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# The Carlyle Compass



By **Jeff Currie**  
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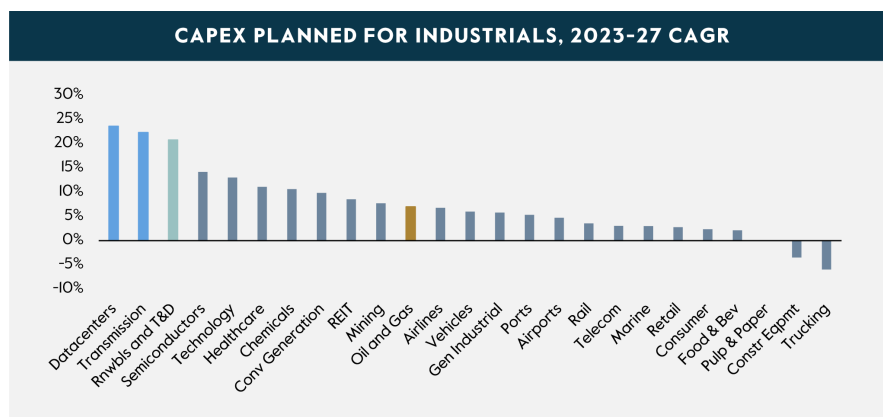
Welcome back to **The Carlyle Compass**, your weekly newsletter that brings together the latest research and market insights from our global team. This week's edition features guest author Jeff Currie, Chief Strategy Officer of Energy Pathways at Carlyle. Jeff discusses the latest trends in energy investment or what he calls the 3D's of commodity demand—Decarbonization, Deglobalization and Digitalization.

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## **The 3D's of Commodity Investment**

Commodities and old economy assets have traded sideways for nearly 18 months, despite evidence of the super-cycle thesis playing out so visibly through strong investment growth from the core drivers of the thesis, i.e. the 3D's—Decarbonization, Deglobalization and Digitalization (see Figure 1). So why aren't asset prices, particularly copper which embodies all of these drivers, reflecting this measurable and large rise in investment that has already started?

Figure 1: Order books show coming surge in capex tied to 3Ds



Source: Carlyle Analysis; Goldman Sachs, July 2024. There is no guarantee any trends will continue.

It begins with the long-term nature of the thesis. Commodities and infrastructure projects require large and lumpy investments with very long lead times. A lot can go wrong, which is why investment tends to wait too long, and then rush in all at once. This dynamic drives commodity cycles. What makes this time different from the previous cycle in the 2000s is the reduced capacity for the market to hold long-term risk on behalf of these industries, which means the investment in commodities to meet this rise in investment demand will need to wait longer until the environment is far more certain.

One factor behind this inability to hold long-term risk is the restrictive regulatory backdrop post Dodd-Frank, which has forced banks to reduce risk and by extension the other side of corporate hedges, decreasing the depth and tenor of forward markets. Another is the rise of algorithmic trading and multi-strat hedge funds that are far more short-term in their investment horizon. Finally, there is the uncertainty around the long-term growth outlook for China, the world's largest commodity consumer. All of this has caused markets for commodities and commodity-related assets to focus only on near-term supply and demand balances, which are currently soft, and not the long-term.

Concerns about China are warranted. Growth continues to disappoint, and the Third Plenum politburo meeting offered little to encourage the markets—which is probably why the PBOC launched a wave of rate cuts in the days immediately following. While near-term growth momentum in China has clearly slowed, we believe the read through to commodities is likely overblown.

To take one specific example of the sentiment swings, markets have latched onto reports of “unusual” amounts of metal—particularly copper—flowing out of China as an ominous sign. This misses the point that the price spike in New York copper this past May that [made all of the headlines](#) naturally incentivized metal to flow into the US, a process that already looks complete. This is just an arbitrage story.

The bigger concern is the longer-term outlook for China driven by a structurally weak property market, poor demographics and a trade war with the West. China doesn't have many easy options at this stage. Their massive bet on green capex goods was intended to offset the structural weakness in the property market, but the swift and significant retaliation by the US and Europe through tariffs may slow that expansion. At the same time, the decline in property prices is hurting their banking sector, making rate cuts harder to implement while debt levels restrict fiscal policy via total social financing.

### The 3D's of Commodity Investment: Decarbonization, Deglobalization and Digitalization

Given the uncertain outlook for long-term Chinese economic growth, it is important to consider other off-setting factors influencing commodity demand. First, China hasn't always been the largest driver of commodity demand, nor will it be in the future. To not expect Chinese demand growth to slow towards other developed nations as it matures would be a mistake, and India is already beginning to replace China as the driver of emerging market commodity demand growth.

Economic development as a driver of commodity demand is an old story. What will make this new cycle particularly unique is the global nature and the breadth of the demand growth. Globalization from 1985 to 2018 boosted demand growth in China as it became the

manufacturer to the world. As manufacturing becomes more local again, the demand growth will be more dispersed, and it is important to emphasize that much of that demand in China that is lost via a trade war and tariffs, will be replaced in the West.

Further, the three themes that will drive commodity demand over the next decade and beyond—decarbonization, deglobalization and digitalization—are all global in nature. Decarbonization, the biggest of the three, must be executed on a global scale to be effective in reducing emissions. Thus far, the spending programs in all three regions—Asia, Europe and the US—have already been implemented on such a large scale—\$406 billion, \$106 billion and \$85 billion respectively in 2024—that it has triggered a trade war against China to protect local subsidies. A potential Trump administration is unlikely to temper the global momentum, as 75% of IRA investment goes to red states, and why would they let China dominate green capex goods when US energy policy will likely be national security policy.

Deglobalization is something that the world hasn't experienced since the 1930s, particularly the tariffs and trade wars that drive reshoring of manufacturing, which creates inefficiencies and redundancies. Deglobalization also drives commodity demand through defense spending, which is already on the rise.

Digitalization began to take hold in the 1990s, but the expansion of the cloud and thus data centers only became significant in the past two decades, with AI now pushing further acceleration. Already, demand for electricity by data centers [exceeds that of Italy](#). Digitalization also reduced the role of emerging markets since most of the data centers will be located in developed nations.

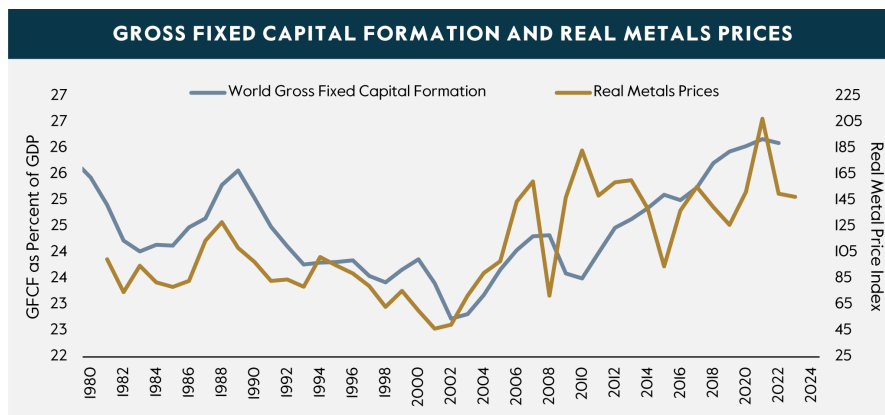
These three structural forces are also mutually reinforcing. We are decarbonizing by electrifying, which naturally fits with the power hunger of the emerging AI economy. The focus on renewables also supports deglobalization, as wind and sunshine are distributed far more widely than oil and gas, and electrons are not transportable like molecules.

## A Super-Charged Capex Cycle

What do all of these demand drivers have in common? They depend on large scale physical investment, particularly in energy infrastructure. These capex cycles have an inherent cyclicity that inexorably drives booms and busts. When physical capacity is plentiful, inflation is low and stable, which allows for the lower interest rates. As the cost of capital falls and investors expand their horizons, they become more focused on duration and longer-term growth opportunities. Capital is redirected into the financial economy, i.e., the Nifty Fifty (1960-1968), Dot-com Boom (1995-2001) and the Cloud/AI Boom (2014-2024).

Eventually, however, demand catches up to physical capacity constraints, motivating the redirection of capital back into the physical economy, as we saw in the 1970s (1968-1980) and the BRICs super-cycle (2002-2014). The higher cost of capital simply reflects the opportunities in the physical economy and the need to attract capex to expand production capacity, which is where we are nearing today. As a result, a commodity super-cycle is nothing other than a capex cycle (see Figure 2).

Figure 2: Commodity Supercycles are capex cycles

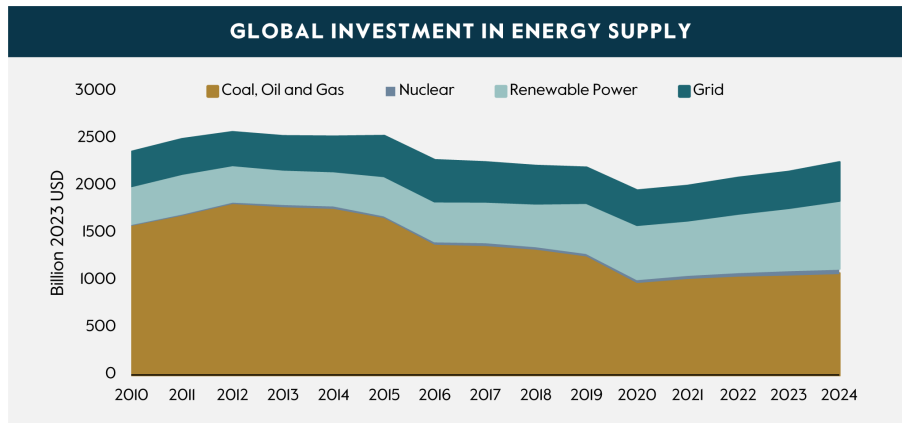


Source: Carlyle Analysis; World Bank; CRB/BLS. There is no guarantee any trends will continue.

This current capex cycle is likely to be unlike anything we have seen in the modern era; more of a super-charged capex cycle. In real terms, overall investment in energy today is actually lower compared to 15 years ago, when the focus on renewables really took off. Oil and gas

have been modestly crowded out by renewables, nuclear has grown from a very low base, and the grid investment has been flat (see Figure 3).

**Figure 3: Real energy investment has yet to recover from EM crisis of 2015**

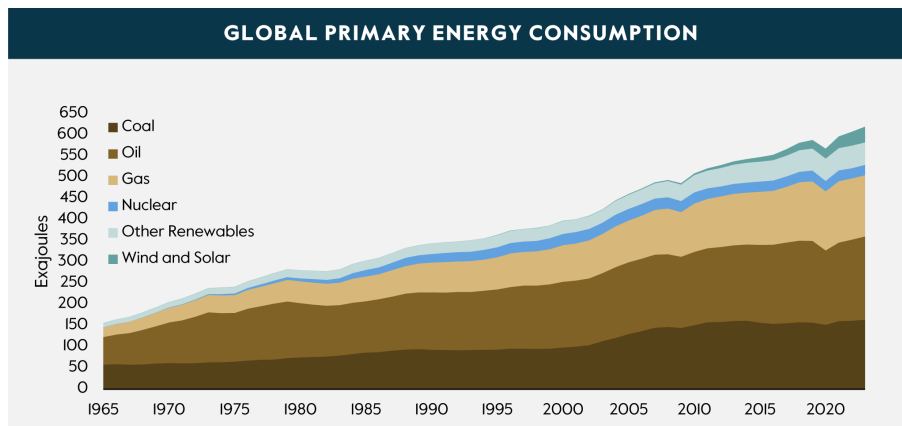


Source: Carlyle Analysis; Goldman Sachs, July 2024. There is no guarantee any trends will continue.

The IEA's [Net Zero Emissions Roadmap](#) sets two central challenges. First, by 2050 global primary energy consumption needs to fall by 12% to 541 EJ. Second, unabated fossil fuel consumption needs to fall by 89%, with wind and solar being the primary replacement source of energy. As [Daniel Yergin has pointed out](#), past energy transitions have been “energy additions”, as the new supply of energy feeds new demand while the old sources of energy linger on. What we are asking of renewable energy in the decades to come is thus to satisfy our additional energy demand *and* to replace our existing demand. That is a lot of investment.

Global energy consumption has grown at a steady 2.5% annual pace over the past sixty years, with consumption per capita rising by 66% as more people left poverty, and consumption per dollar of real GDP declining by 45% as energy use became more efficient (see Figure 4). There is every reason to believe that the number of people in the world, particularly those who are not impoverished, will be higher in 2050, and that the world will be richer. If history is any guide, then we should be prepared for global energy consumption to be higher, not lower, in the decades to come.

**Figure 4: The energy transition has only just begun**



Source: Carlyle Analysis; Energy Institute. There is no guarantee any trends will continue.

**JEFF CURRIE**

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