



Climate action and cost of capital

Impact of emissions and climate disclosure
Summary of research

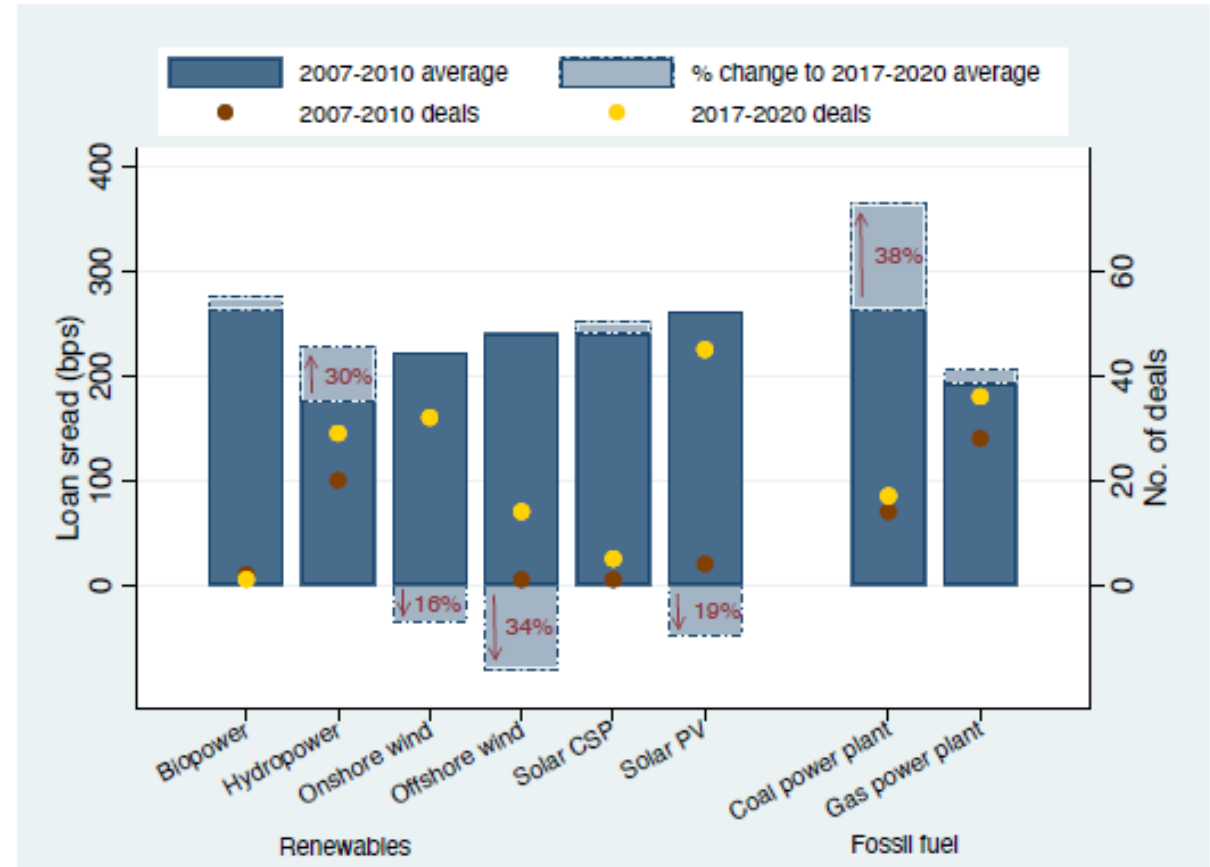
March 21

Evidence

- Coal is the first sector where the climate transition has materially altered the cost of capital via debt and equity
- As a result coal is no longer economically viable
- This divergence in cost of capital is now taking place throughout the energy sector – penalising fossil fuels
- Credit rating agencies are now incorporating climate transition in their analysis of all sectors
- This is driving lower spreads for green bonds through higher demand
- Sector leadership on climate transition is also reflected in equity multiples

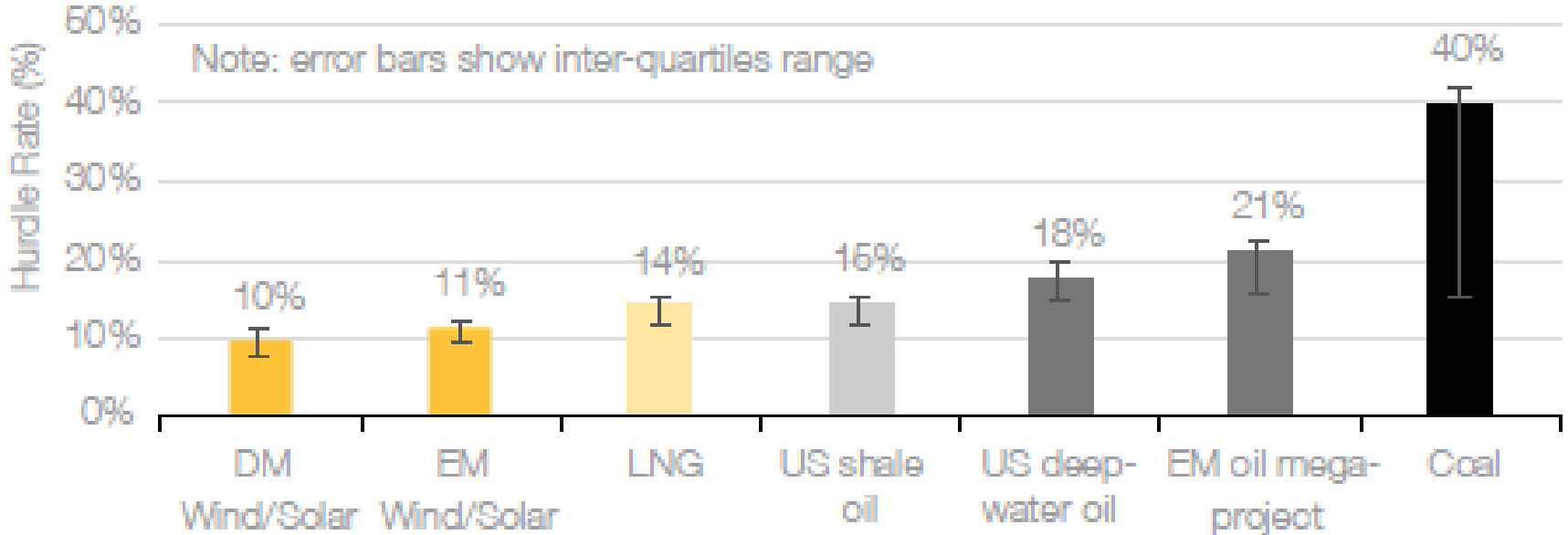
Cost of capital already penalised for coal

- In fossil fuels, coal power bank loan spreads increased 38%, from 264bps to 365bps, while gas and oil power marginally increased.
- In renewables, offshore wind fell 34%, onshore wind 16%, and solar PV 19%.



Coal no longer economically viable

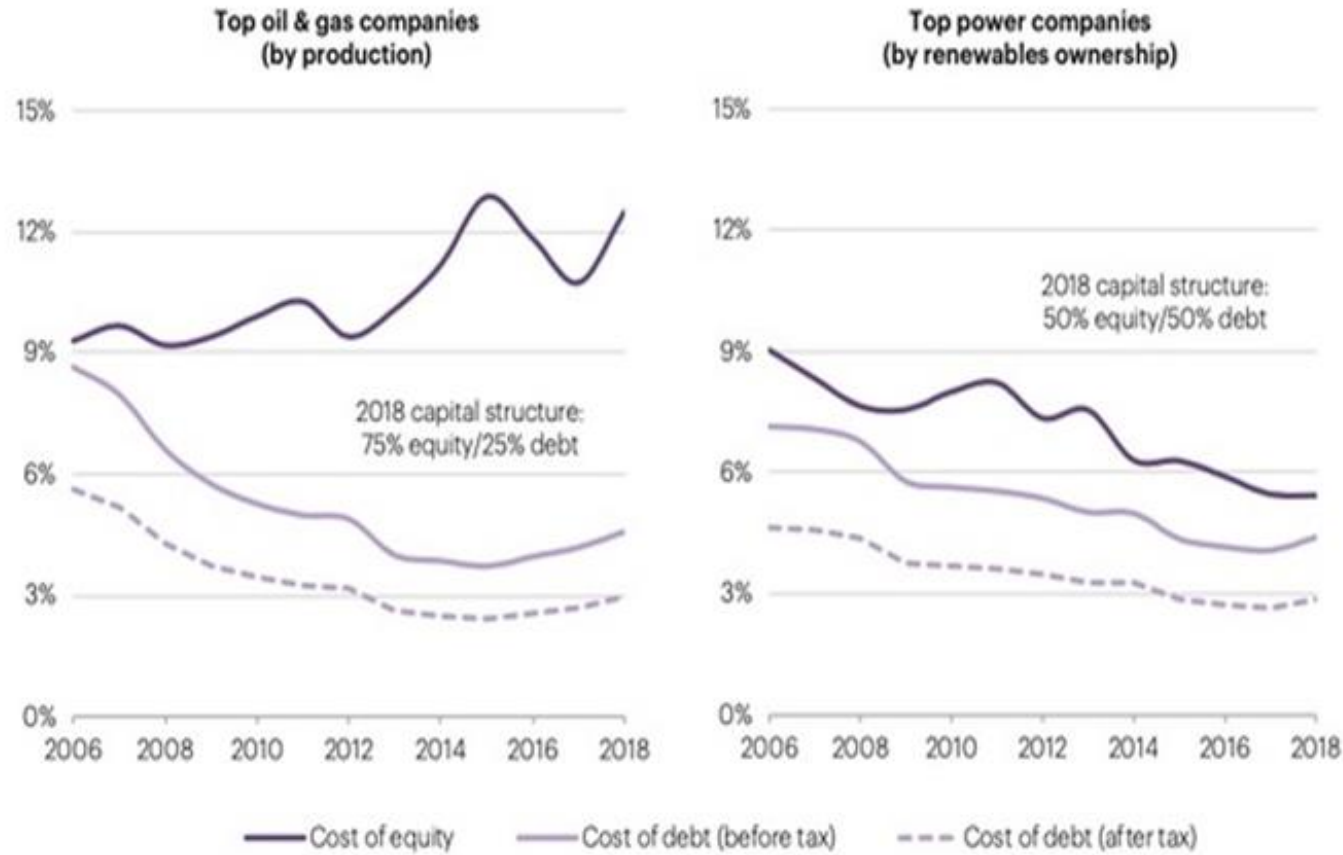
Fig 1
Hurdle rates suggested by investors for new fossil fuel investments



Source: companies, Redburn

Energy sector – fossil fuels versus renewables

Drivers of weighted average cost of capital (WACC) for listed energy companies

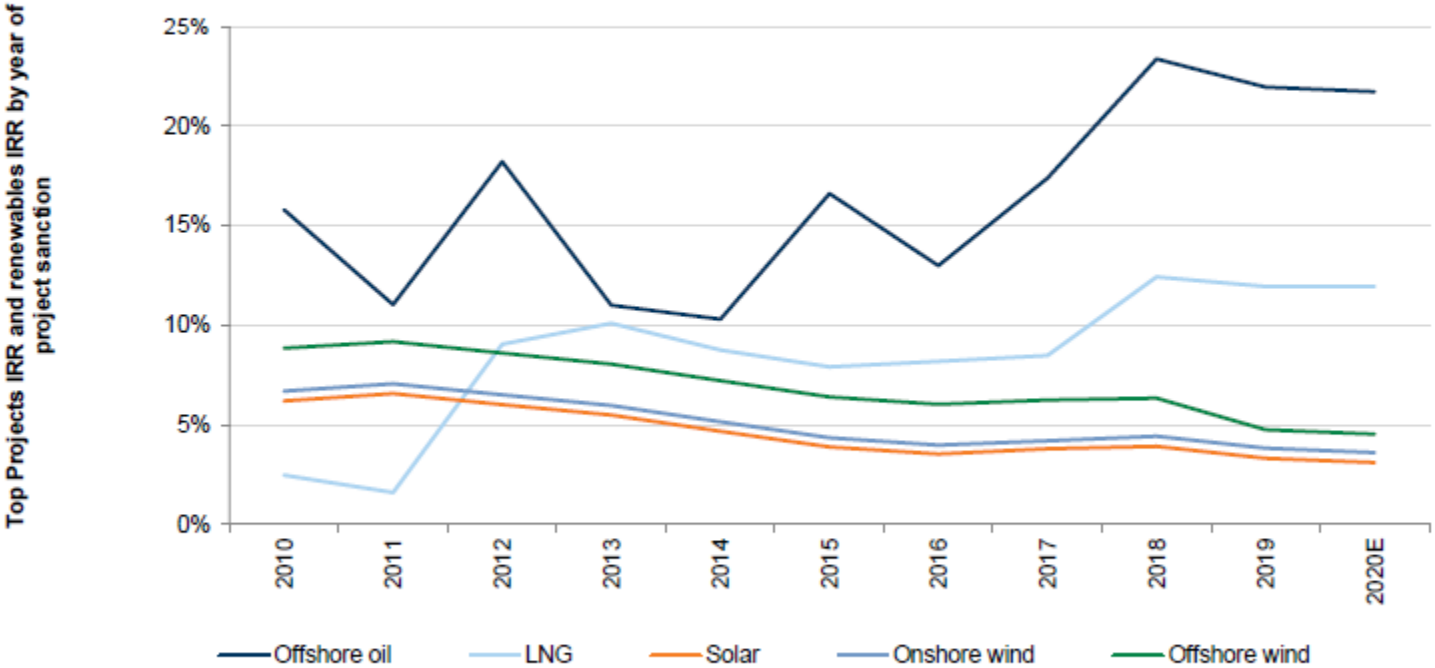


Note: The samples contain the top 25 listed energy companies (in 2018) by oil and gas production and power companies by ownership of solar and wind capacity. Companies based in China and Russia are excluded from the analysis

Source: IEA analysis with calculations based on company data from Thomson Reuters Eikon (2019) and Bloomberg (2019).

Companies prices energy transition

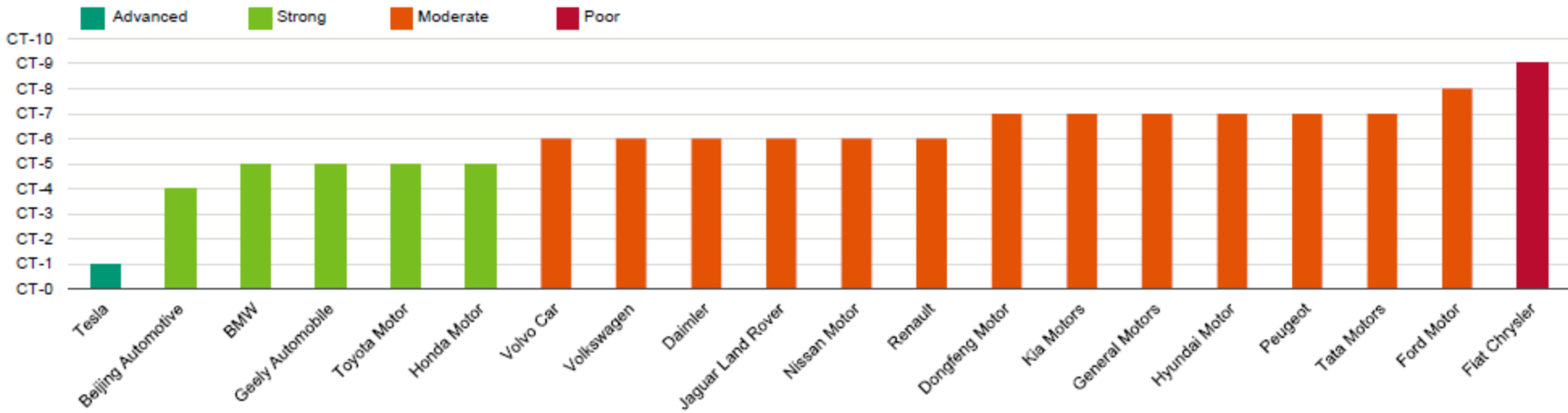
Exhibit 15: The cost of capital for clean energy continues on a downward trend, whilst financing conditions are tightening for the new hydrocarbon developments
Top Projects IRR for oil & gas and renewable projects IRR by year of project sanction



Source: Goldman Sachs Global Investment Research

Rating agencies incorporating transition risk for many key sectors

Exhibit 5
Substantial variation exists in automakers' carbon transition risk profiles
Carbon transition assessment (CTA) scores for 20 leading automakers



Note: CTA scores only consider issuer's light vehicle operations and exclude commercial trucks. Scores for parent companies reflect consolidated operations including subsidiaries. Beijing Automotive and Dongfeng analysis reflects light vehicle unit production from their own brand operations and do not include those from their joint ventures. Joint venture production is attributed to the foreign car brand (e.g., Beijing-Benz is attributed to Daimler AG). Geely's analysis includes unit production from its Lynk & Co joint venture.
Source: Moody's Investors Service

Green bonds rewarded with lower spreads

Verified/Certified Green Bonds Enjoy Lower Cost of Borrowing

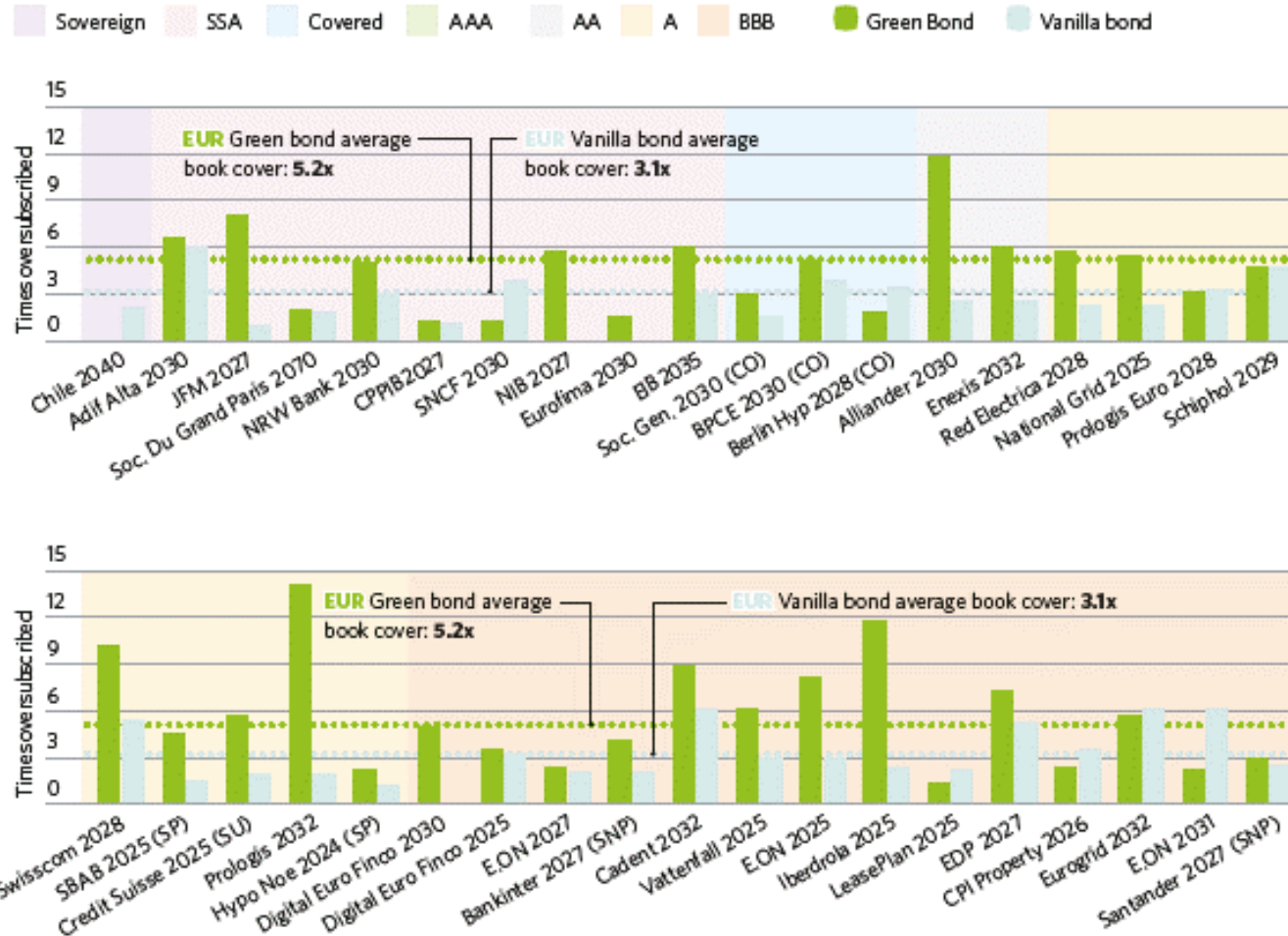
- Green bonds generally enjoy a **lower cost of borrowing**.
- The cost reduction is **tangible if they are verified or certified**.



Sources: Moinas and Bao (2020) and HKIMR staff compilation.

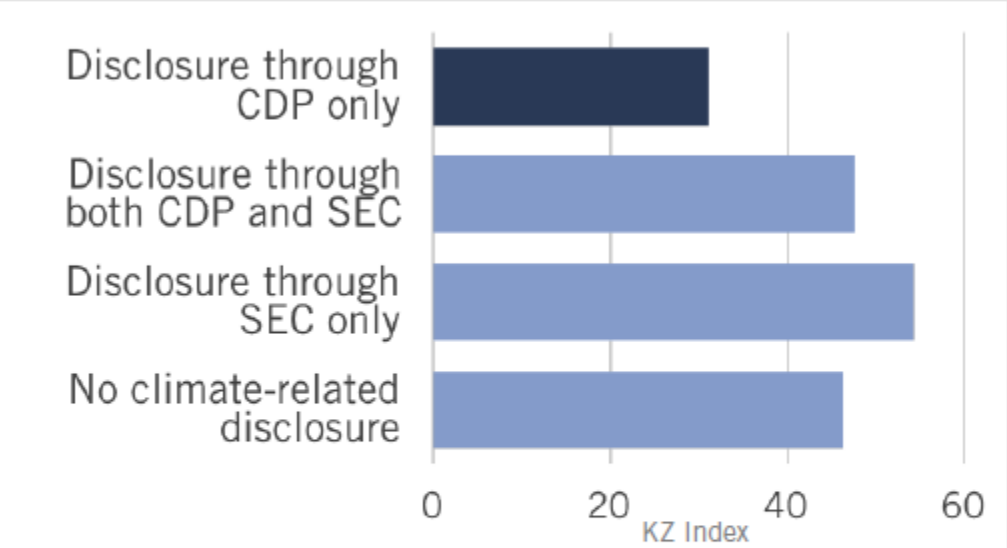
Due to broader investor demand

22 out of 34 EUR green bonds attracted higher book cover than vanilla equivalents



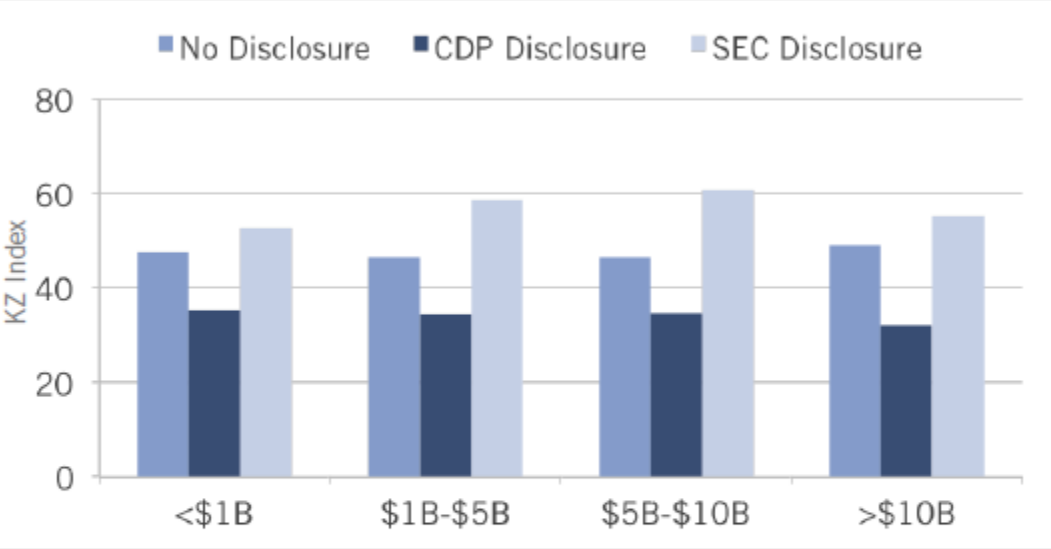
Climate disclosure increases access to capital

Exhibit 2 - Average Access to Capital Rankings Based on CDP and/or SEC Disclosure



These rankings are based on the KZ Index, which measures the degree to which a firm is constrained for capital. Companies that rank better on the KZ index will be closer to 0, which means that they have better access to capital. As the graph shows, firms that have disclosed through the CDP have better access to capital.

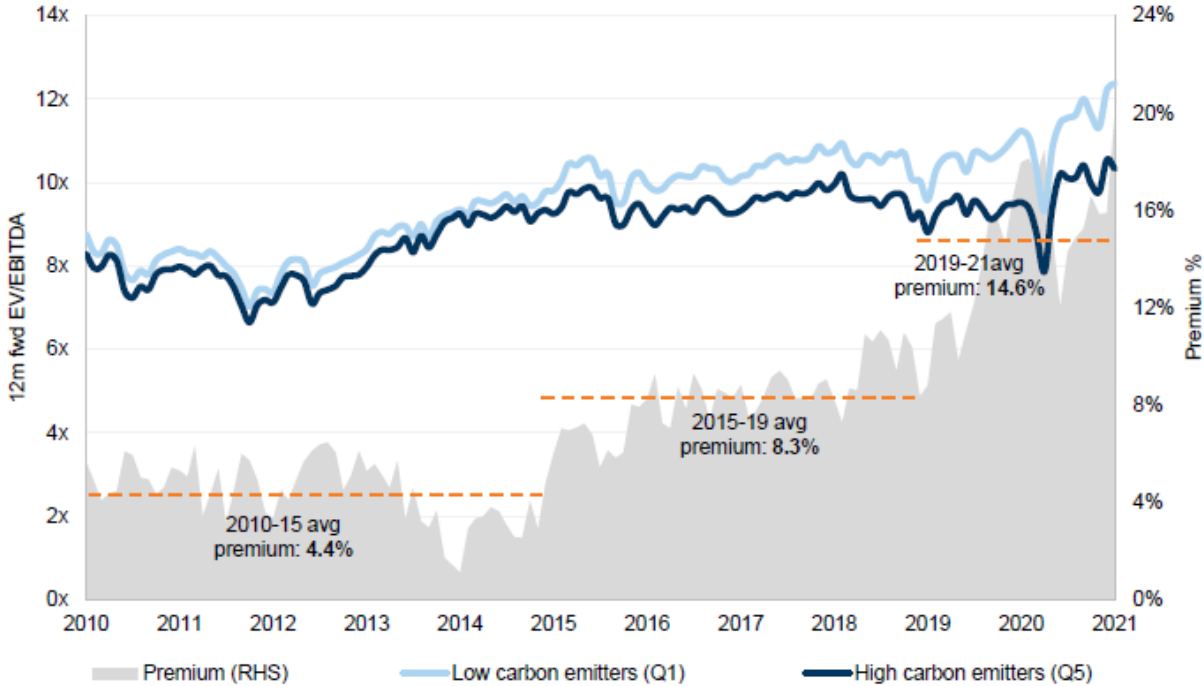
Exhibit 3 - Access to Capital Ranking and Total Assets



Larger firms are more likely to disclose, but the access to capital advantage (disadvantage) of disclosure through CDP (SEC) is mostly consistent across firm size. The graph above shows that firms consistently rank better (worse) on the KZ index when disclosing through CDP (SEC), regardless of size.

Climate transition leadership now rewarded within sectors via equity multiples

Low carbon intensive companies are trading at increasingly elevated premiums vs. high emitting sector peers
 Low carbon (Q1) vs. high carbon emitters (Q5) (Total Scope 1 & 2 GHG Emissions / GFA) 12-month-forward EV/EBITDA multiples (2010 - 2021), excluding Financials



Low and high carbon emitters are determined by taking the average of total scope 1&2 CO2 emissions normalized to gross fixed assets in USD relative to GS SUSTAIN industry peers since 2010, where at least 5 years of carbon data is available.

Source: Refinitiv, FactSet, Bloomberg, Goldman Sachs Global Investment Research