

A Future Without Oil? Myths and Reality

Over the last year or two, many clients have asked for our views on the investment implications of the hoped-for “energy transition” away from fossil fuels to renewable energy sources, with the aim of reducing carbon emissions and thereby addressing climate change. There have even been times when traditional energy stocks appeared to be “uninvestable” – a perfectly rational viewpoint, with the sector having significantly underperformed the broad market for most of the last two decades. In this issue of *Consilium*, we are making no near-term predictions about oil prices, nor about energy stocks, both of which are subject to intense volatility brought about by the Ukraine crisis. But the US energy industry has recently undergone a major transformation in management approach, and at the same time the industry has a huge role to play for the economy and for the world’s “green” agenda. For that reason, it deserves a greater share of attention than its mere 3.8% weighting in the S&P 500 index (compared to 30% in 1980) would imply.

In our analysis, we take no position in the climate change debate, nor on the merits of ESG (environmental, social, and governance) factors in investment decision-making. What follows is a discussion of what *is* occurring, not what *should be* occurring.

The balance between supply and demand for oil has rarely been as tight as at present, and this condition was developing before the disruption of Russian oil supplies. Publicly traded oil companies, representing 60% of world production, under pressure from environmental groups to limit reinvestment in the business AND from shareholders that had grown weary of poor returns, sharply curtailed capital expenditures -- from \$228 billion in 2014, to \$155 billion before the pandemic, to \$91 billion in 2020. This reduced not only the potential for future growth but also left the industry unable even to maintain current levels of output. The Covid hit to oil demand and the stunning collapse in oil prices in the spring of 2020 cemented this decision.

Then, as the world economy emerged from lockdown and demand began to spring back, oil producers maintained their newfound discipline. Recovering demand (now back to pre-Covid levels) instead was satisfied by drawing on inventories, which have fallen to their lowest levels in 20 years, at a pace the US Energy Information Agency describes as “unprecedented”.

This imbalance can only be resolved by a combination of increased supply and reduced demand. Regarding the former, US production will begin to grow again later this year and 2023, even with company managements still reined in by their shareholders’ expectations. It will be important to monitor US producers’ plans in the upcoming months to see if a stronger supply response is elicited. But the days when the stock market rewarded production growth above all other metrics surely are over; even at \$100 oil, US producers are expected to spend just \$98 billion this year. OPEC can and likely will begin to increase supply (especially if Iran is permitted to return to the market) but its ability to simply open a spigot is overstated, as significant cutbacks in capital spending have also limited the cartel’s ability to respond. Releasing oil from national strategic petroleum reserves accomplishes nothing sustainable, as the reserves ultimately must be refilled.

Demand could be “destroyed” by a recession or by extremely high oil prices, but there is no sign that either is imminent. For example, as the economy contracted in 2008, the dollar value of oil consumed in the US reached 5.6% of GDP. But in 2010-2014, oil routinely reached the triple digits while oil consumption relative to GDP never exceeded 3.5% -- and the economy was never threatened. Today, prices would have to reach roughly \$150 per barrel before the oil burden on the economy became painful enough, theoretically, to limit demand.

This returns us to the impact of the energy transition: whatever the merits of the effort, those pushing for reliance on renewables have significantly erred in their estimates of timing, cost, and feasibility. And, to the extent that energy producers have been persuaded to limit capital spending and production growth by such arguments, these errors have created real-world consequences for consumers and economies in the here and now. Some activists and politicians see very high oil prices as a “feature”, not a “bug” -- that they are needed to further incentivize the transition and steer consumers away from fossil fuels. Regardless, the goal of a green energy transition has created vulnerabilities that were inevitable and were not the result of the Ukraine crisis.

How realistic is the hoped-for energy transition, after all? The US is the world’s biggest energy consumer, and renewables (overwhelmingly, wind and solar) account for 11% of US energy supply. While renewables’ share has nearly doubled over the last 20 years, this nevertheless represents very sluggish improvement relative to all expectations set by experts and forecasters during that time. Meanwhile, traditional fossil fuel usage, including coal, is still surging in the developing world.

The slow progress is understandable because the obstacles are significant. To illustrate, let’s focus on the “low-hanging fruit” of electric vehicles, which *should* present a great opportunity for decarbonization. According to JP Morgan, “the US has the highest share of global transport energy consumption, the highest vehicle share of transport energy, the highest number of vehicles per capita, the longest distance driven per capita, the lowest public transit usage, the lowest gasoline prices AND almost the lowest EV penetration as well.” But:

- Automotive quality has improved dramatically, such that the average internal combustion engine (ICE) vehicle remains in use for 16 years. Even if every new car sold were an EV, it would take that long for the fleet to be fully electric, but EVs account for just 3% of sales today. It will be multiple decades before EVs represent even half of the cars on the road.
- Today’s EV owners appear to view them as “second” cars, as the average annual miles driven is less than half of the national average. Studies from Norway, which has the world’s highest EV penetration, support this conclusion – and also observe that EV owners tend to use public transportation less. This limits the potential reduction in emissions from EV adoption.
- A study from the University of California showed that EV buyers would otherwise have purchased a high-fuel economy vehicle, indicating that the emissions reductions from EV purchases, relative to their ICE alternatives, is overstated.
- SUVs account for 75% of US vehicle sales, and the EV alternatives to ICE SUVs are not yet compelling. Not only are they significantly more expensive, but their mileage ranges are also much lower.
- The US electric grid cannot currently accommodate a large fleet of vehicles needing to be charged at home and on the road. Edison International estimates that California alone would require over \$10 billion in grid modernization (in a state notoriously opposed to such activity) simply to service EVs. This is in addition to addressing the reduced stability of the grid in the first place, owing to greater reliance on intermittently available wind and solar power, not to mention the intractable siting challenges posed by electric grid transformation. Decisions regarding the latter rest with states and municipalities, where a “not in my back yard” mentality still prevails.
- Ultimately, passenger cars represent only 16% of primary energy consumption in the US. Even a major success here will not address oil consumed by the trucking, railroad, shipping, and aviation industries, let alone the largest single consumer: industrial settings such as steel, cement, metals, manufacturing, and so on.

Will the citizens of today accept the hardship of economic, technological, societal, and governmental changes required for deep decarbonization? These costs appear to be hugely underestimated, and the companies we rely on as consumers for energy must remain viable *because the US and the world will not be weaned from oil for the foreseeable future, and certainly not over any investable time frame.*

Sources: JPMorgan; US Energy Information Administration; International Energy Agency; Goehring & Rozencwajg; Morgan Stanley; Edison International; US Environmental Protection Agency; Reuters; University of California-Davis