RESEARCH SPOTLIGHT RENEWABLES IN 2023 – Q3 2023

The first three guarters of 2023 have been unexpectedly challenging for companies in the renewable energy sector. In our Q4 2022 newsletter, we discussed how 'growth' equities faced challenges in the new environment as business models faced up to higher interest rates, higher financing costs, and increased valuation discipline from investors. However, despite these challenges, one subset of the 'growth' complex that still had strong prospects was renewable energy, as the underlying drivers of climate change mitigation demand, along with the switch to net zero and government policy support were very much intact. Today, additional drivers such as the ongoing Ukraine war and high global energy prices are also very much still in place, and supporting the case for renewables generation and investment. From a top-down perspective, it has therefore been surprising to see significant underperformance YTD, both when judged against the traditional 'brown' energy sector, overall equity markets and especially other parts of the 'growth equity' complex. The divergence between 'green' and 'brown' in the last quarter has been especially dramatic and clearly challenging for ESG focused investment strategies.

In the section below, we examine why the recent period has been such a challenging environment for the sector. We have witnessed a series of landmines, so to speak, and whilst some companies have managed these well, others have faced severe issues.

Supply Chains and Raw Materials

Q3 2023

Earlier this year, Willis Towers Watson issued the 2023 Supply Chain Risk Report which surveyed 100 senior decision makers at renewable energy companies and found that 74% of businesses said losses related to the supply chain had been higher or much higher than expected over the last two years. A shortage of raw materials topped the list of factors having the greatest impact on renewables business in the next two years, named by 44% of respondents among their biggest concerns.[1] One example is polysilicon, the starting material for wafers in solar cells. China produces 79% of the world's supply of polysilicon and COVID-19 lockdowns, factory accidents, and floods have sharply reduced near-term availability. Between 2020 and June 2022, the price of polysilicon rose by 350% and unfortunately for corporate margins, price hedging in rawmaterials purchasing is not a widespread practice.[2]

Cost inflation has also affected commodities needed for wind turbines. Turbines are 40–50% steel, copper, and aluminium.[3] Due to the combination of rising global



he above chart shows the performance (1st Jan 2023 - 30th September 2023) of the S&P Global Clean Energy Index, MSCI World, MSCI World Growth and the S&P Global Energy Index. Source: ECO Advisors, Bloomberg

demand for wind energy and pandemic-related supply issues, the prices of steel, copper, and aluminium have experienced two to threefold increases over the past few years.[4]

Fluctuations in the supply and prices of raw materials have made the practice of securing good prices for large quantities of raw materials very difficult. Leading turbine manufacturers and cable suppliers have tried to pass the increased costs of materials on to their customers. However, several have issued "profitability warnings, in part because some of their long-term contracts with customers contain fixed prices that do not allow adjustments."[5]



Footnote: Willis Towers Watson, 2023, pp. 1–15, 2023 Renewable Supply Chain Risk Report.

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Labour Shortages

According to the Willis Towers Watson survey, difficulties in attracting and retaining talent also figure prominently as an industry and supplier problem.[6] Employment in renewable energy is growing, with solar and wind jobs outpacing the rest of the domestic economy, DOE said following a June jobs report.[7] However, demand for green jobs is outpacing the availability of qualified workers across the supply chain. At the same time, 68% of wind energy employers had faced "some or great difficulty" finding qualified applicants.[8] Germany currently faces a shortage of around 216,000 skilled workers needed for the expansion of the solar and wind energy sectors, a study by the Competence Centre for securing skilled labour showed.[9] It seems that a lack of early-career experience opportunities is driving a "workforce gap," according to two studies from the National Renewable Energy Laboratory. [10] Companies are taking steps to address the issue. Last year, Enpal opened its own centre south of Berlin to train up installers of residential solar panels over two weeks before they join experienced installers on the job. Enpal has trained more than a thousand people who were eventually hired and is booked out for the next six months. [11]

Higher Interest Rates

As global central banks have boosted interest rates to tame inflation, project financing costs have increased. This has challenged the economic viability of some recent projects which were planned under lower cost of capital regimes. Reflecting this challenge, some developers have even paid to get out of their contracts rather than build them and face years of losses or low returns, despite rising global demand for wind energy and ambitious government targets for renewable energy production. In Massachusetts, two offshore wind developers, SouthCoast Wind and Commonwealth Wind agreed to pay to terminate deals that would have delivered around 2,400 MW of energy.[12]

Orsted recently reported that since US long-dated interest rates have increased, its US offshore projects and certain onshore projects have been affected. If interest rates remain at the current levels by the end of third quarter, it could cause impairments of around DKK5bn. The company told utility regulators in June that it would not be able to make a planned final investment decision to build its proposed 924-MW Sunrise Wind project unless its power purchase agreement was amended to factor in recent inflation.[13]

Offshore wind developers have reacted by seeking to boost the price of power produced at their projects. This came into public focus in September as a UK auction for contracts to build new wind farms received zero bids from developers. It was the first time that happened since the current system was introduced almost a decade ago.[14] Under the Contract for Difference auction system, the government sets a baseline price for the power generated. Companies have to pay anything in excess of that level back to the Treasury, while they get compensated if electricity market prices fall below. The aim of the subsidies is to ensure a guaranteed price.[15] Ministers and officials were told ahead of the auction that the price they had set for the auction was too low to reflect the increases in costs.[16]

Of course, most auctions do not fail, and other governments are listening to what the industry has been communicating around cost pressures. The Irish Government recently ran an auction on a similar basis. Having accepted the need to put the price cap up, it secured 3GW of offshore wind at a price that is still favourable compared to other technologies.[17]

Permitting

Permitting issues are also causing delays and raising costs in certain markets. The US offshore wind industry has developed much more slowly than in Europe because it took years for the states and federal government to provide investment subsidies and draw up rules and regulations governing the industry, slowing leasing and permitting. Although better than the US, "permitting remains one of the biggest bottlenecks for a fast expansion of wind energy. Around 80 GW of wind projects are still stuck in bureaucratic processes all around Europe." [18]

The Inflation Reduction Act

The Biden administration has sought to boost clean energy development with the passage of the Inflation Reduction Act (IRA), a law that provides billions of dollars of incentives to the renewable energy sector. Since the law passed last year, companies have announced billions of dollars in new manufacturing for solar and electric vehicle batteries across the U.S. [19] However, promises of Investment Tax Credits (ITC) have been somewhat challenging to secure. We recently met with several renewable energy sector senior executives who highlighted the challenges to us, noting the criteria and definitions for the IRA were often complex and incomplete, and were making it difficult for them to take full advantage of the subsidies. [20]

Bonus incentives for using domestic materials and for siting projects in disadvantaged communities were recently rolled out. The credits are each worth 10% of a project's cost and can be claimed as bonuses on top of the IRA's base 30% credit for renewable energy projects – bringing a project's total subsidy to as much as 50%. [21] However, developers claim these were too difficult to secure, as expectations around local sourcing were too high when the incentives were drafted. [22] That said, certain companies have been able to take fuller advantage of the IRA and the ITCs. For example, First Solar is investing \$1.3bn in expanding its manufacturing operations in the US as the company draws close to selling out of product through 2026. [23] The company's chief commercial officer, Georges Antoun, stated that the IRA was a catalyst in their decision to expand. "This record backlog, orders stretching out to a few years, over 80 gigawatts of potential booking opportunities, and the certainty that IRA is expected to provide, supplied the fundamentals we needed to move forward with our investment decision," he said. [24]

On the other hand, Orsted had been assuming that several of its projects could qualify for the bonus component and could benefit from a 40% ITC, rather than the base 30%. Orsted has now admitted it is very unlikely that any existing project can benefit from the local content criteria. Other large developers of US renewables, such as lberdrola and EDPR, were more prudent when it came to the bonus component. They signed the contracts for new PPAs while they were awaiting guidance on the bonus credits assuming the base credit was the central-case scenario and that a bonus credit would provide upside. [25] Trade groups representing other developers pursuing offshore wind projects in the U.S. told Reuters they are pressing officials to rewrite the requirements, and warning of lost jobs and investments otherwise. [26]

Renewing Renewables: Facing the Headwinds

Despite these near term challenges, the top-down outlook and demand for renewable energy remains very strong. To begin, the case from climate science is stronger than ever, as we've discussed in our review of the IPCC's Sixth Assessment, COP26 and COP27 in previous research spotlights. Additionally, Russia is one of the world's major oil exporters. Disruptions and skyrocketing gas prices due to the Russia-Ukraine crisis have highlighted the dangers of over-reliance on fossil fuels from those markets. Jess Ralston, an energy analyst at the Energy and Climate Intelligence Unit, said: "The key point here is that even with inflation, offshore wind is still about a third cheaper than gas power stations with the price of gas set to remain higher than before the crisis." [27] Consumer led demand for renewable energy is still very strong. JP Morgan recently conducted a survey on residential solar demand and found that homeowner interest for adding residential solar systems is stronger than currently low investor sentiment and recent underperformance of residential solar stocks indicates. [28]

McKinsey estimates that "between 2021 and 2030, planned global electricity generation from committed solar and on- and offshore wind projects (excluding China) will more than triple, from 125 gigawatts to 459 gigawatts... This could further accelerate as countries seek to make renewables part of their strategy to address the current geopolitical energy crisis." [29]

Policy-led demand is stronger than ever and "we have the best long-term climate policy certainty ever, across all the largest markets", an industry analyst at Wood Mackenzie has argued. [30] The European Commission's recent REPowerEU proposal seeks to boost the continent's share of electricity generation from renewables to 45% by 2030 (up from a target of 40%). [31] The EU has set ambitious targets – 420 GW of wind energy by 2030. In the United States, the Inflation Reduction Act shows a similar sentiment, designed to boost up the renewables industry so that it can meet consumer and government demands. The U.S., in turn, announced its goal to deploy 30 gigawatts of offshore wind by 2030. [32]

Importantly, more support from governments is on its way. In September Ursula von der Leyen announced that the European Union would put forward a package of measures to support its wind power industry to help with challenges like inflation and concluded that "The future of our clean tech industry has to be made in Europe." [33] [34] The package includes fast-tracking permitting, improving auction systems across the EU, skills, access to finance and stable supply chains. [35] In our view, the growth of this industry is simply too important at the regional level to allow near term profitability issues to derail long-term private sector investment.

Despite the fact that the effect of these challenges has varied from company to company depending on management quality and prudent decision making, sentiment has soured across the entirety of the sector, and we feel that some companies have effectively been dragged down by association. Industry analysts agree, concluding that the share price reaction of some stocks was overdone, particularly in companies that do not share many of the Orsted-specific issues in offshore operations. [36] It is not unlikely that Orsted and Siemens Energy's woes have driven an unjustified contagion in the wider renewables sector, with "renewable peers again traded as a pack, all heading downwards in sympathy with little fundamental differentiation between their asset base, in terms of its technology and geography." [37] We believe that these likely overreactions in the market make for good buying opportunities.

And as ever, companies adapt to circumstances. The 2023 Willis Towers Watson survey suggests that renewable firms are taking action to address the situation. Almost two-thirds (60%) say the investments they have already made to strengthen their supply chain have somewhat improved their robustness, while a further 29% said robustness had greatly improved as a result. They report that companies are focused on deepening partnerships, increasing knowledge and achieving end-to-

Can ESG Analysis Help Identify PERFORMANCE DRIVERS *Within* the Renewables Segment?

The renewable energy sector is understandably viewed by investors as an 'E-driven' sector, with ESG frameworks, including our own, often rating companies on their contribution towards the journey to net zero. However, what is also clear from the events of recent months is that many of the issues we have discussed above can be attributed to operational issues which fall under the S pillar rather than E pillar.

To evaluate this in more detail, we present below an analysis from our ESG data research platform. Below, we examine the performance of an industry-relative composite S Pillar score (which includes evaluations of Supply chain management, labour management and product quality assessments) within the global 'GICS Electrical Equipment' Industry group (where many renewable leaders in the wind and solar industries can be found, alongside a broad range of other electrical equipment firms).

To do so, we calculate the "fully hedged" monthly returns on equally weighted fractile (20th percentile) portfolios generated from our global equity investable universe, removing the explanatory effects of exposure to market, industry, country, and style factors: these portfolio returns thus represent the theoretical returns of a "fully hedged" portfolio to all model risk factors, i.e. "alpha". We then calculate the cumulative difference in the "fully hedged" portfolio returns, representing an "alpha" from the S pillar evaluation: the difference in average returns from the "best" S pillar securities compared to the "worst", after controlling for other risk factors. The time period 1st June 2022 through to 30th June 2023. The results are illustrated in the chart below. The conclusion from the chart is striking; even in one of the most "E" centric industries, an industry that is critical to the successful journey to net zero and on the receiving end of significant global policy support, when viewed through an ESG investing lens, it is the 'S' pillar has been the significant determinant of corporate relative performance in recent times.

Conclusion

As we have described above, investing in the renewable energy sector has been a challenging endeavour in recent months, despite the continuing tailwind of high energy prices and global policy support. Bellwether companies have faced material operational challenges, which has soured sentiment across the space. Whilst the inclusion of S pillar factors in our ESG selection evaluation as well as other risk management indicators has helped us avoid some of the worst casualties (e.g. Siemens Gamesa, NextEra and Orsted), our structural bias towards Green Energy related names based on our 'E pillar evaluation' element of the selection process has meant we have still faced headwinds from souring sentiment across the sector.

We wrote in our Q1 2022 newsletter about stretched historic valuation and evidence of crowding when looking at ESG leaders across the Energy and Utilities sectors that had built up in the period to 2021. Fast forward to today and running the same analysis, we see a much more mixed picture depending on individual names rather than a general valuation story in the space.

Our conclusion and approach towards the renewables space is very much that the long-term net zero transition is very much intact, supported by policymakers in the EU, China and US. We continue to maintain structural exposure to the 'E pillar'. Whilst some of the issues facing



Disclaimer: This analysis is based on one particular ESG data methodology and our investable universe parameters. The time period under review is relatively short and does not represent a full market cycle. It may not be possible in practice to fully hedge all risk factors, some securities may not be borrowable, and the analysis does not include any potential transactions or borrowing costs. The above chart does not represent an investable strategy or the returns an investor may have received.

the sector (such as higher interest rates which impact financing) cannot easily be addressed in an ESG framework, we do believe that increased focus of key S Pillar evaluations along with a careful approach to valuations is the best way to navigate a challenging short term period in the renewables space. However, we believe that there are excellent long opportunities emerging amidst the general and somewhat indiscriminate sell-off in the space.

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