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Editor's Note

Welcome to the December edition of *Plugged In*! We would like to thank those who attended last month's in-person panel discussing AI and technology in the EV space. We hope that you found it interesting and engaging.

In this month's newsletter, Kathy Zelenock explores the critical diligence points every commercial property owner and lender must consider as EV infrastructure becomes a key player in real estate finance. With electric vehicle adoption surging, the demand for EV charging stations is reshaping commercial property dynamics—and posing unique challenges for lenders. Next, Glenn Richards and Lee Petro analyze a recent order by the FCC addressing the technical parameters for transitioning transportation communication systems from DSRC, a short-range Wi-Fi-like technology, to C-V2X, which uses cellular networks and integrates with 5G for better safety, traffic management, and smarter infrastructure. Find out how this decision will impact the future of connected vehicles, infrastructure, and U.S. leadership in mobility innovation. Finally, in his recurring column, "In Case You Missed It," Bob Weiss dives into key issues like U.S.-China trade impacts, federal EV policies, and the evolving debate over self-driving technology in this roundup of must-read articles. From potential tariff hikes and EV tax credit rollbacks to the future of AI-driven autonomous vehicles, the automotive industry faces seismic shifts under the incoming presidential administration.

Heather Frayre | Member Partner

Coming Soon to a Commercial Mortgage Loan Near You…EV Charging Station Loan Diligence

More than 3.3 million Americans own an electric vehicle (EV)[1]. In July 2024, the federal government reported that there were approximately 177,000 publicly available commercial-speed EV charging stations available in the United States[2] while some estimates suggest that more than a million publicly-available charging stations will be needed by 2030 or shortly thereafter to meet projected EV usage[3]. Although projections of EV adoption vary, especially in light of the recent U.S. presidential election, EV usage will almost certainly increase significantly over the next decade, creating both demands and opportunities for commercial property owners and their lenders.

While some charging stations are being installed at governmental sites (municipal parking lots and government employment sites) or on dedicated charging locations roughly equivalent to gas stations, the necessary infrastructure is very frequently being installed on commercial properties---in apartment complexes, at office buildings, hotels and shopping centers, entertainment venues and recreational sites, automotive dealers, and even hospitals and other healthcare facilities.

Vendors of EV charging stations offer several approaches to installing equipment. Some vendors simply sell charging equipment, leaving installation and maintenance to the owner of the equipment ("Equipment Sales"). More commonly for commercial properties, however, charging equipment vendors offer a more complete solution: design, installation, and maintenance of equipment ("Installation Packages"). Installation Packages not only have direct costs associated with the installation and maintenance of charging equipment, but also may require offering public access to the charging station---which is potentially desirable for some property types, but not universally so.

Like wireless transmitter antennas frequently installed on the roof of tall buildings, installation of EV charging equipment may involve a purchase of a portion of the property, an easement of a portion of the property, a license agreement, or a lease of space on the property. Different vendors have different preferences as to how they install the equipment, with a license to access the property as the most common approach.

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[1] Edmunds.com, "How Many Electric Cars Are There in the U.S.?" (January 5, 2024).

[2] U.S. Joint Office of Energy and Transportation, "Electric Vehicle Charging Infrastructure Growth" (updated through July 2024).

[3] National Renewable Energy Laboratory, "The 2030 National Charging Network: Estimating U.S. Light-Duty Demand for Electric Vehicle Charging Infrastructure," at vi.

Commercial property owners can increasingly expect their lenders to request information about the following issues, and to require estoppels or similar agreements to protect the lender's rights in charging station installations.

Terms of Installation, Maintenance and Operation Agreement. Lenders will review vendor agreements to understand the installation, maintenance and operation responsibilities of the parties, flows of funds (upfront and ongoing payments), term of service (potentially including the ability of the property owner to assign the benefits under the agreement to the lender), and related issues. Since these terms vary tremendously by vendor, property owners and vendors should expect a great deal of scrutiny from lenders on these issues, and potential requirements of estoppels or other agreements to assure completion of expected installation, and conformity to contract terms.

Availability of Adequate Utility Service. Recent studies by the University of Michigan Transportation Research Institute suggest that use of charging stations can cause unexpected swings in electrical draw, create variability in local voltage, potentially lower power quality by introducing electrical current harmonics, and create "short cycling" issues that can result in overheating of wires, transformer stress and possible energy outages[4]. Lenders may seek information to confirm that the local utility has signed off on the EV charging station installation, and has confirmed adequacy of power to the site.

Reliable Maintenance Plan. Keeping charging stations in operable condition is a critical issue. A recent study of a million EV charging station consumer reviews found widespread dissatisfaction with the current status of EV charging infrastructure. Among other things, the study found that EV charging stations in the U.S. have an average reliability score of only 78%, meaning that one in five didn't work. Another study confirmed the 20% failure rate of EV charging sessions, finding that station connectivity (failure to connect to appropriate networks for authentication), internal station faults or errors (software and hardware problems) and damage to connectors or cables being the most common issues[5]. Property owners and vendors can expect that lenders will want assurances that equipment that is installed will work as intended, and will be protected from vandalism that may impact operability.

Safety Concerns and Insurance. Given the use of high-voltage electricity and lithium batteries in vehicles, EV parking on commercial properties, and installation and use of EV charging stations,

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[4] University of Michigan Transportation Research Institute, "Distributed AI Reveals Reliability Concerns from Electric Vehicle Charging".

[5] Sandridge, "Charger Reliability: The Greatest Threat to EV Adoption," EnergyTech.com (December 22, 2023).

can may introduce a variety of risks, including shocks, burns, fire, electrocution, damage to the EV or its battery, and damage to surrounding property or other vehicles, as well as potential environmental harm from these hazards, particularly if charging equipment is improperly installed or damaged. Even if the baseline risk is relatively low, these risks can be exacerbated if the charging station is not well-secured from vandalism or weather risks, or lacks sufficient fire response equipment. In addition, use of the charging equipment can result in trips and falls on cords or other equipment, or pedestrian injury when quieter-than-combustible EVs are entering or exiting EV charging station areas, particularly in areas where lighting, roadway markings, or signage is not sufficiently clear.

Vandalism is also a concern, as EV charging stations can be targeted not only by those who object to EVs for political reasons, but for those looking to make quick cash by selling the copper material used in cable wiring. Such vandalism is increasing as EV charging stations proliferate.

In addition, remote or unattended charging stations may attract criminal activity. Though this issue is difficult to quantify, the time that it takes to charge a vehicle, and the inability to quickly move the vehicle during the charging process does suggest potential safety concerns in remote or unattended charging sites where the driver cannot move to a nearby office or home to await completion of the charging process.

Finally, the potential ability for criminals to hack into charging stations to interrupt network communications or to compromise customer identification and financial information is a possibility[6].

Lenders will want assurances that adequate space, signage, and security measures are in place to address these concerns.

Accommodations for Parties Using Charging Equipment. Adding charging stations can result in new visitors to a property---visitors with idle time while they wait for their vehicle to charge. While shopping centers or entertainment venues may wish to attract visitors who have time to spare, it can be burdensome for other property types, such as multifamily properties, that may not want the risks associated with uninvited guests.

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[6] Wired Magazine, "EV Charger Hacking Poses a 'Catastrophic' Risk" (July 5, 2023) ("In recent years, security researchers and white-hat hackers have identified sprawling vulnerabilities in internet-connected home and public charging hardware that could expose customer data, compromise Wi-Fi networks, and, in a worst-case scenario, bring down power grids."); Dark Reading, "EV Charging Stations Still Riddled with Cybersecurity Vulnerabilities," (April 9, 2024).

Tensions between EV drivers competing for charging equipment and even between EV drivers and conventional internal combustion engine drivers for scarce parking spaces can create issues in locations where EV equipment and/or parking is limited.

Lenders will want to understand the property owner's plans for addressing these concerns.

**For a detailed lender checklist, please contact KZelenock@dickinsonwright.com.

Kathy Zelenock | Member Partner and Chair, Real Estate Finance Practice Group | Fellow of the American College of Mortgage Attorneys

FCC Order Addresses Transition from DSRC to C-V2X Technology

The Federal Communications Commission ("FCC") on November 21, 2024, released a long-awaited Second Report and Order ("Order") establishing the technical parameters necessary to transition from Dedicated Short Range Communications ("DSRC")-based technology to C-V2X-based technology as the mobility platform of Intelligent Transportation System ("ITS") communications. The Order follows a 2020 FCC decision that retained the upper 30 MHz of the 5.9 GHz band for ITS operations and required the transition from DSRC to C-V2X technology.

ITS uses technology to improve traffic management and efficiency, making transportation safer by increasing coordination and providing users with more information. In addition to the FCC, the US Department of Transportation has been involved with the development of ITS technologies. For more information see: https://highways.dot.gov/research/laboratories/saxton-transportation-operations-laboratory/ITS-technologies. The key difference between DSRC and C-V2X technology is that DSRC relies on dedicated short-range, Wi-Fi-like communication for vehicle-to-everything connectivity, while C-V2X uses cellular networks and direct communication channels, offering greater range, scalability, and integration with 5G infrastructure.

The FCC's decision to transition ITS communications from DSRC to C-V2X technology marks a pivotal step in modernizing U.S. transportation infrastructure. By leveraging C-V2X's advanced capabilities, such as low-latency communication and integration with 5G networks, this shift enhances road safety, traffic management, and efficiency while supporting the deployment of autonomous and connected vehicles. It also ensures efficient use of the limited 5.9 GHz spectrum and aligns the U.S. with global mobility innovation trends, strengthening its leadership in next-generation transportation technologies. For stakeholders, including automakers, technology providers, and infrastructure planners, this creates opportunities for innovation, investment, and collaboration in building smarter, safer transportation systems.

The new FCC rules address spectrum usage, message priority, the timeline for sunsetting DSRC-based technology and the reimbursement of transition costs of DSRC incumbents.

Standards. In the Order, the FCC did not adopt a specific C-V2X standard (e.g., 3GPP Release 14 or 16), but encouraged industry to develop a consensus 3GPP releases moving forward. The FCC noted its commitment to vehicle safety and the need for all vehicles that incorporate C-V2X technology to communicate with each other. In addition, devices need to be secure to protect user privacy and consider cybersecurity concerns.

Band Usage. Existing ITS rules include a hierarchical priority system for messages and the FCC maintained that system for C-V2X operations. Specifically, safety-of-life messages have top priority, followed by public safety communications, and then non-priority communications that promote road safety and efficient, effective road use. According to the FCC, this ensures that ITS spectrum is not used for communications and applications that would impair the timely and reliable use of the spectrum for safety of life and public safety communications. The FCC did not authorize more spectrum for ITS or modify the process for obtaining C-V2X licenses, which will continue to be issued on a non-exclusive basis and does not require an auction process.

Channel bandwidth. The FCC also maintained the ITS 5.9 GHz band plan for C-V2X channels – with three 10 MHz channels in the bands 5.895-5.905 GHz, 5.905-5.915 GHz, and 5.915-5.925 GHz. The FCC will also allow users to combine the 10-megahertz channels into 20 MHz contiguous channels or a single 30 MHz channel without restriction, to accommodate various ITS applications and services.

C-V2X technical requirements.

A. Power and antenna height limits for RSUs – The FCC adopted an EIRRP Power Spectral Density (PSD), without a limit on transmitter output power, of 33 dBm/10 MHz, 33dBm/20 MHz, and 33dBm/30 MHz EIRP PSD limits for C-V2X RSUs. The FCC concluded these power levels will enable ITS systems to operate over their intended service areas while protecting federal incumbent radar systems. The FCC maintained the existing limitations on RSU transmitting antenna height and associated power reduction requirement for RSU transmitting antennas over 8 meters in height at full power up to a maximum of 15 meters with a corresponding power reduction.

B. Power limits for C-V2X On-board Units (OBUs). The FCC adopted power limit rules for C-V2X OBUs that provide for optional use of "geofencing" techniques to allow the OBUs to operate at a higher radiated power in some locations. The FCC explained that "geofenced" OBU devices incorporate a geolocation capability to be aware of the appropriate protection areas around federal radiolocation sites and ensure they operate at lower power levels in protected areas. Accordingly, the FCC permitted C-V2X OBUs with geolocation capabilities to operate with

up to the maximum 33 dBm/10 MHz, 33 dBm/20 MHz, and 33 dBm/30 MHz EIRP PSD outside of a protected coordination zone. Within the coordination zones, the following limits apply: all operations that include use of the 5.895-5.905 GHz channel are limited to a 23 dBm EIRP over the channel bandwidth; all other channels are limited to 33 dBm over the channel bandwidth, but must be reduced to 27 dBm over the channel bandwidth within ± 5 degrees of horizontal in elevation. OBUs not equipped with geofencing capability will be limited to the power levels specified for operation within the coordination zones.

C. Out-of-band emission limits for RSUs and OBUs. The FCC adopted the following conductive out-of-band limits outside of the authorized 5.895-5.925 GHz band for all RSUs and OBUs. The FCC believes these limits will provide equipment manufacturers and C-V2X operators flexibility to design, manufacture, and operate RSUs and OBUs that will help ensure reliable service while protecting adjacent bands operations from harmful interference:

- -16 dBm/100 kHz within ± 1 megahertz of the band edges;
- -13 dBm/MHz within ± 1 megahertz to ± 5 megahertz of the band edges;
- -16 dBm/MHz within ± 5 megahertz to ± 30 megahertz of the band edges; and
- -28 dBm/MHz beyond 30 megahertz from the band edges.

Technology transition. The FCC adopted a requirement that all ITS operations in the 5.9 GHz band either convert to C-V2X technology or cease operating two years after publication of the Order in the Federal Register. New licenses issued after the effective date of the final rules will only authorize C-V2X operations. Existing licensees may use DSRC technology during the two-year transition period.

Compensation of reimbursement for transition costs. The FCC refused to adopt compensation or reimbursement for existing incumbent DSRC licensees to relocate or to replace their systems with C-V2X technology. The FCC reasoned that the long lead time between the issue of the notice of rulemaking and the two-year transition adopted in the Order, should provide licensees sufficient time to work within their normal budgetary cycles to procure C-V2X equipment in cases where they may have previously planned for DSRC equipment.

Effective Date: The order was published in the Federal Register on December 13, 2024, and will become effective February 11, 2025. Existing licenses for DSRC systems may be renewed as necessary following this effective date but only for a period not to exceed December 14, 2026.

Please contact the authors should you have any questions.

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and
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(1) Auto Industry Braces for Whiplash as Trump Takes Power

Perhaps one of the most intriguing and impactful uncertainties revolving around the new administration is its policy toward the automotive industry. Will maximum tariffs be imposed on Chinese competition, will tariffs be extended to Mexico, will the $7,500 incentive be eliminated or materially pared down, and will TARP funds be reallocated? What impact will the bromance between Donald Trump and Elon Musk have on all or any of these or other issues? During these early days of the transition, there are no clear answers. However, an article in the November 18th edition of the *Wall Street Journal* entitled, "Auto Industry Braces for Whiplash as Trump Takes Power," thoughtfully addresses these issues.

(2) How Trump Could Upend Electric Car Sales

For those seeking more analysis of the impact of the potential changes in policies of the new administration, you are in luck. An article in the November 26th edition of the *New York Time*s focuses more in depth on the impact of the possible rescinding by the incoming Trump administration of the $7,500 federal tax credit. It notes estimates by three economic professors at 3 prestigious universities that, "Electric car sales could fall 27% if consumers lose the tax break." The author notes that in some cases the federal incentives, if withdrawn, could be replaced by state (think California) or OEM-funded subsidies (price reductions). The latter circumstance would further increase the already significant OEM losses on each EV sale.

(3) EV Targets 'will not be weakened' Despite Pressure

Although under the new U.S. administration it seems likely that the transition to EVs may be materially slowed or hampered, the UK government, at least, is not similarly inclined. In an article published by the *BBC News*, entitled, the "EV targets ' will not be weakened ' despite pressure," the authors quote the transport minister as saying that although the government will look at "flexibility" given the slowing of EV sales, "the mandate (ban on non-EV sales by 2035) will not be weakened."

(4) Why There's Hope for U.S. Factory Towns Laid Low by the China Shock

Finally, a silver lining in the emergence of Chinese EV competition. In an article in the November 1st edition of the *New York Times* entitled, "Why There's Hope for U.S. Factory Towns Laid Low by the China Shock," the author describes a surge of investment in towns

that were decimated by Chinese and Mexican low costs imports are now the beneficiaries of investments in cutting edge industries like biotechnology, computer chips and EVs.

A research team at the Brookings Institute estimates that of the $736 billion in investment in clean energy industries promised by the Biden administration, "…nearly a third of that total is flowing into communities that experienced the worst effects of the so-called 'China Shock' – the factory closures that followed China's entry to the global trading system."

(5) Have AI Advances Led to Self-Driving Breakthroughs or a Dead End?

As autonomous driving continues to expand beyond limited local geographies, with increasing adoption comes focus on the relative performance of radically different technologies with material implications for ethical and liability issues. On the one hand, Tesla has embraced what is known as a "to end learning model." While Waymo and others are utilizing what is described as "...a more nuanced strategy that harness the latest AI models while incorporating safeguards and methods for verifying safety." An article appearing in the October 17th edition of the Automotive News provocatively entitled, "Have AI advances led to self- driving breakthroughs or a dead end?" the author explores this heated and very consequential debate.

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To learn more about our EV practice, visit our website at https://www.dickinson-wright.com/practice-areas/electric-vehicles?tab=0.

All views presented in this newsletter are those of the authors and do not necessarily reflect the views of Dickinson Wright.

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