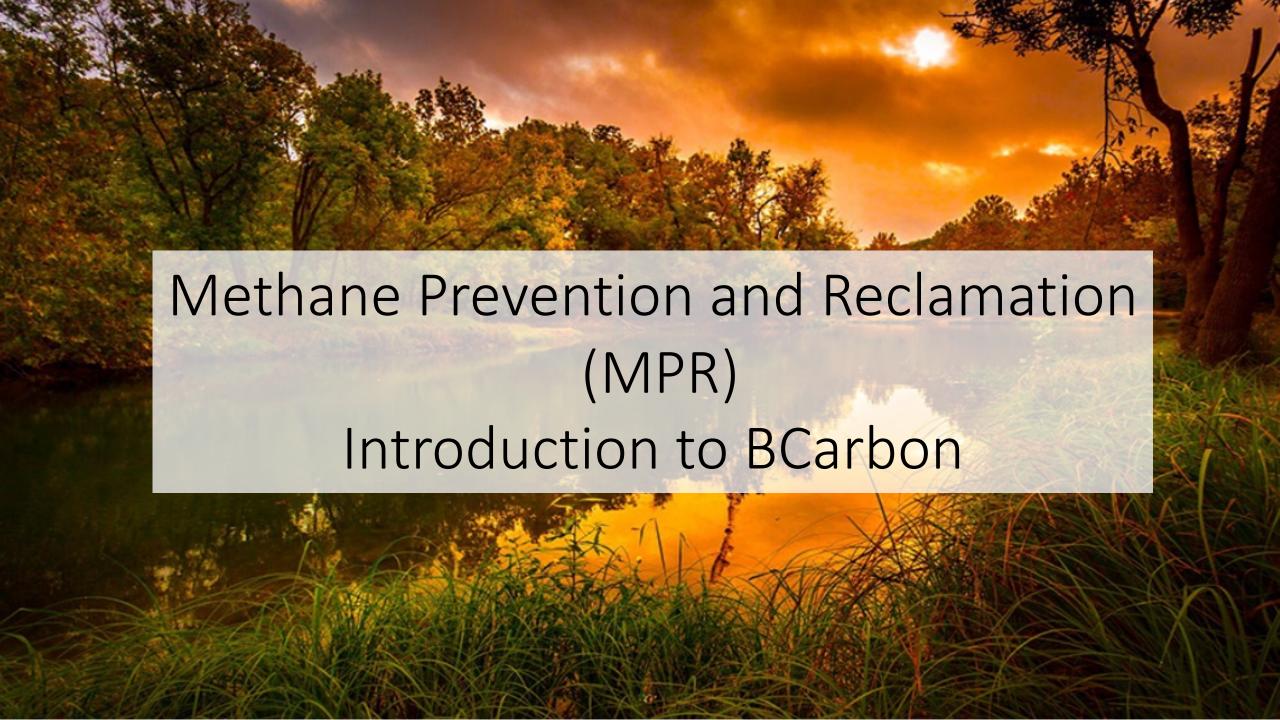
-NRDC

"Research has demonstrated that living near active oil and gas sites leads to adverse health outcomes, including a higher risk of cancer, increased odds of underweight newborns, and a higher likelihood of preterm birth."

- Grist







# **Upcoming Meetings**

- DEI Subcommittee February 9<sup>th</sup> at 2 PM CT
- Living Shorelines Metrics Subcommittee February 16<sup>th</sup> at 2 PM CT
- Stacked Benefits Subcommittee March 1<sup>st</sup> at 2 PM CT
- Next BCarbon Full Group March 2<sup>nd</sup> at 9 AM CT



