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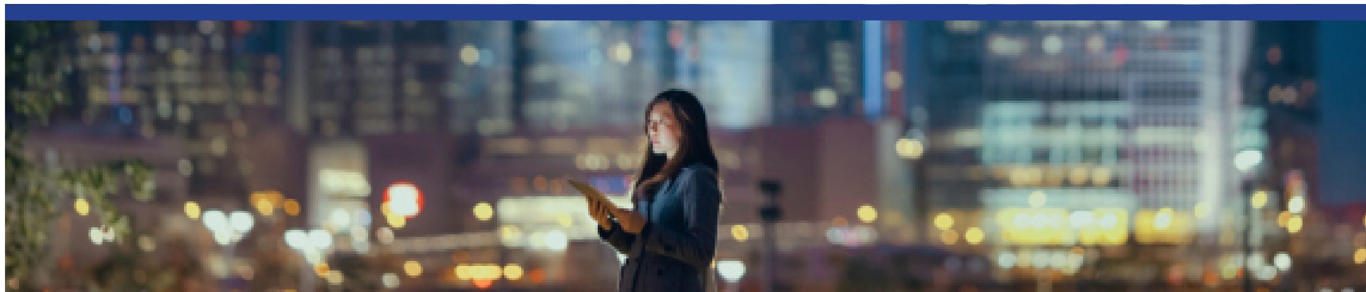

August 6, 2023

CIO Strategy Bulletin

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Reflections on this Rolling Recession

- A "rolling recession" has left many investors waiting for something worse, a definitive and clear economic and market downstroke. We do not see that as likely, even as we expect that after 9 months of US equity market appreciation, a pause or consolidation appears inevitable.
- We do not see a rapid rise in unemployment on the horizon, but rather a cooling that takes labor market gains to a crawl by early 2024. When that scenario occurs, the Fed's focus will shift, and rates will come down to support the economy.

Spotlight | Green Energy Reaches a Tipping Point

- We believe fossil fuel consumption will peak for economic reasons as green energy is rapidly becoming a cheaper, more abundant source of power.
- The global market for clean energy technologies will increase threefold and be worth approximately $650 billion annually beginning in 2030 if countries implement their energy and climate pledges, according to the updated International Energy Agency (IEA) Net Zero Emissions by 2050 report.
- Certain elements of the green energy space are now reaching sufficient maturity in today's late-cycle expansion phase, and we believe there is an increasing likelihood that emerging clean tech companies will face their first non-COVID recession at a profitable stage.
- We think this could trigger a round of consolidation much like we have seen with railroads and oil at the beginning of the 20th century – and again in the tech sector in the early 2000s. Creative destruction will accelerate the green energy transition. This will result in a stronger industry with greater power and capital.
- Investors may consider focusing on firms that are cash flow positive with a capital structure not reliant on financing in the near term. They may want to invest in companies that will have the capital to spend on smaller entities with great intellectual property.
- Private capital may find better buying opportunities today compared to even two years ago. Being selective is essential.

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Reflections on this Rolling Recession

As we noted in last week's CIO Bulletin, "Unanticipated Good News," there are facts and factors that suggest a "rolling recession" will end in 2024. The nature of this slow growth period, with industries contracting at different times, has left many investors waiting for something worse, a definitive and clear economic and market downstroke. We do not see that as likely, even as we expect that after 9 months of US equity market appreciation, a pause or consolidation appears inevitable.

This is what a rolling recession looks like (**Figure 1**), with manufacturing headed down and services slowing. Ironically, this out-of-sync behavior will likely reverse in the next 6 months as manufacturing bottoms. At that time or shortly after, inventories will have fallen setting the stage for a rebound in production to take place. Meanwhile services spending and hiring will cool significantly as frenzied post-Covid buying in travel, leisure and hospitality abates.

Figure 1: Institute for Supply Management ("ISM") New Orders for Manufacturing and Services are out of step during the rolling recession.

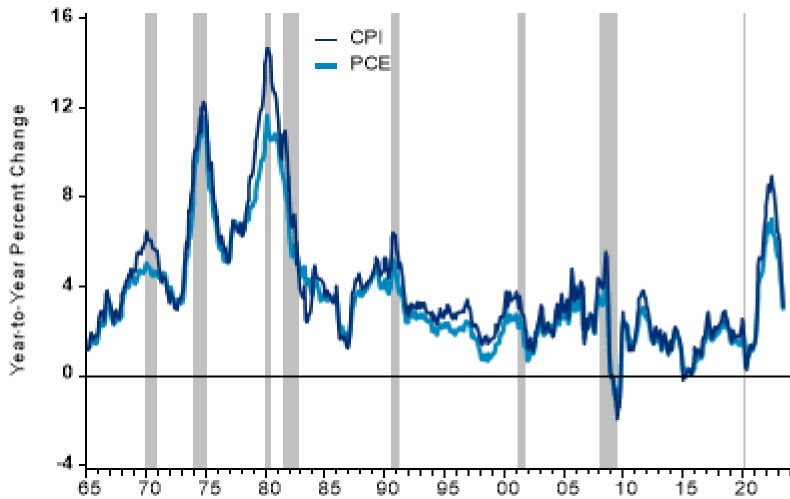
Source: Haver Analytics as of August 3, 2023. Note: Shaded regions are recessions.

Benefitting the Fed

From the US Federal Reserve's perspective, the rolling recession scenario provides time for their potent monetary tightening medicine to work. With US policy rates at a 22-year high and both the Bank of Japan and Bank of England adding to global monetary tightening this week, long-term US yields have risen toward last October's high. Inflation, however, continues to fall as fast as it ever has (**Figure 2**). We see US headline inflation at 3.5% year-over-year at the end of 2023 and at 2.5% or less year-over-year at the end of 2024.

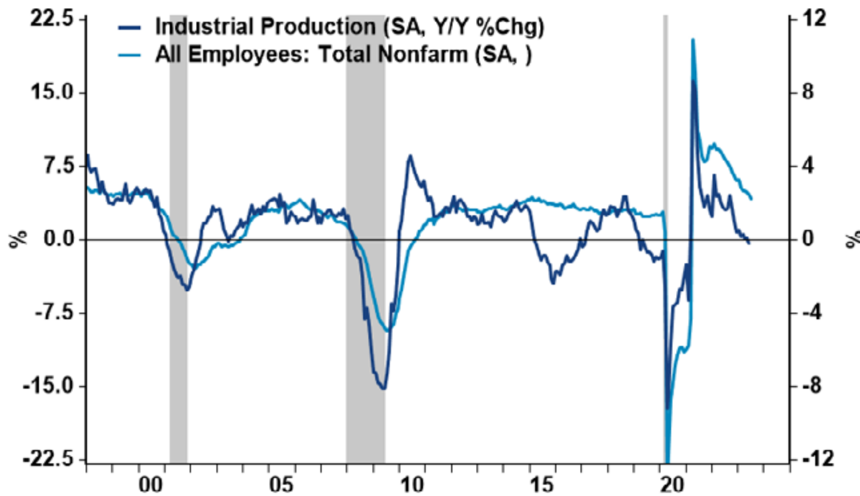
The jobs markets collapsed in 2020 (**Figure 3**), but US labor demand rebounded sharply, exceeding labor supply ever since. Friday's July nonfarm payroll report posted data showed US employment posted the first back-to-back monthly gains of less than 200,000 in the expansion thus far. This suggests that the post-COVID stretch of "labor market outperformance" is finally waning. US labor markets gains will likely stall in the year to come while industrial activity bottoms and begins recovery. Yet, we do not see a rapid rise in unemployment on the horizon, but rather a cooling that takes labor market gains to a crawl by early 2024. When that scenario occurs, the Fed's focus will shift, and rates will come down to support the economy.

Figure 2: US CPI and PCE inflation are plummeting year-to-year.



Source: Haver Analytics as of August 3, 2023. Note: Shaded regions are recessions.

Figure 3: US Employment (right) vs Industrial Production (left) Year-Over-Year%



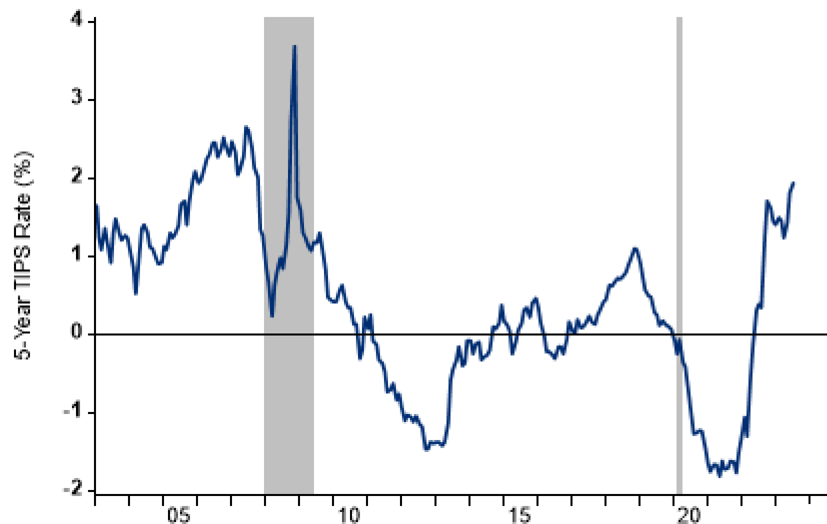
Source: Haver analytics as of August 4, 2023.Shaded regions are recessions.

The Wise Investor's Point of View

This economic scenario suggests that we will see higher short-term rates for longer, and a slower rate of interest rate declines until the Fed begins to feel that supporting the economy and jobs is more important than slaying "rear-view mirror" inflation.

From an investors point of view, this "glide path" to 2024 is positive. Both bonds and equities may provide attractive return opportunities. If investors wisely move from cash to bonds, they will be able to lock in high real interest rates (**Figure 4**). Such opportunities are rare. The reinvestment risk for cash investors is rising.

Figure 4: Five-year TIPS yields have surged as inflation has slackened.

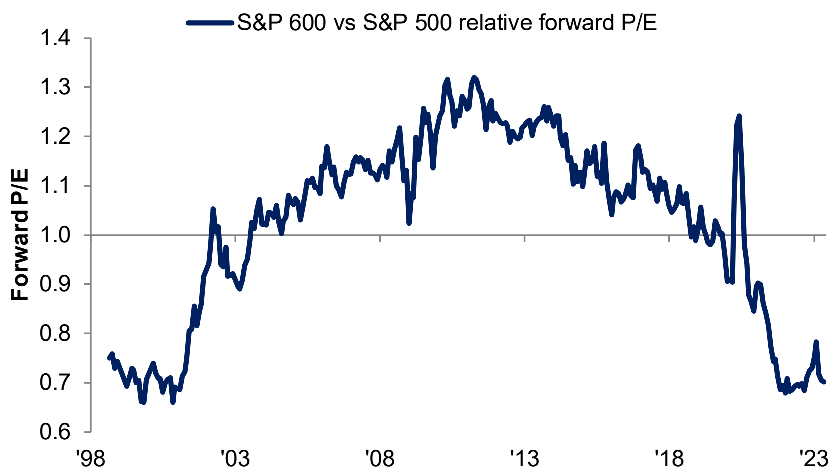


Source: Haver analytics as of August 4, 2023. Shaded areas are recessions.

For equities, this is a time for value consciousness. The Nasdaq and S&P Index tech leaders have driven the valuations of those indices to high levels quickly, mostly on the "AI Craze" that caused just 7 stocks to add nearly half of the gain to global equities this year. But that masks the relative values of mid-cap growth and international equities that are trading as if no recovery in 2024 was on the horizon (**Figure 5**).

Our strategy, therefore, is to invest in the equity and bond markets that reflects high relative value. At some point, when bond markets normalize, a more significant tilt towards equities overall is likely. But during this transitional time, core "60/40" portfolios may do fine. The data from 1931 and 1969 provide ample evidence that when the most unusual circumstances occur – like the joint declines of stocks and bonds in a given calendar year, consolidation and growth in markets becomes more likely, not less (**Figure 6**).

Figure 5: Profitable Small and Mid-Cap US Shares Have rarely been this cheap vs large



Source: Bloomberg and Factset as of August 4, 2023. Indices are unmanaged. An investor cannot invest directly in an index. They are shown for illustrative purposes only and do not represent the performance of any specific investment. Index returns do not include any expenses, fees, or sales charges, which would lower performance. Past performance is no guarantee of future results. Real results may vary.

Figure 6: 2022's unusual events and current market positioning may be positive for 2H 2023 and 2024.*

YEAR	S&P 500 TOTAL RETURN YoY % CHANGE	10-YEAR TOTAL RETURN YoY % CHANGE	*60 / 40	*1-YEAR FORWARD 60 / 40	*2-YEAR FORWARD 60 / 40
1931	-43.9%	-2.6%	-27.3%	-1.8%	28.0%
1969	-8.5%	-5.6%	-7.3%	10.5%	24.3%
2022	-19.5%	-12.3%	-16.6%		

Source: Source: Bloomberg/MSCI/Barclays and Global Financial Data as of July 7, 2023. Note: 60/40 columns show the combination of the annual total return of the S&P 500 and the 10-Year US Treasury with 60% allocated to the S&P, and 40% allocated to UST. Indices are unmanaged and an investor cannot invest directly in an index. Indexes are used to proxy for the asset class. Index returns do not include any transaction costs, expenses, fees, or sales charges, which would lower performance. The 60/40 Allocation in this chart represents moderate risk level allocation, which includes allocations to equities, and fixed income. Risk levels are an indication of clients' appetite for risk. A moderate risk level - Seeks modest capital appreciation and, secondly, capital preservation. Asset Allocation seeks to represent the general asset allocation strategy, and the chart is for educational purposes designed to show the historical perspective of asset allocation rather than any strategy.

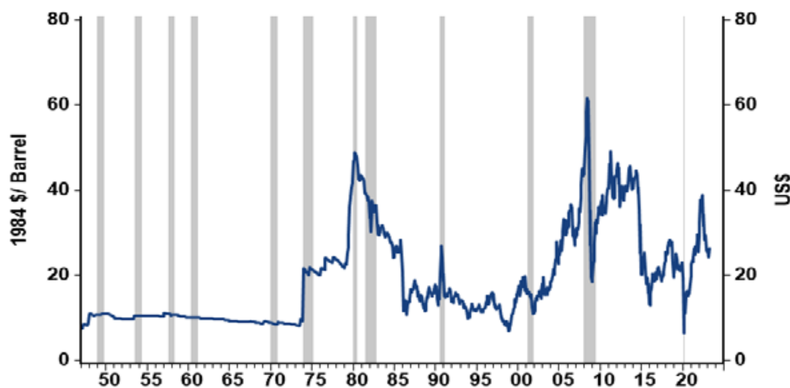
*All performance information shown above is hypothetical not the actual performance of any client account. Hypothetical information reflects the application of a methodology and selection of securities in hindsight. No hypothetical record can completely account for the impact of financial risk in actual trading. The returns shown above are for indexes and do not represent the result of actual trading of investable assets/securities. The asset classes used to populate the allocation analysis may underperform their respective indexes and lead to lower performance.

Spotlight | Green Energy Reaches a Tipping Point

Move over "Big Oil," here comes "Big Green." A maturing green economy will see a wave of consolidation, increased efficiency, more lobbying and increased visibility for Clean Tech. We believe this could have broad political and economic impacts globally.

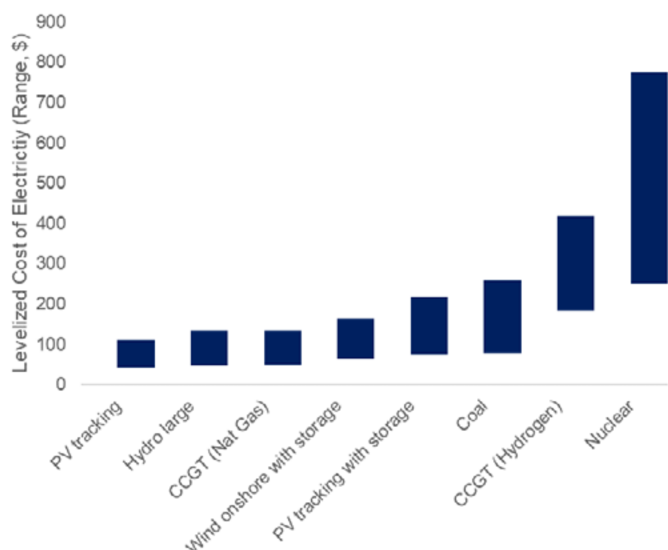
What will the future of energy look like? Demand for energy rises with population growth and wealth – and both are growing. As the world transitioned from wood fire to coal and then petroleum, fossil fuels dominated. But now we see that next gen energy sources are less expensive to install than new fossil fuel plants. With the economics of fossil fuel becoming less attractive, green energy is poised to become a cheaper, more abundant source of power (**Figure 7 & 8**).

Figure 7: Oil price in constant 1984 dollars



Source: Haver Analytics as of June 12, 2023. Note Shaded regions are recessions.

Figure 8: Clean energy solutions are now cheaper than any other option, and even with battery storage are now in the range of the cheapest fossil fuels.



Source: Bloomberg New Energy Finance as of August 3, 2023. Note: Bars show the range of cost for potential project in the US in 1H 2023. CCGT is Combined Cycle Gas Turbine.

Clean Energy is no Longer in its Infancy.

According to the International Energy Agency (IEA), if countries implement their announced energy and climate pledges, the global market for clean energy technologies – solar panels, batteries, wind systems, electric vehicles, heat pumps, electrolysers, and fuel cells – will reach $650 billion annually beginning in 2030.[1] That's 3x what it is today.

At the same time, emerging and medium-sized clean tech companies will face their first non-COVID recession in need of more capital and runway. The present conflict between the positive economics of green tech which the negative capital cycle will sow the seeds of change. A cycle of "creative destruction" is likely to accelerate the green energy transition. We have seen this in the electric vehicle industry where a price war started by Tesla, has squeezed margins at competitors and may be partially to blame for the series of negative guidance and outright bankruptcy at other EV startups.

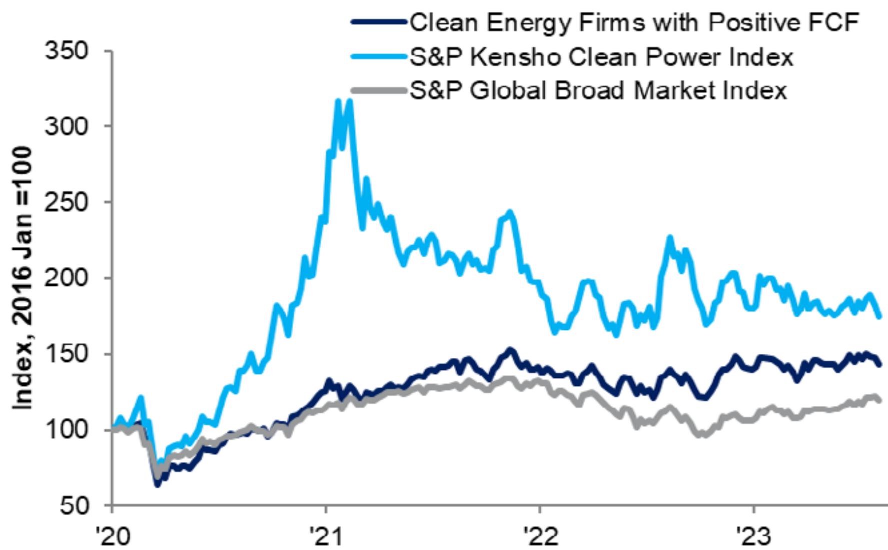
The pursuit of clean technology solutions today reminds us of the nascent tech sector of the 1990s that went from the lab and garages to global dominance in just three decades. We think a round of consolidation is upon us, much like we experienced with railroads and oil at the beginning of the 20th century and again in the tech sector in early 2000s. With a generation of educated employees who see jobs in green tech as a "cause" as well as a paycheck, there is further momentum to this green movement.

We also see regulations and policies supercharging growth in the clean tech sector. This will accelerate as consolidation creates fewer, more powerful firms. These firms will actively lobby governments and help set the rules for business.

In fact, outside of the initial bounce coming out of the pandemic in 2020, clean energy firms with positive free cash flow started to outperform both the broader clean energy market and the S&P global market (**Figure 9**). We see these leaders with strong balance sheet and outstanding cash flow management having the capacity to consolidate their position as this phase of the business cycle with tight credit is especially challenging for startup firms.

[1] IEA (2023), Energy Technology Perspectives 2023, IEA, Paris https://www.iea.org/reports/energy-technology-perspectives-2023, License: CC BY 4.0

Figure 9: Clean Energy firms with positive free cash flow have been more stable outperformers than the broader market.

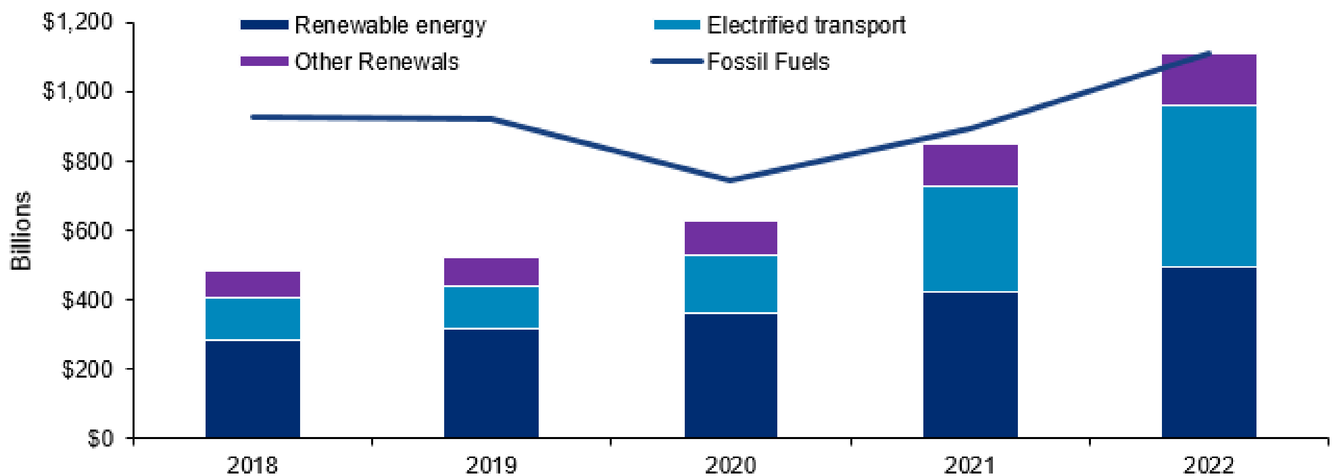


Source: Bloomberg, FactSet, Citi Research as of August 4, 2023. Note: Clean Energy firms with Positive Free Cash Flow (FCF) basket constructed using Citi Theme Machine, filtering for positive earnings and companies with high exposure to renewable energy or energy efficiency themes. The Citi Research Theme Machine combines the insights from Citi Research's fundamental analysts around the globe with a rigorous quantitative analytical framework to evaluate the relative attractiveness of themes on a number of different financial metrics. Citi Research's equity analysts, covering over 3500 stocks have matched companies to 80+ investment themes.

The First Truly Green Business C'cle

In prior business cycles, established companies typically focused on green initiatives because it was the right thing to do – not necessarily for profit. Very few, if any, were focused on investing in clean tech through the 2007 economic downturn. Fast forward to 2023 and one could argue that if a company is not explicitly charting their path to net zero emissions, they could be inadvertently charting their path to extinction – not due to optics, but obsolescence (**Figure 10**).

Figure 10: Investment in Renewable Energy vs. Fossil Fuels



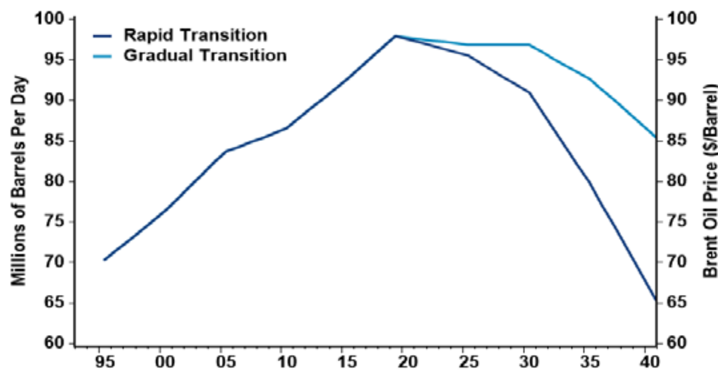
Source Bloomberg New Energy Finance as of May 2023.

Oil is Making Green Greener

High oil prices have been a gift to green energy through the current rolling recession. OPEC's surprise cuts in production announced in April 2023 as well as their further cuts in July have kept oil prices higher for longer. This implies less competition for green energy as well as higher energy profits.

OPEC's decision might be seen as beneficial for green firms and the environment. For instance, investment in software solutions, smart technology, and connectivity to address grid updates, storage/intermittency, and create smart cities, could be supported by regulatory demands, and will be required to solve many of the emerging challenges.

Figure 11: BP's own Energy Outlook anticipates a radical decline in global oil demand in the coming decades.



Source: BP Energy Outlook 2023 and Haver Analytics as of August 4, 2023

Taken together, these market and policy dynamics might be why the green space sometimes feels like tech in 1998. Currently there is a proliferation of firms exploring alternative energy solutions, but few household names. Highly skilled labor is distributed broadly. There are a lot of companies with solo technologies in the pipeline receiving startup money – and a large dispersion of names where no individual large actors stand out.

Invention Amidst Capital Scarcity

There is a benefit to having a vibrant community of startups that are testing hundreds of ideas, one or two of which could be revolutionary. For example, the university alliances for green energy appears to be emulating that of the pharma industry: Professors with great ideas are launching startups designed to be sold.

Private capital may have been hesitant to invest in clean tech in the past, but this is no longer the case. But in 2023, private capital may find better buying opportunities compared to even two years ago. Spending resources on the best ideas is easier when competition for capital is high.

As investors expect high returns, their tolerance for losses through an economic downturn decrease. This type of risk aversion was evident during the late 1990s collapse – and is typical for an emerging technology space as individuals and teams with good ideas compete to attract attention and capital (**Figure 12**).

Figure 12: S&P 500 vs. S&P 500 Information Technology (January 1, 1995 – June 9, 2022)

Source: Haver Analytics as of August 4, 2022. Shaded areas are recessions. Indices are unmanaged. An investor cannot invest directly in an index. They are shown for illustrative purposes only and do not represent the performance of any specific investment. Index returns do not include any expenses, fees, or sales charges, which would lower performance. Past performance is no guarantee of future results. Real results may vary.

What Does Creative Destruction Look Like?

With the current high cost of capital and the likelihood of many portions of the world entering recession, there will increasing pressure on firms that may have good intellectual property assets, but limited income. And as capital for new startups becomes scarce, rationalization and consolidation take place.

It is likely that the clean tech segment will end up bigger after a shakeout in a recession, but with far fewer firms. Battery, metals and oil and gas companies that are investing in green energy are likely to be more resilient at this stage in the business cycle. Some of these firms may become greener by acquisition.

As green energy matures, government funds are shifting from research grants to consumption stimulus. Likewise, carbon taxes have larger impacts on larger players, so companies that can either generate offsets or reduce carbon emissions more create more value. For example, a tax refund on an electric vehicle will benefit bigger companies selling more vehicles. We see larger players focusing on vertical integration. If a company has expertise in supply chain management, its position will be enhanced relative to those starting from scratch.

Investors and the Green Giants

The green barons are coming. Rail and oil fortunes created dynastic legacies for the Vanderbilts and Rockefellers, just as tech has done for Gates and Jobs. Elon Musk might be the most well-known green technology representative, but the sector is in the Green Giant phase just now.

For investors, it is most important to focus on the clean tech companies that are consolidating and evolving. Cash flow positive, well managed firms will have the upper hand in a slowing global economy.

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Bond rating equivalence

Alpha and/or numeric symbols used to give indications of relative credit quality. In the municipal market, these designations are published by the rating services. Internal ratings are also used by other market participants to indicate credit quality.

Bond credit quality ratings	Rating agencies		
Credit risk	**Moody's[1]**	**Standard and Poor's[2]**	**Fitch Ratings[2]**
Investment Grade			
Highest quality	Aaa	AAA	AAA
High quality (very strong)	Aa	AA	AA
Upper medium grade (Strong)	A	A	A
Medium grade	Baa	BBB	BBB
Not Investment Grade			
Lower medium grade (somewhat speculative)	Ba	BB	BB
Low grade (speculative)	B	B	B
Poor quality (may default)	Caa	CCC	CCC
Most speculative	Ca	CC	CC
No interest being paid or bankruptcy petition filed	C	D	C
In default	C	D	D

1 The ratings from Aa to Ca by Moody's may be modified by the addition of a 1, 2, or 3 to show relative standing within the category.
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