Road transport is an important focus for decarbonisation

Peter Meany, head of global listed infrastructure, and Kate Turner, deputy head of responsible investment, First Sentier Investors

Electric vehicles (EVs) appear to be a compelling investment opportunity, but there are many ways to gain exposure to the EV theme. These include investing in lithium producers who power EV batteries, or the vehicle manufacturers themselves. However, we see the 'E' in EV as a significant opportunity, where investors can support the EV revolution by investing in the charging infrastructure that underpins the whole sector.

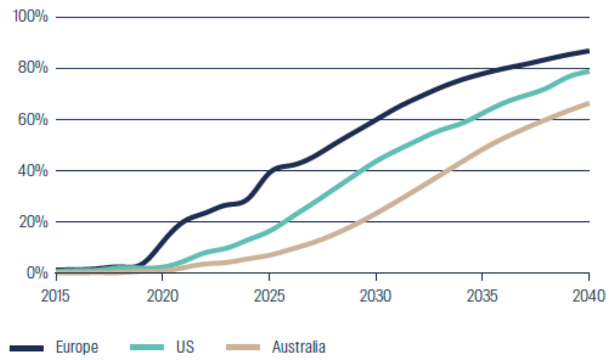
The opportunity

As the world moves to lower greenhouse gas emissions, transport is an important focus for decarbonisation – and road transport in particular, which accounts for around 75% of emissions in the transport sector[1].

EVs are set to be an important part of the solution. Already accounting for around 9% of vehicle sales globally, they are even more popular in countries like Germany, where one in every four vehicles sold is electric.[2] In fact, global sales doubled between 2020 (3.2 million sold) and 2021 (6.6 million), according to BloombergNEF (BNEF).

Most governments around the world recognise the need to accelerate uptake of EVs to address the climate impacts of transport. European policies have been particularly supportive, with the region's largest car manufacturer Volkswagen Group expecting electric vehicles to represent 70% of sales by 2030 and to stop selling internal combustion engines by 2035.[3]

Figure 1: EV share of passenger vehicles



Source: BNEF Long-Term Electric Vehicle Outlook 2022, First Sentier Investors

Data as at 31 March 2022

[1] Source: International Energy Agency, as at 31 Dec 2021
[2] Source: Bloomberg BNEF, EV Outlook, 2021
[3] Source: Volkswagen, May and June 2021

The infrastructure gap

As the new range of EVs hit the showroom floor, the real challenge begins. A Deloitte survey[4] found that the number one barrier to EV adoption was a lack of charging infrastructure (33% of participants). If we add driving range (22%) and charging time (16%), then it could be argued more than 70% of the problem is about charging infrastructure.

As the fleet of passenger EVs expands, so too will the need for charging. BNEF estimates this investment opportunity could represent $US1.0–1.4 trillion over the next 20 years, roughly split evenly between private, public and commercial uses.

There are a number of ways to invest in this theme, including EV vehicle and battery manufacturers like TSLA, BYD or CATL, or by gaining exposure to key minerals like lithium, cobalt or nickel. However, manufacturers are likely to face significant competition over time, while commodities could be a wild ride.

A number of EV charging infrastructure companies have listed in recent years – ChargePoint, EVgo, Allego, Wallbox, Blink Charging and Volta. The business models vary, but may include the manufacture, sale, installation and maintenance of charging hardware, a margin on electricity sales, and software for subscription-based access to charging networks.

Initial excitement in this growth opportunity has been overwhelmed by the reality of heavy losses. Our analysis indicates that these business models deliver low gross margins, there are few barriers to entry, supply chain issues have delayed rollouts, and the "land-grab" for charging sites is expensive. As a result, stock price performance has been disappointing (see Figure 2).

Figure 2: EV charging stock performance ($/share)

Data as at 1/7/2022

---

[4] Deloitte 2020 Global Auto Consumer Study.

Utilities as an EV play

In our view, regulated utilities with electricity distribution networks represent a more compelling exposure to EV charging infrastructure. With the right policy and regulatory settings in place, utilities are well placed to deliver a coordinated rollout of a consistent product at a reasonable cost.

By including the EV charging infrastructure rollout costs in the regulated rate base, along with the required distribution and transmission network upgrades, they can be shared across the customer base.

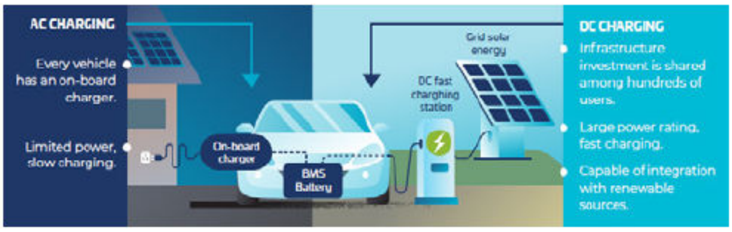
Xcel Energy provides a useful case study. Xcel owns electricity distribution networks in Minnesota, Colorado, Wisconsin and New Mexico with approved EV programs. The utilities intend to invest over US$2 billion over the next 10 years to enable 1.5 million EV in their service territories. In current dollars that equates to around US$700 for charger equipment plus US$700 for installation per customer.

Xcel is not alone. Across the US there are now 60 electric companies in 35 states or territories with regulatory approvals for EV programs[5], including PG&E, Edison and Sempra in the west, ConEd, PSEG, Avangrid and Eversource in the northeast, and Duke and NextEra in the southeast.

The investment opportunity could be materially higher if customers demand faster charging. While a home AC installation for overnight charging should price below US$2,000, a fast DC charger that gets you back on the road in 20 minutes could cost more than US$100,000 (Figure 3).

Figure 3: EV charging costs

Type and cost of EV charging infrastructure



Hardware and installation cost assumptions in 2020 (US $)

Hardware type	Hardware cost	Install cost	Total cost	50 kWh charge
11kW private/home	855	950	1,805	-
11kW public/work	1,080	3,040	4,120	4h 30min
50kW	20,421	16,646	37,067	60min
150kW	54,720	51,243	105,963	20min
350kW	96,390	61,161	157,551	9min

Source: Electric Vehicle Council, BNEF, First Sentier Investors

Data as at July 2022

[5] Source: First Sentier Investors as at 31 May 2022.

Investor-led solutions

We believe EV charging is an enormous investment opportunity, despite the challenges. So, how can responsible investors contribute to accelerating the uptake of EVs? A few ideas worth considering are:

1. Allocate investor capital towards electric utilities that have regulatory approval to rollout EV charging infrastructure.
2. Lobby energy regulators to include EV charging infrastructure plus associated electricity distribution and transmission network upgrades in the rate base to encourage investment. Multi stakeholder engagement with utilities, regulators and industry bodies could be a useful tool.
3. Real estate investors require a minimum of one in five vehicle parking spaces to be EV-ready for new or redeveloped office, commercial, housing projects.
4. Explore opportunities for toll road companies to develop EV fast charging and recreation areas on vacant land along suburban or intercity roads.
5. Challenge integrated oil companies to transform retail fuel sites into EV fast charging centres.
6. Allocate higher risk capital to supply chain solutions including rare metals mining, semiconductors and battery manufacturing. Allocate capital to the manufacture of component parts such as semiconductors.
7. Allocate your personal capital to an EV.

About First Sentier Investors

First Sentier Investors manages more than US$149.4 billion in assets, as at 30 June 2022, on behalf of institutional investors, pension funds, wholesale distributors, investment platforms, financial advisers and their clients worldwide.

The firm operates as a standalone global investment management business with offices across Europe, the Americas, and Asia Pacific. First Sentier Investors' expertise spans a range of asset classes and specialist investment sectors focused on delivering sustainable investment success based on responsible investment principles.

Formerly First State Investments, the firm was acquired from the Commonwealth Bank of Australia in August 2019 by Mitsubishi UFJ Trust and Banking Corporation, a wholly-owned subsidiary of Mitsubishi UFJ Financial Group, Inc.