

Perspectives

AUG
2021

Pixie Dust and Fairy Tales





“The reports of my death have been greatly exaggerated.”

—MARK TWAIN

The coming energy transition is real, but as investors, we should heed the advice of Mark Twain as it relates to the impending end of our global reliance on fossil fuels: “the reports of my death have been greatly exaggerated.”

Earlier this year, the International Energy Agency (IEA) released their headline-grabbing report: “Net Zero by 2050”—a noble title even if it is based on aggressive assumptions and projections. The 224-page report focuses on the 2015 Paris Agreement goal of holding global temperature increases to 1.5 Celsius. The report keys in on what is required in the short term (now to 2030) and long term (2030–2050).

The IEA was born out of the 1973–1974 oil crisis, when industrialized countries found they were not adequately equipped to deal with the oil embargo imposed by the Middle East oil producers that pushed prices to historically high levels. This first oil shock led to the creation of the IEA in November of 1974, with a broad mandate on energy security and energy policy cooperation. There are 30 *member* countries including: U.S., U.K., the rest of Europe, Australia, Mexico and Canada. In an effort to be inclusive, there are also eight emerging-market countries called *association* countries, including China, which in our mind means, “these forecasts don’t apply to you.”

The full reportⁱⁱ is a fascinating read with many predictions. As we dove into the assumptions needed for many of the predictions to occur, we were left thinking:

- The transition from fossil fuels to cleaner energies will take far longer than the politicians and ESG aficionados would lead us to believe.
- The supply strain and impact on natural resources (copper, lithium, cobalt for example) required to meet the projected growth in EVs is poorly understood.
- In addition to the supply strain on these natural resources, the amount of fossil fuels needed to extract them is never discussed.
- One key assumption: while population and the world economy continue to grow, overall energy consumption will decline 25% by 2050. Since 1965, there has not been a single 20-year period where per capita demand has fallen by more than .1%; why would the future be so different?

The table below highlights some of the assumptions and projections from the IEA, along with observations around those assumptions.

IEA Assumptions/Projections ⁱⁱⁱ	Observations
Annual clean energy investment rises from \$1 trillion to \$4 trillion by 2030 and is maintained at that level through 2050.	Government spending ≠ efficient allocation of capital. Spending on decarbonization will be parabolic, but governments historically are not good allocators of capital.
Half of the reductions in global CO ₂ by 2050 comes from technologies that are currently in the demonstration or prototype phase.	Never underestimate the power of innovation, but many politicians are proposing legislation as if this technology is already in use.
No new oil and gas fields approved for development; no new coal mines or extensions.	But, what about China? 247 gigawatt of coal power is now in planning and development in China, 6x's Germany's capacity. China also proposed additional new coal plants, that if built, will generate 73.5 gigawatt of power—more than 5x's the proposed 13.9 gigawatt ^{iv} IN THE REST OF THE WORLD.
Electric vehicles will represent 15% of total transportation energy by 2040.	Most people don't realize how much fossil fuels are required to mine the lithium required in EV batteries. If the IEA is correct and EVs represent 15% of total transportation by 2040, an incredible 2 billion tons of oil will be required to build the battery.* ^v Traditional mining is the antithesis of the green movement.
Emissions and energy consumption fall by 60% and 25%, respectively, by 2040, while the population grows by 20%.	According to British Petroleum, there has not been a single 20-year period since their data began in 1965, where per capita demand has fallen by more than .1%, making the IEA's assumption almost impossible. ^{vi}
EV global car sales move to 60% by 2030 (up from 5% today) with public charging +40-fold.	The impact on natural resources to accomplish this needs to be understood. The U.K. alone has pledged to only produce EVs by 2035. This will require the U.K. to import the equivalent of the entire annual cobalt needs of the European industry. It would also require nearly the entire world production of neodymium, ¾ of the world's lithium production and 50% of the world's copper production ^{vii} ...once again just in the U.K. alone.
By 2050, solar becomes the largest source of energy, wind power increases 11-fold, while fossil fuels fall to only 20% of the energy supply.	Every major technological advance has come about because it is able to convert energy more efficiently than what society was using before, i.e., engines evolved from the steam engine (1700s-1800s), to the internal combustion engine (1850s), to jet engines (1950s). Today, fossil fuels are 87% of global energy consumption because they are the most efficient source of energy globally. Wind and solar (both intermittent sources of energy) would mark the first time we have seen a widespread shift to a less efficient source of energy conversion. ^{viii}
Oil demand falls -75% to -24mmbopd by 2050 (OPEC market share expands to -50%)	Currently, OPEC has a ~30% market share, while the U.S. has ~15%. In the IEA scenario, OPEC, who do not share the same interest as the U.S., would almost double their market share and influence on the markets. The irony is the reason the IEA was formed was to create an affront to many of the countries that make up OPEC. Yet, the IEA wants to almost double their power. Current OPEC members: Algeria, Angola, Congo, Ecuador, Gabon, Iran, Iraq, Kuwait, Libya, Nigeria, Qatar, Saudi Arabia, UAE, Venezuela.

Energy companies haven't been the best stewards of investor capital. Far too many were poor allocators of capital and focused on drilling at any cost. Over time, money goes where it has been best treated. In the last 10 years, the energy sector^{ix} had an annualized return of -.95% and reached an all-time low weighting in the S&P 500 of ~2.3%. This is juxtaposed to growth companies in the Nasdaq-100 which have earned a whopping 21.66% per year over the same time period and make up ~28% of the S&P 500^x. It's not hard to see why investors are avoiding this sector.

Today feels reminiscent of the late 90s, when 46 states reached an agreement with the leading tobacco companies that mandated the tobacco companies pay the states \$206 billion. Many believed the major tobacco companies were "uninvestable." Ironically, from 12/31/1998-12/31/2020, Altria (ticker: MO) has returned 3x the return of the S&P 500.^{xi}

Though the IEA's idea of "Net Zero by 2050" is admirable, some of their assumptions and projections are more akin to a fairy tale. In areas like batteries, the math just doesn't add up. If the 30 member countries follow the U.K. pledge, the supply needed for lithium, cobalt and copper alone are many multiples of what actually can be extracted. Cobalt output would need to increase at least 3.5x and stay at that level from now until 2050 to satisfy that demand.^{xii} Couple that with the fossil fuels needed to extract those resources and the benefit of the end product, the EV car, is almost totally negated. We all live in one world, and the gains made by the IEA countries are almost completely offset by China's continued dependence on coal.

We know investing is about the future, not the past, and many of the hydrocarbon companies that have survived the past 10 years seem clear on what investors will demand over the next 10 years:

1. capital discipline
2. growing dividends
3. balancing the core business while investing in better technologies that allow them to operate with a smaller carbon footprint.

Even the horse and buggy, clearly inferior to the automobile, took decades to disappear. Investor enthusiasm for fossil fuels has never been lower, but we believe that the energy sector remains not only investable, but a sector that will have competitive returns going forward.

Requisite Capital Management, LLC (“Advisor”) is a registered investment advisor with the U.S. Securities and Exchange Commission.

The impact to an existing Client’s portfolio may vary depending on their target allocation, timing of contributions and withdrawals and individual circumstances. Existing investors should review their account statements for information regarding their accounts and/or contact Requisite for more information.

These materials do not constitute an offer or solicitation in any jurisdiction to any person or entity. These materials are not intended to provide the sole basis for evaluating and should not be considered a recommendation with respect to, any transaction or other matter.

These materials have been prepared for one-on-one discussion purposes with sophisticated investors.

Past performance is no guarantee of future results.

Information shown is as of August 2021 unless otherwise noted. All data is subject to change.

These materials are based on information provided from public sources believe to be reliable by Requisite. Requisite assumes no responsibility for independent investigation or verification of such information and has relied on such information being complete and accurate in all respects

Diversification does not protect against market risk or loss of principal.

Benchmarks and indices are not available for direct investment. Returns shown are total returns which may include interest, capital gains, dividends, and distributions realized over a given period. An individual who purchases an investment product which attempts to mimic the performance of an index will incur expenses such as management fees and transaction costs which reduce returns. This material is for informational purposes only and should not be used or construed as a recommendation.

© 2021 Requisite Capital Management LLC

-
- i lea.org
 - ii lea.org
 - iii lea.org
 - iv <https://e360.yale.edu/features/despite-pledges-to-cut-emissions-china-goes-on-a-coal-spreed>
 - v Goehring & Rozenchwajg Q4 2020 commentary
 - vi Goehring & Rozenchwajg Q4 2020 commentary
 - vii <https://www.nhm.ac.uk/press-office/press-releases/leading-scientists-set-out-resource-challenge-of-meeting-net-zero.html>
 - viii *Energy and Civilization: A History*, Vaclav Smil
 - ix XLE July 31, 2011–July 31, 2021
 - x July 31,2011–July 31,2021: Nasdaq 100 and energy sector returns
 - xi Bloomberg December 31, 1998–December 31, 2020 MO total return 994.36% vs. SPX 364.30% (total return)
 - xii <https://www.nhm.ac.uk/press-office/press-releases/leading-scientists-set-out-resource-challenge-of-meeting-net-zero.html>