



Santa Clara Investment Fund Research Report

Climate Sector

Fall 2023



Table of Contents

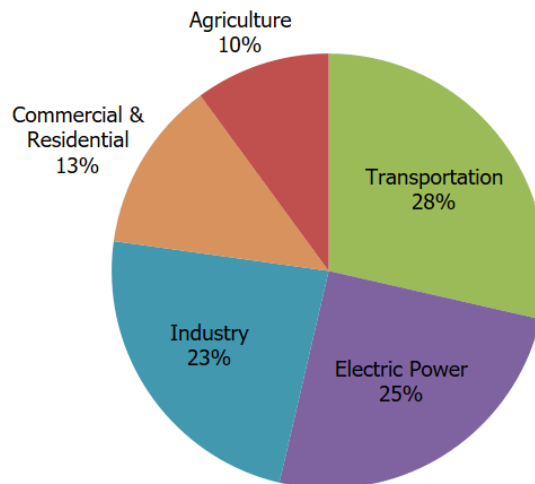
Table of Contents..... 1
Overview..... 2
Agriculture..... 3
Energy..... 9
Environmental Consumer / Packaging & Materials..... 14
Transportation..... 19



Overview

The Climate Sector inside SCIF focuses on pitching stocks that align with the current Climate Change Movement. As a result, the Climate sector aims to invest in companies that help fight against greenhouse gas emissions and in general help the environment on a large scale. However, the Climate market is roughly \$2 trillion in market cap, with its hands in almost every industry and sector. As a result, the Climate team decided to divide the report into four main sections, based on the four biggest causes of greenhouse gasses and how each of those industries are combatting those changes. The four sectors are: Agriculture, Energy, Environmental Consumer/Packaging, and Transportation.

The Agriculture Report focuses on Sustainable Agriculture and discusses the new technologies that are taking over that space and revolutionizing agriculture. The Energy Sector talks about the new renewable energies that are helping replace the traditional fossil fuels and their impact on the environment. The Environmental Consumer/Packaging sector talks about all of the consumer oriented products as well as its packaging that helps the environment. Finally the Transportation Industry discusses the new vehicles that are being created to replace typical gas powered vehicles that pollute the planet



The above chart breaks down greenhouse gas emissions by different sectors.



Agriculture

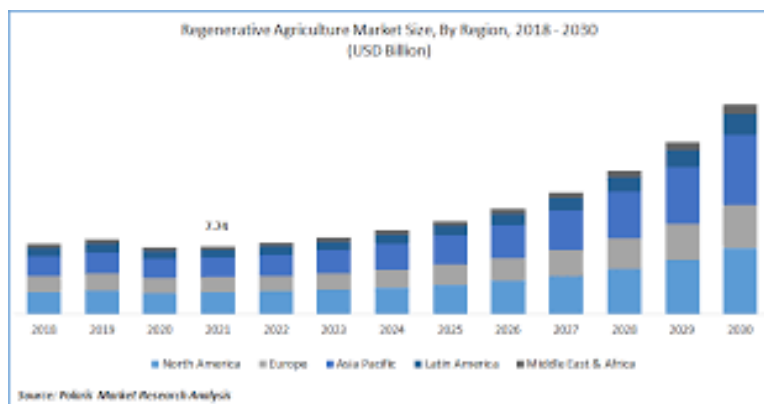


Overview

The agriculture/food sector is roughly \$1.2 trillion in market size with 5.4% of the US total GDP. The American farms contribute \$164 billion, with that being 0.7% of the overall GDP. However the sustainable agriculture market is still very small with it only being \$13.73 billion worldwide, however, lots of big agricultural companies are slowly getting into this space.

Some of these big companies in this space are The Mosaic Company (MOS, \$12B), Corteva (CTVA, \$35B), John Deere (DE, \$109B), Trimble (TRMB, \$12B). All of the companies maintain a stronghold over their industry as they are each able to specialize in one specific area. For example, Trimble specializes in optimizing farmer operations while none of the other companies with a reasonable valuation do. This type of specialization has worked quite well for the companies in this field as it is a very young industry so all these different players are able to easily take control with little effort.

The internal growth of this sector is very drastic as it is very young. In terms of revenue, the CAGR over the next eight years till 2031 is 10.17%, making the total review in 2031 come out to \$31B, growing roughly \$20B over the next few years, almost tripling in size.



This graph shows the rapid growth of the sustainable agriculture market over the next decade



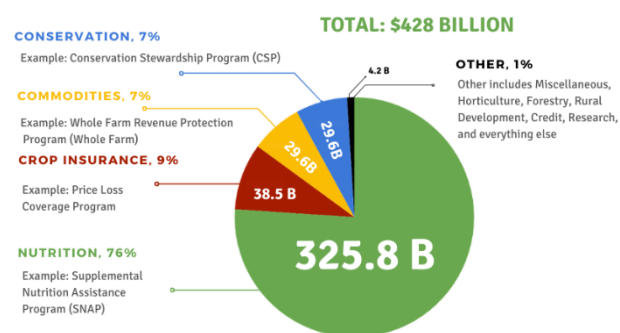
Market Trends

The overall consumer demand is exclusively from enterprises as sustainable agriculture directly sells their solutions to other agriculture companies so that they can become environmentally friendly. Even though it just recently started, it has been stagnant in this aspect as individual consumers have not entered into this field at all.

There is a lot of disruption within this industry as there have been a lot of new firms over the past five years. There are several fields where there is rapid growth, one being vertical farming where farmers are able to farm on multiple levels instead of wasting land. Another large area where there is new rapid technology is improving the irrigation and fertilization as that then trickles down and impacts the rest of the industry. The biggest technological innovation by far was through AI, as a lot of agricultural machinery has AI integrated inside making sustainable energy a lot more efficient.

Legislation has been one of the biggest proponents for the drastic growth of the industry. One of these legislations is the Farm Bill which was passed in 2018. The Farm Bill, renewed approximately every five years in the United States, is a multifaceted legislative package that significantly impacts agriculture. Comprising twelve titles, it encompasses commodities, conservation, trade, nutrition, credit, rural development, research, forestry, energy, horticulture, crop insurance, and miscellaneous programs. Drafted by members of Congress on the Senate and House Committees on Agriculture, Nutrition, and Forestry, the bill addresses a wide array of agricultural aspects. However, certain policy areas, such as food safety and environmental regulations, are beyond its scope. The Farm Bill's financial implications are substantial, with the 2018 Farm Bill projected to cost around \$428 billion over five years, affecting the allocation of funding for diverse agricultural programs.

**FARM BILL PROJECTED FUNDING, IN BILLIONS
2019-2023**





Key Drivers

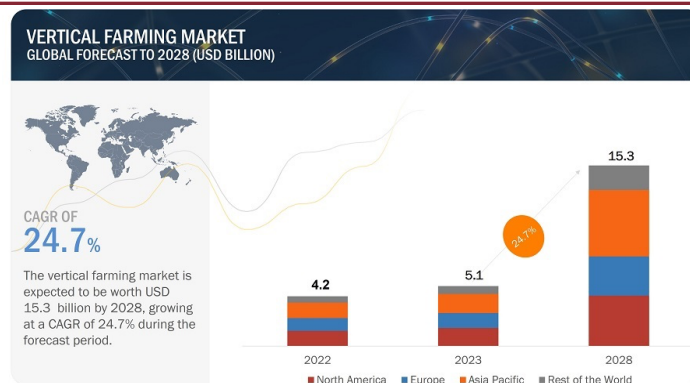
The sustainable agriculture industry is being directly affected by the economic downturn that the United States is currently facing. Most of the Sustainable Agriculture stocks are down over the past year, which directly reflects the overall market. However, they have not been as affected as other industries such as technology as the sector is still primarily reliant on its funding and legislation. This is due to Sustainable Agriculture forming out of the Climate Change movement, which is an integral part of the government's plan.

In terms of the economic moat, it is pretty strong as single companies dominate in their respective fields. However, that is mostly because of it being a small industry, in the future, a lot more companies will start to challenge them as it has moderate barriers to entry and lots of companies will compete with them.

Challenges and Opportunities

The Sustainable Agriculture industry faces one main challenge, which is still trying to create the market for sustainable farming and helping convert companies to sustainable agriculture. Lots of big companies still prefer traditional agricultural methods as it would lead to greater profits, so a lot of the current efforts are convincing those companies to invest in a safer future. Furthermore, even a lot of the companies that are producing the sustainable agriculture technology are a part of bigger companies and allocate a small portion of their funding to sustainable efforts, something that needs to change if development needs to occur.

However, this is a great opportunity in itself as continued government subsidies would continue to incentivize companies to pursue sustainable agriculture, which would then lead to a slow change in the industry. Also with these governmental subsidies, the number of companies in the industry will continue to grow, leading to more competition and innovation over the next few years. Another big opportunity that arises is the rapid population growth around the world. According to the United Nations, the population of the world is expected to grow to 8.5 billion by the year 2030, increasing the population by 1 billion over the next 8 years alone. This will lead to more pressure on maintaining efficient land and food production, forcing companies to take a more sustainable approach when cultivating. This would lead to a greater use of sustainable technology and methods such as vertical farming and better crop rotation methods, immensely benefiting the sustainable agriculture companies.



Outlook and Conclusion

In this sector research report, several key points emerge as crucial for understanding the current landscape of the agriculture and sustainable agriculture sector. The sector boasts a substantial market size, contributing 5.4% to the total U.S. GDP, with sustainable agriculture experiencing rapid growth, projected to have a CAGR of 10.17% until 2031. Notably, consumer demand is primarily driven by enterprises, with individual consumers yet to enter the field significantly. Key areas of growth include vertical farming and advanced technology in irrigation, fertilization, and AI integration. Legislative factors, particularly the Farm Bill, play a pivotal role in the industry's expansion, with the 2018 Farm Bill alone projected to cost approximately \$428 billion over five years. Despite the economic downturn, sustainable agriculture stocks show resilience due to their reliance on funding and legislation, stemming from climate change initiatives. The industry's current economic moat, upheld by dominant companies in specialized fields, may face challenges as barriers to entry are moderate, potentially leading to increased competition. The main challenge faced is persuading traditional agricultural companies to transition to sustainable practices, yet government subsidies offer an opportunity to incentivize change.

For this quarter, the recommended fundamental investing stance is Growth. The sector's remarkable growth prospects, the influence of supportive legislation, and the potential for an influx of competition and innovation make it an attractive choice for investors seeking growth opportunities. It is advisable to focus on companies well-positioned to capitalize on the growth of sustainable agriculture, especially those incorporating technological advancements and specialization. Monitoring economic conditions and government policies remains essential for assessing potential impacts on the sector's performance.



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Energy



Overview

In 2022, the global renewable energy sector's worth stood at USD 1.1 trillion and is "projected to grow at a compound annual growth rate (CAGR) of 16.9% from 2023 to 2030", according to Grandview Research. According to Investopedia, General Electric is one of the most prominent players in the renewable energy industry, with a market capitalization of \$89.02 billion. General Electric leads the wind turbine industry with over 49,000 wind turbine installations globally and 400 Gigawatts of renewable energy installed. Iberdrola is an up-and-coming player headquartered in Spain but with offices internationally. Iberdrola's solar energy production increased 188.5% in the USA from 2022-23. According to Investopedia, Iberdrola's "1-Year Trailing Total Return is 113.65%". Iberdrola is a global player in the electricity industry with leading wind power production and is committed to a sustainable business model centered on smart grids, energy storage, and digital innovation.

The Department of Energy found that employment within renewable energy grew faster than overall U.S. employment, with over "8 million jobs in renewable energy." Additionally, the DoE supports renewable energy by standardizing clean energy education and supporting "market growth and stability by fostering stable pipelines of clean energy contracts." In Europe, the Ukraine-Russia crisis "has accelerated renewable energy deployment in the European Union," according to the International Energy Agency.

Looking at employment growth, currently, there are 6.8M employees, which is ~5% of the U.S. labor force). Renewable energy employment grew by "3.9%, adding 114,000 jobs nationally," and "clean energy technologies, such as solar and wind, accounted for more than 84% of net new electric power generation jobs, adding over 21,000 jobs", according to the Department of Energy. Renewables now account for "30% of global electricity generation," and clean energy investments reached "USD 1.6 trillion in 2022, an increase of almost 15% from 2021", according to the International Energy Agency.



Market Trends

Renewable energy is a large industry focusing on different markets. Solar energy is a recent consumer demand that has increased in the past decade as installation prices have decreased. The consumer demand for solar energy products has increased because of tax incentives and savings on electricity bills. For companies to be operating carbon-free globally, we need to "accelerate the decarbonization of electricity grids," according to Google. Additionally, corporations can make a difference by supporting new clean energy technologies "by signing long-term purchase agreements." New technologies will be vital in the renewable energy market growth as one pressing issue is that solar and wind energy cannot be harnessed at night. Hydrogen energy is a focus point many companies are looking towards. Google suggests that through electrolysis, Hydrogen will effectively operate as a long-duration energy storage with "combustion turbines, reciprocating engines, fuel cells, and linear generators." With the rise of AI, these technologies can play a vital role in the transition to renewable energy. For example, according to Forbes, "AI innovations can optimize supply chain efficiency via enhanced consumer demand predictions, thereby reducing activities that generate GHG." Legislative action, such as the Inflation Reduction Act (IRA) of 2022, focused on investing in the domestic clean energy industry. One of the goals of the IRA is shifting the "U.S. grid to 80 percent clean electricity and cutting climate pollution by 40 percent by 2030", according to the Rocky Mountain Institute. The IRA was passed in 2022, and one year later, "\$278 billion has been invested in new private clean energy investments" (Rocky Mountain Institute). The IRA has caused energy prices to decrease and reduced carbon emissions in the USA.

Key Drivers

The energy sector is driven by technology, policy, and consumer preferences. Technology is especially important in the renewable energy space as new technologies emerge and are improved on. New competitors' success is determined largely by their ability to keep up with the rate of innovation. Policy is also key to the sector as new legislation such as the Bipartisan Infrastructure Law (BIL) and Inflation Reduction Act (IRA) have encouraged growth among renewable energy companies. Consumer preferences are also shifting to demand more renewable energy. As solar installation prices continue to drop closer to (and in some cases below) traditional energy prices, the market will continue to grow dramatically. Leading competitors such as First Solar that continue to expand and innovate and are able to effectively capture new market share will be attractive investments.



The energy sector has demonstrated mixed performance during recessions, on average declining ~23% peak to trough. However, in 2 out of 3 recessions, prices peaked as long as 6 months after the onset of the recession, likely due to energy shortages and increased demand. This may provide a cushion and a “lead time” to evaluate and get out of energy positions before they crash.

Large companies like General Electric and First Solar lead the way in efficiency and cost reduction. Renewables are competing with each other to lower prices and rival traditional energy sources and large players leverage market power and economies of scale to drive costs down. New companies face high costs and struggle to keep up with larger, previously established competitors.

Challenges and Opportunities

The U.S. energy sector is rapidly transforming. Changing consumer preferences, new technologies, and shifting legislation all contribute to this. 69% of Americans said that they believe that the U.S. should focus on expanding renewable energy infrastructure over oil and gas. The same 69% also reported that they would choose renewable energy over traditional sources. The future of the energy sector lies in renewables.

Clean energy accounted for 87% of new electric power jobs in 2022, and grew 3.9% overall from 2021 levels. Young competitors such as NextEra are examples of newer players that are carving out market share for themselves. The majority of new competitors are in renewables, and contribute to the blistering pace of innovation in the area. For example, the average efficiency of solar panels has increased from ~14% in 2010 to ~25% in 2023. Researchers recently created solar panels with efficiency as high as 47%, and solar companies that are quick to develop and innovate will decrease costs, increase efficiency, and see incredible growth.

Investments from Bipartisan Infrastructure Law (BIL) and Inflation Reduction Act (IRA) provide critical funding to drive more rapid adoption of zero emissions products. While this is good news for renewables, oil and gas will be hurt by this. Oil giants like Exxon Mobil and Chevron will need to take advantage of the shifting policies and consumer preferences in order to survive. Chevron announced that they are “growing capabilities in renewable fuels, carbon capture and offsets, hydrogen, and other emerging technologies”. Supply chain disruptions from Russia as well as the unfolding conflict in Israel and the Middle East as a whole may spike oil prices further. Chevron has also been experiencing strikes in their Australian facilities. Finally, as



the U.S. modernizes its energy grid, massive opportunities will emerge for new and existing players.

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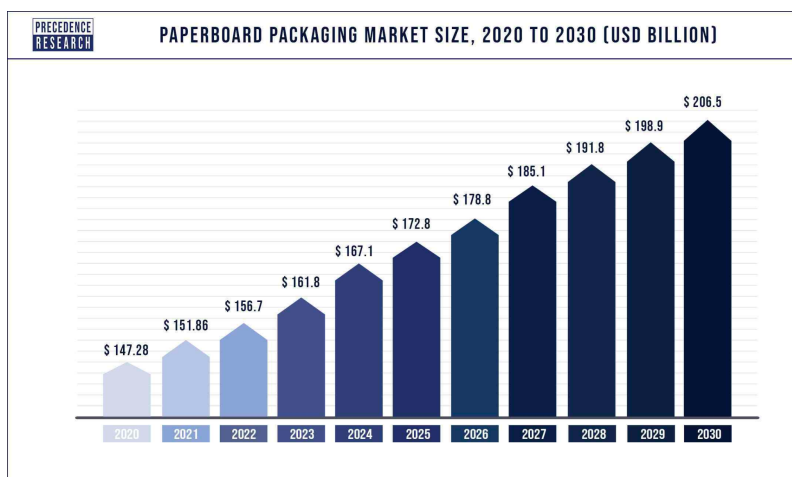
Environmental Consumer / Packaging & Materials



Overview

Products that are marketed as sustainable hold a market share of roughly 17% after significant growth through the pandemic. Despite their market share, they delivered roughly one third of all Consumer Packaged Goods (CPG) growth. Almost all consumer companies have some focus on sustainability, with large players like Tide, which saw a 39% increase in product sales after efforts to promote new cold-washing detergents.

Alongside consumer-focused companies, a new wave of packaging companies are also working to create sustainable CPGs working with business to consumer companies. The market size for paper-packaging was around \$156.7 billion as of 2022, and is projected to reach over \$200 billion by 2030 with a CAGR of 3.5%. Large players within the U.S. include WestRock (which was recently acquired by Smurfit Kappa), International Paper, and AMCOR. However, 2023 has seen a slight decline in the amount of boxboard packaging being produced, with the American Forest and Paper Association estimating total first-quarter production to be down 5% compared to the same period last year. These companies primarily rely on ecommerce, which is estimated to grow 9.3% in 2023 to reach \$1.137 trillion





Market Trends

The demand for sustainable consumer goods, while many consumers report having a vested interest in the effort to purchase sustainable goods, remains a major struggle for the sector. The sector is focused primarily on reaching these consumers and how to bridge the gap between voiced commitment to environmentally-friendly products and generating an actual demand for them. Still, consumer demand for environmentally-friendly products is steadily rising world wide, especially as globally more environmental regulations are being put in place, with more than 70 countries putting legislation in motion to target plastic use in particular. There is also a very clear generational gap, as Millennials and Generation Z consumers are more willing to spend extra on sustainable products than older generations.

Paper-packaging is also seeing a variety of innovations. One major technology expected to revolutionize the food packaging industry is fiberized packaging- utilizing plant-based fibers in order to create sustainable and environmentally-friendly packaging. Nanotechnology is also expected to improve the quality of sustainable packaging, including food-packaging and goods requiring durable packaging. This industry also stands to benefit from any legislation that regulates the usage of non-sustainable materials used in packaging, such as plastic, which, as mentioned before, is seeing a new wave of legislation.



Key Drivers

The Packaging Sector, while more resilient during times of economic downturn due to its nature as a supplier of consumer staples / discretionary sector businesses, still performs cyclically sensitive to economic cycles having recorded a strong positive correlation to these sectors since 2015. (PKG & XLP were used for this study) Current macroeconomic trends provide both headwinds and tailwinds to the sector. A challenging and volatile macroeconomic environment of high inflation and surging commodity prices, which are notably not included in CPI, have compressed margins for the sectors and consumer spending is projected to slightly decrease. However, the move to e-commerce and globalization over the years has boosted the need for packaging products as more products are shipped which require more products such as corrugated cardboard for shipping boxes. Economic moats in the sector for firms such as PKG, Packaging Corporation of America, are currently strong as economies of scale and large fixed costs prevent many smaller players from trying to scale, especially in times where financing costs have risen tremendously.

Challenges and Opportunities

Changing Consumer preferences represent a tailwind for the sector as increased e-commerce activity increases the need for packaging and packaging materials. The sector is largely stable and the innovation occurring is at the established firms with the exception of the paper packaging market and more sustainable options. However, this innovation is largely material science and requires years of development before they can impact the market at scale. Existing players may need to adapt if regulatory changes occur forcing these companies to pivot. Sustainable packaging and the trend of moving away from plastic packaging are foreseeable regulatory hurdles for companies not also involved in the paper packaging market or working to develop more sustainable materials. However, their challenges provide opportunities for smaller firms. The only foreseeable geopolitical risk American Packaging companies face are if the United States cut ties with China in the scenario of economic or physical war as that eliminates the need for global packaging and shipping to one of the greatest consumer bases in the world. The current greatest issues in the sector are rising commodity costs and global supply chain disruption as a result of a resurgence of COVID or increased geopolitical instability.



Outlook and Conclusion

Key points for this sector are that Packaging stocks typically forecast and lead economic cycles as they are highly sensitive to sectors such as consumer staples / discretionary which are inherently sensitive to consumer spending. TAMs for the sector are increasing and sustainable packaging can benefit from regulatory challenges to non-sustainable plastic packaging. Moats in the sector are strong but high geopolitical volatility can drastically decrease business, a factor to watch in the coming months.

SCIF will be taking a value approach to this sector as many of these companies are mature businesses with high FCF that pay dividends. We believe that investing opportunistically in this sector can provide gains as well as lowering volatility in the overall portfolio. The stock highly correlates with economic cycles and TAMs are projected to grow as mentioned in the overview and market trends segments of the research report.

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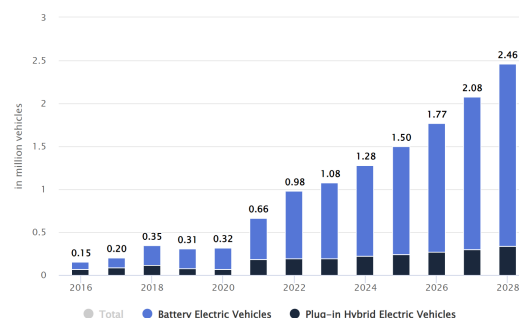


Transportation

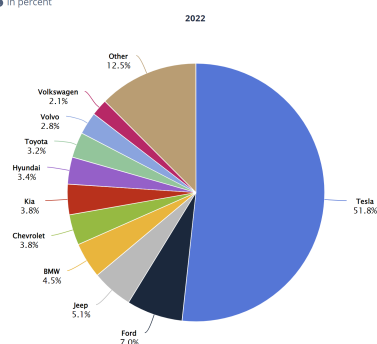


Overview

The global electric vehicle market size was USD 384.65 billion in 2022 and is expected to grow from USD 500.48 billion in 2023 to USD 1,579.10 billion in 2030, exhibiting a CAGR of 22.1% during the forecast period. However, specifically in the United States, revenue in the electric vehicles market is projected to reach US\$70.1bn in 2023. Revenue is expected to show an annual growth rate (CAGR 2023-2028) of 18.17%, resulting in a projected market volume of US\$161.6bn by 2028. In regards to employee growth within this industry, a recent analysis by the Economic Policy Institute (EPI) finds that U.S. auto-industry jobs could rise by 150,000 by 2030 if battery electric vehicles sales reach 50 percent by 2030 and the vehicle market share of U.S.-assembled vehicles increases to 60 percent from today's 50 percent. As a data point, the 15 major automakers in the United States employ about 388,000 workers.



● In percent



Regarding market share, Tesla is currently the leading EV company occupying 51.8% of the market. Ford, with 7% of the EV market share is the second largest company with the highest market share, followed by Jeep (5.1%) and BMW (4.5%). However, there has been a surge of Chinese EV companies that are currently in the process of distributing their vehicles in US markets, which occupy the majority of the “Other” category. Tesla has benefited considerably from its early entry into the electric vehicle space. While Teslas offer

superior performance, lower maintenance, and no tailpipe emissions compared to internal combustion engine based cars, the company has also been able to benefit from various government incentives at both the federal and state levels (ZEV credits, federal tax credit for buyers). The advantages of the shift to all-electric vehicles are unlikely to remain exclusive to Tesla over the long term. Mass market manufacturers GM and Nissan have already proven that they can manufacture relatively compelling electric products such as the Bolt and Leaf, while other large players have also earmarked sizable investments to aid their shift to EVs. Ford, for instance, is expected to invest over \$4.5 billion into its EV program by 2024.



Market Trends

In the first two months of 2023, battery electric car sales were already up by over 30% year-on-year, while overall car sales increased by just over 10% year-on-year. A number of factors are helping to increase sales in the United States. A greater number of available models, beyond those offered by Tesla, the historic leader, helped to close the supply gap. Given that major companies like Tesla and General Motors had already reached their subsidy cap under US support in previous years, 5 new models from other companies being available means that more consumers can benefit from purchase incentives, which can be as high as USD \$7,500. Awareness is increasing as governments and companies lean towards electrification. In 2022, a quarter of Americans expect that their next car will be electric, according to the American Automobile Association. Although charging infrastructure and driving range have improved over the years, they remain major concerns for US drivers given the typically long travel distances and lower popularity and limited availability of alternatives such as rail. However, in 2021 the Bipartisan Infrastructure Law strengthened support for EV charging, allocating USD 5 billion in total funding over the 2022-2026 period through the National Electric Vehicle Infrastructure Formula Program, as well as USD 2.5 billion in competitive grants over the same period through the Charging and Fueling Infrastructure Discretionary Grant Program.

The acceleration in sales growth could continue in 2023 and beyond thanks to recent new policy support. The Inflation Reduction Act (IRA) has triggered a rush by global electromobility companies to expand US manufacturing operations. Between August 2022 and March 2023, major EV and battery makers announced cumulative post-IRA investments of USD 52 billion in North American EV supply chains, of which 50% is for battery manufacturing, and about 20% each for battery components and EV manufacturing. As an example, Tesla plans to relocate its Berlin-based lithium-ion battery gigafactory to Texas, where it will work in partnership with China's CATL, and to manufacture next-generation EVs in Mexico. Ford also announced a deal with CATL for a battery plant in Michigan, and plans to increase electric car manufacturing sixfold by the end of 2023, at 600 000 vehicles per year, scaling up to 2 million by 2026. BMW is seeking to expand EV manufacturing at its plant in South Carolina following the IRA. Volkswagen chose Canada for its first battery plant outside Europe, which will begin operations in 2027, and is also investing USD 2 billion in its plant in South Carolina. While these investments can be expected to lead to high growth in the years to come, the impact may only fully be seen from 2024 onwards as plants come online. In the immediate term, the IRA has constrained eligibility requirements for purchase incentives, as vehicles need to be produced in North America in order to qualify for a subsidy. However, electric car sales have remained strong



since August 2022, and the first months of 2023 have been no exception: In the first quarter of 2023, electric car sales increased 60% compared to the same period in 2022, potentially boosted by the January 2023 removal of the subsidy caps for manufacturers, which means models by market leaders can now benefit from purchase incentives. In the longer-term, the list of models eligible for subsidies is expected to expand.

In conclusion, the Santa Clara Investment Fund should adopt a growth investing stance for this industry. The electric vehicle market is poised for remarkable growth in the coming years, both globally and within the United States. The data presented clearly illustrates a significant upward trajectory in market size, with projections indicating substantial revenue increases and positive employment prospects in the U.S. auto industry. Market dynamics are shifting, with Tesla maintaining its lead but facing increasing competition from a variety of manufacturers, especially from emerging Chinese companies. This competition is driving innovation and expanding the range of available electric vehicle models, making them more accessible to consumers. Government policies and incentives are playing a crucial role in promoting the adoption of electric vehicles, which is reflected in the increasing sales figures and heightened consumer awareness.

Key Drivers

The transportation sector is a significant contributor to greenhouse gas (GHG) emissions, accounting for about 20% of global GHG emissions[1]. The sector is also the largest source of GHG emissions in the United States, responsible for one-third of all emissions[2]. The impact of transportation emissions on the climate crisis is worsening quality of life in cities, towns, and rural communities throughout the world. The United Nations Department of Economic and Social Affairs has called for transformative action that will accelerate the transition to sustainable transport globally[3]. In this report, we will explore the transportation sector in the climate industry and provide recommendations for investment opportunities.

First is Decarbonizing Transport. The World Bank, the government of the Netherlands, and the World Resources Institute have jointly developed a new series of publications and events that aim to deliver actionable recommendations, with a focus on overcoming investment barriers and developing innovative financial instruments to decarbonize transport[1]. This presents an opportunity for investment in innovative financing approaches from a developing market perspective to overcome market barriers that are constraining climate-friendly transport solutions. Second is Clean Energy Transitions. The International Energy Agency (IEA) has identified the role of transport in clean energy transitions[6]. The IEA recommends that urban governance should encompass transport strategies that can induce modal shift towards



low-emission transport in order to get in step with the Net Zero Emissions (NZE) Scenario. This presents an opportunity for investment in low-emission transport infrastructure, such as bicycle lanes and car-free zones, and fiscal and regulatory policies that support electric vehicles.

Third is Climate-Smart Mobility. The United States Department of Energy has developed a National Blueprint for Transportation Decarbonization[2]. The blueprint includes historic levels of funding for transit, rail, and active transportation, build outs of EV charging, and other measures to reduce emissions from the transportation sector. This presents an opportunity for investment in clean transportation infrastructure, such as EV charging stations and public transportation.

Fourth is California Climate Investments. California Climate Investments (CCI) is a program that invests cap-and-trade auction proceeds in projects that reduce GHG emissions, particularly in disadvantaged and low-income communities[5]. The program has invested in a variety of transportation-related projects, including clean vehicle rebates, public transit, and active transportation. This presents an opportunity for investment in transportation-related projects that reduce GHG emissions and improve air quality.

Challenges and Opportunities

The markets for, and the marketing of, goods and services have undergone profound transformations over the past 20 years[1]. Regulatory reform, more open global markets, new technologies, and the growth of services as an increasing component of economic activity have been agents of change and in many instances have provided significant benefits to consumers. According to a Deloitte report[3], the consumer is changing because of the evolving environment around them. The report suggests that if retailers and consumer product companies want to cater effectively to changing consumer needs and identify new pockets of opportunity, it is imperative for them to understand the demographic, economic, and competitive milieu that the consumer is reacting to. The report also suggests that consumer tastes and preferences will continue to fragment.

According to a report by the National Renewable Energy Laboratory (NREL)[2], transportation electrification is a rapidly growing market, with electric vehicles (EVs) becoming more affordable and accessible. The report suggests that the transportation sector is undergoing a significant transformation, with the adoption of EVs, the development of charging infrastructure, and the integration of renewable energy sources. According to a Pew Research Center report[4], a large number of respondents argued that geopolitical and economic competition are the main drivers for AI developers, while moral concerns are often secondary.



This suggests that new technology is being developed at a rapid pace, and existing players in the transportation sector will need to adapt to keep up.

According to an EY report[3], consumers are traveling less than in pre-COVID-19 times, but their preference for cars, especially electric vehicles, is growing. Public transport "satisfaction gap" is emerging as a major challenge for city transport authorities. A carrot and stick approach may yield results, with 46% of consumers saying that free public transport would reduce their usage of private cars, and 38% saying that urban traffic charges would also lead them to take fewer journeys by car. Many city transport authorities may be tempted by the revenue-boosting potential of road usage fees, which also offer the prospect of a hedge against falling incomes from vehicle and fuel taxes as EVs become more prevalent.

The transportation sector is a significant contributor to GHG emissions and a major challenge in the fight against climate change. However, it also presents significant investment opportunities in decarbonizing transport, clean energy transitions, climate-smart mobility, and California Climate Investments. By investing in these areas, we can build a clean transportation system that is clean, safe, secure, accessible, affordable, and equitable, for all to help create a more sustainable future for generations to come. The transportation sector is undergoing significant changes, with new technology and changing consumer preferences, and, as such, existing players in the sector will need to adapt to keep up with these changes.

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Climate Research Report

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