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Exhibit SC-08:

Effects of Residential Gas Appliances on Indoor and Outdoor Air Quality and Public Health in California
(Excerpt)

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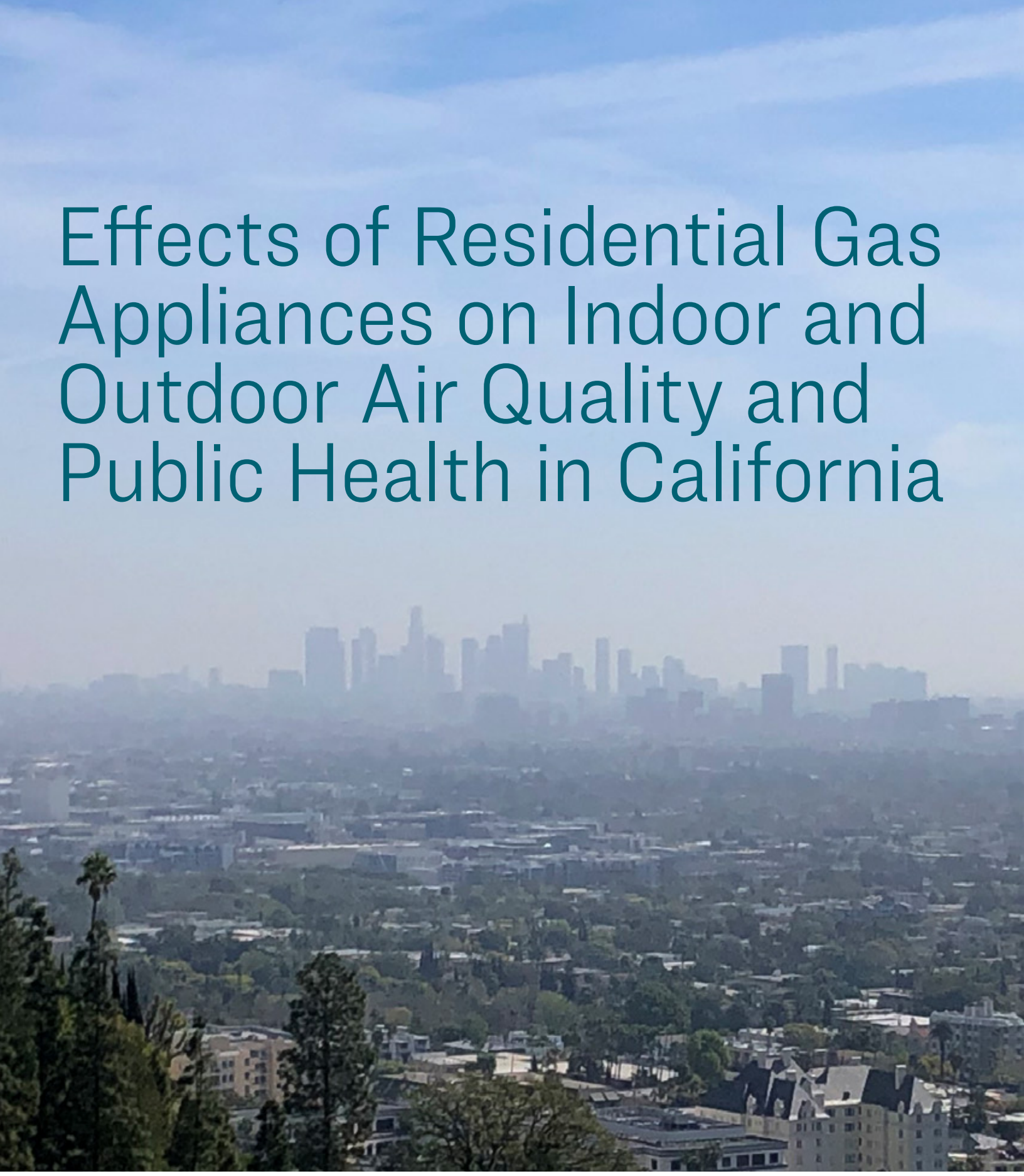

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Cover: A view of downtown Los Angeles from Hollywood Hills, blanketed in smog the afternoon of March 5th, 2020. Photo by Kristiana Faddoul, Sierra Club

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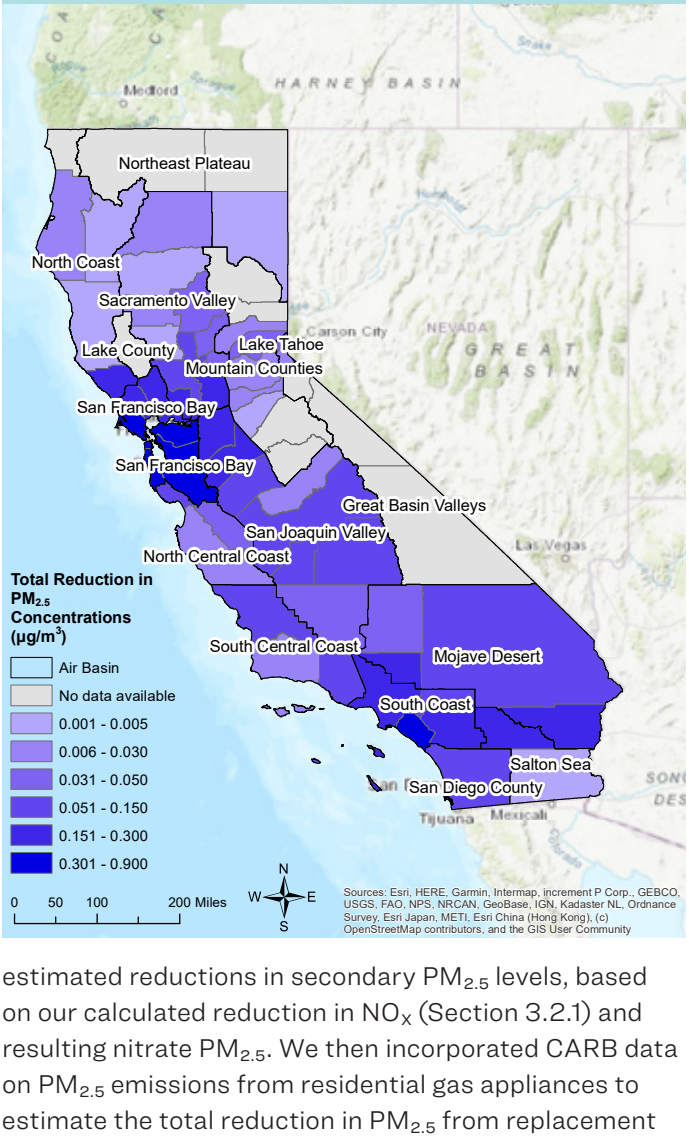
Figure 3-3: Total reduction in ambient $PM_{2.5}$ concentrations in California from elimination of gas appliances, by county in 2018.



estimated reductions in secondary $PM_{2.5}$ levels, based on our calculated reduction in NO_X (Section 3.2.1) and resulting nitrate $PM_{2.5}$. We then incorporated CARB data on $PM_{2.5}$ emissions from residential gas appliances to estimate the total reduction in $PM_{2.5}$ from replacement of gas appliances, representing changes in primary and secondary (nitrate) $PM_{2.5}$ from gas appliance use. This scenario is described in detail in Appendix A. Overall, this scenario suggests a reduction in the ambient $PM_{2.5}$ concentration by an average of 0.11 µg/m^3 per county (see Appendix A.2.3 for details).

Appendix B shows county data for total $PM_{2.5}$ and NO_X emissions, and the estimated emission reductions with building electrification per county. Figure 3-3 shows the geographic distribution of emission reductions due to residential building electrification.

As discussed in Section 3.1.1, there are existing emissions from power plants due to electricity generation.[73] Gas accounts for approximately half of all electricity generation in California,[288] and thus, if the fuel sources of electricity generation were to remain the same, gas usage would increase (and associated emissions from power plants would increase) if the new electric load is not powered by renewable energy resources. However, utilities are making progress to ramp down electricity production from gas and deploy clean energy on the grid, in accordance with the state's zero-carbon requirements. Additionally, taking into consideration California law SB 100 — which requires all of the state's electricity to be generated by zero-carbon resources by 2045 — there will be increasingly less dependence on nonrenewable resources from power plants, and an increased clean energy portfolio that contributes to reduced emissions from power plants.[259] Our analysis does not account for any increases in gas used for electricity generation as a means of looking beyond the transition period to zero-carbon resources.

3.2.3. REDUCED MORTALITY (DEATH) AND MORBIDITY (DISEASE) DUE TO ELECTRIFICATION

In this section, we assess the human health impact from emission reductions in the ambient $PM_{2.5}$ levels due to building electrification described in Section 3.2.2. Using the U.S. EPA's BenMAP community edition tool (BenMAP-CE), we estimated all-cause mortality impacts, acute bronchitis impacts, and chronic bronchitis impacts[vi] due to the reduction in $PM_{2.5}$ from the modeled electrification scenario for the year 2018, as described in Section 3.2.2. As described in the Data and Methods section (Appendix A, Section A.2.3), we incorporated impacts from the reduction of both primary and secondary (nitrate) $PM_{2.5}$ from the conversion of NO_X to secondary $PM_{2.5}$.

For the year 2018 (as described in Section 3.2.2), the improvement in outdoor air quality from residential building electrification alone would reduce approximately 354 deaths (all-cause mortality), 304 cases of chronic bronchitis, and 596 cases of acute bronchitis in California (see Table B-5 for confidence intervals for mortality). The most affected counties are the higher-population areas, i.e., Los Angeles County and Orange County, due to the nature of the concentration-response function.

To estimate the monetized benefits of reduced all-cause mortality, we used a Value of a Statistical Life (VSL) estimation in BenMAP, which is commonly used in health impact assessment. For acute and chronic bronchitis, we used a Willingness to Pay (WTP) function, explained in more detail in Appendix A. The mortality reductions

vi. Mortality impact applies to the population aged 30-99; acute bronchitis impact applies to the population aged 8-12; and chronic bronchitis impact applies to the population aged 27-99.