

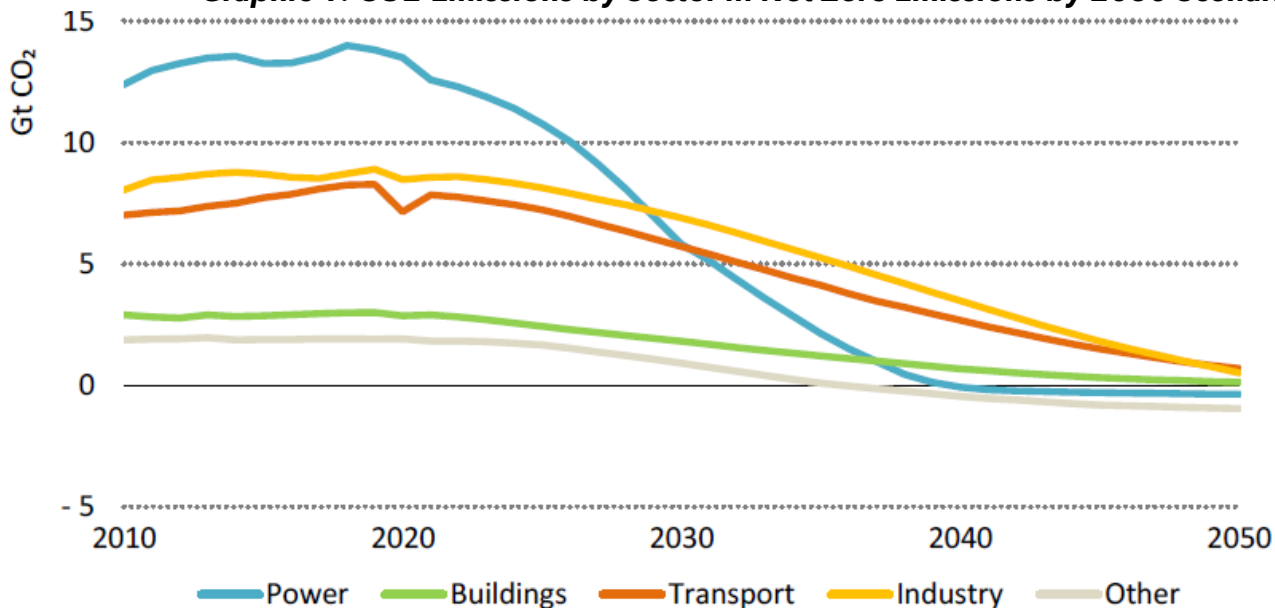
Utilities Sector: Unlocking the Vast Potential of an Increasingly Electrified World

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In order for the world to deliver on its aims of reducing greenhouse gas emissions and limiting the global temperature increase to 1.5 °C above pre-industrial levels, most recently reiterated at the COP26 Summit, vast amounts of clean electrification must occur in every part of the world. Bloomberg New Energy Finance (BNEF) estimates that the world will require the electrification of the energy used in industry, transport, and buildings to reach nearly 50% of final energy in 2050, some 2.5x the 19% rate of electrification in these areas today. To achieve net zero emissions by 2050 and put the world on a 1.5 °C path (Graphic 1), a dramatic change will be required to not only supply the future growth in demand coming from population and economic growth, but also the transformation of how society will consume energy, whether it be in manufacturing of goods, home heating, or transportation. As an example, all major auto manufacturers aim to quickly transition their vehicles to electric and are on track to end the sale of internal combustion engine (ICE) cars by 2035.¹

Graphic 1: CO2 Emissions by Sector in Net Zero Emissions by 2050 Scenario



Source: International Energy Agency²

These additional electricity sources will need to come from renewable energy, set to increasingly displace coal and other carbon-intensive forms of energy. Per the International Energy Agency (IEA), the electricity sector generated 36% of all energy-related emissions in 2020, the highest of any sector. Coal is responsible for nearly 75% of these emissions yet constitutes roughly one-third of global electricity generation.

¹ BloombergNEF

²IEA (2021), *Net Zero by 2050*, IEA, Paris <https://www.iea.org/reports/net-zero-by-2050>

We recognize that utilities are a key piece of the value chain in unlocking the vast potential of an increasingly electrified world, delivering on the goals set forth by governments and investors alike as we work towards a net-zero future. For decades, these companies have provided reliable power at the lowest cost possible to their respective customers, and now find themselves at the front line of the green energy transformation. Some utilities shifted their business mix before many of their peers and are now reaping the benefits of having established processes and protocols for developing and integrating solar and wind (both onshore and offshore) resources. Others are partnering with established developers to adapt their operations more quickly or enter renewable development themselves, which is becoming more competitive but still has the potential to generate attractive returns for participants with scale.

The additional challenge created by such massive electrification over the coming decades is the adaptation of the existing grid infrastructure to the new supply and demand dynamics. The new sources of renewable generation present operational challenges due to their, intermittency and additional investments will need to be made to ensure that these are properly integrated in the future. Here, once again, incumbent utilities companies have significant experience and know-how of not only the operations necessary to reliably deliver energy to commercial and residential customers, but also of the political factors at play. These companies are also proactively seeking ways to enhance the customer experience, integrating two-way grid communications so that customers can view their electricity usage in real time, or providing services such as seamless EV-charging installations.

What we have seen as companies lay out their plans for the medium-term is record level of activity to 1) grow and integrate renewable generation, 2) invest in the grid infrastructure, and 3) explore additional opportunities to help the world's net-zero transition. We believe that select companies will be able to take advantage of these massive capital opportunities across their asset base to potentially deliver consistent earnings growth over the next decade, as they steward the world's transition to net zero.

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