

AMP Capital

Investing in electric mobility

Recently, **Chase McWhorter**, Institutional Real Estate, Inc.'s managing director, *Institutional Investing in Infrastructure*, spoke with **Anthony Hadley**, investment director, infrastructure equity, for AMP Capital, about the e-mobility market. An excerpt of that conversation follows.

Can you provide an overview of the e-mobility market and its key growth drivers?

E-mobility refers to the electrification of transportation, and that includes all types of vehicles, ranging from passenger cars, buses and trucks to high-speed trains. The term is not limited to the physical vehicles, but encompasses the entire value chain that supports electrification, including energy supply, charging and traffic infrastructure. Today, the future of transportation — both public and private — is really evolving. The market is shifting toward electrification as a result of two key factors: the first being a steep decrease in battery-cell costs, and the second being advancements in electric-vehicle technology. Battery costs, for example, have fallen by around 90 percent over the past 10 years, and that trend is only set to continue.

These factors have created strong interest from municipalities and governments, as vehicle electrification is crucial to reducing carbon emissions, and they open up a whole range of new possibilities for urban development and connected cities. Countries are increasingly adopting policy commitments and providing regulatory support for bus transit electrification — as a result, Bloomberg is forecasting that 60 percent of new bus sales will be electric by 2025.

In this context, can you tell us a little about AMP Capital's investments in e-mobility?

AMP Capital recently formed a joint venture with Enel X to invest in e-mobility, pursuing a public and private bus transportation electrification strategy across the Americas. The joint venture currently owns a fleet of 433 operating electric buses and associated charging infrastructure in Santiago, Chile. The buses are leased to one of the premier bus operating companies in the Santiago market, which operates public bus routes under a concession with the Chilean government. In addition to the existing fleet of e-buses, there is a strong pipeline of future investment opportunities we are looking at across multiple markets, and we are expecting to really grow this platform in the coming years.

How does this investment fit within AMP Capital's broader infrastructure portfolio?

This investment was made out of AMP Capital's flagship Global Infrastructure Fund II, which is a \$3.4 billion closed-end fund that reached final close in December 2019. The fund targets investments across four key sector verticals, which are: energy & utilities, telecommunications, transportation & logistics, and infrastructure health. The investment provides us with a strong entry point into the nascent and highly attractive e-mobility sector through a partnership with a true market leader in the clean-energy transition. We believe the e-mobility space will

offer attractive risk-adjusted returns for our investors, and the investment also represents our first significant investment into Latin America — an area of strategic focus for our fund — in partnership with a very strong incumbent player in the region. We will look to build on this success and continue to grow our exposure to Latin America in the future.

Why did you and Enel X choose each other as partners?

Selecting the right partner truly is a crucial ingredient for success in any joint venture, and we are very excited to be partnering with Enel X. The Enel Group is the largest renewables player in the world, and its Enel X subsidiary — our partner for this platform — is a market leader in the provision of smart-cities products and services, of which e-mobility forms a key part. Enel's breadth of services and its impressive footprint, particularly across Latin America, positions the JV strongly for future growth.

On the other hand, AMP Capital has been investing in the infrastructure asset class for over 30 years. Our past experience investing in transportation leasing businesses, in addition to our strength as a capital partner, and the alignment of core values we share with Enel X around investing in businesses that benefit communities and the environment, are all highly valued by Enel X.

Is there a particular market or geography that you are targeting for investments in e-mobility?

We are targeting investments across the Americas, with an initial focus on Latin America. Latin America has two unique characteristics that make e-mobility a strong investment proposition: Firstly, Latin American countries have the highest per capita usage of bus services globally and, secondly, many of the major cities in South America have some of the worst air quality in the Western Hemisphere. As a result, we are seeing significant policy developments from governments in the region, which are creating strong tailwinds for the sector.

For example, the Chilean government has pledged that electric vehicles will account for 40 percent of private vehicle ownership and 100 percent of public transit by the year 2040, and there are around 7,000 diesel buses in the Santiago public transportation system, which consequently must be replaced in the coming years. Brazil provides another example: In 2018, the municipality of Sao Paulo set emissions limits for the city's public buses, which decrease gradually to zero over the next 20 years. A significant portion of their bus fleet will need to be electric to meet those emissions requirements, and the transit agency in Sao Paulo is planning to deploy up to 10,000 electric buses in that market over the next 10 years.

More broadly across the Americas, North America is a longer-term proposition for us. The United States, for example, is in what I would characterize as the very early stages of embracing electrification. One notable example is California, which very recently mandated that all commercial trucks and vans sold in the state by 2045 must be zero-emission vehicles. North America represents an opportunity of significant scale for the e-mobility industry in the long term.

What impacts are you seeing from COVID-19 on electrification in the public transportation segment?

To date, we haven't seen any adverse impacts on our e-mobility investments or the future pipeline as a result of the pandemic. We have not experienced any of the supply-chain issues seen in other industries since COVID-19 started spreading quite rapidly in early 2020. In fact, our joint venture recently procured and leased 150 new e-buses, which went operational in Santiago on June 26 this year, and those buses were placed in service on time and without any supply chain-related challenges or delays. Interestingly, we have even seen a push by some municipalities to accelerate e-bus deployment, given the pandemic is thought potentially to spread more rapidly in regions suffering from poor air quality. So, in my opinion, the COVID-19 pandemic doesn't appear to have had any material adverse impacts on the electrification of public transportation in the markets we are targeting.

How do you see the e-mobility space evolving over the long term from an investment standpoint?

We anticipate interest in the sector among the investment community will continue to grow, particularly as the scale of the market develops over time. We also see e-mobility as the next frontier in the clean-energy transition, following the dramatic shift we have witnessed over the past decade toward low-emission sources of power generation. As part of that shift, we have seen quite significant compression in investment yields for technologies such as wind and solar as those market segments have matured, with early investors in those markets the largest beneficiaries. With around 15 percent of the world's greenhouse gas emissions produced from transportation, the need to decarbonize this segment of the economy is critical if we are to meet our medium- to long-term climate goals, and those needs will attract significant capital to the asset class, we think, which should drive a similar compression in yields over time.

For another clue as to how the market may evolve, you can look to the adjacent asset class of rolling-stock leasing, which AMP Capital has quite a deep history in, including through our investment in Angel trains in the United Kingdom. Angel and its peers

used to be viewed by the investment community as a discrete set of assets and, hence, valued on a run-off basis. In recent years, we have seen these companies valued as going-concern businesses once the market recognized the robust and long-term nature of their underlying demand drivers and value of the diversified platform, and this resulted in a significant re-rating of these companies from a valuation standpoint. We see a number of parallels between AMP Capital's rolling-stock leasing investments and our more recent investments in the e-bus platform alongside Enel X, and we think there's real potential for a similar evolution in how investors view the e-mobility asset class over time.

Can you comment on how your investments in e-mobility complement AMP Capital's focus on ESG?

Our focus on achieving strong environmental, social and governance outcomes through our infrastructure investments is longstanding. The e-bus platform provides a good example of how we approach investing from an ESG standpoint, with a few aspects, in particular, worth noting.

Firstly, improving air quality: Our electric buses are zero-emission vehicles, versus traditional diesel buses, which emit particulates that are a key contributor to poor air quality, leading to undesirable health impacts. The displacement of diesel buses with electric dramatically reduces air pollution and oil dependence and their impacts on the environment and local communities.

Secondly, reducing our carbon footprint: Every single one of our 433 e-buses is charged with 100 percent green energy, which will assist in reducing greenhouse emissions and our customers' carbon footprint. Remarkably, the typical diesel bus emits over nine tons of greenhouse gases per month, so the adoption of e-buses is a very important step toward decarbonization.

Thirdly, positive social impact within our target markets through a better public-transportation product: The new electric bus fleets we are investing in typically are replacing much older bus units, which can often be quite run down. Our e-buses also include features such as wi-fi to help create an improved user experience for passengers. The joint venture's existing fleets have all been very well received by public transport users across Santiago.

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