

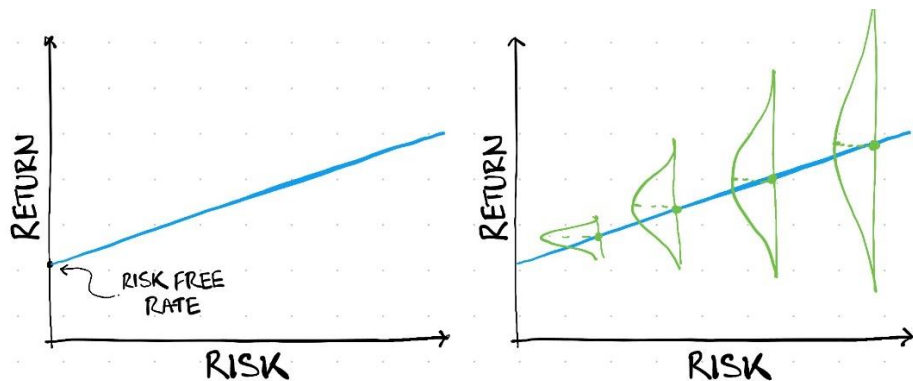
Enduring Volatility: A Framework for Renewable Project Development

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Howard Marks: Framework on Risk and Return

- In the 1960s at the University of Chicago, Howard Marks encountered a graphical representation showing that as one moves from left to right on a risk/return graph, increasing risk correlates with increasing expected return, the capital markets line.
- Marks noted a critical flaw in this representation: the linearity of the graph implied a level of certainty that higher risk equates to higher return.
- In reality, as risk increases, not only does the expected return increase, but the range of possible outcomes widens—with the potential for significantly worse outcomes alongside the opportunity for higher returns. This more nuanced understanding of risk and return highlights the trade-offs and uncertainties in pursuing higher returns.



Development Firm's Position in the Risk-Return Framework

- The risk-return framework provides a useful lens to view the lifecycle of renewable energy projects. The far-right side represents the uncertain, high-risk nature of project development—aggregating strategic positions with numerous commercial unknowns—while the far-left side reflects stable, operating assets, akin to a fixed income vehicle (Yield-Cos)
- Projects begin in the high-risk, high-return segment of project development, where the range of possible outcomes is wide. This position provides opportunities for outsized returns but also involves significant challenges, requiring capability to manage wide-ranging outcomes.

Project De-Risking Process: A Linear Assumption?

- Initially, I academically viewed the development process as a linear progression, where projects transitioned from high-risk to lower-risk, much like moving from volatile investments to stable, predictable "bond-like" returns.
- However, while modeling these projects during key development milestones—such as lease signings, offtake bidding, power flow analyses, property tax negotiations, and capital structure planning—it became clear that the concept of “de-risking,” especially in a linear sense, oversimplifies the true complexity of project development.

Morgan Housel: Keys to Investing

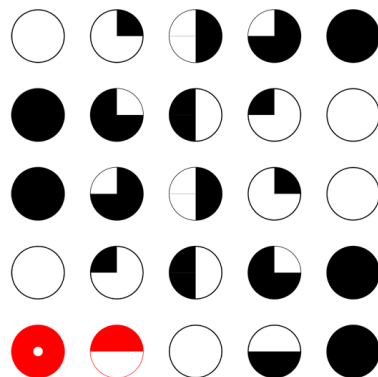
Morgan Housel, a partner at the Collaborative Fund, offered insights that refined my understanding of risk and returns; he highlights two key elements for which investors are compensated:

- Market Mispricing: the ability to identify market disequilibrium and capitalize on timing or misaligned valuations to create value
- Endurance of Volatility: the capacity to persist through periods of uncertainty and fluctuation

While development firms capitalize on both elements, the concept of enduring volatility aligns closely with the realities of renewable energy project development, where the process is inherently dynamic, and new information frequently emerges. Shifting from a focus on "de-risking" to "endurance of risk" offers a more realistic framework for value creation in development.

While "de-risking" often implies the complete elimination of risk—a goal that is rarely achievable—emphasizing "endurance of risk" acknowledges that uncertainties persist throughout the lifecycle of a project. *In addition to managing and enduring development risk, development firms need to strategically commit capital during the development phase ("pay to play"), investments that warrant compelling return multiples.*

Put differently, attempting to reduce development complexity to something like Harvey Balls oversimplifies the risk and iterative nature of the process.



THE ORIGINAL HARVEY BALLS

Original Booz Allen Hamilton style balls on the top row and the Consumer Reports style on the bottom row

Conclusion

1. Development is not solely about de-risking projects to achieve the stability of a fixed-income vehicle. Instead, it involves acknowledging that the development process remains volatile for extended periods of time.
2. By enduring volatility development firms generate value that others are unwilling or *unable* to realize.
3. A firm's success stems from its ability to thrive at the far-right end of the risk spectrum, committing capital to projects with robust fundamentals and enduring volatility during development.