### ESSEX

#### ESSEX INVESTMENT MANAGEMENT COMPANY, LLC

# The Essex Exchange

#### Autumn 2017

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The Essex Exchange Newsletter

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Please see our website www.essexinvest.com for updated insights from our portfolio management and research team.



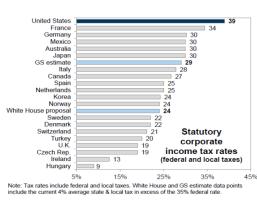
### Capturing Growth Opportunities

Robert J. Uek, Co-Chief Executive Officer & Senior Portfolio Manager

The third quarter of 2017 was an eventful one for both the stock market and for Essex Investment Management. The market continued to make new highs, with the S&P 500 Index posting a 4.0% return for the quarter (12.5% year to date). Stocks have moved higher based on continued economic growth in the U.S. coupled with a recovery in economic growth overseas. On the policy front, hope for corporate tax reform gave the market a boost late in the quarter as history would suggest that tax reductions lead to economic growth and higher corporate profits. Further, the market is recognizing the significant growth potential of several major technological changes, including artificial intelligence/machine learning, breakthroughs in healthcare based on gene editing, and the rise of electric vehicles. We continue to find attractive investment opportunities.



Source: OECD, Goldman Sachs Global Investment Research



Statutory corporate come tax rates ral and local taxes) 35%

> The Essex Environmental Opportunities Fund is based on our existing Global Environmental Opportunities Strategy

> Essex also surpassed an important mile-

stone during the quarter as we launched

our first non-sub-advised mutual fund.

Over the history of Essex, we have sub-

advised mutual funds for others; currently our team in Evanston, Illinois led by Co-

CEO Nancy Prial sub-advises the AMG

Managers Essex Small/Micro Cap Growth

("GEOS"), which we have been managing at Essex since July 2009. GEOS is an all-cap, global equity strategy that invests in companies that are helping to solve many of the world's greatest environmental challenges. We invest across nine proprietary themes ranging from Clean Tech & Efficiency to Agricultural Productivity to Water to Renewable Energy. In short, we invest in companies that help the world do more with less. Currently, we are finding significant investment opportunities in electric vehicles (see detailed note in the following pages), water, factory automation/efficiency, and smart cities.

Continued...

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#### **Capturing Growth Opportunities**

Robert J. Uek, Co-Chief Executive Officer & Senior Portfolio Manager

Until now, investors have been able to invest in GEOS through separately managed accounts and on select "model" platforms such as Fidelity, Envestnet and FolioFN. A mutual fund can be a preferred option for many investors as there is greater transparency with daily published prices and substantially less paperwork to open an account. Additionally, a mutual fund typically has much lower initial investment minimums than does a separately managed account.

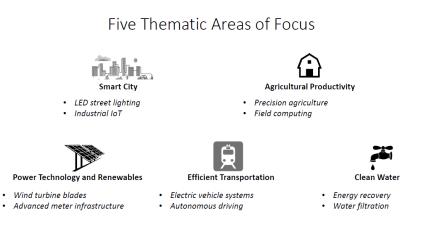
We believe there is demand for differentiated, actively managed mutual funds. Given the structure of the markets with high frequency trading, greater use of passive and quantitative strategies, and decline in retail participation, we believe an increasing number of stocks are being overlooked and incorrectly priced by the market. At Essex, we believe that strong fundamental research and a focus on emerging growth opportunities not yet captured in the indexes will allow one to exploit these pricing inefficiencies and create meaningful investment opportunities. We are putting our money where our mouth is with the launch of our mutual fund.

Please visit our new Essex Funds website at <u>www.essexfunds.com</u> for more information on the Essex Environmental Opportunities Fund and for important documentation and disclosures.

You should carefully consider the Fund's investment objectives, risks and charges and expenses before investing. This and other important information is contained in the Fund's prospectus and summary prospectus, which should be read carefully before investing. To obtain a fund prospectus or summary prospectus, call (800) 700-9929. The Fund is distributed by Ultimus Fund Distributors, LLC.

Given the significant differences between separately managed accounts and mutual funds, investors should consider the differences in expenses, tax implications and the overall objectives between separately managed accounts and mutual funds before investing. Past performance of the strategy/separately managed account is not indicative of future performance of the Fund.

Because the Adviser's GEOS criteria exclude securities of certain issuers for non-financial reasons, the Fund may forego some market opportunities available to funds that do not follow the environmental themes inherent in the GEOS strategy. The Fund's direct or indirect investment in foreign securities involve risks not associated with investing in US securities that can adversely affect the Fund's performance. There is no guarantee that this, or any, investing strategy will be successful.



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#### EVs Climbing the (Model) S Curve

#### Robert J. Uek, Co-Chief Executive Officer & Senior Portfolio Manager

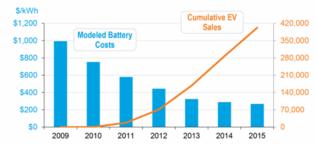
The auto industry is poised to be the next industry on the verge of mass disruption. Like many industries that are ripe for disruptive innovation, the auto business is characterized by a high degree of consolidation, outdated business models, entrenched and complacent management teams, long development cycles, slow adoption of new technologies and a complex distribution system. Electric vehicles are the disruptive force that will create massive change in the auto industry in the next decade. While sales of electric vehicles today make up less than 2% of the more than 100 million new vehicles sold globally each

year, we are forecasting that electric vehicles will account for more than 50% of new car sales by 2035.

The success of Tesla (at least from a product perspective, if not yet a financial one) is the key catalyst that has triggered the electric vehicle revolution. There have been many failed attempts at electric vehicles over the past several decades, but Tesla succeeded for two main reasons: it came along at the right time

from a technology standpoint, and it set out to create a great car (not just a car that ran on electricity). The fact that Tesla has received more than 400,000 reservations for its new Model 3 with no advertising and no product availability has finally compelled the auto industry to respond to the threat of electric vehicles.

#### **Electric Vehicles**

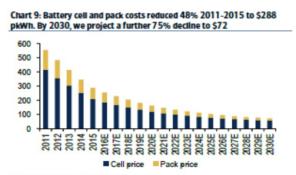




After years of casual dismissal, the reluctance of this shift is evidenced in a recent quote from long time industry veteran and former GM Vice Chairman Bob Lutz, "the majors are going to accept the losses on the electric vehicles as a necessary cost of doing business in order to sell the big gasoline stuff." This is not a quote from someone focused on seeing electric vehicles as an opportunity.

Tesla has dragged a reluctant industry into the electric vehicle era, but there are a number of other important factors that give us confidence in our bullish outlook for electric vehicle adoption. Among these: continued declines in the cost of technology (particularly lithiumion batteries), availability of compelling products from traditional auto OEMs, the collapse in sales of diesel passenger sales following consumer backlash to the emissions scandals, and government health related mandates calling for the phase-out of internal combustion engines.

Historically, a key hindrance to the widespread adoption of electric vehicles has been battery cost. Today, electric vehicles remain about 15% more costly than a similarly equipped automobile with an internal combustion engine; there is still a trade-off between desire for lower cost (smaller battery) and greater driving range (bigger battery). According to Bernstein Research, this cost disadvantage is expected to dissipate by 2021 as Tesla, in partnership with Panasonic, completes its battery Gigafactory and as other competitors aggressively invest in battery research and manufacturing capacity. Improvements in supply chains, manufacturing efficiency advancements and greater energy density from changes in battery chemistry should allow lithium-ion battery costs to drop to \$100 kWh by 2021, a level believed to give electric vehicles a cost advantage over traditional internal combustion engine powered vehicles.



Governments around the world are aggressively encouraging adoption of electric vehicles as a means to improve air quality and meet increasingly stringent fuel economy requirements. As noted in a recent article in *The Wall Street Journal*, it is estimated that poor air quality can reduce the life expectancy of those living in China by up to 3 <sup>1</sup>/<sub>2</sub> years. The United Kingdom and France have both committed to ban sales of cars with traditional internal combustion engines from 2040. India is targeting an electric vehicle penetration rate of 40% by 2032. And while not yet an official policy, a Vice Minister from China recently announced that China (now the world's largest market in terms of annual new car sales) would end "production and sales of traditional energy vehicles" by 2040. In addition to a desire to curb air pollution, China sees leadership in electric vehicles as an opportunity for domestic companies to take significant market share in an industry where it has struggled to penetrate globally.

Source BofA Memill Lynch Global Research estimates

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#### EVs Climbing the (Model) S Curve

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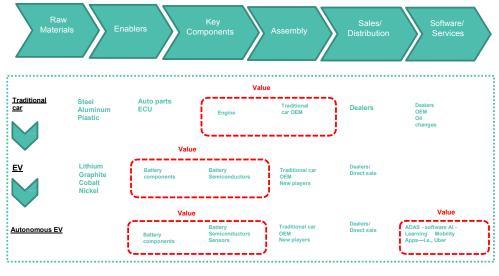
While the growth of Tesla is a nice success story, electric vehicle market penetration will never grow to a significant share of the overall market until we see the introduction of compelling product from the traditional OEMs. As evidenced at the recent Frankfurt auto show, these OEMs are finally moving aggressively to launch electric vehicles in the next few years. Volkswagen CEO Matthias Miller, announced what he called the "largest electrification initiative in automotive history" while stating that his company would offer 50 electric vehicle models by 2025. The lineup would expand to 300 models across the VW Group by 2030, an effort that would cost nearly \$100 billion. Daimler, manufacturer of Mercedes-Benz, stated that its entire portfolio will be electrified by 2022. BMW CEO Harald Kruger recently stated that "Our top priority now as a company is electric mobility." This past summer, Volvo, a Swedish auto manufacturer with a Chinese parent, set an even more aggressive timeline with the announcement that every new model the company releases from 2019 will run at least in part on electric power.

So the revolution is on, but what is the best way to invest in this trend? Does one invest in the auto OEMs? Parts suppliers? Equipment suppliers? Battery manufacturers? Materials suppliers (lithium, cobalt, copper and nickel)? Infrastructure providers? Conversely, what happens to the oil industry, the primary supplier of transportation fuel?

At Essex we are bullish on the outlook for electric vehicle adoption and we believe that it will happen faster than most are forecasting. The electric vehicle disruption is being driven by declines in technology cost, desire/demand from customers, adoption of government mandates in key end markets and the availability of attractive product offerings from traditional OEMs. We see compelling investment opportunities across a broad spectrum of companies.

But this transition to electric vehicles isn't the only challenge that the auto industry must navigate. Car sharing and autonomous driving are coming next...

As we move from traditional ICE cars to EVs and increasingly autonomous EVs, we believe the value creation moves from the auto OEMs to the core components and enablers of these new technologies



Source: Bernstein Research; March 2017

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