

ASA Energy Valuation Conference

*ESG and the Energy Transition:
Positive Value Drivers for Energy Companies
May 12, 2022*

1. LET'S START WITH THE ANSWER

FOR THE ENERGY COMPLEX.....

For companies operating in the Energy Complex, both ESG and the Energy Transition represent positive value driver opportunities . The reason for this is that one of the most dominant factors within both the ESG and the Energy Transition discussions is climate, with an emphasis on carbon. **Energy companies up and down the value chain uniquely possess the technical skills, experience, and physical capabilities necessary to make substantive ESG and Energy Transition impacts that can create or enhance value.**

2. ESG & THE ENERGY TRANSITION

ESG ORIGINS AND DEFINITION

- Corporate performance typically has been evaluated using financial metrics like EPS and TSR, alongside other metrics like IRR, NPV, and ROI.
- Non-financial elements have been used in certain specific situations, such as with South Africa (apartheid), Tobacco, and Russia (right now).
- Environmental, Social, and Governance (ESG) refers to a much broader application of non-financial aspects.
- The term was most likely first used in a Forbes article back in 2005.
- ESG is linked to Sustainability and to DEI-Diversity, Equity, and Inclusion as well.

ESG-ENVIRONMENTAL

The Environmental aspects include items such as these:

- Greenhouse Gas (GHG) emissions, with emphasis on Carbon Dioxide (CO₂) and Methane (CH₄)
- Air pollution
- Wastewater impacts on water tables and aquifers
- Hazardous materials
- Ecological impacts

ESG-SOCIAL

The Social component has a great focus on investor and employee relations:

- Fair pay and benefits like health insurance
- Workplace policies regarding diversity, inclusion, and equity
- Training and Education programs
- Employee turnover
- Social Relevance and Societal Impact
- Customer Service
- Human Rights
- Investment in Community

ESG-GOVERNANCE

Governance in the context of ESG has to do with management:

- Stakeholder Engagement
- Financial and Accounting compliance and visibility
- Boards that are acting with real fiduciary relationships with stockholders
- Conflicts of interest
- Diverse and Inclusive boards and management teams
- Executive Compensation
- Executive bonuses tied to ESG metrics

IS THE ENERGY TRANSITION SPECIFICALLY DEFINED?

- The energy transition most often refers to a complete conversion of the global energy complex from fossil-based resources to zero-carbon resources by the second half of this century.
- In the US, it started to be part of public discourse during the 1970's oil shocks.
- The impetus to reduce energy-related CO₂ emissions is directly tied to climate change, specifically volatility and warming.
- Decarbonization of the energy complex, expansion of renewable energy, and vast acceleration of energy efficiency programs worldwide are generally expected to hit 90% of the “required” carbon reductions.

THE ENERGY TRANSITION-SUPER SHORT HISTORY

- The Greenhouse Effect
- Greenhouse Gases
- The Keeling Curve
- 1970s: The Earth is Cooling
- 1980's: Nope, It's Getting Warmer
- 1989: Intergovernmental Panel on Climate Change
- 1997: Kyoto Protocol
- 2015: Paris Climate Agreement

CARBON IS A BUILDING BLOCK OF LIFE AND ITS KILLING US

- It's the carbon, stupid
- 4th most abundant element in universe
- It can form lots of organic compounds and polymers and is a key component of life
- There is a reason why you have to get through organic chemistry to get into medical school
- We are 18% carbon
- If carbon is found on Mars headlines will say life found on Mars
- But CH₄ and CO₂ are GHGs that cause warming
- **What does zero carbon really mean?**

SO WHAT IS THE ENERGY TRANSITION?

The movement to clean and renewable energy

- Eliminate carbon-based energy and fossil fuels
- Renewable energy includes wind, solar, geothermal, hydro
- Nuclear is not renewable but can be seen as clean
- Gas is not renewable and it is a fossil fuel, but can be clean and is the fulcrum molecule
- Oil and Gas get lumped together, this is changing
- What is the actual pathway?

CURRENT TRENDS

What's hot now (pun intended)

- EVs
- Carbon Capture and Storage
- Battery Storage
- Hydrogen
- Geothermal
- Biofuels

3. WHERE WE ARE NOW

THERE ARE VARIOUS ESG FRAMEWORKS

- CDP-Carbon Disclosure Project
- CDSB-Climate Disclosure Standards Board
- GRI-Global Reporting Initiative
- IIRC-International Integrated Reporting Council
- ISSB-International Sustainability Standards Board
- SASB-Sustainability Accounting Standards Board
- IIRC and SASB have merged to form the Value Reporting Foundation

Valuation Impact: Emphasizing reporting and financial statements naturally feeds valuations.

ESG-THE MONEY

- According to Morningstar Direct, global ESG fund assets increased to \$2.74 trillion in December 2021, up from \$1.65 trillion at the end of 2020 and \$1.28 trillion at the end of 2019.
- According to Bloomberg, \$2.5 trillion on ESG focused debt will be issued this year, doubling the 2021 value.

Valuation Impact: Large capital flows into ESG and/or Energy Transition funds increase valuations by bidding up asset prices.

ESG SCORECARDS

- There are lots of them.
- Credibility is varied.
- What do they really mean?
- This is Spinal Tap, the amp goes to 11...
- It's not like S&P, Moody's, or Fitch yet.

Valuation Impact: Despite these items valuations are being impacted by ESG scorecards.

THE ENERGY TRANSITION

- Renewables are growing, up to almost 25% here in US.
- But 300 coal plants are under construction globally.
- The developing world has not shown much interest in slowing down growth and standard of living improvements in favor of the Energy Transition.
- Geopolitics play a looming role, just look at impact of war in Europe.

Valuation Impact: Natural Gas and LNG related valuations will increase, and solutions that reduce exposure to Russian energy will command higher valuations. Advances in energy technology will also rise in value.

THE ENERGY TRANSITION-CLIMATE DISCLOSURES

- The Financial Stability Board (FSB) created the task Force on Climate-Related Financial Disclosures (TCFD) to develop recommendations on the types of information that companies should disclose to support investors, lenders, and insurance underwriters in appropriately assessing and pricing a specific set of risks—risks related to climate change.
- Section F covers impact on financial statements, all three.
- Detailed modelling is critical to make this meaningful.
- Scope 1, 2, and 3....all covered.

Valuation Impact: Again, emphasis on actual financial statements with real numbers has a substantive valuation impact.

THE ENERGY TRANSITION-CLIMATE DISCLOSURES

- The Securities and Exchange Commission just proposed rule changes that would require registrants to include certain climate-related disclosures in their registration statements and periodic reports.
- Will include information about climate-related risks that are reasonably likely to have a material impact on their business, results of operations, or financial condition, and certain climate-related financial statement metrics in a note to their audited financial statements.
- The required information about climate-related risks also would include disclosure of a registrant's greenhouse gas emissions, which have become a commonly used metric to assess a registrant's exposure to such risks.

Valuation Impact: Quantification of risks and mitigation can cause valuations to rise vs. comps that are behind.

THE ENERGY TRANSITION-THREE PATHS

Bifurcated

- The developed world accelerates the transition while the developing world uses the most available and cost-effective energy sources. **Most likely**

All-In

- A framework such as Paris is widely implemented without exemptions for developing countries. **Unlikely**

Fragmented

- A hodge-podge approach driven by geopolitics. **Possible**

Valuation Impact: Companies and assets that support the most likely scenario will appreciate in value.

4. VALUATION

ESG NOT GOING AWAY

- Today ESG is a dominant topic of discussion across the American business and investment community.
- It is driving some business decisions, impacting corporate structures and organizational charts, and is having a profound impact on investment decisions.
- The recent global pandemic and economic crisis have accelerated the drive by companies to establish ESG programs and report ESG metrics.
- Companies are seeking ways to attract investment capital and demonstrate rigorous ESG risk management in their organizations.

VALUATION IS THE CRITICAL ELEMENT

- What has remained elusive for businesses and investors is a way to quantify the actual and potential risks, losses, benefits, and rewards associated with ESG programs.
- The missing piece, the way to tie ESG to valuation, has been the problem facing corporate leaders and Boards, who, for good reason, tie every decision to value creation. They have a fiduciary duty to do so.
- How do you justify making substantial investments and fundamental changes to corporate structures and culture without empirical evidence that it will have a direct impact on shareholder value, total shareholder return, net present value, and individual rates of return?

THE TIME IS NOW

- **Unlocking hidden value** is always worth it.
- **Do it now** before you are forced to do it by your Board, investors and ultimately the Congress and the SEC. ESG might be the new Sarbanes Oxley!
- **Gain a competitive advantage** over your peer group by being a first-mover.
- **Drive the narrative** actively, rather than passively.
- **Mitigate the risks** that poor ESG performance can have on your business.
- **Access capital** that will only engage if your ESG program is designed, measured, and valued.

IDENTIFY MATERIAL FINANCIAL FACTORS

- Define the material ESG factors specifically relevant to the business and industry.
- For Energy companies the carbon value chain will be paramount.
- Run “comps” to assess your market position in terms of the defined material ESG factors vis-à-vis competitors.
- Identify and quantify as accurately as possible specific impact of your operations on the material ESG factors.
- Identify and quantify as accurately as possible the impact of external factors on the material ESG factors.

BE CAREFUL TO ENSURE COMPARABILITY OF DATA

Normalize the Data

- This will create more effective peer comparisons
- Must select appropriate measures for use in normalization
- Normalization helps to create visibility into performance over time

Analyze the Data in Context of Industry Performance

- Work within a set of comps
- Articulate different data types and review the distribution of data
- Summarize the data and try to understand any data dispersion
- Make sure to address outliers and non-normal distributions

Add Company-specific Context to the Analysis

- Can help to enhance valuation over peers & competitors

QUANTIFY THE LINKAGE OF ESG PERFORMANCE DIRECTLY TO VALUATION

Identify and Quantify the Timing, Duration, and Intensity of ESG Impacts

- Summarize key characteristics of impacts
- Try to differentiate between one-time vs. recurring impacts
- Attempt to account for any correlation between impacts

Extend Material ESG Data into Valuation

- Isolate all interrelated impacts to avoid double-counting
- Segregate into buckets that make sense for the business
- Model Balance Sheet impact
- Model Income Statement impact
- Model Cash Flow impact
- Model Cost of Capital impact

Integrate structured ESG data and impacts directly into valuation models

SUGGESTED ESG VALUATION FRAMEWORK

Top-Down Market Approach

- Guideline Public Company Method
- Multivariate Regression Model of Returns
- Liquidity Impact
- Adjust WACC for ESG Assets & Program (Kd, Beta, Alpha)
- Fair Market Value

SUGGESTED ESG VALUATION FRAMEWORK

Bottom-Up Income Approach

- Isolate ESG Assets & Program
- Multi-Period Excess Earnings Model
- Differential Income Model
- Brand Valuation Impact
- Other Techniques if Appropriate
- Fair Market Value

SUGGESTED ESG VALUATION FRAMEWORK

Reconciliation of Methodologies

- Reconcile the results
- Look for biggest impact
- Provide range of ESG impact on Fair Value / Fair Market Value

5. CASE STUDIES

LARGE RETAIL ELECTRIC PROVIDER

- The Company developed a nascent Corporate ESG Program with certain energy efficiency product offerings to enhance its valuation as a merger target.
- One demand side product was identified to be tested and valued.
- The most critical ESG metrics were isolated, with emphasis on the “E”.
- “Big Data” concepts were used to harvest mission-critical data with Access and R.
- Data was analyzed and structured the data using a two-stage least squares (2SLS) estimation methodology.
- Multiply hypotheses were tested.
- The results were valued and presented to Senior Leadership Team.
- **Company was acquired for more than \$3 billion and the valuation was enhanced incrementally by the results of this study.**

VC BACKED ENERGY TRANSITION COMPANY

- An Energy Transition Company lowers energy demand for customers by using LED technology by developing a product to lower electric power usage and to quantify annual CO₂ reductions.
- The Company's auditor and investors required independent third-party vetting of the ESG and Energy Transition elements and impact of this product.
- Designed ESG framework and metrics and independently quantified annual kWh reduction and associated CO₂ lbs. reduction.
- Used analytics to harvest the data (Python & Excel).
- Valued the ESG and Energy Transition specific elements; presented results to investors and auditors.
- **The independent valuation quantified intangible asset value for the product and it was accepted as collateral for a \$25 mm secured financing.**

VC BACKED ENERGY TRANSITION COMPANY

- A privately held upstream company with a European parent proposed using ESG and Energy Transition metrics as part of a merger valuation.
- Independence was required; metrics defined specific to ESG program and assets.
- Sustainability Accounting Standards Board (SASB) Oil and Gas – Exploration & Production Sustainability Accounting Standard Version 2018-10 was used to support the analysis.
- The specific focus was on Air Quality, Water Management, and Biodiversity Impacts.
- The ESG program and assets were valued and findings presented to Board.
- **Transaction value was enhanced by 6%.**

DEVELOPMENT STAGE ENERGY TRANSITION AVIATION FUEL COMPANY

- A development team needed an independent assessment of the metrics and valuation of a Sustainable Aviation Fuel (SAF) project to attract and qualify for ESG and Energy Transition capital.
- Metrics specific to Energy Transition impact were defined.
- Sustainability Accounting Standards Board (SASB) and Task Force on Climate-Related Financial Disclosures (TCFD) elements were used to formulate a financial impact framework.
- Using a stochastic model with Monte Carlo Simulation, all critical inputs and assumptions and their impact on valuation were tested.
- The narrative was articulated for Board presentation.
- **Valuation was used to negotiate with private capital players for the early-stage financing in the range of \$50 mm.**

THANK YOU

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