

How does the ISE Clean Edge Global Wind Energy™ Index (GWE™) stand to benefit from the Inflation Reduction Act of 2022? And how should investors approach index fundamentals in today's market environment?

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Historical in scope and appeal, the Inflation Reduction Act (IRA) of 2022 addresses two issues that have been top of mind for the average consumer, the Federal Reserve, and the government—record high inflation and climate change. Inflation surged to a multi-decade high in 2021¹, necessitating one of the fastest and steepest rate hikes in history by the Federal Reserve. With additional shocks to the economy by way of supply shortages, the coronavirus pandemic and the Russia-Ukraine war, inflation continued to surge in 2022. As much of the inflation surge stemmed from supply-side factors, contractionary monetary policy was not seen as a silver bullet for bringing inflation down. The passage of the IRA has given the average American consumer a strong reason to be optimistic about inflation reduction while the effects of monetary policy take hold.

The central focus of the IRA is bolstering American leadership in clean energy to proactively address the climate crisis. Expanding the production of clean energy and lowering its cost will naturally act as an inflation dampener, given the sharp rebound in traditional energy prices and their significant contribution to overall price levels in the economy. Beyond its focus on energy, the IRA has begun to reduce prescription drug costs, another large spending bucket for the American consumer. 5-7 million Medicare beneficiaries could see their prescription drug costs decline because of a provision in the IRA that would allow Medicare to negotiate these costs².

The IRA makes the single largest investment in clean energy in history, with the aim of reducing carbon emissions by 40% by 2030. It empowers the average consumer to actively participate in the transition to clean energy by providing powerful incentives as prescribed by the field of behavioral economics. Consumers are incentivized to buy high-efficiency appliances, purchase electric cars, and install solar rooftop panels by way of tax credits (worth up to \$7,500 for EVs). By 2030, the IRA anticipates powering homes and communities with 950 million solar panels, 120,000 wind turbines and 2,300 grid-scale battery plants through an expansion of production tax credits by \$30 billion².

With respect to the wind energy industry, the IRA has important provisions for energy investment tax credits (ITC), which provides a credit of up to 30 percent for projects that begin construction before 2026; an extension of pre-IRA production tax credits for offshore wind projects through at least 2023; and ensures that projects placed in service after 2021 are eligible for full credits. Where the IRA is expected to have a material impact is in the offshore wind industry, with half a dozen projects finalizing environmental review and about 11 gigawatts (GW) of new energy generating capacity currently earmarked for development.

¹ <https://www.wsj.com/articles/us-inflation-june-2022-consumer-price-index-11657664129>

² <https://www.whitehouse.gov/briefing-room/statements-releases/2022/08/15/by-the-numbers-the-inflation-reduction-act/>

Additionally, the IRA is paving the way for offshore wind power output to be harnessed for alternative uses, as evinced by the announcement of a pairing of green hydrogen and offshore wind last year in Louisiana³.

The IRA has the potential to be truly game-changing, not just for its potential impact on spiraling energy costs, but also for providing incentives to create manufacturing jobs in clean energy technologies such as solar, wind, clean hydrogen, and carbon capture. Additional clauses in the bill introduce certain complexities for companies to navigate, in terms of sourcing components that are “Made in the USA” and employing workers in lower income communities. While this could delay the observed impacts of the legislation, it is broadly in keeping with other goals of the Biden administration in growing US manufacturing, broadening equity across all American workers, and strengthening US self-sufficiency in crucial areas like clean energy, semiconductors, healthcare/pharmaceuticals, and defense.

The IRA addresses two other issues that concern the broader public, that of the tax code and fiscal deficit. Large corporations and wealthy, high-income taxpayers will pay more in taxes. With the implementation of a 15% minimum corporate tax on income for large corporations, up to \$313 billion over 10 years in incremental tax revenue is projected⁴. Additionally, a better-funded IRS is expected to enforce greater tax compliance, reducing the cumulative deficit by \$124 billion over 10 years⁵. From a historical perspective, the tax increases are moderate and are unlikely to weigh on growth. This is likely to allay any concerns about negative externalities.⁶

GWE Index – Overview and Fundamentals

The ISE Clean Edge Global Wind Energy Index (GWE) is designed to track public companies that are primarily involved in the wind energy industry, including both pure-play companies focused on the wind energy sector and diversified multinationals with wind energy exposure. The index was launched on December 16, 2005 with a base value of 100.

The transition to clean energy is top of mind for the Biden Administration, as evinced by the clear-cut targets laid down to bring down emissions: 100% clean electricity by 2035 and a zero-emission economy by 2050. To meet these targets, the government is offering incentives for renewables, including solar, onshore and offshore wind, geothermal, wave and tidal energy projects.

According to Siemens Energy CEO, Christian Bruch, the transition to clean energy will not happen without wind energy. Wind energy is among the most mature of renewable energy technologies, and accounts for the largest share of renewable generation in the U.S.⁷. Today, there are 72,000 wind turbines installed in the U.S., generating about 9% of the nation’s electricity. As per an important study by the National Renewable Energy Lab, between 40% and 62% of total electricity generation by 2030 will be accounted for by solar and wind⁸. In terms of capacity, the wind energy industry added about 78 gigawatts of capacity globally in 2022, down from 17% growth in 2021 and 12% in 2020, but still the third-best ever year in terms of capacity growth⁹. New investments in offshore wind in the U.S. more than tripled to \$9.8 billion in 2022¹⁰. While there were additions to total capacity, the wind energy industry has not been immune to challenges. Over the last couple of years, the industry has been under pressure due to several factors including government policies that encouraged a price war, inflation, high logistics costs, and inefficient permitting and licensing rules. While the cost of new

³ <https://www.spglobal.com/commodityinsights/en/market-insights/latest-news/electric-power/022123-us-offshore-wind-investments-more-the-tripled-in-2022-ira-to-boost-alternative-uses>

⁴ <https://www.crfb.org/blogs/whats-inflation-reduction-act>

⁵ <https://www.crfb.org/blogs/whats-inflation-reduction-act>

⁶ <https://www.mckinsey.com/industries/public-and-social-sector/our-insights/the-inflation-reduction-act-heres-whats-in-it>

⁷ <https://www.c2es.org/content/renewable-energy/>

⁸ <https://www.pv-tech.org/ira-will-see-solar-and-wind-account-for-over-60-of-us-generation-by-2030-nrel/>

⁹ <https://www.world-energy.org/article/30940.html>

¹⁰ <https://www.spglobal.com/commodityinsights/en/market-insights/latest-news/electric-power/022123-us-offshore-wind-investments-more-the-tripled-in-2022-ira-to-boost-alternative-uses>

wind farms may remain elevated for another year or two thanks to recent inflationary trends, the long-run expectation for a declining cost curve remains in place.

Despite these challenges, the outlook for the next decade is quite optimistic with the passage of the Inflation Reduction Act of 2022 (IRA), as well as President Biden's Executive Order 14008, which provides a commitment to deploy 30 gigawatts of offshore wind by 2030 and 15 gigawatts of floating offshore wind by 2035¹¹. The IRA is also expected to lead to \$160 billion of investments in onshore wind, doubling installed capacity over the next decade to 280 GW¹². Going forward, demand is expected to be driven by power-consuming corporations and power-generating utilities alike, as they meet their respective ESG targets. As per a report by PwC on IRA, "The current tax credit regime is built around specific credits for specific technologies. The Act refreshes and extends the current tax credit regime through the end of 2024, but then pivots to a "technology neutral" tax credit regime through the end of 2032¹³.

Many of the companies that make up the GWE Index are expected to be beneficiaries, as evinced by recent announcements. Italian company Enel, with an index weight of 2.4%, has announced plans for a new manufacturing site in the U.S. to complement its expansion plans in Europe, citing benefits from IRA. Nextera Energy, with an index weight of 2.1%, is expected to increase its spending the most, with 20% of U.S. market share of renewables. Alliant Energy, with an index weight of 2.1%, has announced an increase in its capex spending, which may drive EPS growth above its target of 6% through 2025. CS Wind, with an index weight of 1.7%, is expected to increase plant capacity by twofold in stages from its current 4GW.

Overall, the IRA is seen as a material positive for companies that make up the ISE Global Wind Energy Index (GWE).

Revenue and Gross Margin Trends vs. Index Performance

The companies that make up the GWE Index have shown significant strength in fundamentals over the past year despite a challenging macroeconomic backdrop of rising interest rates, recession fears, high inflation, and supply chain challenges.

44 out of 55 companies (representing 79% of index weight) tracked by the index saw revenues increase in 2022 vs. 2021, driven by surges in wind and solar capacity, supportive pricing trends and a general rise in wind speeds globally. This sub-group was down 15% on average in 2022, underperforming companies that saw revenues decline by 10 percentage points, suggesting a disconnect between performance and fundamentals.

Several companies reported strong revenues driven by industry-specific and company-specific tailwinds such as rising demand for solar and wind energy, high electricity sales, strong pricing, growth in offshore wind and normalizing wind speeds, which offset challenges in the macroeconomic environment.

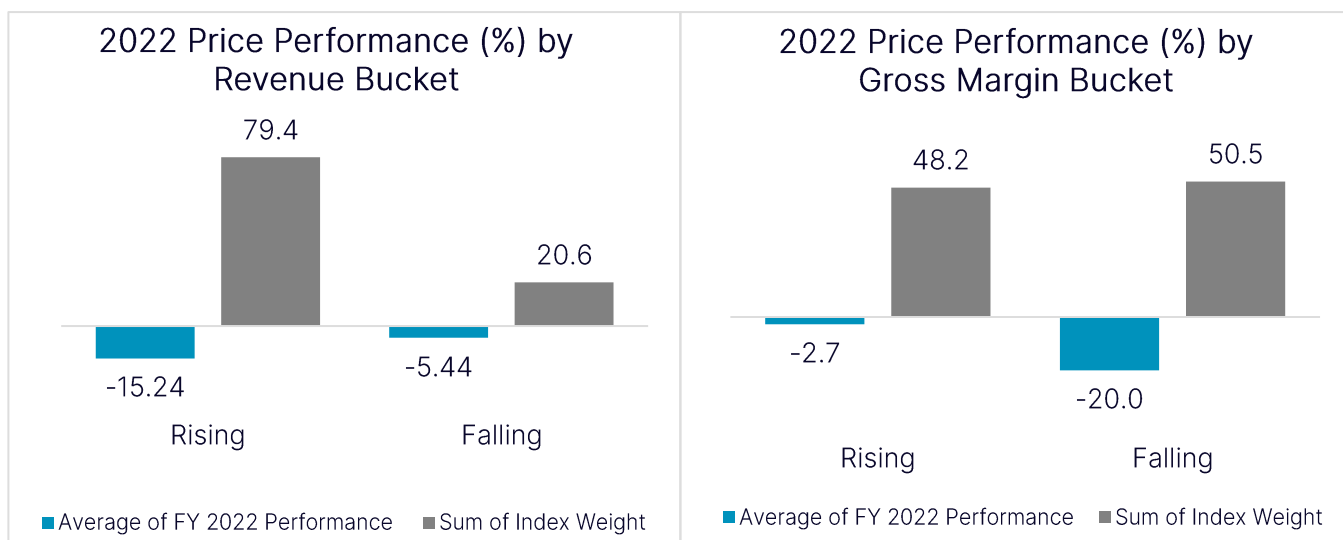
Industry bellwethers such as Vestas Wind Systems and Siemens Energy expect strong revenue growth over the next 12 months, which is likely to send a positive signal to the markets.

Only 10 companies saw revenues decline in 2022, representing approximately 20.4% of index weight. While the revenue profile for the index was quite robust in 2022, investors appear to have been less enthused, not rewarding topline growth within the index in the current market environment.

¹¹ <https://www.whitehouse.gov/briefing-room/statements-releases/2021/03/29/fact-sheet-biden-administration-jumpstarts-offshore-wind-energy-projects-to-create-jobs/>

¹² <https://www.reuters.com/business/energy/us-tax-credits-set-spur-bigger-wind-farms-new-siting-strategies-2022-10-20/>

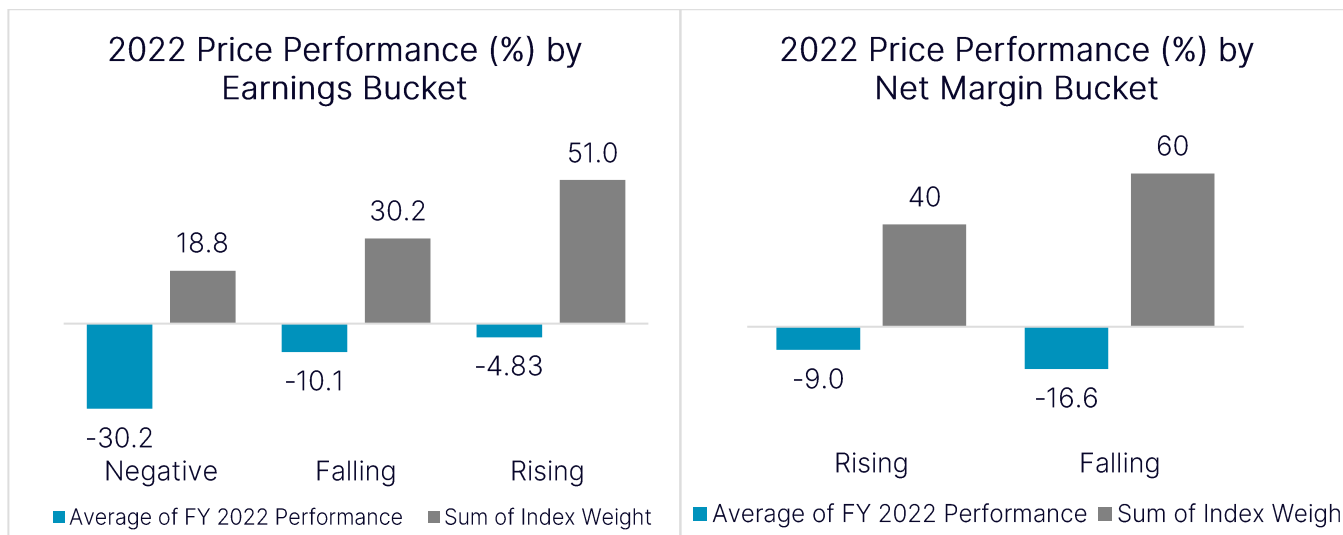
¹³ <https://www.pwc.com/us/en/services/tax/library/ira-energy-related-credits-may-benefit-certain-asset-managers.html>



21 out of 55 companies (representing 48% of index weight) tracked by the index saw gross margins increase in 2022 in a particularly challenging year of high inflation and supply-chain challenges, largely due to benefits to the top-line from rising wind speeds, supportive pricing, and volume gains in wind and solar, which helped offset some inflationary pressures.

32 companies (representing 51% of index weight) saw gross margins decline in 2022 due to more pressure from inflationary challenges, supply-chain disruptions, and high raw material costs. This sub-group was down about 3% on average, outperforming companies that saw gross margins decline by 17 percentage points. Investors appear to have been encouraged that about half of the index generated improvements in gross margins in an inflationary environment and have rewarded companies as such.

Earnings and Net Margin Trends vs. Index Performance



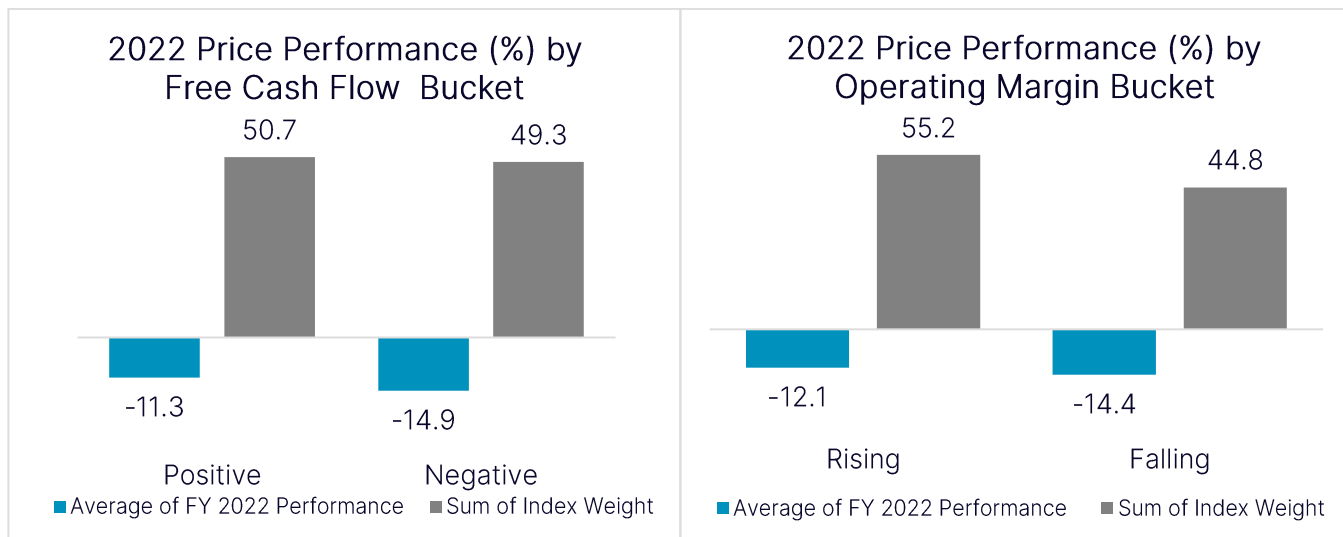
24 out of 55 companies (representing 51% of index weight) tracked by the index saw earnings increase y-o-y due to a variety of tailwinds. The companies that grew earnings benefitted from a more diversified portfolio that was able to weather supply-chain hurdles, better weather-normalized electricity-sales growth, higher exposure to structural growth trends in energy transition, favorable exposure to strong end-markets, higher output in renewables, and strong pricing.

15 companies (representing 18.8% of index weight) posted losses due to several headwinds including soaring raw material costs, decline in turbine orders, increased transportation costs and supply-chain disruptions while 16 companies (representing about 30.2% of index weight) saw earnings decline y-o-y, but remain positive. Of the companies that posted losses in 2022, Vestas and Siemens Energy are of particular interest, with the fourth largest and seventh largest index weights respectively. Vestas had a particularly anomalous year due to multiple headwinds that weighed on earnings. Most, if not some of the losses, are expected to reverse in 2023 as it benefits from easing steel prices, high turbine prices, and a substantial order backlog. Siemens Energy, which posted a net loss in 2022 that was exacerbated by problems in their Spanish wind subsidiary and restructuring of its Russian business, expects its net loss to reverse in 2023.

We observed a strong correlation between earnings and performance. Companies that posted losses underperformed the other two buckets by a significant margin, down 30.2% while companies that grew earnings outperformed by a significant margin, down only 4.8% on average. Only 25% of index weight experienced bear market-level losses (greater than 20%), while a substantial percentage (75% of index weight) either had losses that were under 20% or gains in the range of 0%-70%. Based on the relatively small percentage of constituents that underperformed the broader market during 2022, the GWE Index may be signaling a limited downside as one of its intrinsic characteristics.

24 out of 55 companies (representing 40% of index weight) saw net margins increase while 31 out of 55 companies (representing 60% of index weight) saw net margins decrease. As a sub-group, companies that grew net margins were down 9.0% on average, outperforming companies that saw net margins decrease by approximately seven percentage points. We note that several leading incumbents had particularly anomalous years that skewed the results of the overall net margins downward, and that the net margin profile is expected to improve in 2023 and beyond, as some of the headwinds abate.

Free cash flow and Operating Margin Trends vs. Index Performance



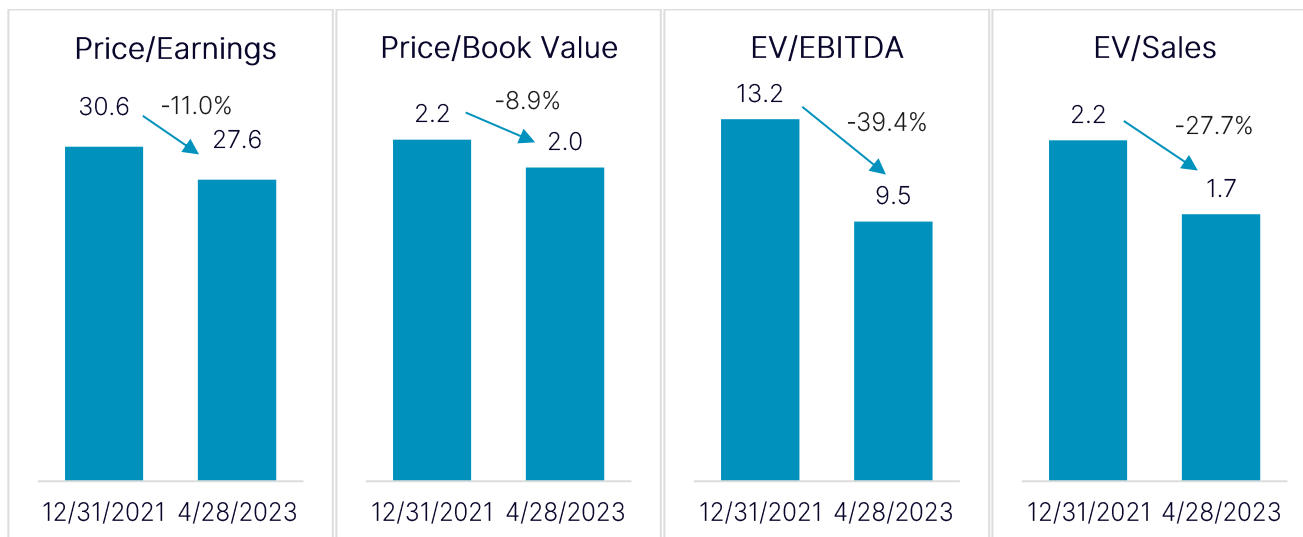
25 out of 55 companies (representing 51% of index weight) were free cash flow (FCF) positive while 30 out of 55 companies (representing 49% of index weight) were FCF negative in 2022. The FCF-positive sub-group was down 11% on average, modestly outperforming companies that were FCF-negative by about four percentage points.

27 out of 55 companies (representing 55% of index weight) saw operating margins increase while 28 out of 55 companies (representing 45% of index weight) saw operating margins decrease due to high-cost inflation from material and components, supply-chain bottlenecks, higher operating costs, and volatile demand. As a

sub-group, companies that grew operating margins were down 12.1% on average, slightly outperforming companies that saw operating margins decrease by two percentage points.

In a particularly challenging year for the wind energy industry, investors have strongly rewarded companies that reported earnings growth and improving gross/net margins, while more modestly rewarding those with improving operating margins and positive FCF. Investors generally appear encouraged that the demand environment for renewables continues to be strong and that the passage of the IRA offers a significant tailwind for the industry long-term, with pricing power likely to somewhat offset inflationary pressures.

Current Valuations vs. Year-End 2021



Source: Bloomberg as of April 28, 2023

Over the course of 2022, the ISE Clean Edge Global Wind Energy Index (GWE) has become significantly cheaper on a wide variety of index-weighted valuation metrics, including price-to-earnings, price-to-book (P/B), enterprise value-to-sales (EV/Sales) and enterprise value-to-EBITDA (EV/EBITDA). Concerns weighing the industry down including supply-chain disruptions, inflationary pressures, and economic resiliency weighed on the performance of the index. It is worth noting that equity investors were broadly more pessimistic in 2022 than previous years as they dealt with concerns about a recession and rising rates.

Conclusion

The passage of the IRA marked a watershed moment for the wind energy industry. In recent years, industry leaders dealt with uncertainties surrounding the extension of tax credits, which led to ramp-ups in production, followed by sudden halts. The IRA removes this uncertainty, allowing industry leaders to plan for the long-term. The sentiment has shifted dramatically from that of pessimism surrounding recent losses to that of optimism. Siemens, one of the biggest makers of wind turbines in the world, recently made announcements that lend further credence to this shift in sentiment. As recent as February 2023, it announced plans to re-open two turbine component factories, citing benefits from IRA. Additionally, Vestas, Siemens and GE announced plans to build new turbine component factories in New York and New Jersey, contingent upon federal funding. These announcements are likely to serve as a positive read-across for the entire industry.

The Russia-Ukraine War and ensuing fuel crisis in Europe in 2022 prompted industry leaders, governments, and other key participants to accelerate the transition to clean energy. States such as New York and New Jersey are ahead of the curve, in terms of setting of targets and commitments to new wind projects. New York announced the expansion of its deployment target to 20 GW by 2050 while extending development into

deeper waters off the state's coasts. New Jersey is building a \$250-million turbine monopile production plant along the Delaware River, and is looking to become the east coast capital of offshore wind¹⁴. This suggests that governments are taking the lead along with private sector leaders to implement plans to accelerate the transition to renewables.

Now that there are several tailwinds propelling the industry forward, particularly in terms of federal support, the emphasis is likely to shift to making the sector more economically resilient for the long term. Industry experts believe that wind and solar will eventually become cheap enough to compete without subsidies, while tax credits will continue to be important in the short term. Over the last couple of years, several negative factors including rising inflation, interest rates, and the war in Ukraine negatively affected wind turbine manufacturers of both land-based onshore and offshore wind projects. As these headwinds recede and the benefits from IRA kick in, the wind energy industry is expected to be on strong footing.

Other positive spillover effects from IRA include the creation of new jobs and a stronger supply chain for the wind energy industry. Benefits are likely to accrue throughout the country, not just the coastal areas, improving equity. To support the creation of new factories, the supply chain is likely to strengthen with the building of at least 34 new manufacturing facilities, including specialized ports and vessels.

While the IRA has grabbed the attention of the broader public, there have been other initiatives such as the Floating Offshore Wind Shot that are expected to be highly impactful. This project seeks to reduce the cost of floating offshore wind energy by more than 70% to \$45 per megawatt-hour by 2035 for deep water sites¹⁵.

While the fundamentals of the GWE Index came under some pressure in 2022, it is encouraging to observe the continuation of a healthy demand environment for renewables, suggesting that there are no major long-term roadblocks in the energy transition. Barring one fundamental metric (net margins), 50% or more of the index (by weight) posted improving margins and profitability, which suggests that this is a strong theme with the potential for improvements once headwinds recede and benefits from policy support kick in. Since late last year, the passage of the IRA and easing price pressures have been offsetting some of the inflationary headwinds and the loss of tax incentives.

GWE was down 14.7% for full year 2022, substantially outperforming the tech-heavy Nasdaq-100® which was down 32.9%. The index's concentrated exposure to more value-oriented sectors such as Industrials, Energy and Utilities (approximately 93% of index weight) – combined with no exposure to growth-oriented Technology and Consumer Discretionary – contributed to its relative outperformance versus the Nasdaq-100 and other growth benchmarks. Macroeconomic concerns surrounding high interest rates weighed less heavily on these sectors, limiting their downside. As we approach the second half of 2023, this value-tilted exposure is likely to be attractive to investors as recessionary concerns continue to dominate the market narrative.

Investors looking to gain exposure to companies that are engaged in the wind energy industry can invest in products tracking the ISE Clean Energy Global Wind Energy Index (GWE), including the First Trust ISE Global Wind Energy Index Fund (Nasdaq: FAN).

Sources: Nasdaq Global Indexes, FactSet, Bloomberg, Wall Street Journal, McKinsey, Committee for a Responsible Federal Budget

¹⁴ <https://www.enr.com/articles/54040-offshore-wind-energy-sector-has-big-gains-and-growing-pains>

¹⁵ <https://www.energy.gov/eere/wind/floating-offshore-wind-shot>

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