

Federal Utility Partnership Working Group

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THE CLEAN POWER AND ELECTRIFICATION PATHWAY

Realizing California's Environmental Goals

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Figure 1: Meeting California's GHG Reduction Goals (Source: California Air Resources Board [CARB])

This paper presents Southern California Edison's integrated blueprint for California to reduce greenhouse gas emissions and air pollutants. Realizing the blueprint will reduce the threat of climate change and improve public health related to air quality. It is a systematic approach and each measure is integrated with — and depends upon — the success of the others. To be successful, California must approach implementation as an integrated package, applying resources across the board where most effective.

EXECUTIVE SUMMARY

Climate change and air pollution pose serious threats. Worldwide sea levels are rising while drought and severe weather are threatening vulnerable populations. In California, while significant progress has been made to improve air quality, too many communities continue to be exposed to high levels of pollution and to experience high instances of asthma and other air quality-related health issues.

California continues its leadership in addressing climate change and air pollution. The state's greenhouse gas (GHG) goals call for a 40 percent reduction in GHG emissions from 1990 levels by 2030 and an 80 percent reduction by 2050 (Figure 1). Air quality goals include a 90 percent reduction in emissions of nitrogen oxides from 2010 levels in some of the state's most polluted areas by 2032. Meeting these ambitious clean energy and clean air goals requires fundamental changes over the next 12 years and beyond.

The electric sector is at the forefront of the fight against climate change in California and today accounts for only 19 percent of the state's GHG emissions. The transportation sector (including fuel refining) and fossil fuels used in space and water heating now produce almost three times as many GHG emissions as the electric sector and more than 80 percent of the air pollution in California.

The Clean Power and Electrification Pathway is an integrated approach to reduce GHG emissions and air pollution by taking action in three California economic sectors: electricity, transportation and buildings. It builds on existing state policies and uses a combination of measures to produce the most cost-effective and feasible path forward among the options we studied.

The Pathway will help California achieve its climate goals and significantly reduce today's health-harming air pollution in local communities. By 2030, it calls for:

- an electric grid supplied by 80 percent carbon-free energy;
- more than 7 million electric vehicles on California roads; and
- using electricity to power up to one-third of space and water heaters, in increasingly energy efficient buildings.

(Continued)

Electrification Pathway

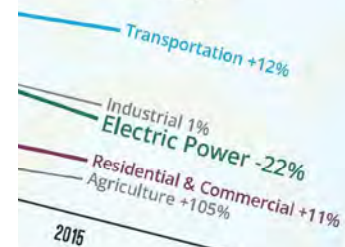
(Executive Summary)

Technologies will use zero-emission resources like solar and wind to meet the demand of their power, and can in turn support the electric grid by meeting demand with supply.

Various sectors must work together to support customer adoption of electric technologies that remain reliable and affordable, and that end-use efficiency is improved. Public policy can enable the Clean Power and Electrification Pathway through comprehensive integrated resource planning, thoughtful consideration of end uses of fossil fuels, through investing in electric infrastructure, and through supporting electrification in various businesses.

California Edison is proud to be a long-standing partner with the state, and continues to be an important climate change and air quality partner. We are committed to achieving a bold, clean energy future.

CALIFORNIA'S GHG REDUCTIONS ARE THE ELECTRIC SECTOR



2015

(Source: CARB)

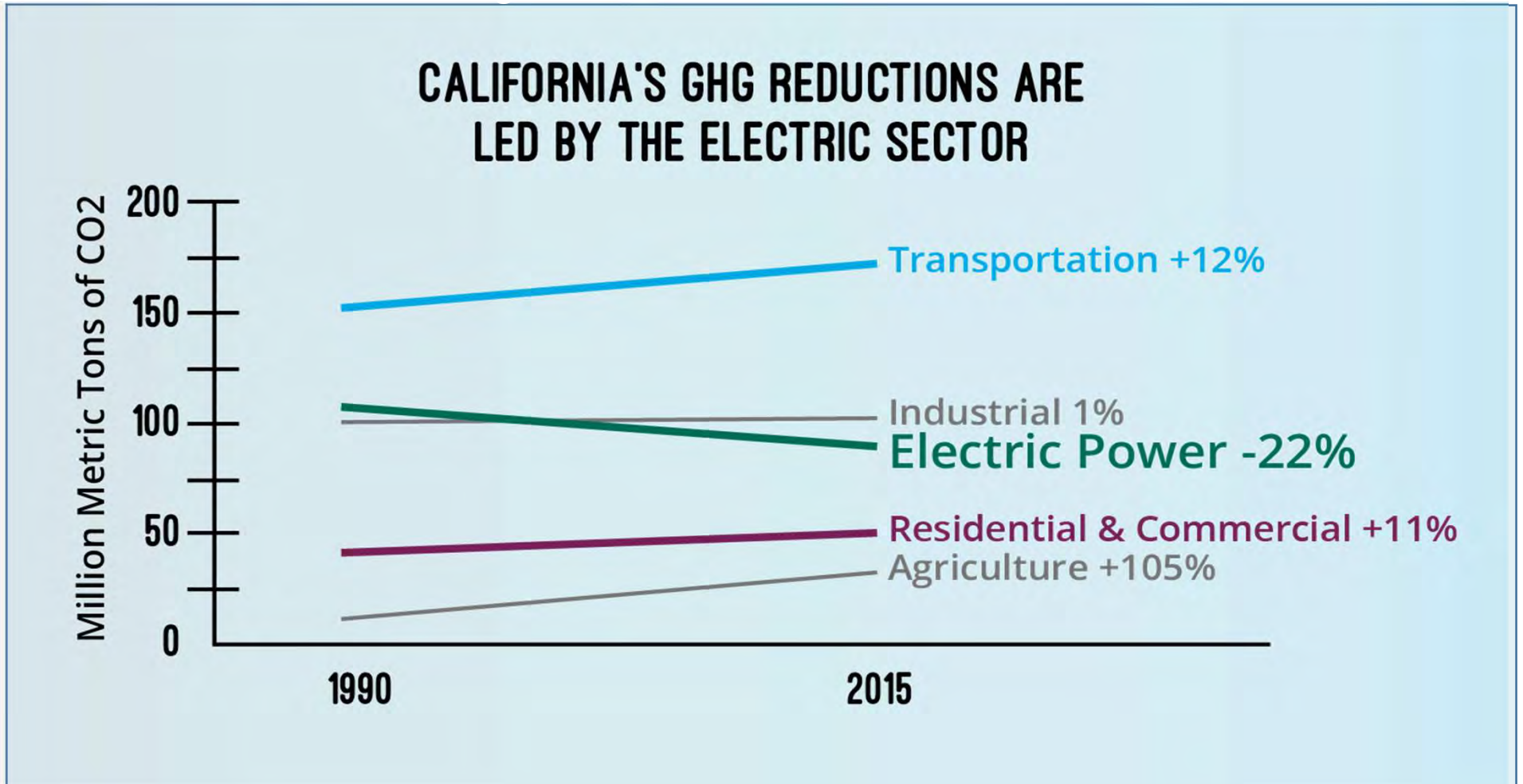
GHG emissions reductions

California Edison (1) established a Renewable Portfolio Standard (RPS) of reducing GHG emissions 80% below 2000 levels by 2020 and created an RPS that added new requirements for doubling renewable energy deployment, including wind and solar, 40% below 1990 levels by 2030, and defined new offset levels. California Edison and tools to achieve the 2030 GHG emissions goal.

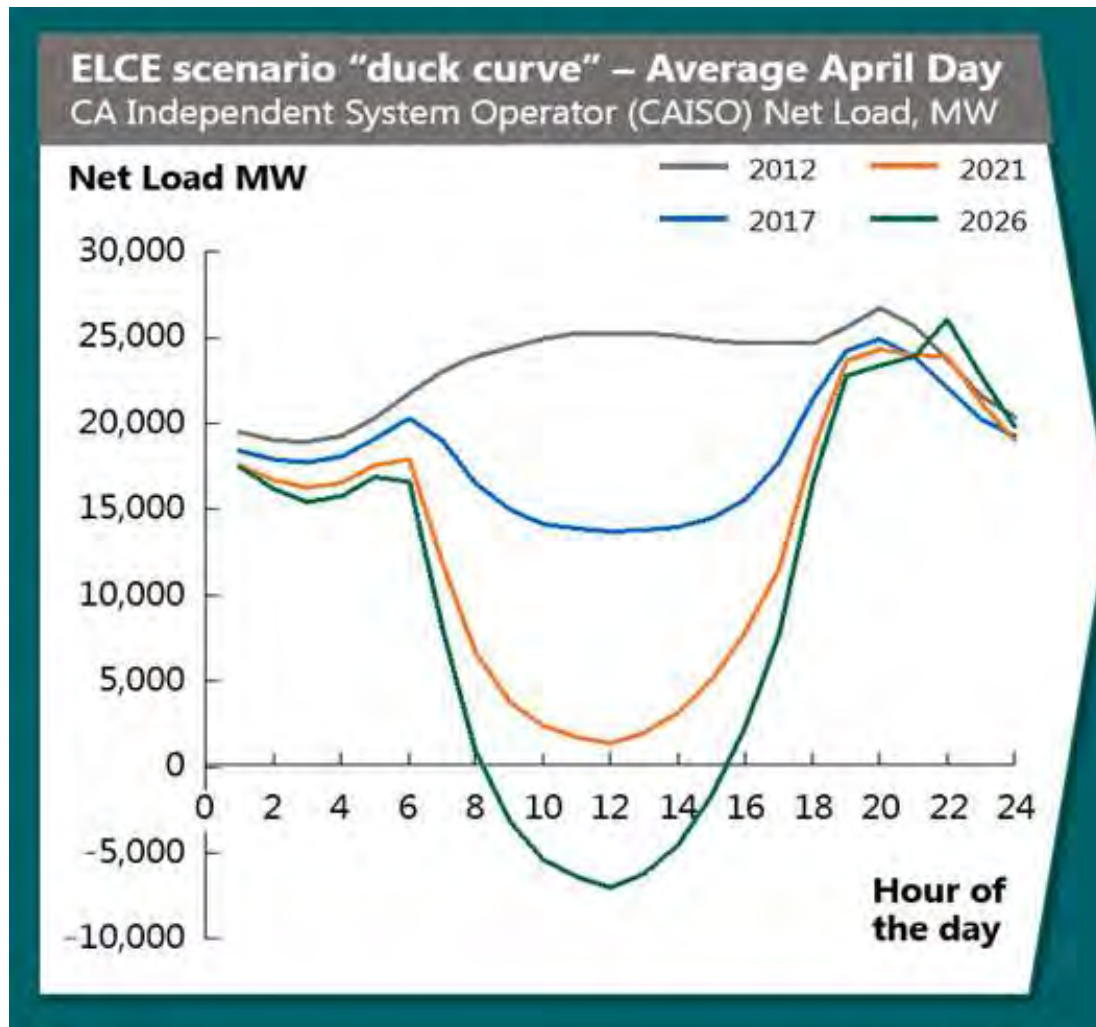
Standard, the Zero Emission

To date, the electric sector is the only sector that has reduced GHG emissions since 1990.

Change in California GHG Emissions



Cleaning the power system



Coordination and new investments in the grid will address production and demand challenges.

Thank you