

WALTER SCOTT

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How to Get from A to B in a Global Energy Transition

The complexity of the global energy transition is a significant long-term challenge for investors as the familiar and long-dominant energy system gradually gives way to a new and still-uncertain paradigm. At the recent Walter Scott Research Conference, two guest speakers took a closer look at the reality of the transition and some of the many associated risks and opportunities.

Drawing on previous transitions in history, Peter Tertzakian, Deputy Director at the ARC Energy Research Institute and author of *A Thousand Barrels a Second*, considered how investors can build a framework to help them better analyse, manage and monitor risk and return in today's energy shift. Meanwhile, Helle Kristoffersen, President of Strategy and Sustainability at TotalEnergies, outlined her company's transition approach and emphasised the importance of supporting and investing in today's energy system, whilst at the same time investing in a cleaner, more sustainable future.

Not Humanity's First Transition Rodeo

In *Farwell to the Horse*, Ulrich Raulff's elegiac study of the role of the horse in human history, the reader is asked to imagine the sights and smells of New York in the late 19th century, when some 130,000 of our equine friends toiled within the city at any one time:

“What must it have felt like to walk along Broadway and have to dodge horse carcasses and carriages wedged into gridlock? How must a city like New York have reeked, when its horses produced 1,100 tonnes of manure and 270,000 litres of urine daily, and when twenty dead horses were transported away every day?”

For the residents of New York, the horse-powered economy was an environmental hazard to be endured. Aside from the daily assault on the senses, accidents were commonplace – in 1867, horse-powered transport caused four fatalities and a further forty injuries in New York every week – and the accumulation of effluence was a breeding ground for disease.

But at the same time as horse power was reaching its apogee, the seeds of its destruction were being sown in the American Midwest. In 1903, Henry Ford founded his eponymous motor company in Detroit, Michigan. In a little under two decades, Ford's pioneering use of the moving assembly line would make automobiles affordable to the average American. As the country enthusiastically embraced the arrival of this new, more convenient, 'cleaner' technology, the horse would soon disappear almost entirely from city life, 'transitioned' away by the internal combustion engine and manufacturing innovation.

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As Peter Tertzakian explained, the replacement of the horse by the automobile was, at root, an energy transition for turning a wheel. What is important to understand, however, is that such transitions entail not simply the replacement of one technology with another, but the wholesale replacement of one supply chain with another. For investors, this has profound implications.

What would an investor in the early years of the 20th Century have made of the advent of the automobile? With a little foresight, they might have concluded that it didn't look so good for

farmers. According to Ulrich Raulff, eight million tonnes of hay and almost nine million tonnes of oats were produced every year to feed the three million horses working in American cities in 1900. At the same time, however, a whole new supply chain was emerging: oil wells, refineries, pipelines, fuelling stations. Evidently, the move from System A – the horse – to System B – the automobile – brought opportunities as well as risks.

That systemic change is analogous – up to a point – with what we are seeing with today’s move to decarbonise the global economy. If we stay with the example of turning a wheel, electric vehicles demand a different supply chain from those with internal combustion engines. With little need for the old infrastructure of oil wells, refineries, and pipelines, the focus is instead on primary energy sources like wind or solar, electricity which requires transmission, charging stations and batteries. Understand changing supply chains – the move from System A to System B – and the investor is better placed to understand the emerging risks and opportunities of the transition.

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Today’s transition differs from previous instances in a couple of crucial aspects, however. First, the sheer number of new and nascent technologies and energy sources associated with the transition means that there is little clarity around which supply chains will emerge as dominant. Second, the world is awash with policies, regulations and incentives designed to encourage the use of some technologies and energy sources and to discourage the use of others. How likely are these policies, regulations and incentives to endure, particularly in today’s polarised political landscape? Remove a favourable regulation or incentive and an entire supply chain can be rendered financially unsustainable. The presence of both of these variables lends today’s transition an unprecedented level of complexity from an investment perspective.

Out with the Old...Not Necessarily

It is tempting to think that transitions result in the decline of those companies dominant in the incumbent modality; that the investment opportunities of the future belong only to the start-ups and disruptors. This is not necessarily the case. Using the analogy of the sailing industry, Peter Tertzakian pointed to the century or so that it took the new technology of coal-fired steamships to surpass in speed the wind-powered clipper. Why? Because when faced by the threat of the steam age, the sailing industry innovated, experimenting with design and materials to make faster and more efficient vessels. The lesson: don’t underestimate the ability of incumbents to successfully navigate transition by leveraging their already considerable expertise and resources.

Transition-focused innovation is something we discuss regularly with incumbent companies, whether that’s industrial-gases leader Air Liquide’s work on hydrogen and other energy sources or Ferrari’s push into ultra-high-end electric vehicles. It’s a theme that was taken up at the conference by Helle Kristoffersen of TotalEnergies (Total), a company that has pivoted to successfully establish a position in the vanguard of decarbonisation without compromising the performance of its long-established fossil fuels business.

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Total’s pragmatic approach to transition starts from the inescapable fact that in the short-to-medium term the world still needs fossil fuels. System A therefore requires significant ongoing

support and investment. Total invests around one-third of its annual capital budget into maintaining its existing oil and gas businesses, and around another third on new oil and gas projects. The company takes a highly disciplined approach to new ventures, investing only in low emission and low-cost oil and gas as a means of securing financial resilience in an environment of low demand or carbon pricing. The risk of stranded assets is a real one as the transition matures.

The other third of Total's investment is in low-carbon energies, where the company takes a similarly disciplined approach. Using its high-margin oil and gas businesses to fund the creation of a large renewables business, the company has established structural advantages in the nascent but rapidly growing industries of offshore wind, hydrogen, and carbon capture and storage. Total aims to be one of the largest renewable operators globally by 2030.

Key to the Total transition story, however, has been its long-term strategic view that natural gas – specifically liquefied natural gas (LNG) – would be a vital bridge from System A to System B given it produces 60% less carbon per unit of generated energy when burnt relative to coal. Whilst that decision has been subject to a fair degree of investor scepticism over the years, it is now playing out largely as management expected. Today, Total is the number two player globally and expects to see this business double by 2030 as LNG increasingly facilitates the transition away from coal-fired power generation, particularly in Asia.

Peak Complexity

Running through the presentations of both Peter Tertzakian and Helle Kristoffersen was the common thread of complexity. The world is in the early stages of an epochal shift in how it produces and consumes energy, one of the fundamental building blocks of humanity's progress and prosperity. How that transition evolves is still the subject of huge conjecture, however, and potential scenarios and permutations abound.

Faced with this uncertainty, we will continue with our proprietary research and our conversations with external experts, policymakers and industry leaders, as we endeavour to better analyse and understand the financially material risks and opportunities presented by the energy transition. Our work in this area will, as ever, be guided by pragmatism, and in line with our aim of investing in strong businesses that can consistently compound wealth for our clients over the long term.

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