Renewable infrastructure: A diversified approach

AlphaReal explores the benefits of a diversified approach to renewable infrastructure

Renewable infrastructure assets continue to be deployed at pace across the UK as the country races to achieve net zero by 2050[1] and decarbonise the electricity system by 2035[2]. Consequently, renewable electricity generation has increased fivefold since 2010[3].

A survey[4] of UK pension funds and insurers commissioned by AlphaReal, the specialist manager of secure income real assets, found a strong preference for diversification across renewable energy assets.

This article discusses why a diversified approach that focuses on onshore wind, ground-mount solar and battery storage could be an optimal way to invest in UK renewables in today's economic climate.

Why are solar and wind assets an attractive investment opportunity?

These technologies are large and growing markets that are well understood and have manageable risk profiles. Both have been deployed at scale globally[5] and in the UK, with a mature ecosystem of related service providers. This improves investors' ability to forecast the operating lives of projects, project operational costs and predict key technical parameters such as availability of the site to generate electricity, and degradation of the asset (i.e. its reduction in performance over time.) The maturity of the UK market means suppliers are more willing to offer fixed price contracts and guarantees for key elements of projects such as construction costs, further reducing risk.

The improved cost competitiveness relative to fossil fuels[6] is supporting installation of more sites in the UK. Wind and solar farms can be constructed within reasonable timelines, sometimes in under twelve months, compared with other low carbon technologies that can take years to build[7].

Onshore wind and solar deployment in a combined scenario are expected to grow from approximately 31GW in 2023[8] to 72GW by 2035. This provides ample opportunity and scale for capital deployment.

A diversified approach benefits investors by broadening the pool of suitable projects and enabling investors to identify the best opportunities from multiple technologies with attractive growth and risk profiles.

Solar and wind technologies exhibit a different mix of technical, supply chain and weather dependency risks, thereby diversifying total risk within the portfolio. Research and experience in the sector suggest that solar and wind in the UK have complementary energy generation profiles. Typically, solar generates higher output in summer when daylight hours are elevated, and wind more in winter when there are above average wind speeds. A combination creates a smoother annual revenue profile than either would achieve independently.

What is the role of battery storage in a diversified portfolio?

Battery Energy Storage Systems (BESS) are increasingly being used to help balance supply and demand. During periods of high renewable generation when power prices are often lower, the BESS system can charge up. It can then export at times when power prices are elevated. BESS benefiting from lower priced periods also makes it a good hedge against wind and solar at a portfolio level.

BESS can be co-located alongside wind and solar generation, creating a project with better economies of scale.

What are the benefits for investors?

- A wider selection of opportunities increases the scale and speed of capital deployment.
- Diversification enables asset managers to select the best opportunities within and between technologies achieving better risk adjusted returns.
- Combining onshore wind and ground-mount solar helps to achieve a smoother annual electricity generation and return profile for the portfolio.
- Adding BESS further enhances diversification and returns at the total portfolio level.

This approach is open to investors of all shapes and sizes and can be accessed via a bespoke route or via pooled funds.

[1] https://www.gov.uk/government/news/uk-becomes-first-major-economy-to-pass-net-zero-emissions-law
[2] https://www.gov.uk/government/news/plans-unveiled-to-decarbonise-uk-power-system-by-2035
[3] https://assets.publishing.service.gov.uk/media/64f1fcba9ee0f2000db7bdd8/DUKES_2023_Chapters_1-7.pdf
[4] AlphaReal commissioned the survey of 100 UK pension fund and insurance senior investment professionals who collectively manage £359.82bn in AUM.
[5] https://www.iea.org/reports/renewables-2023/executive-summary
[6] https://www.irena.org/News/pressreleases/2023/Aug/Renewables-Competitiveness-Accelerates-Despite-Cost-Inflation
[7] https://ember-climate.org/insights/in-brief/why-wind-and-solar-are-key-solutions-to-combat-climate-change/
[8] https://assets.publishing.service.gov.uk/media/66043060f9ab410011eea3e2/ET_6.1_MAR_24.xlsx