INTUITION
10 MAY 2024

Schneider Electric: Artificial Intelligence needs a backbone.

Electricity is the most efficient secondary energy form on the planet versus the likes of oil/coal and gas. Consequently, the electrification of energy supply chains, to mitigate emissions and boost decarbonization, is core to achieving the 2050 Net Zero climate goals. In 2020, the share of electricity in total final energy consumption was 20%. That needs to rise to 30% by 2030 and 50% by 2050. This structural trend has enabled Schneider Electric to become the global leader in energy management and sustainability. This article will look at how the 188-year-old French company is keeping up with the new sources of energy demand, namely Artificial Intelligence and data centres along with smart buildings and the opportunities within fast-growing economies like India. We see Schneider as the simplest way to invest in the key mega-trends of electrification, automation, and digitalization as the world moves towards a sustainable future.

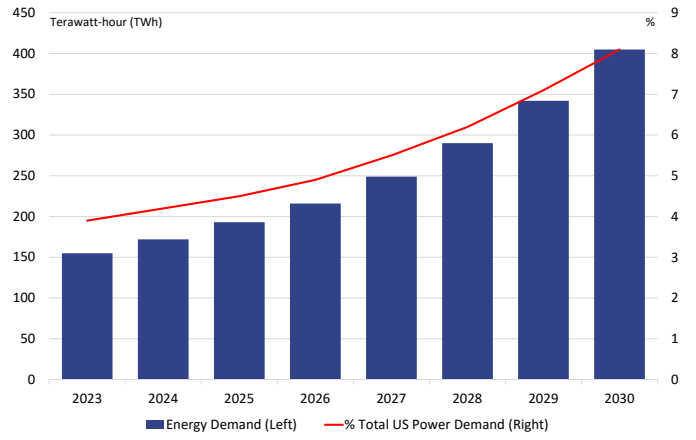
Nick Rogers

Last week we highlighted that the scramble for copper assets has begun following BHP's bid for Anglo American. This week, we dig deeper and highlight some trends around data centres and how investors can profit therefrom. The push to electrification accelerated during the Pandemic and coincided with advances in Artificial Intelligence (AI). AI relies on ingesting and analyzing enormous volumes of data which then allows computers to perform tasks autonomously. The disruptive and highly transformational impact of AI has resulted in shares such as Nvidia, Google, Apple and Microsoft outperforming global markets since December 2022 when ChatGPT was first unveiled. However, little notice has been taken of other players whose role is essential in enabling AI to exist. For AI to be effective, data needs to be stored and accessed efficiently. This is where Schneider Electric comes in.

SPEED READ

- **To achieve the required Net-Zero emissions by 2050, the world needs to transition at a rate 3x faster than the current pace. That presents a huge opportunity for Schneider Electric, the global leader in energy management and sustainability.**
- **Global power consumption from Artificial Intelligence (AI) applications is forecast to increase from 40 GW today to 143 GW in 2026 (1 GW = 1,000 MW and 1MW of electricity can power 650 average homes in SA).**
- **Every megawatt of data centre power requires between 20 - 40 tons of copper, the primary metal for conducting electricity efficiently.**
- **Schneider Electric is the leading provider of physical infrastructure solutions for the entire data centre and its lifecycle. It helped customers save and avoid 110 million tons of CO2 emissions in 2023.**

GLOBAL DATA CENTRE ENERGY CONSUMPTION



Energy demand from the global data centre industry could reach 126-152GW by 2030, driving approximately 250TWh of new electricity demand. US data centres alone could account for 8% of total US power demand by 2030 (according to research from McKinsey).

Data centres are the backbone of AI and just about everything else digital or IT-related. What are they? As the world moves online and paperless, letters are replaced by Gmail. Forests

can breathe a sigh of relief. CDs can be binned as Spotify and Netflix cater to our entertainment needs. We are all, by default, reliant on data which is stored in the "cloud". The cloud consists of a large group of networked computer servers, for the remote storage, processing and distribution of large amounts of data, housed within a data centre. Why is this a massive opportunity for Schneider Electric? Data centres are big energy consumers. In 2020, data centres only consumed 1% of global energy (according to the IEA) but today, a Google or Apple data centre, for example, can use as much power as 80,000 households.

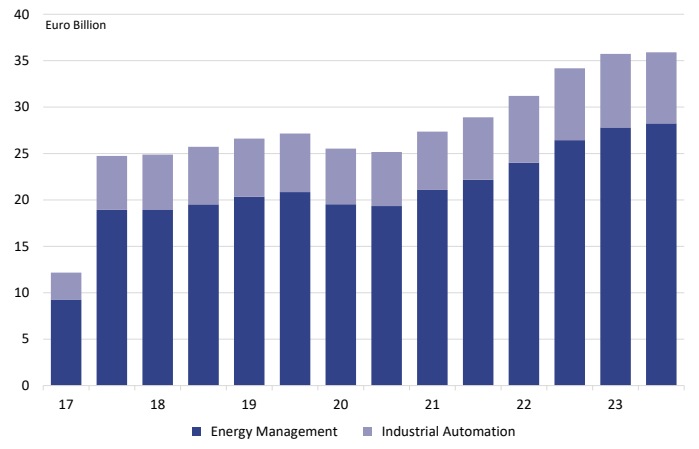
J.P. Morgan projects a 20% compound annual growth rate in power use from data centres between now and 2026. The pressure to make data centres sustainable is intense due to CO2 emissions. Large data centres, often consisting of thousands of computer servers, generate intense heat and must be cooled to work efficiently. The capacity of a data centre is dictated by how well it cools the servers since the closer servers can be stacked, the more productivity is achieved per square meter. Cooling accounts for approximately 40% of a data centre's energy consumption, consequently, efficient cooling is a crucial driver of profitability. One of Schneider Electric's customers, Green Mountain, a Norwegian data centre company, uses frigid fjord water to cool its data centres. This approach, combined with Schneider's intelligent Ecostructure Data Centre Infrastructure Management (DCIM) system, allows the company to cut its energy requirement by a third. Thanks to its collaboration with Schneider Electric, Green Mountain's data centre produces zero carbon emissions. Schneider Electric is the undisputed global leader in data centre energy management and now contribute 19% of Group revenues. Looking ahead, the company has built up a record €2.7 billion order backlog in 2023 that will drive business in the years ahead. The majority is coming from infrastructure and data centres.

Data centres are already consuming vast amounts of electricty and the prediction is that this will grow enormously.

"Decarbonisation is the biggest challenge of our time and buildings contribute close to 37% of global CO2 emissions."

Buildings account for a further 34% of Schneider's revenue. Decarbonisation is the biggest challenge of our time and buildings contribute close to 37% of global CO2 emissions. In cities like New York, buildings are responsible for up to 70% of CO2! In Europe, 80% of the buildings in use today will still be in existence in 2050. How does one approach this challenge? On average, 30% of a building's emissions relate to the construction phase including mining the materials used, whilst the remaining 70% occur during the building's daily use. The big opportunity is to retrofit existing buildings with the latest technology, rather than demolish and rebuild. That said, JP Morgan, the world's largest bank, has started work on its new global headquarters - a 60-story skyscraper which will be the first fully electrical skyscraper in Manhattan with zero net emissions once in operation. It's no surprise that Schneider Electric is the chosen partner to implement its cutting-edge technology. Ultimately, for corporates who have made ambitious carbon commitments, buildings can be a productive place to start. One just has to look at the SA property sector using solar panels to mitigate loadshedding but simultaneously reducing their carbon footprints. Yet paybacks on investments vary significantly. For instance, LED lighting may recoup its cost within 1-2 years whereas an expensive building management system may take as long as ten years. However, the typical lifespan of a building still makes these economics attractive. This provides Schneider strong annuity income as it remains in

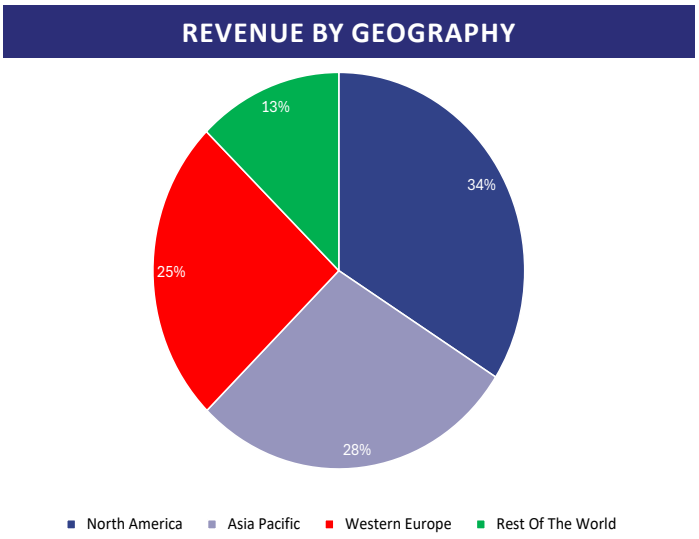
ROLLING 12M REVENUE BY SECTOR



Schneider Energy Management is the global leader in energy efficiency solutions for building and industrial infrastructure. It is becoming an increasingly important component of Group revenues.

control of the systems and technology.

Schneider's traditional markets have been in Europe and the US, but it has expanded aggressively into new territories. Almost 40% of its 2023 revenues came from new economies like India and the Middle East where it is estimated that these growing populations need approximately 100 billion square meters of living space to accommodate both people and businesses. Electricity management is essential given that these populations are much younger and so expect digitization from day one. In India, at least 14 smart cities are currently being built. All of them deploy Schneider's AVEVA software and various other products. As a result, India is now Schneider Electric's 3rd-largest market having achieved double-digit growth over the past few years. Consumer spending is typically the major driver of economies, accounting for about 80% of GDP in developed economies. But developing economies are forecast to dominate global growth through to the end of this decade thanks to both rising incomes and growing investment in infrastructure. Schneider has positioned itself well to capitalise on these trends.



Geographically, the business is very well balanced across the three main geographies. 40% of revenue is from new, fast-growing economies like India and the Middle East.

Lastly, re-shoring is also driving up electricity demand, as countries become strategically less reliant on China. For example, the US is becoming increasingly reliant on Mexican manufacturing as it shifts production closer to home. Modern factories require modern energy solutions, a multi-decade boon for the likes of Schneider. The company's multi-hub "GLOCAL" (global-and-local) model has been in place for many years, well before the disruptions caused by the Pandemic and Ukraine-induced energy crisis. It

India's booming economy, including cities such as Hyderabad, is drawing in investors such as Schneider.

has structured its operations around four hubs – Europe, China, the United States, and India. Each is responsible for its own product specifications, research and development, manufacturing, distribution, and suppliers. This gives the company greater agility to respond to customer needs and market trends and illustrates management's ability to anticipate the future.

In conclusion, to achieve the required Net Zero emissions targets by 2050, the world needs to move at a rate 3x faster than the present pace. Due to the financial implications for individuals, property owners, companies and governments of falling behind the climate adoption curve, it comes down to global collaboration and most importantly, leadership, to steer the ship. Schneider Electric has over 600,000 partners and service providers and sees its partnership model as key for accelerating and enabling change. New CEO, Peter Herweck, has big boots to fill but is confident that the structural tailwinds of Electrification, Digitisation, Climate Change/Net Zero and Re-shoring will continue to benefit Schneider Electric and drive future earnings, profits and dividends. As much as buildings and electricity may seem dull, we believe that this is an extremely exciting sector in which to be invested for the foreseeable future.

By the time of our next Insight seminar, our election will be out of the way. We will take the opportunity to review market performance for the first five months of the year, and look ahead to what the second half might hold.

Please note that we will be hosting both a morning and evening presentation in Cape Town. The venues will be communicated once finalised.

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Topic:	Taking Stock: Mid Year Update
Natal Midlands	
Date:	20 June, 2024
Venue:	Christ Church Howick, 23 Mare Street, Howick
Morning Time:	10am for 10.30am
Evening Time:	5.30pm for 6pm
Johannesburg	
Date:	11 June, 2024
Venue:	Rosebank Union Church, Cnr William Nichol and St Andrews Road, Hurlingham
Time:	7am for 7.30am
Cape Town	
Date:	13 June, 2024
Venue:	ABRU Motor Studio, Lourensford Wine Estate, Somerset West
Time:	5.30pm for 6pm

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For more information on the range of products and services offered by Harvard House Investment Management and its associated companies (including Harvard House, Chartered Accountants), or for any financial advice, please contact the Company at:

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