

# ELECTRIC POWER SECTOR TO DRIVE SUCCESS OF ELECTRIC VEHICLES

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*The electric power sector in the US receives a significant amount of negative publicity relating to carbon dioxide emissions. The electric power sector is one of the main emitters of carbon dioxide but has significantly reduced emissions since 2008 (Exhibit 1). Surprisingly, this reduction has occurred in the absence of Federal carbon dioxide mandates. Many older coal plants have been retired and the plants that remain active have reduced utilization levels as demand for lower-emitting natural gas plants has increased. This shift is due to the decline in natural gas prices that has resulted from the shale gas revolution. Additionally, non-emitting wind and solar assets have contributed to the decline with several states continuing to implement higher renewable energy targets.*

## Transportation sector carbon dioxide emissions remain elevated

The transportation sector is now emitting more carbon dioxide than the electric power sector. This is an interesting development because the transportation sector has become increasingly motivated to move rapidly toward electric vehicles to address this problem. The challenge with electric vehicle adoption is that they are charged using electric power generation. Therefore, power generation emissions could reaccelerate which, in turn, could increase overall carbon dioxide emissions once again.

This circular feedback loop could be avoided with additional renewable investment and battery storage technology. The cost of renewables and battery storage has been on a downward trajectory but they remain relatively expensive. Continued state renewable goals and possibly tax incentives are necessary to move this solution forward. An alternative could be nuclear build-out, though this currently has very little political or economic traction.

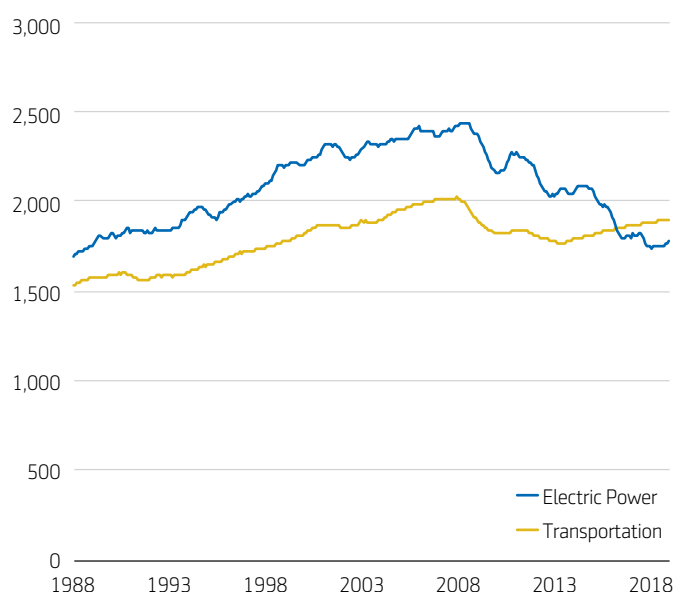
## Sustainable investment opportunities

We believe that the electric sector is a necessary driver of renewable energy growth that will facilitate the transition from traditional fossil fuel powered vehicles to electric vehicles. We believe companies within the electric sector that are able to take advantage of the renewable energy growth trends may present attractive sustainable investment opportunities. Renewable energy efforts have the potential to provide new, profitable investment opportunities as the auto industry transitions to electric vehicle usage in a carbon-efficient manner.

Read more of our thought leadership and credit research on responsible investing opportunities: [Global Emissions Standards](#) [Driving Hybrid and Electric Vehicle Growth](#).

Exhibit 1: US energy-related carbon dioxide emissions (January 1988 - November 2018)

Million metric tons of carbon dioxide (MMmt CO<sub>2</sub>)



Source: US Energy Information Administration. As of November 2018.

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