



Real estate developers in the age of electric vehicles

Thriving through the transition

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Nontechnical Whitepaper

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Electric transport is redefining how we live, and more importantly, [where we live](#) →

Introduction

The transition to electrified transportation is the defining challenge of the decade for most industries. While particular attention has been paid to automakers and the oil & gas giants, real estate developers face challenges that have not been fully grasped.

The auto industry plans to invest **half a trillion dollars over the next five years** into electric vehicles (EVs). High gas prices and hot summers (fresh reminders of climate change) are driving significant consumer demand for EVs. The total cost of ownership of EVs is already lower than many internal combustion engines (ICE) vehicles, meaning that on top being climate-friendly, in many cases it is cheaper to own EVs.

The future is happening faster than expected. EVs are changing how we live and where they live.

The question for developers, especially homebuilders, is **how to reimagine the future that homeowners will thrive in.**

In this brief note, we review what developers may consider as they make the strategic and tactical decisions that will define their future.



Challenges

50% increase in a home's consumption exacerbates grid bottlenecks

EVs are the biggest load in the home. 80% of charging is done at home. A 100kWh EV, if charged once a week, increases a home's monthly energy usage by 50% (assuming 800kWh as monthly energy).

Future communities need to be planned to handle much higher loads. This increases the costs and complexity of construction as significant upstream upgrades to substations and electric infrastructure need to be included. Such costs may not always be borne by utilities.

Utilities may also restrict the number of EV chargers that can be installed in a community where upgrades are too costly, making such homes less attractive.

Increased blackouts

Blackouts are catastrophic for electric vehicles, unlike plug-in hybrids which can use gasoline. Between 2000 and 2020, major blackouts in the U.S. increased by 9x. Home batteries only last a few days, just as gas used in generators. The Texas Power Crisis in 2021 lasted two weeks and three days.

While much is made of vehicle-to-X capabilities to power homes from EVs, in reality, during blackouts, owners may prefer to save the power for transport.

Increased need for dedicated parking

Many residents in multi-tenant buildings, especially in cities, lack dedicated parking. Other homes, especially row and townhouses, were designed with parking away from the home, often across a sidewalk, which prevents the installation of a charger. It is estimated that a third of prospective EV owners cannot install home chargers.

Future homeowners will more likely be current or prospective EV owners, and will demand access to dedicated home charging, forcing the construction redesigns which will increase costs.

A vision of the future

Home Level 2 + communal Level 3 charging

Homebuilders should preinstall Level 2 chargers in homes and add a few Level 3 fast chargers for shared use. Level 3 is DC fast charging and is banned from homes due to the high voltage required. Most Level 3 chargers are unfortunately miles away from homes. Homebuilders can delight homeowners by adding communal fast chargers located within a few hundred feet of where EV owners live.

Solar + battery + charger package with single dashboard

Homeowners are integrating rooftop solar, batteries, and EV chargers on their own, usually from different manufacturers, each with their dashboards, user manuals, and warranties, each with expensive installation.

Future homes pre-installed with an integrated solution managed from a single dashboard will alleviate significant homeowner headaches and drive value.

Blackout insurance

Homebuilders can be proactive and provide community backup solutions such as diesel generators and batteries which can provide power for longer periods at cheaper prices than individual backups. This service can be priced appropriately as a subscription revenue stream.

Electric lifestyle

Once homeowners experience the quality of life of an electric community free from noise and air pollution, they'll demand nothing less. Electric scooters can be geofenced to only work within the neighborhood. Outdoor events will not need noisy diesel generators. Communities become healthier.

EVs owners are higher income earners (over \$100K in combined income) that can afford this lifestyle.



Who we are

Pirl has partnered with
D+R →

Pirl builds next-generation electric vehicle charging stations to accelerate the transition to electrified transport. Using the latest Internet-of-Things (IoT) technology, we deploy stations that charge rapidly, have a lower environmental footprint, and delight owners with an engaging user experience.

D+R International offers a complete ecosystem of services built to help our clients transform the way we use energy in transportation and buildings, bring new technologies to market, and create long-lasting change.



Building the future of EV charging

Learn more about us:
thepirl.com
drintl.com

Kobby Osei-Kusi
kobby@thepirl.com

John Horvatis
bd@thepirl.com

David Steiner
dsteiner@drintl.com

