



MOBIUS
RISK GROUP

The Path to Carbon Neutrality – A Market Based Approach

EXPERIENCE. INNOVATION. IMPACT.

Mobius Quick Facts

Mobius Risk Group is an independent commodity and energy enterprise, risk, compliance, and ESG advisory firm providing market strategic analysis, guidance, enterprise velocity and scale to producers, consumers, and capital participants needing timely, actionable and impactful insight for commodities, interest rates, and FX.

- Founded: 2002
- Annual Transactions: + \$20 Billion
- Ownership: Privately Held
- Office Headquarters: Houston, Texas
- SSAE 18
- SOC I Type II (Formerly SAS 70)
- > 950 curves and proprietary curves marked daily
- Average Employee Industry Experience: 20 Years
- M-Risk – Industry Leading Proprietary Risk Module
- Corporate Confidentiality Policy
- Corporate Conflict of Interest Policy
- Non-Conflicted Advice
- Fixed Fee - Retainer Based Services



Agenda

The path to carbon neutrality may seem opaque or you might not know the direction in which you take your first step. Today, with a focus on the oil and gas industry, we will provide guidance as to your path to carbon neutrality.

- Why should I consider being carbon neutral?
- What is the path to carbon neutrality?
- How do I become carbon neutral?
- What nuances must I consider?





Why should I be carbon neutral?

ESG Focus

- A firm's valuation is a function of both fundamentals and investor demand
- As individual and institutional investors increasingly focus on Environmental, Social, and Governance (ESG) metrics, sustainable investing is rapidly transitioning from a niche industry on the investment side and "nice to have" on the corporate side into an essential focus across the investment landscape
- Working with environmental partnerships and reducing greenhouse gas emissions is a first step, but as of late investor focus has shifted to a carbon neutral focus
- Firms that fail to address ESG concerns face a loss of customers as supply chains go green, lower investor demand/equity valuations, and potential pushback from employees, suppliers, and regulators



"Indeed, climate change is almost invariably the top issue that clients around the world would raise with BlackRock...because capital markets pull future risk forward, we will see changes in capital allocation more quickly than we see changes to the climate itself. In the near future-and sooner than most anticipate-there will be a significant reallocation of capital."
—Larry Fink, CEO, BlackRock



"We will source 100% of our facilities electricity from renewables by 2040 globally, and by 2030 in the US...and in partnership with our suppliers, we are establishing a sustainable material target of at least 50% by 2030 for all of our vehicles."
—Mary Barra, CEO, GM

Supply Chain – Value Add

Institutions throughout the oil and gas sector are looking to mitigate their carbon footprint, and many companies don't know where to start

Supply of green energy and commodities:

- Assists producers and consumers in meeting ESG goals
- Can represent a profit center, if the premium charged for green energy exceeds costs
- Provides significant market differentiation and public relations benefits / IR Uplift
- Is the right thing to do – commodity industries will continue to be essential to grow the world economy and lift people out of poverty, particularly in the developing world
 - We need responsible management
 - No one wins in a binary choice between the environment and the economy

“Greening up” of conventional raw materials

- Arbitrages the cost differential between sustainable and conventional raw materials, while making other investments or offset purchases to make them net carbon neutral

Socio-Economic Benefits

Oil and gas has powered, clothed, and fed the world

- The oil and gas industry is responsible for over 12MM American jobs
- Between 2012 and 2025, the oil and gas industry is expected to provide \$1.6T in federal and state tax revenue
- 2019 trade deficit was \$305B less than it would have been without domestic oil and natural gas production
- Lower energy costs support public and private sector investment and growth
- Manufacturing industries make up approximately 25% of the energy consumption in the US
- Let's not forget about the charitable donations of time and money for our communities

However, as with most things in life, benefits comes with costs...EPA estimated total GHG emissions in 2018 of 6.67 Billion Metric tons of CO2 equivalent

Source: DOE and EPA

Energy in Transition

Without oil and gas, you would not be able to have a transition to renewables. Oil and gas could be considered as the backbone to the renewables transition...Why?

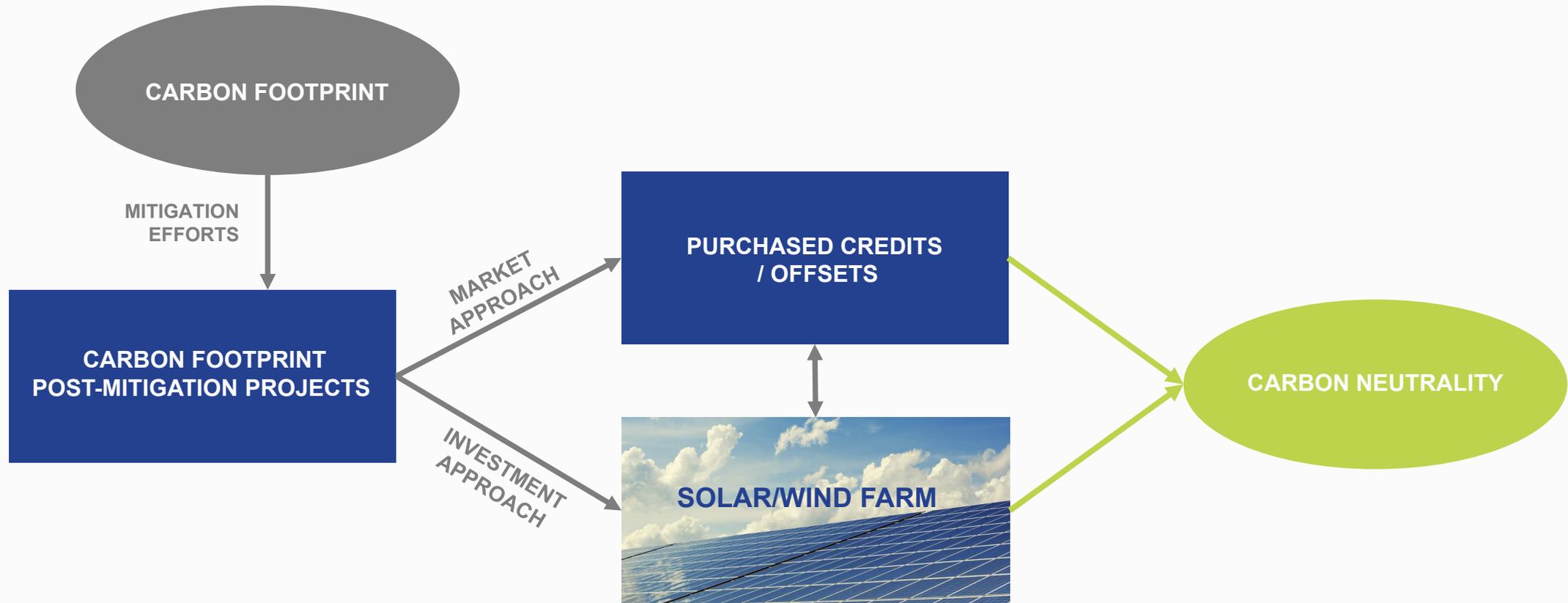
- Raw material production (steel, aluminum, concrete, etc.) requires... Oil and Gas
- Raw material transportation to assembly locations requires... Oil and Gas
- Wind turbines transportation from assembly to field/water location requires... Oil and Gas
- On-Site assembly requires... Oil and Gas
- On-going operation and routine/non-routine maintenance requires.... Oil and Gas
- You can recreate this example for any other renewable energy project

Even the “greenest” of renewable projects have carbon emissions, Source 1, 2, and/or 3...so what is the path to carbon neutrality??



What is the Path to Carbon Neutrality?
How do I become carbon neutral?

Path to Carbon Neutrality



Carbon Emissions

Emissions Types

- Scope One emissions - direct emissions from a firm's operations
 - Ex.) operations of a corporate headquarters or factory and the emissions from company owned and operated vehicles
- Scope Two emissions - emissions from purchased electricity, heating, and cooling for corporate use
- Scope Three emissions - all indirect emissions, both upstream and downstream
 - Upstream examples would be the emissions from suppliers and employee commuting
 - For oil and gas producers, emissions resulting from the downstream refining and use of their products is the largest source of their carbon footprint
 - One company's Scope One emissions will often be another firm's Scope Three

Emissions Reduction Methods

- Reducing consumption/efficiency
- Project development
- RECs
- Credits and offsets

Carbon Credits and Offsets

While they differ in their source, both carbon credits and offsets represent a One Metric Ton reduction in Co2

- Carbon credits are either issued or auctioned, and their purchase takes away someone else's "right" to pollute
- Carbon offsets represent certified projects that directly reduce carbon emissions
- Examples of offset projects include reforestation/deforestation reduction, energy efficiency, and methane/industrial gas destruction

Carbon credits and offsets can be traded under either compliance based or voluntary regimes

- Compliance based credits include EUAs (European Union ETS), CERs (Kyoto Protocol), RGGI Allowances and Offsets (Regional Greenhouse Gas Initiative), and CCAs (California Cap and Trade)
- While not allowable for regulatory compliance, voluntary offsets can offer advantages over regulated markets in terms of both cost and flexibility
- When properly sourced, voluntary offsets will be certified to similar (sometimes higher) standards than regulated markets
 - VCS, ICAO, and CORSIA efforts

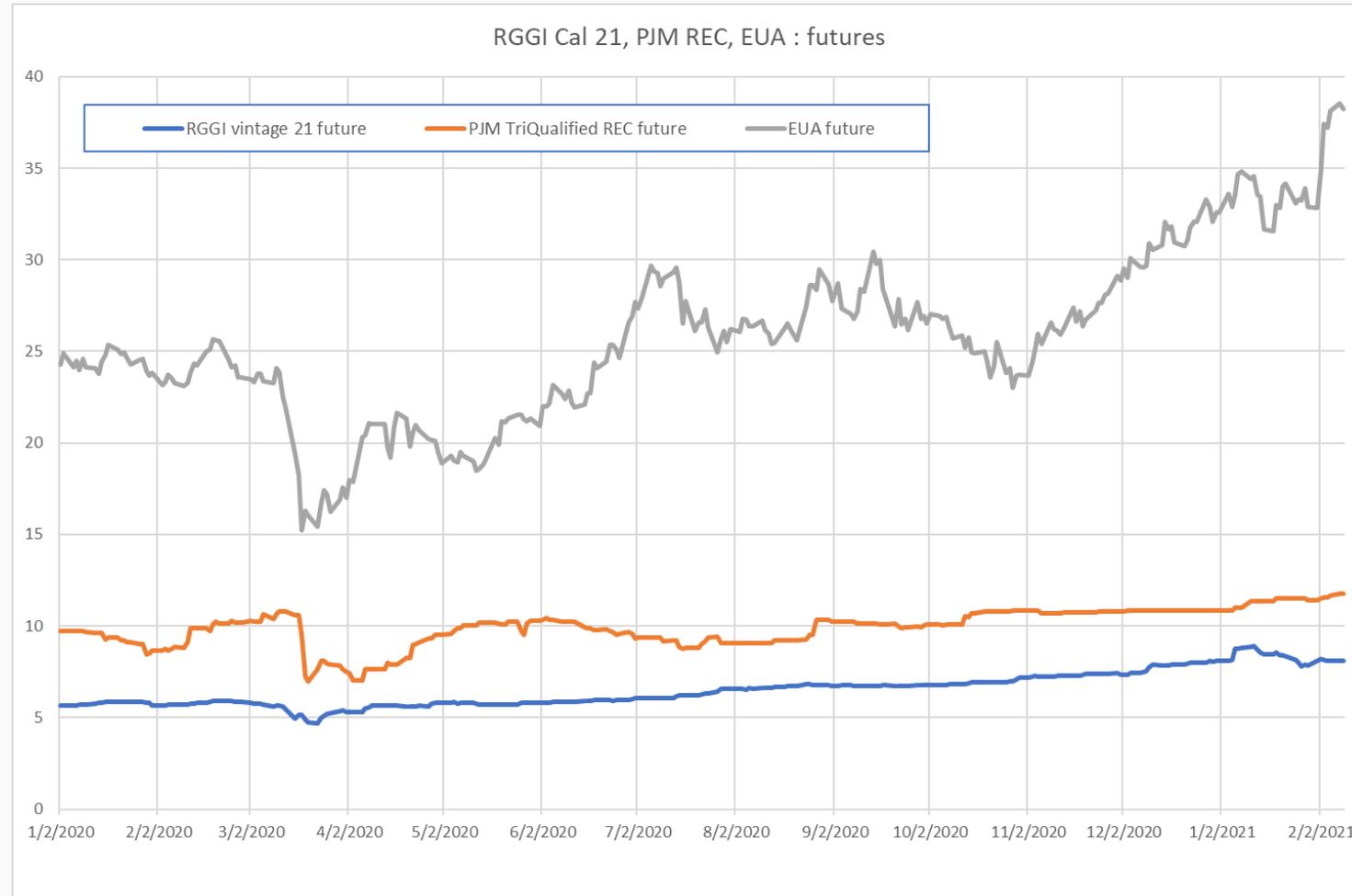
Carbon Credits and Offsets

By using carbon offsets to create “green” oil and gas, producers can offer value added services to their current and future client base.

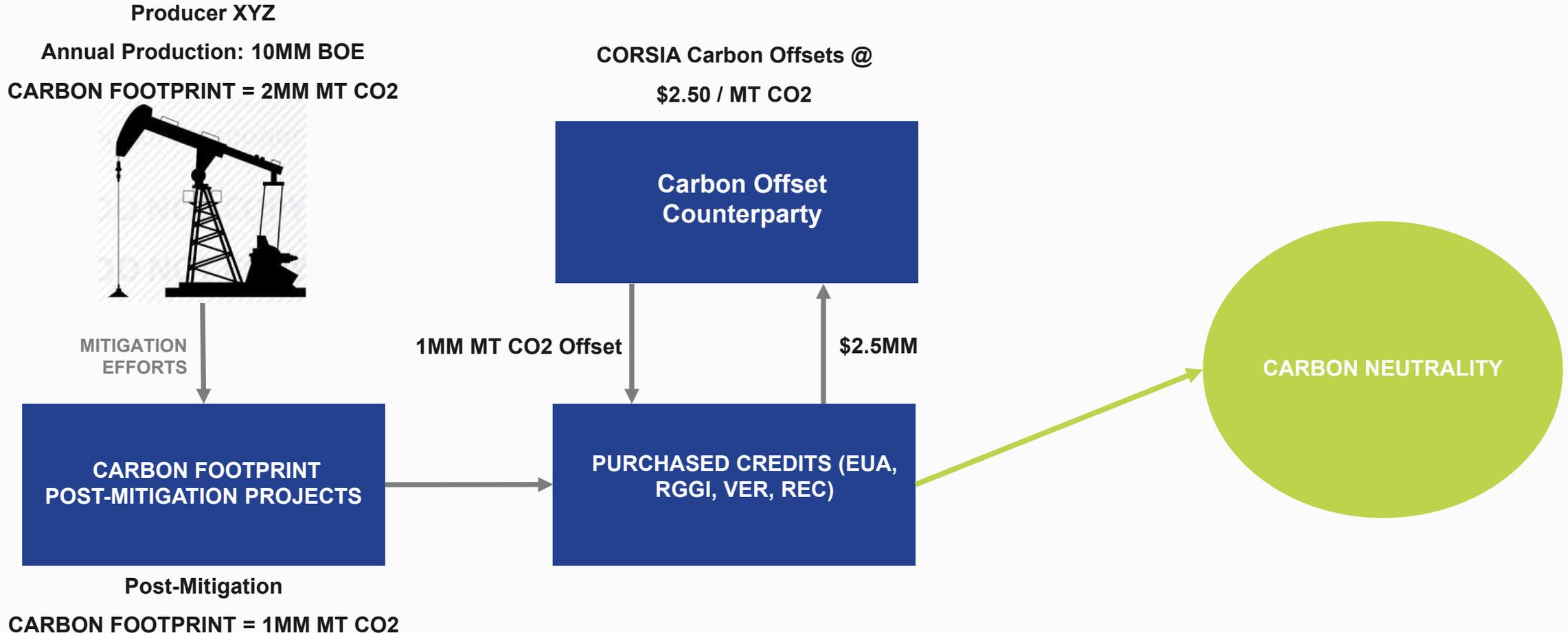
Carbon Neutral Oil and Gas

- Oil and gas will remain an essential part of the global fuel mix long into the future
 - Much like airlines allow customers to offset their carbon footprint, producers can offer the same option to customers
 - Natural gas is green relative to available alternatives, but will never be fully “net zero” on a stand alone basis
 - Producers carbon emissions varies based on production standards, transportation, and end use
 - Public records show a wide range of carbon intensities after mitigation projects ~ 1 MT of CO₂ / 5 BOE
 - Assuming an increased offset price of \$5/MT CO₂ and 0.20 MT CO₂/BOE, this would add around \$1.00/BOE to delivered pricing
 - Alternatively, offsets meeting minimum CORSIA standards, but perhaps less attractive from an IR perspective, are currently trading for less than \$2.50/MT CO₂, adding ~ \$0.50/BOE
 - Carbon neutrality can be bundled with risk management products to create innovative purchaser offerings
 - Example, if a customer is willing to purchase a floor under a floating price agreement crude/gas might be delivered carbon neutral at no additional charge, provided pricing is above the floor

Prices: RGGI, RECs, EUA futures



Oil and Gas Producer's Route to Carbon Neutrality





What are the nuances of a Path to Carbon
Neutrality?

The Path to Carbon Neutrality

The Path is Nuanced - must leverage Technology, Data, Analytics, and Expertise to Drive Best Practices

- How does one evaluate and achieve the lowest cost option to achieve carbon neutrality?
- How does one properly value investment and carbon offset projects?
- How does one track energy production, consumption, and emissions across corporate functions in real time?
- How does one level the information gap across the corporation and with its counterparts?
- Does one have access to real time knowledge of energy and emissions credit pricing?
- Does one have the necessary experience and information to execute a carbon mitigation program?
- Does one have the extensive experience required to market and trade compliance-based and voluntary carbon credits, including physical, financial, and complex non-linear and structured products?
- How does one handle the shareholder, equity sponsor, and regulatory reporting?

Markets Are Opaque – Mobius will level the playing field

First Mover Advantages

Regulations are continuing to evolve and increase in their requirements

Benefits to staying ahead of shifts:

- There are only so many ideal areas to place a wind or solar farm - Waiting forces suboptimal choices
- If you wait until carbon neutrality is mandated, you wind up making the same investment, but without the investor or PR uplift
- Many customers care deeply about ESG matters regardless of regulations
- Supply chain shifts are very difficult in most industries
- Many large industrial firms are already anticipating increased regulations and acting accordingly
- Suppliers will need to keep up or find themselves increasingly disadvantaged
- As regulations increase, demand for offsets and credits will increase, potentially forcing prices higher

Concluding the Path to Carbon Neutrality

The Why:

- Improved fundamental outlook, improved investor demand, and reduced borrowing costs
- Taking carbon emissions out of the eco system – potentially in a zero-cost structure

The What and the How:

- Carbon emissions are an externality of the Socio-Economic benefit that is the oil and gas industry
- Carbon offsets serve fund renewable investments and are part of a wholistic plan to carbon neutrality
 - A carbon neutral plan must include a market and investment approach to reach goals

The Nuances:

- Mobius will provide the road map for your Path to Carbon Neutrality – equipping you with information parity in an OPAQUE market
- Real-time monitoring and reporting are crucial to the success of your Path to Carbon Neutrality
- Mobius will provide you the industry experience / expertise and technology to travel The Path to Carbon Neutrality



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Nicolas Hutnyak
VP Corporate Strategy and Development
nhutnyak@mobiusriskgroup.com
210.421.6315

Mobius HQ
5847 San Felipe St, Suite 2502
Houston, Texas 77057
713.877.0404