
Research Summary: Clean energy investing in public capital markets: Portfolio benefits of yieldcos

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Several policies are needed to obtain the decarbonization of the power sector, including the deployment of capital markets at large scale. Specifically, investors must have access to financial vehicles that compensate them appropriately for investing in renewable energy. Investors' perceptions that renewable energy investments do not deliver appealing returns compared to conventional investments, can hinder the flow of capital to finance renewable energy requirements.

This paper analyses whether publicly-traded financial products provide investors with competitive risk-adjusted returns, or whether investors are at loss for choosing renewable energy or sustainable assets. A traditional portfolio approach is used to see whether adding renewable energy exchange traded funds (ETFs) to a portfolio provides diversification benefits to investors. In addition, we analyse the benefits of investing in yieldcos. Yieldcos are publicly-traded

holding companies that manage portfolios of operating-stage renewable energy projects and deliver revenues to shareholders in the form of dividends (Best, 2017).

Research objectives

More specifically, the research objectives of this paper include:

1. Testing whether adding a selection of renewable energy stocks (in the form of ETFs) to a classic portfolio has diversification benefits for potential investors,
2. Testing whether narrowing exposure to operational generation assets improves performance, by adding a yieldco index fund to the sample of assets,
3. Comparing the performance of US versus non-US yieldcos to test variation in outcomes among

yieldcos based in the US and those based elsewhere.

Summary of results

Market correlation of portfolio assets

We examine the correlation between assets considered for the portfolio and the S&P 500 (Standard & Poor’s 500) and we find that the correlation between the renewable energy ETFs and the S&P 500 fund are high in every period examined (correlations from 62% to 81%). This high correlation with the market indicates that including such assets in a portfolio will unlikely return large diversification benefits.

Initial performance and diversification results

Our results find few diversification benefits obtained from including any of the commodity or alternative assets in a standard portfolio. Specifically, we find very little evidence of strong performance from the renewable energy assets considered relative to the market. The combination of poor performance and high correlation with the market renders diversification ineffective in improving the Sharpe ratio. The Sharpe ratio is a commonly used measure of performance in portfolio theory and represents the amount of excess return per unit of risk.

Performance and diversification results with yieldcos

We find that the yieldco index fund has a correlation of 49% with the S&P 500 fund. In addition, the yieldco index fund experiences negative excess returns. Instead, when we add a

non-US yieldco index, a modest but measurable improvement is seen in the daily Sharpe ratio. Focusing on the difference in results when including US yieldcos versus non-US yieldcos, we discover a clear difference in individual performance of US and non-US yieldcos, which displays a trend in favour of non-US yieldcos. In general, non-US yieldcos clearly outperform yieldcos based in the US (see figure 1).

Policy relevance

Our findings suggest that policymakers and practitioners would be incorrect to conclude that the yieldco model is fundamentally faulty. Instead, they would benefit from further analysis to discover what types of strategies and other aspects contributed to this performance delta. Moreover, given the significant outperformance of non-US yieldcos, perhaps it would be suitable for management of US yieldcos to be more closely aligned with that of their international counterparts, in order to give superior value to investors. Finally, we find that the yieldco idea can provide a policy advantage by reducing the capital costs of renewable energy projects and offering low-risk returns to investors, thus mitigating the public cost of attaining clean energy deployment policy objectives.

This research summary includes highlights from a recent ESIPP paper: La Monaca, S., Assereto, M., & Byrne, J. (2018). Clean energy investing in public capital markets: Portfolio benefits of yieldcos. *Energy Policy*, 121, 383-393. <https://doi.org/10.1016/j.enpol.2018.06.028>

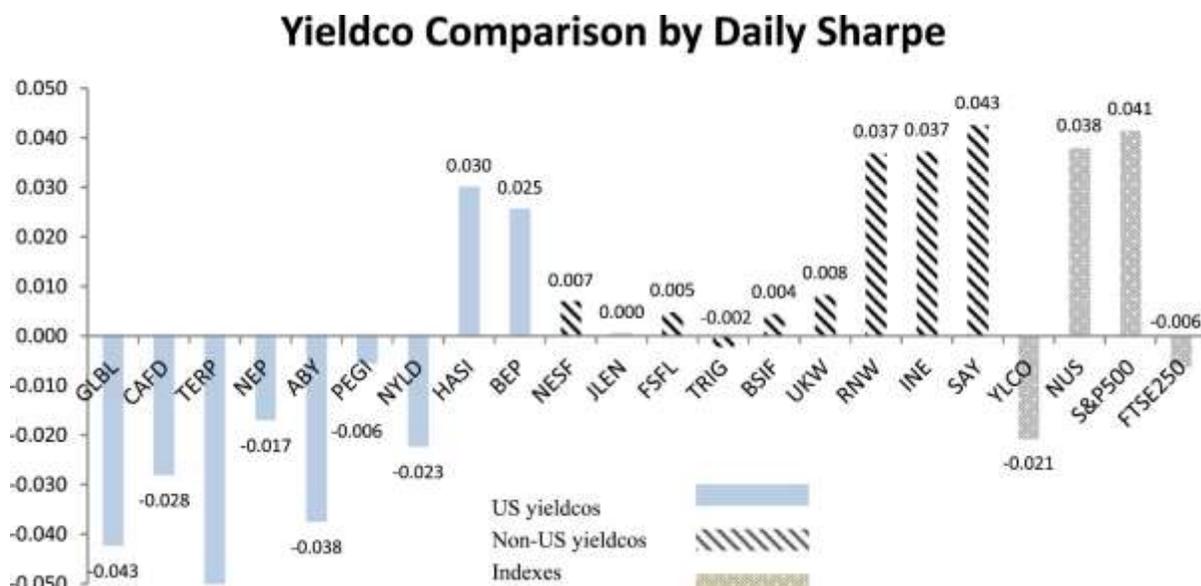


Figure 1. Comparison of daily Sharpe ratio for individual yieldcos