
MAKING MONEY WHILE CHANGING THE WORLD:

Elon Musk's 6 Point Strategy to
Solve Global Climate Change by
Transforming the Energy and
Transportation Sectors

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INTRODUCTION

In a recent [March 2015 interview with Neil deGrasse Tyson](#), Elon Musk mentioned the passions he developed in college. These passions, the Internet, space travel, and clean, sustainable energy seem to have guided him throughout his career.



As a founder of X.com which merged with PayPal in 2000 and the founder of SpaceX (with [5 successful launches](#) in just the first 4 months of 2015) Musk has certainly made an impact in the first two areas. But what about the third, sustainable energy?

By all appearances, it's too early in the game for transformation in the energy and transportation sectors to know for sure. The good news is that the US may have turned the corner. [Over 70% of newly installed electrical generating capacity](#) is now from solar and wind energy, but the percentages of installed capacity are still tiny compared to fossil fuels and renewables' impact on CO2 emissions are still modest. Progress has been made but the energy and transportation sectors still operate much the way they did 50 years ago. Musk has had great success growing Tesla Motors from \$413M in 2012 revenue to \$3.2B in 2014 in the immensely competitive automotive industry. But with over [1.6 Million premium vehicles sold last year in the US alone](#), Tesla's [market share](#) is hardly dominant. As chairman, Musk is also highly influential in the leadership of SolarCity, which successfully leveraged a residential and commercial solar cell installation strategy to grow to more than a quarter billion dollars. SolarCity was able to avoid the fate of many others caught up when [the solar industry bubble burst in 2013](#), but annual installations of a

few gigawatts is still tiny compared to US electrical production capacity on the order of a terawatt.

It's clear that Musk is heavily invested, both financially and emotionally, in making a significant impact on energy sustainability. But to be successful in accelerating the transition to clean energy, he will have to drive major transformation in the energy and transportation sectors. And if he does this, he will cement his place in the pantheon of elite entrepreneurs like Akio Morita, Steve Jobs, Jeff Bezos, and Richard Branson who all saw major success in transforming multiple industries.

In the discussion that follows, we will begin with an examination of Musk's motivation and move on to the current state of renewable energy as we try to ascertain his strategy. We will then examine the strategy itself, the implications of that strategy and predict his chances for success.



Photo Credits: flickr/Scientist, Dan Taylor / Heisenberg Media

BILLIONAIRE MOTIVATIONS FOR CHANGE ON A GRAND SCALE

Steve Jobs, Bill Gates, Oprah Winfrey, Howard Shultz, Elon Musk. What do all these names have in common? Besides being self-created billionaires, they've all demonstrated incredible passion for making a difference in the world, each in their own way. While Bill Gates was giving away billions to start the [Bill and Melinda Gates Foundation](#), Steve Jobs was putting a “ding in the universe” with a beautiful design aesthetic and intuitive usability in product designs no pure capitalist could have imagined.

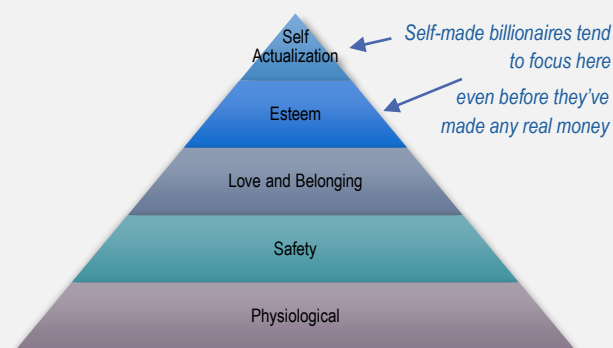
“Being the richest man in the cemetery doesn't matter to me. Going to bed at night saying we've done something wonderful, that's what matters to me.”

- Steve Jobs

As it turns out, a closer look at this group reveals that many self-made billionaires are focused more on a big idea (or ideas) than profit. Another way to think about it is that it could be that in order to reach this level of success, one's mind needs to be freed of the tyranny of focusing on physical survival and safety, a concept well described by [Maslow's hierarchy of needs](#).

Each of the billionaires in this list was able to, in his or her own way, satisfy their physical and safety needs when most others could not. Indeed, our current culture teaches us that physical, safety, and belonging needs require a certain house, car, large retirement account or other outward signs of prosperity when the reality is most of us in the industrialized world could do just fine with much less.

Materialistic messages create a substantial gap between *perceived* risk and *actual* risk in the minds of those that spend their lives focused on the bottom half of the pyramid, even though others (like the ones on this list) are able to look beyond materialism to more important matters. Focusing too much on the bottom half of the pyramid gets in the way of the big picture thinking required to drive systemic change, and this is why transformational change is so uncommon.



Does this mean that if you're focused on self actualization you'll be rich? Does it mean billionaires don't have outsized egos? Of course not. What I am saying is that self made billionaires tend to become super rich almost as a by-product of focusing on higher levels of the pyramid. For these individuals, wealth is a part of a strategy where the end goal is to make a difference, not to simply get rich.

John Sviokla and Mitch Cohen recently co-authored a book, [The Self-Made Billionaire Effect](#), where they describe several key habits of mind of self-made billionaires that allow them to be “producers”. Among them are *patient urgency* and a *relative view of risk*. Both of these habits require shedding fears associated with not having foundational needs met; these are also both traits that Elon Musk has demonstrated in spades over the span of a successful career.

"My threshold for existing is pretty low. I figure I could be in some dingy apartment with my computer and be okay and not starve."

- Elon Musk

So what is Elon Musk so passionate about that he was willing to live on **\$1 a day**? Musk consistently mentions 3 key goals in various public forums, including in a discussion with VC investor Steve Jurvetson at a Stanford business school event in 2013 that can be found [here](#).



According to Musk, these 3 goals will "most affect the future" in a "positive way"

- Sustainable energy
- Internet
- Making human life multi-planetary

As any good capitalist knows though, change usually (but not always) requires capital. We see two primary ways these billionaires used capital to create change.

The traditional method, philanthropy, involves becoming insanely rich by whatever means necessary and then funding (and in many cases operating) charitable endeavors. Bill Gates' story is a great example of this approach, although one

could also argue that Microsoft had a historical role in positive social change as well. Some would undoubtedly argue the opposite – but that discussion is for another day.

The second model involves creating businesses whose business models directly align profit with positive social change. This is not where a commercial company like [Newman's Own](#) donates profits, but rather a for-profit model like Nobel Prize winner Muhammad Yunus' [Grameen Bank](#) which addresses poverty by using a new business model, in this example microfinance.

Starting with the Internet, Musk's approach has been to drive social change by building profitable businesses in alignment with his larger goals. One could argue that instant access to the sum of human knowledge is not as important as eradicating poverty, but there is no question PayPal (and X.com before that) pioneered a profitable model for online transactions, a key enabler for commercialization of the Internet.

"If I were to get hit by a bus today, I should leave all of it to Elon Musk... I could give my money to a non-profit and a lot less would get done than a corporation that's pursuing things that are directly aligned with things I care about."

-Google CEO Larry Page (as paraphrased by Steve Jurvetson)

The point here isn't that one approach is inherently better than another, but rather that Musk follows the second model. The SpaceX story also shows a similar pattern. According to Musk, he started with a concept to build a greenhouse on Mars as a publicity stunt intended to increase support for increased NASA funding. Eventually he realized that approach would not work because with launch

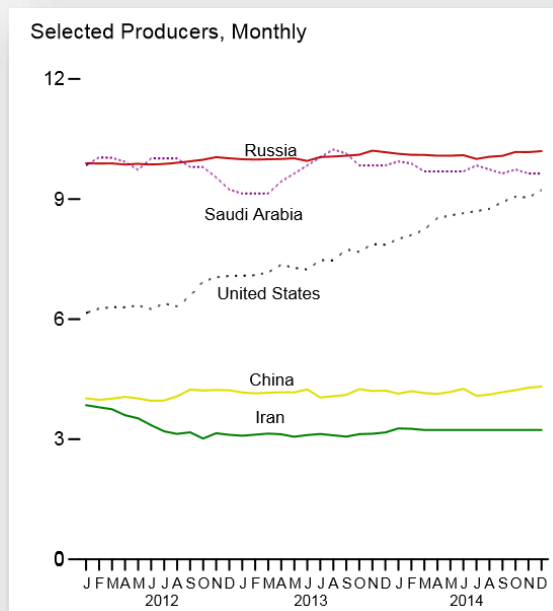
costs exceeding \$10,000 per pound, launch economics presented the critical obstacle to the economics of a successful human Mars mission. Once he realized this, Musk began to focus on the point where the technology wasn't 'good enough', space launch economics, and ultimately founded SpaceX.

For Musk, this was not just about making money. For example, he gave SpaceX a "less than 40%" chance of success and ultimately had to bet much of his net worth at a key moment in the company's history. He also knew that, in order to advance the cause of making human life multi-planetary, he had to lead the necessary changes in the underlying business models and structure of the space industry. As we will soon see, such is also the case with energy and transportation.

RENEWABLES VS. FOSSIL FUELS

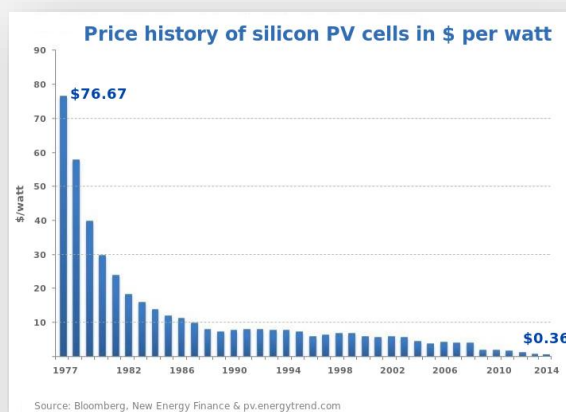
Before we look into the specifics of Elon Musk's renewable energy and transportation strategies, we need to understand a bit more about the current industry structure and economic dynamics between renewable energy and fossil fuels.

Due to advances in fossil fuel production like fracking, we've seen a dramatic reduction in the cost of crude oil in 2014-15. Because it reduces our dependence on producers in politically volatile areas of the world, this is great news for the US; lower oil prices have also contributed to a stronger dollar and continued strength in the US economy. Here's a chart showing the dramatic increase in US oil production:



Source: [US Energy Information Administration](#)

Looking at this data, one might think that lower prices for oil would have a dampening effect on investments in solar and other renewables, but the general consensus seems to be that the impact will be modest at best. Why is this the case? First, the cost of solar has declined dramatically in the last 30 years. The following chart shows this trend:



Source: http://en.wikipedia.org/wiki/Price_per_watt

Although \$0.36 per watt looks quite attractive, the cost is significantly higher when you include the capacity factor (i.e. the sun doesn't always shine) and the effects of transmission losses. Wind power has similar economics with an even lower cost per watt than solar. Even so, electricity generated from solar and wind energy is already cost competitive with natural gas, and as already mentioned, most newly installed electrical generation capacity is from renewable sources.

The sources of the long term trend in solar are clear: Economies of scale and technological advances are at play in the production of photovoltaic silicon wafers. Similar to Moore's Law, a rule, named after Richard Swanson, founder of SunPower, called "Swanson's Law" points to further exponential reductions in cost due to economies of scale and technological developments related to solar cell efficiency. Because of this, total costs of solar energy will be driven less by the cost of solar cells and more by installation and distribution cost factors.

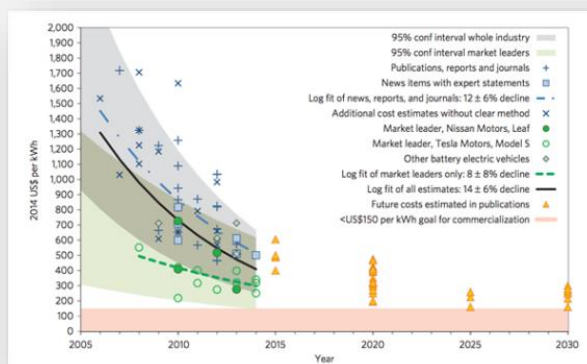
If solar and wind are already cost competitive and the trend is for costs to continue to decline, then why aren't renewables replacing fossil fuels as sources of energy more quickly? One reason is that if existing electrical production via fossil fuels is to be addressed, you have to account for the cost of decommissioning existing fossil fuel generation capacity in addition to the cost of new renewable capacity. Other reasons are even more important. To answer this question fully, we need to take a closer look at the energy value chain, specifically around energy storage and distribution.

THE ENERGY VALUE CHAIN

Traditional fossil fuels enjoy two major benefits over renewables. First, the supply is predictable. Unlike solar and wind, fossil fuels don't depend on the weather. The second benefit is that fossil fuels have an energy storage mechanism built into the fuel itself (also true for hydroelectric power). Energy storage enables fossil fuel based energy supplies to be easily matched with energy demand that varies by time of day, time of year, weather and economic output. To effectively use solar and wind as sources of energy, you must either supply other more expensive types of energy to account for unpredictable output and changes in demand or utilize an energy storage mechanism, like hydroelectric capacity storage in reservoirs or batteries.

Unfortunately, hydroelectric power storage also has a number of limitations (rainfall, environmental factors, etc.) and batteries have been far too expensive historically for industrial scale use.

The good news is that battery prices are coming down.



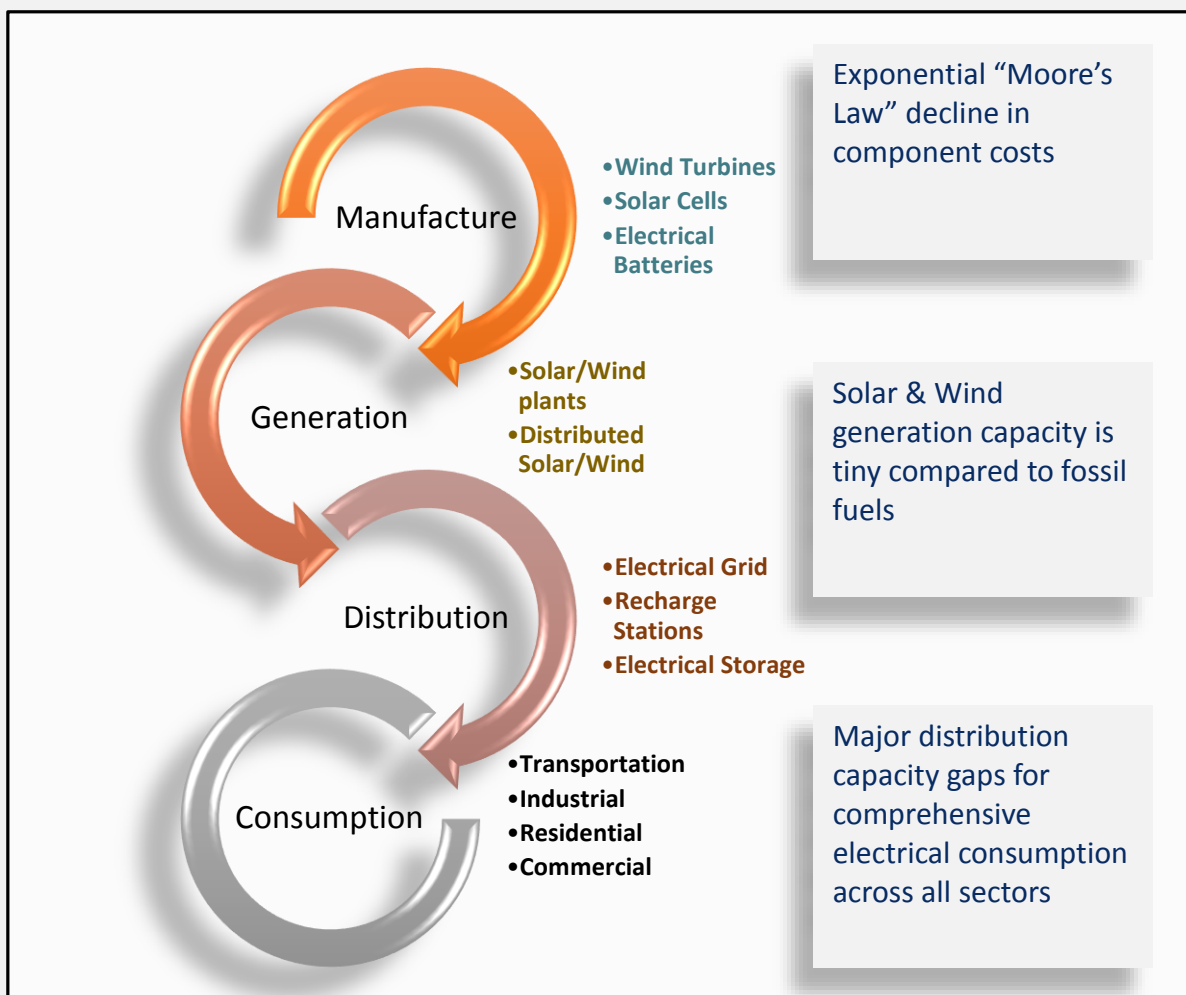
Source:

<http://www.nature.com/nclimate/journal/v5/n4/full/nclimate2564.html>

As the previous chart indicates, several estimates put the cost breakeven point between electric battery based cars and gasoline at 2020 or sooner. While a detailed cost analysis of the cost breakeven point of solar + batteries vs. fossil fuels is beyond the scope of this discussion, the trend is clear: At some point in the near future, solar and wind plus batteries will reach and then blow past the breakeven cost point with traditional fossil fuels. Once this happens, the transition to renewables (and corresponding reduction in greenhouse gas emissions) can accelerate, although there is at least one other limiting factor in the value chain – distribution. As the following graphic shows, in addition to storage, distribution is a key component of the energy value chain.



Photo Credit: flickr/aresaumbumphotos



For energy to be utilized cost effectively, it has to be distributed to energy consumers in a form they can use. Unfortunately, the transportation sector is the largest consumer of energy and is mostly unable to utilize electrical energy. In addition, a significant cost of energy (both generation and distribution) is energy conversion. For example, only 40-60% of the energy in natural gas is converted to electricity in a gas turbine being used to generate electricity.

Compare this to up to 97% efficiency in gas conversion to heat. Finally, electrical transmission costs are also significant. For these reasons, it's no surprise that

Over 70% of energy in the US is distributed via liquid, gas, and solid fossil fuels, not electricity.

**US Energy Distribution,
Dec-2014**

	Total Consumption	Fossil Fuel Distribution	Electrical Distribution
Residential	19.7%	63.2%	36.8%
Commercial	13.2%	56.8%	43.2%
Industrial	32.1%	57.6%	42.4%
Transportation	35.0%	95.1%	4.9%
All	100.0%	71.8%	28.2%

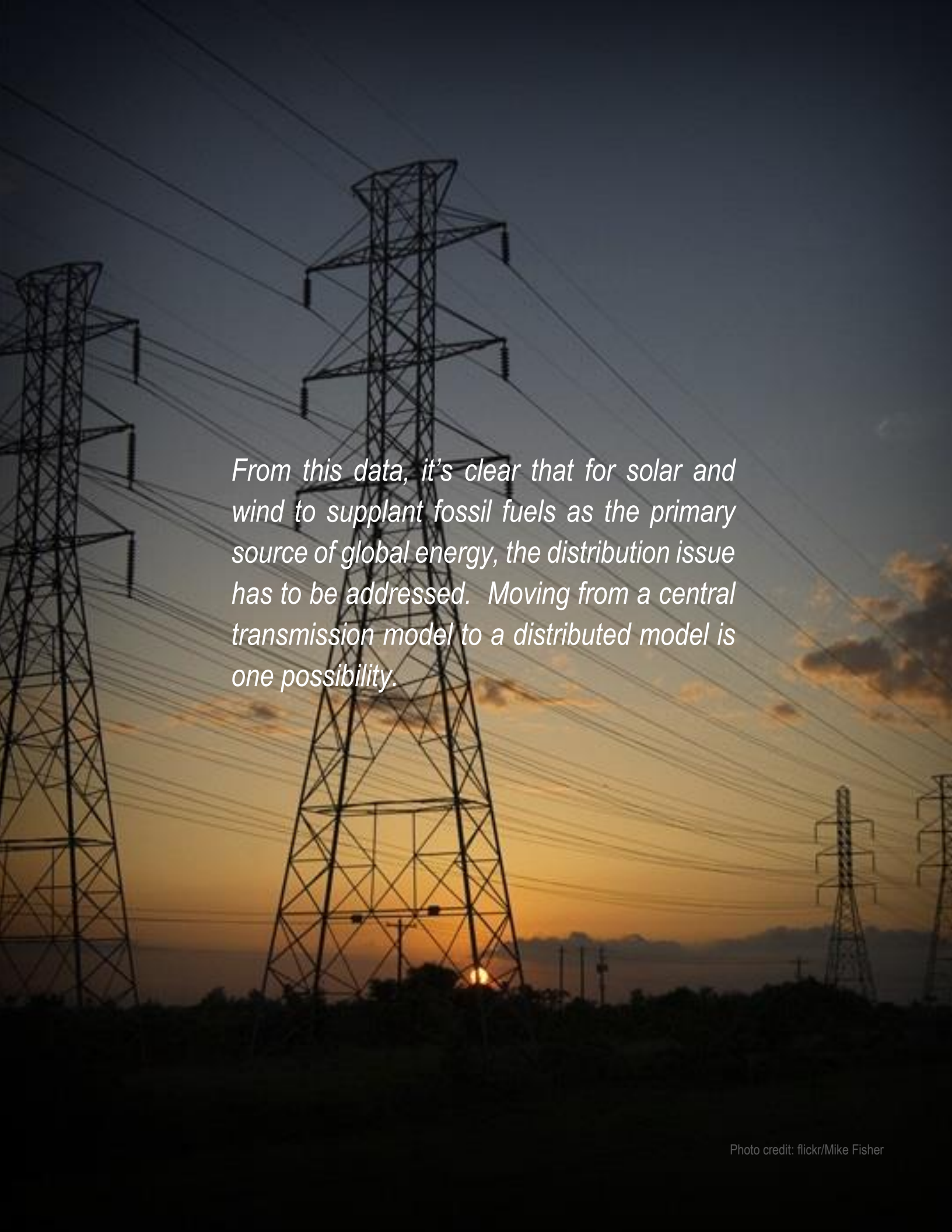
Source: Author calculations derived from <http://www.eia.gov/totalenergy/data/monthly/pdf/mer.pdf>

Also note the differences in distribution by sector. Nearly all distribution in transportation is via fuels and about 40% of energy in other sectors is distributed by electricity. Since transportation is the largest contributor to global greenhouse emissions, distribution infrastructure in this sector is doubly important, and is probably a contributing factor to why Elon Musk is so focused on "sustainable transport". Also note that this is US data where we have significant electrical transmission infrastructure already in place, which is not the case in much of the developing world where an even higher percentage of energy is distributed via fossil fuels.

Consider that if we wanted to reduce fossil fuel consumption by half, we would have to more than double electrical distribution capacity, which would require truly massive capital investment given that utilities spent nearly \$100 Billion on transmission over the last 10 years in the US alone.

"The reality is gas prices should be much more expensive than they are because we're not incorporating the true damage to the environment and the hidden costs of mining oil and transporting it..."

-Elon Musk

A photograph of several high-voltage electrical transmission towers and power lines. The towers are silhouetted against a bright, orange and yellow sunset sky. The sun is visible as a small, glowing orb near the horizon, partially obscured by the lower part of a tower. The power lines stretch across the frame, creating a sense of depth and scale. The overall mood is industrial yet serene, capturing a moment of transition in the day.

From this data, it's clear that for solar and wind to supplant fossil fuels as the primary source of global energy, the distribution issue has to be addressed. Moving from a central transmission model to a distributed model is one possibility.

ELON MUSK'S STRATEGY TO SOLVE FOR SUSTAINABLE ENERGY – LIKE A CAPITALIST

In order to understand Elon Musk's strategy, let's think about the problem the way Musk might. Instead of looking at current business opportunities and adjusting their impact on society's needs, let's start with the ultimate goal, solve for sustainable energy, then develop a strategy that achieves this goal by focusing on the right business opportunities or solutions.

"We're running the most dangerous experiment in history right now, which is to see how much carbon dioxide the atmosphere... can handle before there is an environmental catastrophe"

-Elon Musk

To solve for sustainable energy, the key questions Musk would need to ask are:

1. Where is the opportunity to make the quickest and biggest impact?
2. How does one attract investment in renewable energy to create the technologies, infrastructure, markets, and ecosystems required?
3. What critical parts of the overall value chain are inhibiting opportunities for economic profit?
4. How does one create the sustainable competitive advantage required to provide a source of cash flow needed to fund further investments?

Strengths

- Cost per watt for wind and solar is now comparable to fossil fuels
- Improving electrical storage (battery)
- Strong investments and subsidies from both public and private sectors

Weaknesses

- Most energy not distributed via electricity
- Mismatch between time and location dependent supply and demand
- Transportation sector lacks ability to consume via electrical at scale and distribution infrastructure

Opportunities

- Solve the distribution capacity problem while minimizing required capital investment
- Create a renewable energy model that balances supply and demand by combining renewable sources of production with energy storage
- Utilize/develop emerging technologies to create a new electrical driven transportation sector

Threats

- Continuing reductions in fossil fuel costs (eg. fracking)
- Response of incumbent energy providers, utilities, and governments
- Technology advances rendering Musk companies' competitive advantages obsolete

Starting with the first question, it's important to understand why this is important. No one person or organization can by themselves achieve a goal as large as creating a sustainable energy value chain for humanity; it takes an ecosystem of participants. People need to believe it's possible and for that to happen, they need to see tangible and immediate signs of progress.

Transportation is a great entry point because very little of the sector (less than 5%) is fueled from electricity, the sector is the major contributor to global greenhouse emissions, and it's highly visible. In addition, the timing is good because of advances in battery technologies to make fully electric cars economically viable.

Musk started by focusing Tesla on a tiny market niche, mid/high-end luxury electrics, a move that echoes Facebook where Mark Zuckerberg initially focused exclusively on the Harvard student body and only gradually expanded Facebook's reach. The niche startup strategy may or may not have been intentional on Zuckerberg's part, but it almost certainly was on Musk's. Peter Thiel, one of Musk's colleagues at PayPal, describes this type of strategy in detail in his recent book, "Zero to One: notes on startups, or how to build the Future". Thiel was talking specifically about network effects businesses like eBay and Facebook, but he also generalizes the approach to other kinds of business models. The underlying idea is that it is easier for a startup to create competitive advantage in a niche market than a mainstream market.

"The Monopoly Question: Are you starting with a big share of a small market?"

— Peter Thiel, Zero to One

This approach is different than the one described by Clayton Christensen's disruptive innovation theory where disruptors focus on over-served markets or provide access to consumers not served before, but there are some important similarities. The primary similarity is that the market niche's relatively small total revenue potential limits the amount of capital incumbents are willing to invest to compete with new competitors. Incumbents are also focused on mainstream core markets and their capabilities and/or assets are typically not as customized to serve specific niche markets. As mature markets like the mainstream automotive industry evolve, capabilities developed in niche categories can later provide the source for sustained competitive advantage needed to fund further investments.

Tesla clearly seems to be following this approach by initially focusing on a market niche and developing new technologies, capabilities and scale with electrical car production (batteries, power trains, software). Tesla is not Elon Musk's only foray into the energy sector, however.

As chairman and a leading investor of SolarCity, Musk is also involved in dominating a second market, residential and commercial rooftop solar installation. Because of technology advances, economies of scale, government subsidies and creative financing models, rooftop solar has seen tremendous growth, much of it driven by SolarCity.

SolarCity appears to be following an approach similar to Tesla's; focus initially on a niche where you can develop a competitive advantage before attacking larger markets. At the same time, SolarCity avoided competing (initially) in the commoditized, cost driven photovoltaic market where competitive advantage is fleeting at best and was able to capture leadership market share in the solar cell installation market.

One area where there is potential not just for innovation, but wholesale disruption is electrical utilities, both on the generation and distribution side. This is a critical part of solving for electrical distribution as the primary barrier to renewable energy. As mentioned before, it will take either moving to a distributed energy distribution model or massive investments to address the significant shortfall in electric distribution capacity. By providing a path to market through SolarCity's installation and financing business and the ability for residential and commercial energy consumers to reduce (and eventually eliminate in some cases) reliance on electrical grids with solar cells and batteries provided at scale by both Tesla and SolarCity, Musk makes a distributed model

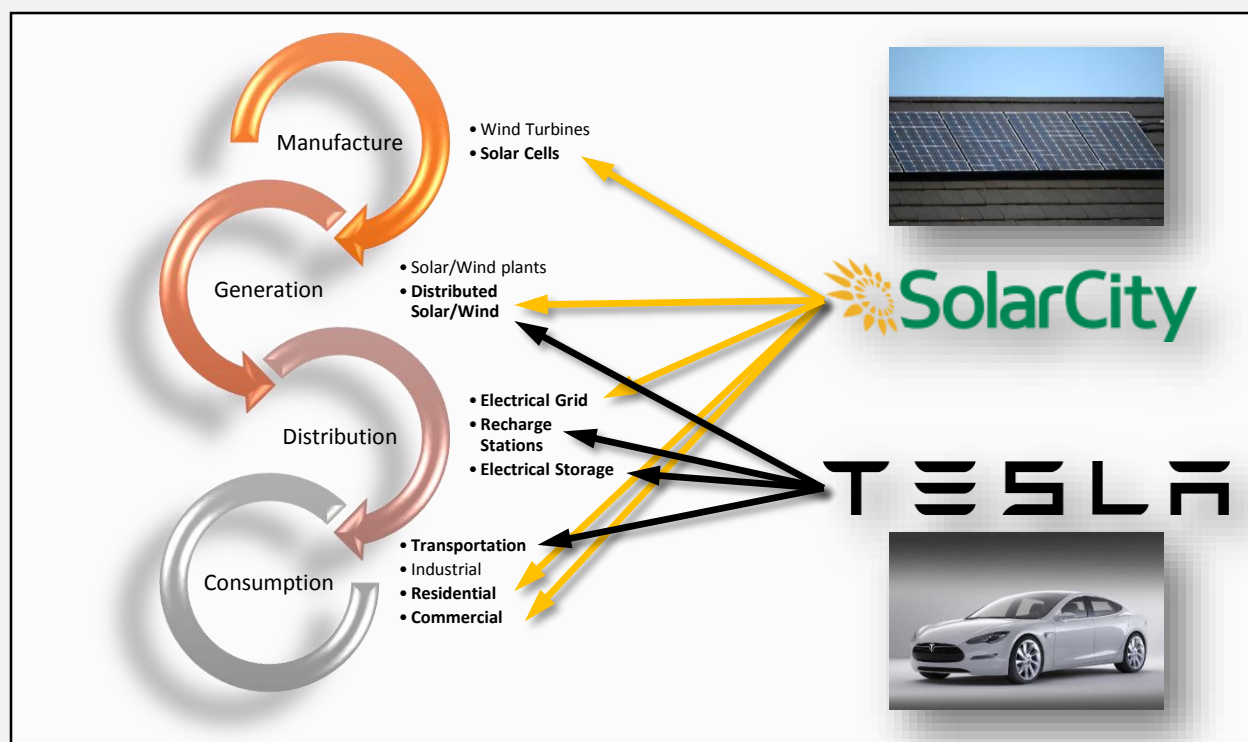
possible. New markets and new participants are created by blurring the line between electrical producers and consumers and the amount of electricity that has to be distributed is slashed; this will make the current utilities monopolies' business models increasingly difficult to maintain.

Because of Musk's success with both Tesla and SolarCity, he's attracted additional investments and competition. A great example of this is the increasing level of [investments in pure electric vehicles](#). Musk is also [providing enabling technologies](#) to companies many would see as direct competitors. This has the double benefit of growing the industry at an accelerated pace while improving the economics of the specific

components that lead to competitive advantage, in Tesla's case drive trains and batteries.

Although some see SolarCity as primarily a solar residential installation company and Tesla as primarily a car company, the reality is that Musk's companies have operations across much of the value chain. This distribution of investments and activities is not random. Musk's focus has been on elements of the value chain that tend to have the biggest impact on sustainability and present the greatest economic impediment to creating a superior cost alternative to the fossil fuel value chain. It's also not a coincidence that these components of the value chain also present the largest opportunity for sustained competitive advantage and profits.

Tesla and SolarCity Combined Operations in the Solar and Wind Energy Value Chain



While Musk's Tesla and SolarCity have focused on batteries and distribution, key enablers for the renewable energy ecosystem, they've also invested in both production and electrical consumption in the transportation sector. First, let's look at solar cells. SolarCity avoided investing in photovoltaic production during the 2008-2012 solar boom when companies like Solyndra and Evergreen Solar failed to compete with primarily Asian manufacturers in a market experiencing dramatic cost driven commoditization similar to solid state memory. The question then is why did SolarCity get into production when they [purchased Silevo in 2014](#)? According to Musk and his cousins running SolarCity, this move was [to acquire engineering expertise and access to capacity](#). The timing was right because Silevo seems to have technology that provides an at least temporary advantage in power density over rivals, something SolarCity could use to extend its market share leadership in the installation market. There's also another benefit to this acquisition, vertical integration. SolarCity now has operations in both the manufacture and installation of solar cell modules, which provides a number of advantages. Chief among them is the opportunity to accelerate innovation via knowledge transfer between producers of the modules, installers and customers. This is critically important in markets where technology is immature. Much like with Tesla, SolarCity will probably eventually license these technologies to competitors in a way that accelerates overall industry growth but also maintains control over key intellectual properties.

Another example of the benefits of vertical integration is Tesla's battery technology. In addition to making electric cars a successful business, the growth of Tesla's capabilities with respect to electrical storage stands to benefit the

development of a distributed energy production model. For example, Walmart already has Tesla batteries [installed at 11 locations in California](#). Once Tesla's [Gigafactory](#) is complete, Musk will be able to use high volume battery production to both accelerate penetration of the automotive market with the mid-market [Tesla Model III](#) and help extend SolarCity's [market share leadership](#) by enabling commercial and residential customers to become energy self-sufficient with energy modules containing both solar cells and batteries. The key here is that this is also without the need for major investments in distribution.

Over time, as renewables experience greater commoditization, expect to see Musk eventually focus less on vertical integration and more on elements of the value chain where competitive advantage is sustainable, but as the technology has a long way to go, this could take decades.

By taking a holistic view of Musk's strategy, we begin to see a pattern emerge:

1. Start with the big picture view
2. Start in a niche small enough to dominate
3. Execute like crazy
4. Only move into mainstream market segments when you can create real competitive differentiation
5. Prioritize investments in the elements of the value chain that "aren't good enough"
6. Integrate across boundaries within the value chain to create [economies of scope](#)

This approach has endless applications in other contexts and industries and I expect to see Musk, Peter Thiel, and others apply this approach to transform many other industries. By combining a powerful vision to make a difference with a structured method, the benefits can be truly breathtaking.

RISKS

In addition to the falling prices of fossil fuels, there are other even more significant risks to Musk's strategy. Chief among them is resistance from incumbents. Tesla has faced legal and political [resistance from dealer networks](#) trying to maintain their monopoly position in several states. From a public sector standpoint, expiration of solar tax credits, application of utility infrastructure surcharges and other uncompetitive practices are also significant risks.

["After the effective date of SRP's new plan \(December 8 of last year\), applications for rooftop solar in SRP territory fell by 96%"](#)

-SolarCity

To defend itself, SolarCity has gone as far as to [sue the Salt River Project utility](#) and I would expect to see continued litigation on the part of both Tesla and SolarCity for the foreseeable future.

This is common for industries experiencing disruption, in this case, auto dealer networks and electric utilities. We've also seen this pattern of incumbent response recently in other industries where new players like Uber and Airbnb are attempting to disrupt incumbents with new business models, with quite a bit of success I might add.

Counterbalancing these risks are improving value chain economics and the public's desire to move to clean, sustainable energy; these factors when considered together should eventually mitigate these threats.

There is also the chance that other technologies could reduce or eliminate Tesla's and/or SolarCity's competitive advantages. Fuji Pigment, for example, is developing a [battery that could negate Tesla's advantage](#) with Lithium Ion technologies. While these types of technological risks are real, Musk companies have developed scale based and network based advantages (like SolarCity's network of installers customers, and finance providers) that will be increasingly hard to overcome.

CONCLUSION

While some have criticized Musk's strategy or the performance of his companies, it's hard to dispute that with SolarCity he achieved leadership market share in the solar cell installation market in the US and through Tesla has done something no one has been successful with in the last 50+ years, found a profitable automotive company. While still in the early stages, the energy sector has begun its transformation to a distributed industry structure with consumers also being producers and large numbers of both. For the first time we see economically viable production at scale of

electric automobiles and strong signals of a mass market electric auto in the very near future. We see strong evidence of a top down methodological approach to addressing obstacles to a clean, renewable energy value chain. Like many other billionaire entrepreneurs, Musk's success started with a passion to do much more than make money, although he stands to profit greatly in the process.

The transition to clean energy is not happening fast enough to adequately address global warming and many obstacles remain, but I like the Elon Musk teams' chances of leading a significant acceleration in the global transition to renewable energy.



"If something is important enough, even if the odds are against you, you should still do it."

- Elon Musk

Photo credit: flickr/jurvetson

ABOUT THE AUTHOR



Tyler Johnson,

Founder and CEO, Convergent Technology Advisors, LLC

A senior executive and thought leader with more than 18 years of experience, Tyler stands at the forefront of business and IT innovation. During this time, Tyler led product development for a \$500 Million IT services business, led strategic alliances with over \$75 Million in transaction volume, and was awarded more than 24 patents in computer architecture.

A recognized expert in the cloud computing space, Tyler has consulted and worked with global IT firms, such as Rackspace, HP, CSC, EMC, NetApp, VMware, Dell, EMC, and many others on product strategy, business and alliance development, and business/IT alignment.

It is this unique perspective born of deep experience in business, technology, sales, and alliances that enables Tyler to bridge the gap between business and technology and help companies with their transition to digital enterprises.

Tyler holds a B.S. in Electrical Engineering from Florida Atlantic University, an MBA from Southern Methodist University and resides in Alpharetta, GA, with his wife and two sets of twins.



LINKS SUMMARY:

<http://www.cnbc.com/id/102510242>
<http://www.universetoday.com/120004/spectacular-5th-spacex-launch-in-2015-sets-record-pace-clears-path-for-critical-flights-ahead/>
<http://www.forbes.com/sites/peterdiamandis/2014/09/02/solar-energy-revolution-a-massive-opportunity/>
<http://www.fool.com/investing/general/2015/03/28/10-things-everyone-should-know-about-solar-energy.aspx>
http://www.pv-tech.org/editors_blog/will_solarcitys_1gw_buffalo_riverbend_production_plant_be_a_dream_or_a_drea
<http://www.statista.com/statistics/261255/premium-automotive-sales-by-country/>
<http://hardware.slashdot.org/story/15/03/24/1342219/elon-musks-solarcity-offering-to-build-cities-businesses-their-own-grids>
<http://www.bloomberg.com/news/articles/2014-12-05/musk-battery-works-fill-utilities-with-fear-and-promise>
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<http://www.washingtonpost.com/blogs/innovations/wp/2015/03/24/when-elon-musk-lived-on-1-a-day/>
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<http://www.eia.gov/totalenergy/data/monthly/pdf/mer.pdf>
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<http://en.wikipedia.org/wiki/SolarCity>
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