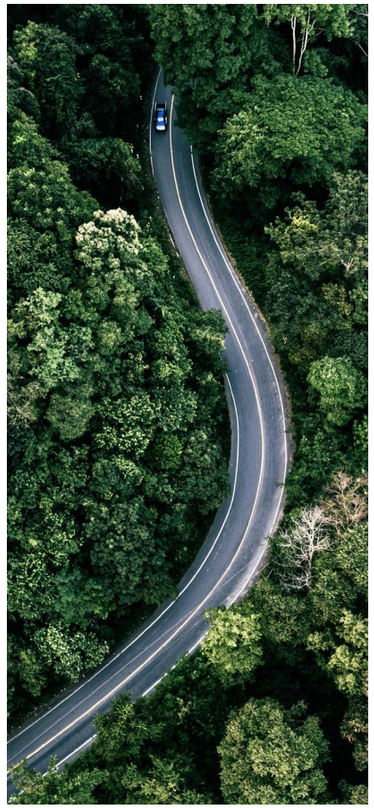
Grant Thornton

clean energy pipeline

Renewable Energy Cost of Capital Survey - 2026

A Grant Thornton and Clean Energy Pipeline initiative

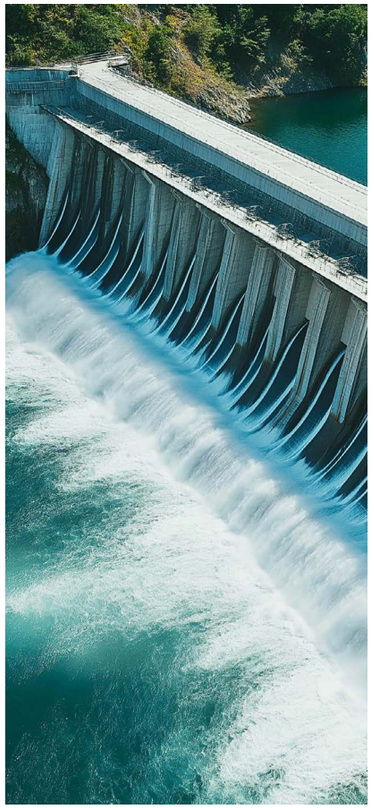
Click to explore the findings



About this report

Global renewable energy investment in 2025

Global cost of capital results



Country index - renewables investment 2025

Valuation methodologies and approaches

Concluding remarks

Contents

Tap on an image or title to navigate.

About this report

About this report

Grant Thornton, in collaboration with Clean Energy Pipeline, is pleased to present the 2025/26 Renewable Energy Cost of Capital and Valuation report. This publication builds on previous editions of Grant Thornton's Renewable Energy Cost of Capital Survey and associated market research, continuing our focus on pricing, valuation and investor return expectations across secondary-market renewable energy transactions.

The discount rate, a key proxy for the cost of capital, remains a critical input for investors, lenders and developers when evaluating renewable energy M&A activity. It directly influences valuation outcomes and fair market pricing across operational, late-stage and development assets. Despite its importance, observable market evidence remains limited, requiring market participants to rely on professional judgement, transaction benchmarks and specialist valuation insight.

This report presents a comprehensive, data-led view of current market conditions by combining two complementary research streams.

First, Grant Thornton conducted a global survey of leading investors, lenders and developers to capture prevailing expectations for discount rates applied to secondary-market renewable energy transactions. Respondents were asked what discount rates they would expect to apply to both levered and unlevered investments across a range of technologies, including ground-mounted solar photovoltaic (PV), onshore wind, offshore wind and battery energy storage systems (BESS). The results shown relate to geography and technology combinations which presented a minimum number of responses to infer meaningful conclusions.

Participants also provided commentary on key valuation assumptions, such as merchant risk premiums and co-location considerations.

Second, the report incorporates a detailed analysis of Clean Energy Pipeline's transaction database, focusing on observed enterprise value per megawatt (EV/MW) metrics for commercial operations date (COD) and ready-to-build (RTB) projects. This transaction dataset covers deals announced or completed during 2024 and 2025 and draws on publicly disclosed information, including sponsor announcements, lender communications and market disclosures, alongside selected private bilateral transactions, early-stage development trades and balance-sheet financings that are not publicly reported. Together, this approach is intended to provide a representative view of market values during the period under review.

The research covers countries that rank among the top 20 global markets for renewable energy investment over the 2024–2026 period and spans a broad range of mature and developing markets across Europe, Asia, Africa and the Americas. All survey data was collected prior to the onset of the Iran conflict in the Middle East and should be interpreted accordingly.

Renewable energy assets form a distinct and evolving segment of the wider infrastructure asset class. Valuation approaches must reflect the specific risk-return characteristics associated with these investments, including revenue support mechanisms, merchant exposure, leverage structures, technology maturity, construction risk and operational performance variability. For operational and late-stage construction projects, income-based valuation techniques, most commonly discounted cash flow (DCF) analysis, remain the prevailing approach. For earlier-stage development assets, where long-term cash flows are more uncertain, market-based valuation methods using EV/MW multiples are often utilised, with adjustments made for development milestones and probability of success.

Given the limited transparency of transaction-level pricing, this report provides an important market-led perspective on how investors are currently benchmarking risk and return across renewable energy technologies and geographies. Observed transaction internal rates of return (IRRs) and implied costs of capital derived from comparable market activity remain important valuation reference points to support this.

Set against a backdrop of sustained global investment driven by decarbonisation targets, electrification and energy security considerations, the renewable energy sector continues to attract significant capital deployment. Declining technology costs, improving operational performance and expanding merchant and hybrid revenue models continue to support transaction activity across wind, solar and storage assets. Looking ahead, investment in renewable energy infrastructure is expected to remain robust, underpinned by long-term policy objectives and the increasing integration of renewables into global power systems.

Global renewable energy investment in 2025

Global renewable energy investment in 2025

Across many global markets, the strongest opportunities in renewables are those that can support energy security, reduce exposure to volatile fossil fuel prices, and contribute to longer-term decarbonisation goals at the same time. Investment into renewable energy is guided by these overlapping pressures.

Global investor appetite for renewables remains high based on the overall volume of financing for projects in solar, wind, and BESS. The total deal value of global renewable energy project financing increased by 22% to $685.9 billion in 2025, compared with $563.3 billion in 2024.

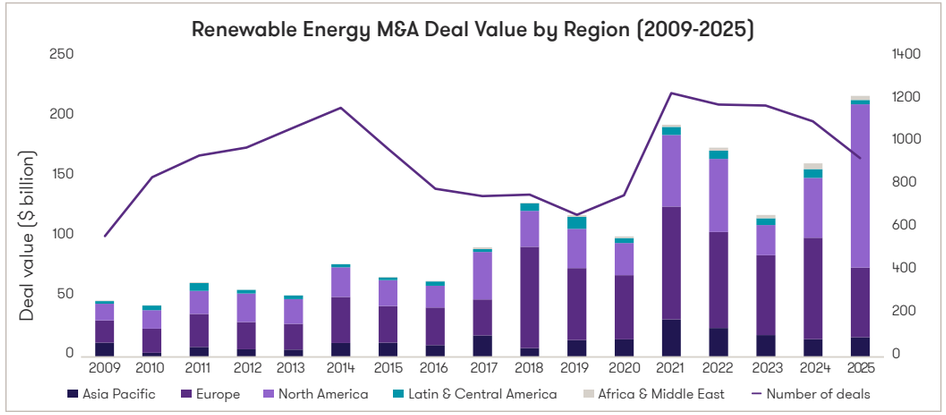
Renewable energy M&A activity also strengthened materially by deal value in 2025. Total M&A deal volume across all sectors rose to $217.7 billion in 2025 from $160.9 billion in 2024, an increase of 35%, while key sectors including solar PV and onshore wind accounted for $117.4 billion, up from $51.3 billion, lifting their share of total deal value from 43% to 57%.

The surge in financing for renewable assets is similarly reflected in the scale at which new renewable energy capacity is being added to the global grid.

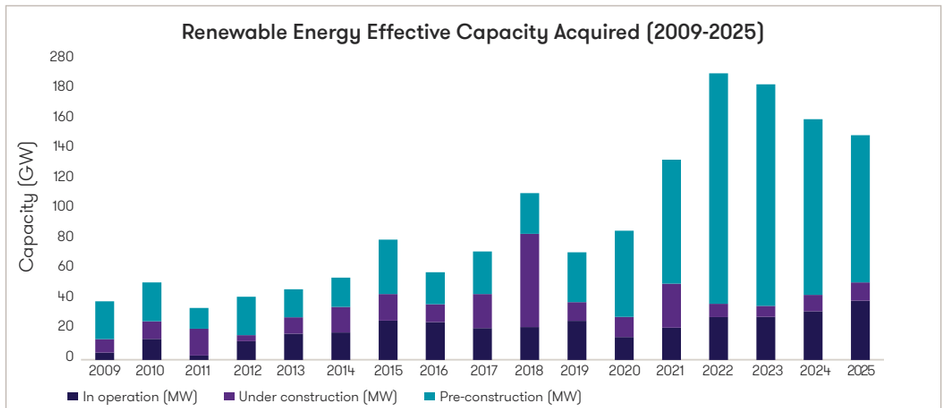
The International Renewable Energy Agency (IRENA) estimates the world's total renewable power capacity at 5,149 GW by the end of 2025[1], with 692 GW of new renewable energy additions, representing a 15.5% increase. 96.8% of new renewable energy capacity additions based on IRENA's 2025 capacity data.

The scale of renewables penetration differs greatly country by country and there are significant differences regarding the rate at which new renewable energy projects are being deployed.

Renewable energy investors and developers often have to navigate different risk and return profiles depending on a multitude of factors, including location, project status, local counterparties, pricing, grid connections, equipment costs, and more. Notwithstanding the geopolitical catalysts in the energy sector, such as conflicts in Ukraine and Iran, fluctuating global energy prices, rising energy demand, and supply chain constraints. This is particularly pertinent as we see slowing M&A since 2022 but pre-construction M&A remaining strong. This report aims to identify a number of key indicators and differentiators driving global renewable investment.



Source: Clean Energy Pipeline

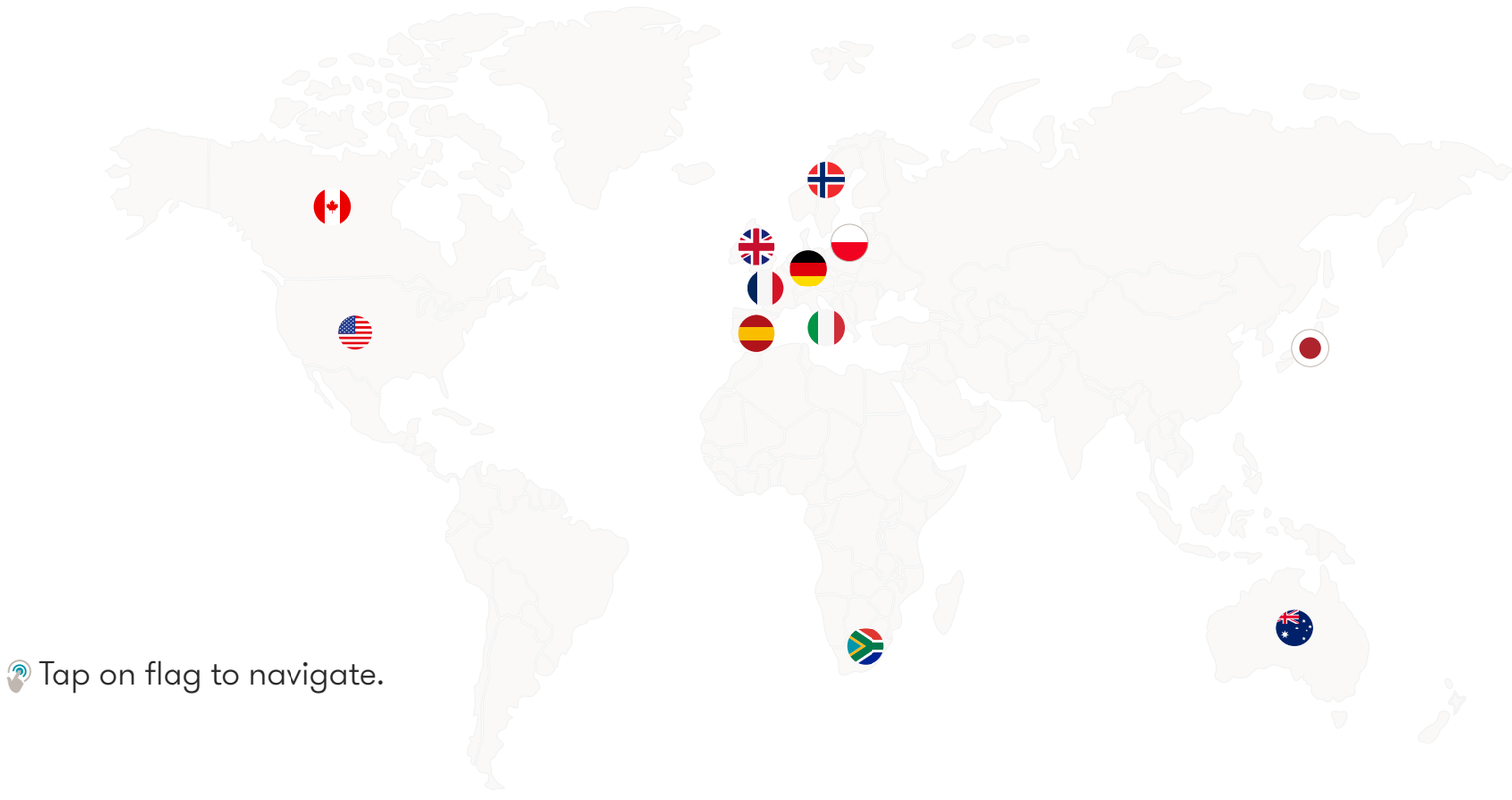


Source: Clean Energy Pipeline

1. https://www.irena.org/News/pressreleases/2026/Apr/Near-700-GW-Surge-in-2025-Proves-Renewable-Energy-Resilience

Global cost of capital » results

Global cost of capital results



Tap on flag to navigate.

Country index - renewables investment 2025

Country index - renewables investment 2025

Australia

PF Deal Value:	$11.5 billion
M&A Deal Value:	$3.9 billion

Capacity acquired:
- Operational: 1.2 GW
- Under Construction: 1.3 GW
- Development: 7.8 GW

Germany

PF Deal Value:	€16.8 billion
M&A Deal Value:	€2.5 billion

Capacity acquired:
- Operational: 1 GW
- Under Construction: 546 MW
- Development: 4.5 GW

Nordics

PF Deal Value:	€3.5 billion
M&A Deal Value:	€1.1 billion

Capacity acquired:
- Operational: 454 MW
- Under Construction: 435 MW
- Development: 7.7 GW

Spain

PF Deal Value:	€11.4 billion
M&A Deal Value:	€5.5 billion

Capacity acquired:
- Operational: 2.5 GW
- Under Construction: 1 GW
- Development: 3.9 GW

Canada

PF Deal Value:	$4 billion
M&A Deal Value:	$1.9 billion

Capacity acquired:
- Operational: 1.2 GW
- Under Construction: 369 MW
- Development: 2.1 GW

Italy

PF Deal Value:	€5.3 billion
M&A Deal Value:	€1.4 billion

Capacity acquired:
- Operational: 896 MW
- Under Construction: 213 MW
- Development: 3.5 GW

Poland

PF Deal Value:	€3.5 billion
M&A Deal Value:	€965 million

Capacity acquired:
- Operational: 349 MW
- Under Construction: 44 MW
- Development: 2.6 GW

UK

PF Deal Value:	£13.8 billion
M&A Deal Value:	£3.2 billion

Capacity acquired:
- Operational: 581 MW
- Under Construction: 1.7 GW
- Development: 6 GW

France

PF Deal Value:	€5.7 billion
M&A Deal Value:	€4.5 billion

Capacity acquired:
- Operational: 2.8 GW
- Under Construction: 790 MW
- Development: 1.1 GW

Japan

PF Deal Value:	$3.7 billion
M&A Deal Value:	$767 million

Capacity acquired:
- Operational: 289 MW
- Under Construction: 28 MW
- Development: 184 MW

South Africa

PF Deal Value:	$4.3 billion
M&A Deal Value:	$103 million

Capacity acquired:
- Operational: 133 MW
- Under Construction: N/A
- Development: 60 MW

USA

PF Deal Value:	$116.6 billion
M&A Deal Value:	$9.3 billion

Capacity acquired:
- Operational: 5.2 GW
- Under Construction: 1.2 GW
- Development: 11.3 GW

Source: Clean Energy Pipeline

*All Renewable technologies tracked by Clean Energy Pipeline comprise both established and nascent sectors, including: Solar PV, Onshore/Offshore Wind, BESS, Green Hydrogen, Hydro, Tidal, Biomass, EV charging infrastructure, Waste-to-Energy, and more.

*Project Finance (PF) and Mergers & Acquisitions (M&A) transaction data is based on the total deal value of renewable energy projects in 2025, including Solar Photovoltaic (PV), Onshore Wind, and Battery Energy Storage Systems (BESS) / co-located BESS.

*BESS capacity has been standardised to a two-hour charging duration for comparability. For example, a 20 MW project with a four-hour charging duration is presented as 40 MW on a two-hour equivalent basis.

Valuation methodologies and approaches

Valuation methodologies and approaches

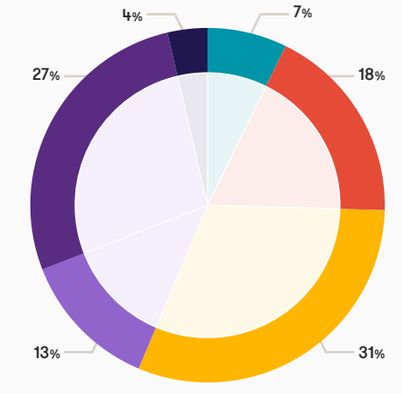
Infrastructure valuation is becoming more bespoke, with survey responses reflecting a market that is both more advanced and more differentiated in requirements, optionality and development.

Merchant Premia

Survey responses on discount rate premia for fully merchant projects show a clear concentration within a defined range, with most respondents expecting uplifts of of between 100 and 300 basis points (bps) relative to contracted revenue projects. The strongest clustering sits in the 150–200 basis point range, followed closely by 250–300 bps, while very few respondents anticipate either negligible premia or extreme uplifts beyond 300 bps.

This pattern indicates that merchant risk is no longer being treated as a binary condition, but instead is increasingly differentiated based on factors such as duration of exposure, volatility of cash flows and the presence of downside mitigation. In practice, this reflects a market that has become more comfortable underwriting merchant revenues within discounted cash flow frameworks, rather than defaulting to blunt increases in discount rates.

What discount rate premium do you expect to see, if any, for a fully merchant project compared to a project with contracted revenues?



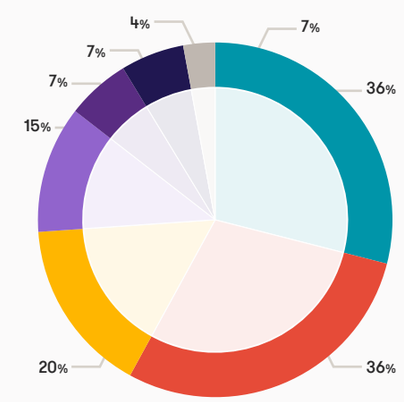
Terminal Value

A similar refinement is evident in the treatment of terminal value assumptions. Historically, residual value was often assumed to be limited to scrap value, effectively implying no terminal value. Our survey results suggest this view is evolving, particularly as projects mature or approach the end of their original project lives.

Approximately 36% of respondents identified repowering as a basis for terminal value, reflecting the growing feasibility of extending project lives where grid constraints remain and opportunities to increase capacity emerge. While realisation of this value remains contingent on factors such as lease extensions and technical feasibility, repowering is increasingly being viewed as a credible source of incremental value rather than a theoretical upside.

We would also like to reference that respondents highlighted terminal value being associated with the value of the land and grid connection, highlighting the value in overcoming this bottleneck.

What is your approach to terminal value, if any? (Select all that apply)

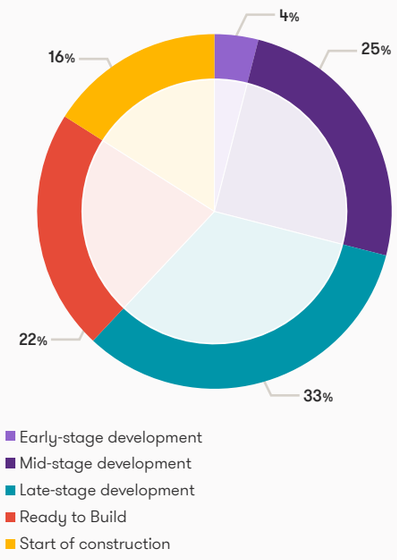


Please note respondents could select multiple answers to this question, therefore the total percentage in the chart above is greater than 100%.

Value Accretion

Responses on the timing of valuation uplifts above cost highlight how approaches to valuing pre-construction projects are evolving. Considering challenges faced by developers such as oversubscribed grid connection queues and complex permitting processes, only c.4% of respondents recognise any value above cost for early-stage pre-construction projects. Meanwhile, c.71% of respondents do not recognise any value above cost until either late-stage development or later in the process. This represents the significant de-risking which occurs later in the development process, as projects finalise grid, planning and permitting arrangements, alongside negotiating and optimising offtake and financing structures. Given the uncertainty which developers need to navigate in earlier-stages of development, the responses suggest that value recognition is most commonly delayed until there is greater certainty that a project will reach COD.

At what point do you recognise value uplift above costs to develop for a development pipeline?



Pre-construction assets

The survey responses also point to a pragmatic approach to valuing projects at the pre-construction stage. Rather than applying discounted cash flow models prematurely, respondents recognise the importance of cost and market based valuation approaches, which together account for c. 51% of responses.

Valuation methodology is commonly described as stage dependent, with discounted cash flow analysis typically introduced only once key development milestones have been achieved, and projects are approaching a 'ready to build' phase. This reflects a broad recognition that early stage value is driven primarily by risk mitigation and the preservation of development optionality, rather than the optimisation of long term cash flow forecasts.

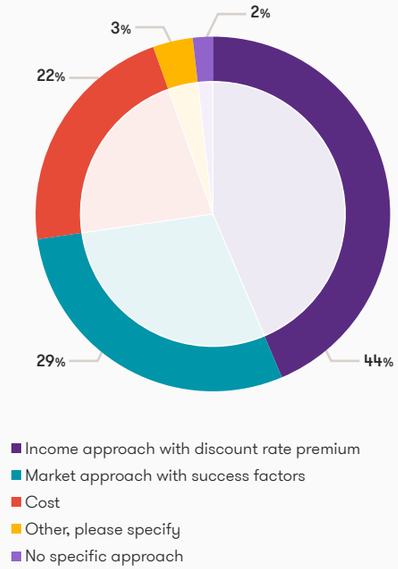
In this context, cost and market based approaches are viewed as credible alternatives for valuing early stage projects, with approximately 29% of respondents identifying a market based methodology as their primary approach. This typically involves applying probability weightings or success factors to reflect progress against key development milestones.

By aligning valuation techniques more closely with development maturity, valuers are reducing the risk of false precision and ensuring that reported values remain anchored in observable progress rather than theoretical outcomes.

Other responses included utilising a DCF to complete an impairment test, to check whether any impairment to the cost-based valuation should be recognised.

c. 44% of respondents selected the income approach with a discount rate premium, making it the most popular approach. As demonstrated by the responses on the timing of valuation uplifts above cost, the use of the income approach may vary significantly depending on the maturity of the pre-construction project. The relevance of the income approach tends to increase as projects progress through development milestones towards RTB, when greater certainty over future cash flows exists.

What is your main valuation approach applied to preconstruction assets, if any?



BESS co-location and hybrid valuation

Finally, the treatment of co-located and hybrid projects (particularly solar/wind paired with BESS) underlines how valuation practice is adapting to greater system complexity, but the survey evidence suggests the market has not yet converged on a single standard approach.

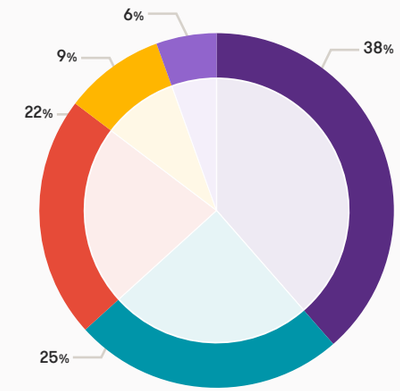
Quantitatively, the most common response is still to treat the hybrid as two separate projects (c. 38% of respondents), indicating that many practitioners continue to value the generation and storage components on a standalone basis, even when they share infrastructure or a connection point. Alongside this, a material portion of respondents reported no specific approach (c. 25%), which points to an area of practice that is still developing and often handled case by case rather than through a consistent valuation framework.

That said, the remaining responses show clear evidence of increasing integration in how valuers think about co-located sites. A further c. 22% of respondents value the site primarily through the solar/wind project lens, and c. 6% primarily through the BESS lens, implying that some participants anchor valuation on the "lead" project and treat the co-located component as secondary or supportive rather than fully independent. Importantly, the qualitative "other" responses (c. 9%) reinforce an emerging theme: where there is meaningful operational and revenue linkage, respondents explicitly describe valuation on a combined basis, referencing "combined economics", "revenue interaction", and outcomes that "depend on how BESS interacts with the solar array", including viewing the site as a "single combined project".

Taken together, the data implies a bifurcation in current practice. There is a clear and growing emphasis, particularly in the qualitative commentary, on the need to reflect interaction (dispatch optimisation, capture price uplift, constraint management, and revenue cannibalisation or enhancement).

In practical terms, this reinforces the direction of travel: hybrid projects increasingly require modelling frameworks that can capture interdependent cash flows and operational coupling, rather than relying solely on additive standalone valuations, even if that remains the most prevalent approach today.

What is your main approach to valuing co-located or hybridised assets with BESS?



Concluding remarks

Concluding remarks

Taken together, these insights reinforce the view that the next phase of infrastructure valuation is characterised less by methodological change and more by improved judgement and selectivity. Across discount rates, terminal value treatment, development stage valuation and hybrid project modelling, the emphasis is increasingly on ensuring that assumptions are closely aligned with project specific risk profiles and macroeconomic exposure.

In this environment, valuation robustness is less about complexity of modelling and more about the clarity with which value drivers, risks and optionality are articulated and defended.

We hope you find this report insightful.

If you'd like to discuss this report further or have any feedback, please contact:

Jade Palmer
Partner
Grant Thornton UK Advisory & Tax LLP
E: jade.l.palmer@uk.gt.com

Tristan Rawcliffe
Associate Director
Grant Thornton UK Advisory & Tax LLP
E: tristan.ej.rawcliffe@uk.gt.com

Endnotes

Australia

1. https://www.dcceew.gov.au/energy/renewable/capacity-investment-scheme
2. https://www.dcceew.gov.au/energy/renewable/priority-list
3. https://cer.gov.au/markets/reports-and-data/quarterly-carbon-market-reports/quarterly-carbon-market-report-december-quarter-2025/large-scale-renewable-electricity

Canada

4. https://www.canada.ca/en/environment-climate-change/services/climate-change/pricing-pollution-how-it-will-work.html
5. https://www.canada.ca/en/revenue-agency/services/tax/businesses/topics/corporations/business-tax-credits/clean-economy-itc/clean-technology-itc/about-ct-itc.html?utm_source=chatgpt.com
6. https://natural-resources.canada.ca/minerals-mining/mining-data-statistics-analysis/minerals-metals-facts/coal-facts
7. https://www.canada.ca/en/environment-climate-change/corporate/transparency/strategic-environmental-economic-assessments/clean-electricity-regulations.html
8. https://www.cer-rec.gc.ca/en/data-analysis/energy-markets/renewable-energy-canada/provinces/renewable-power-canada-canada.html

France

9. https://presse.economie.gouv.fr/le-gouvernement-publie-la-troisieme-programmation-pluriannuelle-de-lenergie-une-strategie-pour-la-souverainete-energetique-de-la-france/
10. https://presse.economie.gouv.fr/le-gouvernement-publie-la-troisieme-programmation-pluriannuelle-de-lenergie-une-strategie-pour-la-souverainete-energetique-de-la-france/
11. https://www.cre.fr/electricite/soutien-a-la-production/dispositifs-de-soutien-aux-enr.html
12. https://www.cre.fr/fileadmin/Documents/Rapports_et_etudes/2025/250327_Rapport_PPA.pdf
13. https://presse.economie.gouv.fr/le-gouvernement-publie-la-troisieme-programmation-pluriannuelle-de-lenergie-une-strategie-pour-la-souverainete-energetique-de-la-france/

Germany

14. https://www.gesetze-im-internet.de/eeg_2014/__1.html
15. https://data.bundesnetzagentur.de/Bundesnetzagentur/SharedDocs/Downloads/EN/Areas/ElectricityGas/CollectionCompanySpecificData/Monitoring/MonitoringReport2025.pdf
16. https://www.bundesnetzagentur.de/SharedDocs/Pressemitteilungen/EN/2026/20260108_Wind.html
17. https://www.destatis.de/EN/Themes/Economic-Sectors-Enterprises/Energy/Production/Tables/gross-electricity-production.html

Italy

18. https://www.gse.it/servizi-per-te/fonti-rinnovabili/ferx/prezzi-di-aggiudicazione
19. https://www.gse.it/servizi-per-te/news/fer-x-pubblicate-le-graduatorie-dei-bandi-per-impianti-eolici-e-fotovoltaici
20. https://www.gse.it/servizi-per-te/fonti-rinnovabili/ferx/prezzi-di-aggiudicazione
21. https://www.gse.it/servizi-per-te/news/fer-x-pubblicate-le-graduatorie-dei-bandi-per-impianti-eolici-e-fotovoltaici
22. https://download.terna.it/terna/Terna_Piano_Sviluppo_2025_Overview_8dd62ebfc87edf6.pdf
23. https://www.gse.it/servizi-per-te/energy-release/energy-release-2-0
24. https://www.gazzettaufficiale.it/eli/id/2024/07/02/24A03360/SG
25. https://download.terna.it/terna/Rapporto_mensile_dicembre_25_8de59df161f93af.pdf
26. https://www.mase.gov.it/portale/-/clima-energia-l-italia-ha-inviato-il-pniec-a-bruxelles

Japan

27. https://www.enecho.meti.go.jp/en/category/others/basic_plan/pdf/7th_outline.pdf
28. https://www.meti.go.jp/english/press/2024/0319_001.html
29. https://www.enecho.meti.go.jp/en/category/special/article/detail_173.html
30. https://nyusatsu.occto.or.jp/
31. https://www.enecho.meti.go.jp/category/others/basic_plan/pdf/2025_strategic_energy_plan.pdf

Nordics

32. https://www.nordpoolgroup.com/en/trading/Day-ahead-trading/Price-calculation/
33. https://www.en.kefm.dk/Media/C/5/Energy%20Agreement%202018%20a-webtilg%C3%A6ngelig.pdf
34. https://www.government.se/contentassets/e731726022cd4e0b8ffa0f8229893115/swedens-draft-integrated-national-energy-and-climate-plan/
35. https://www.nve.no/norwegian-energy-regulatory-authority/the-norwegian-energy-regulatory-authority/water-values-how-do-we-ensure-that-we-utilize-hydropower-in-the-best-possible-way
36. https://stat.fi/en/statistics/ehk

Poland

37. https://www.gov.pl/web/klimat/polska-osiaga-50-mocy-z-oze--historyczny-przelom
38. https://www.gov.pl/web/klimat/polsko-niemieckie-rozmowy-dot-energii
39. https://www.pse.pl/-/projekt-nowego-planu-rozwoju-sieci-przesylowej-na-lata-2025-2034-uzgodniony
40. https://www.ure.gov.pl/en/communication/news/449%2C2025-RES-Auctions-Solar-tops-wind-again.html
41. https://www.gov.pl/web/gov/skorzystaj-z-programu-moj-prad

South Africa

42. https://www.dmre.gov.za/Portals/0/Energy%20Resources/IRP/IRP%202025/User-Friendly-IRP-2025.pdf?ver=d278hZ0IzvO7hlWLiwLoaQ%3D%3D&
43. https://www.eskom.co.za/update-on-the-establishment-of-the-independent-transmission-system-operator-tso

Spain

44. https://www.miteco.gob.es/es/energia/estrategia-normativa/pniec-23-30.html
45. https://www.ree.es/en/press-office/news/press-release/2026/03/the-spanish-electricity-system-in-2025-electricity-demand-generation-and-installed-power-capacity-increase
46. https://www.miteco.gob.es/es/prensa/ultimas-noticias/2024/septiembre/el-gobierno-aprueba-la-actualizacion-del-plan-nacional-integrado.html

United Kingdom (UK)

47. https://www.gov.uk/government/publications/clean-power-2030-action-plan/clean-power-2030-action-plan-a-new-era-of-clean-electricity-main-report
48. https://www.gov.uk/government/news/new-auction-delivers-unprecedented-clean-homegrown-power
49. https://www.ofgem.gov.uk/sites/default/files/2025-04/Gate-2-Criteria-Methodology-Final-Decision.pdf
50. https://www.neso.energy/industry-information/connections-reform/about-connections-reform

United States of America (USA)

51. https://www.energy.gov/articles/doe-releases-new-report-evaluating-increase-electricity-demand-data-centers
52. https://www.eia.gov/todayinenergy/detail.php?id=67367&
53. https://www.irs.gov/credits-deductions/clean-electricity-production-credit
54. https://ceba.org/ceba-analysis-shows-corporate-clean-energy-breaks-130-gw/

GRANTTHORNTON.CO.UK

Grant Thornton