

A Case Study on the Financial Implications of the Zero Net Energy (ZNE) Goal in California



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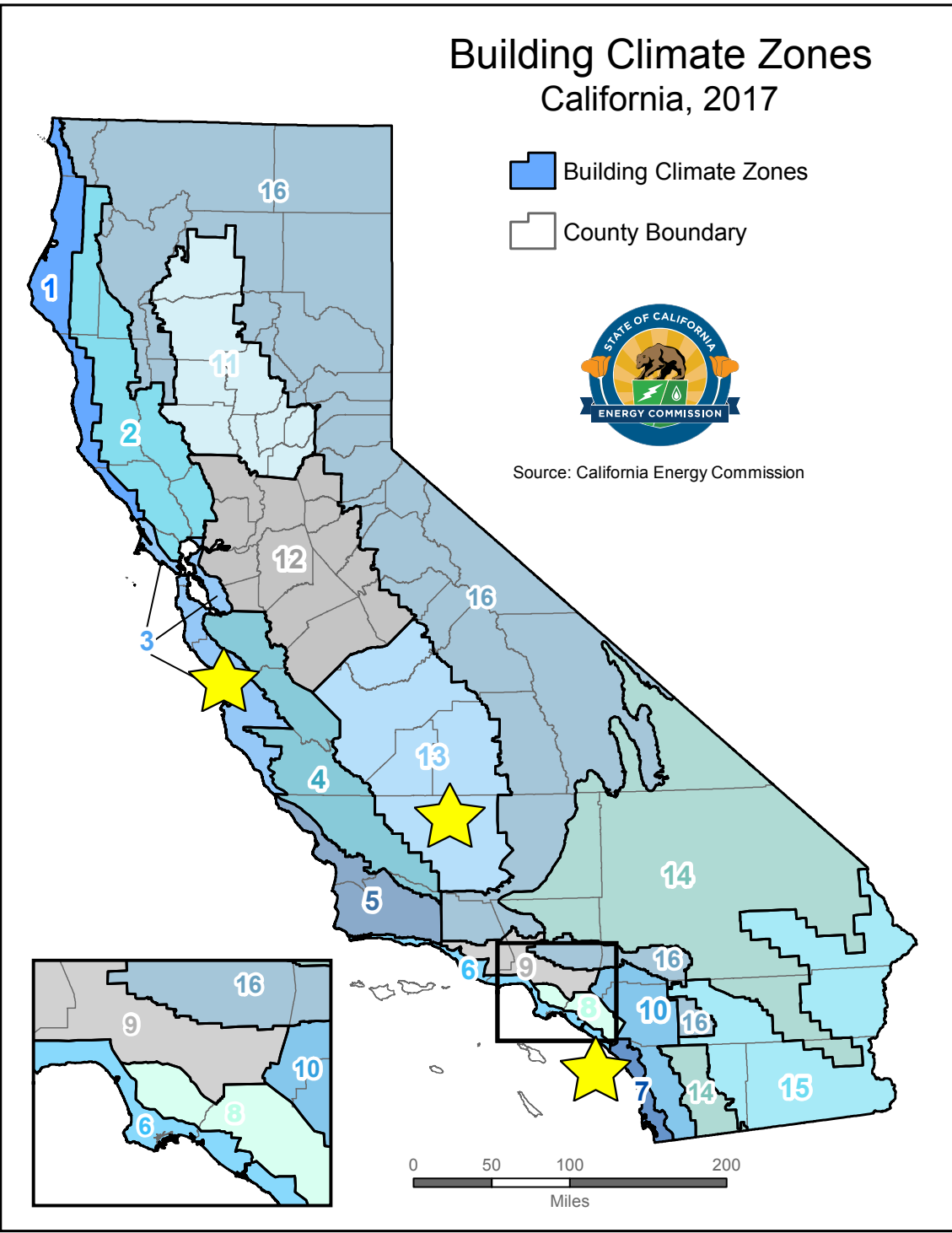
Purpose

- 2019 Title 24, Part 6 Building Energy Efficiency Standards: “Largest energy code update Lennar has ever faced” (Regional Vice President of Operations, San Diego).
- Identify additional construction costs associated with updated Building Energy Efficiency Standards.
- Understand Energy Design Rating (EDR) Index and how it affects cost.
- Compare cost differences between three climate zones (CZ-3, CZ-7, CZ-13).
- Provide a predictive “snapshot” of new code at a given moment in time.

This paper is a case study that identifies potential financial implications from the updated Title 24, Part 6 code requirements established in 2019 by the California Energy Commission (CEC). The CEC works closely with the California Public Utilities Commission (CPUC), who’s long term goal is to make all residential structures Zero Net Energy (ZNE) throughout the state. The CEC’s updated code requirements include mandatory measures for detached residential homes to meet Zero Net Electricity on an Energy Design Rating (EDR) basis, a step towards Zero Net Energy. The purpose of this study is to understand the additional construction costs associated with the updated regulations, and how they may differ in various regions in California. The study was conducted on Lennar Corporation, the state’s largest residential homebuilder, and sought out to identify the company’s increased construction costs for homes permitted on or after January 1st, 2020. While the new regulations differ for homes of different shapes, sizes, and location, this study only pertains to detached, two-story, 2500 square feet residential homes in climate zones three, seven, and thirteen.

Conclusions

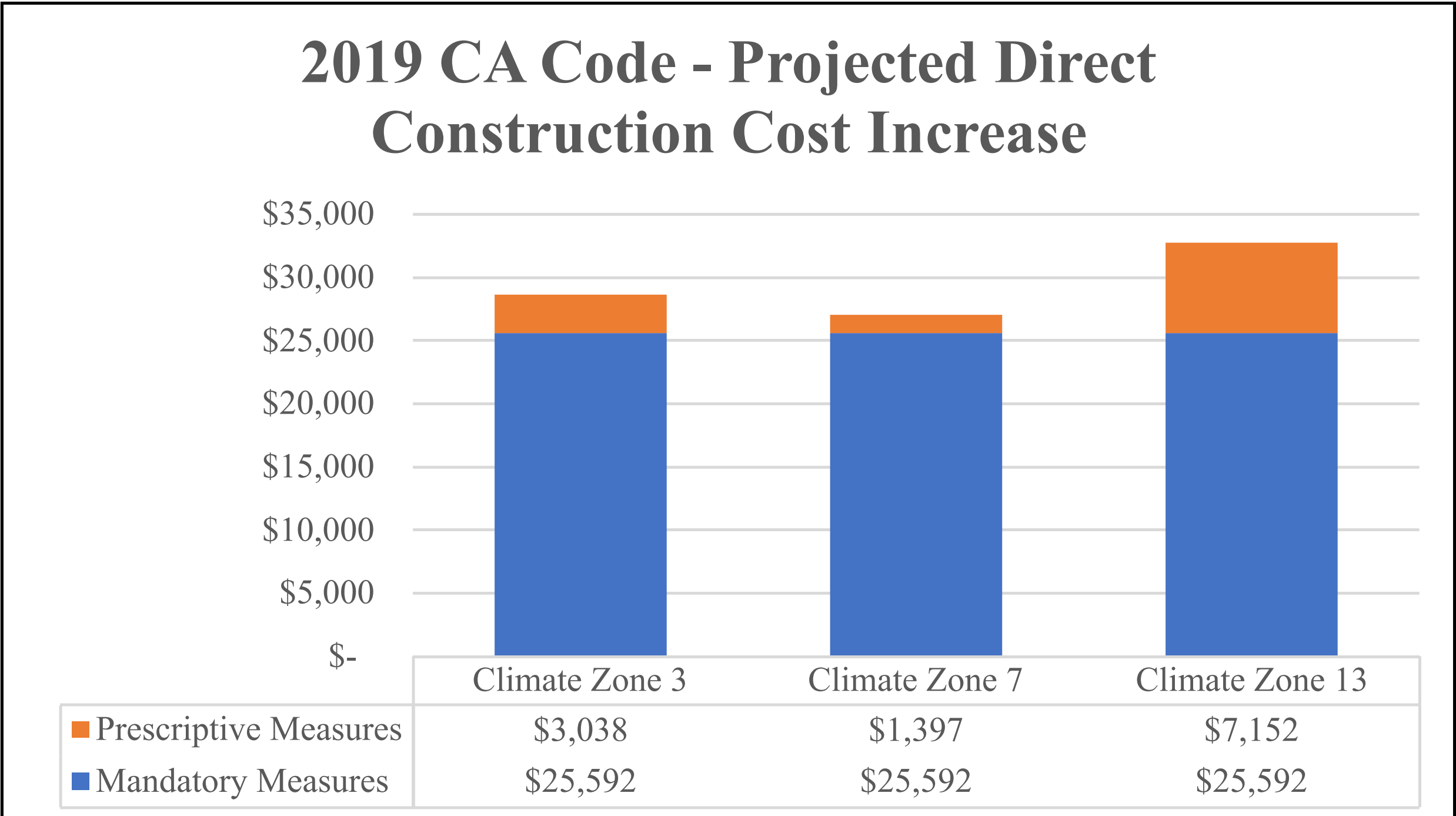
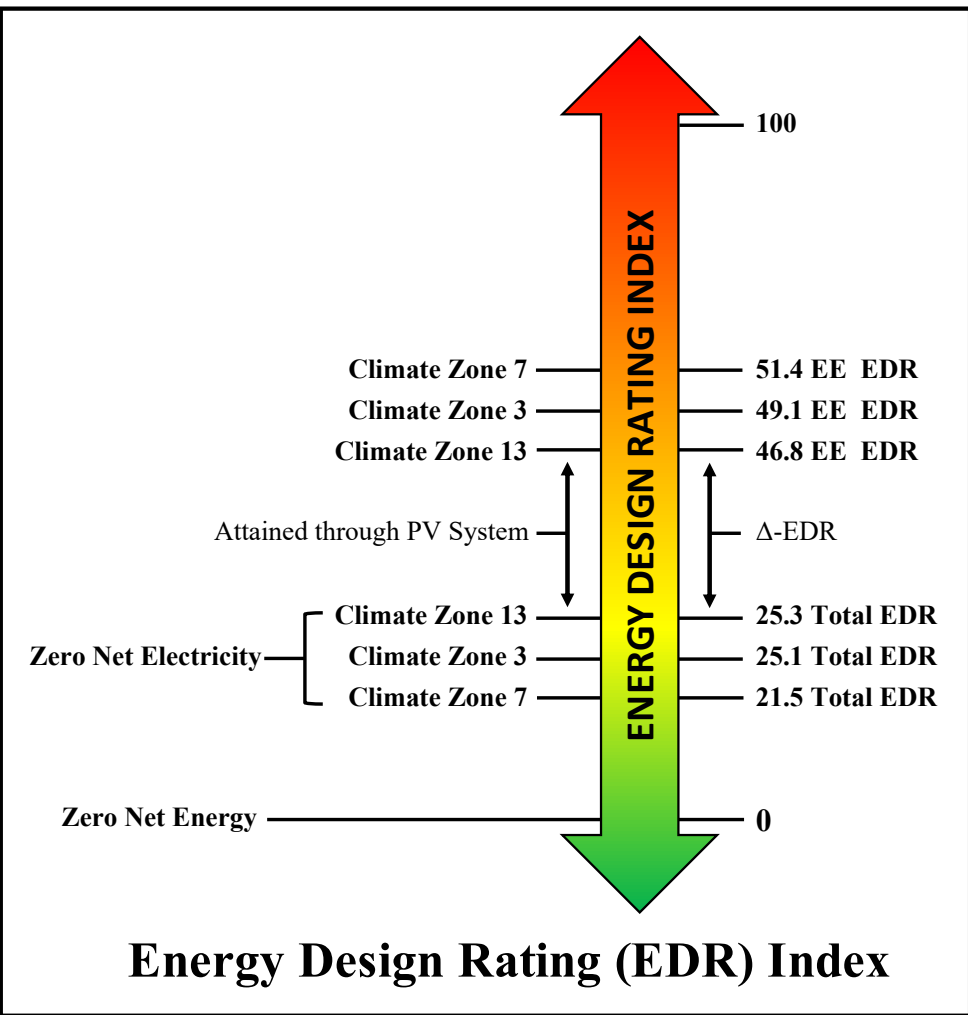
- Largest Cost Increase: Climate Zone 13
- Moderate Cost Increase: Climate Zone 3
- Low Cost Increase: Climate Zone 7
- Average Cost per SF: +12.3%
- 2020 Projection (CA): +\$560,000,000



Target Group

- All new homes
- Three climate zones
- 2-Story detached homes
- 2,500 square feet

Key Words: Residential, Zero Net Energy, Title 24, California Building Code, Financial



Considerations

- Glazing percentages of different floor plans
- Orientation of home (North, East, South, West)
- Solar Exclusions (not factored in this report)
- Solar leasing program (zero up-front cost)
- State solar rebate program (\$1,200 in this case)

