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A Sustainable Energy Future for all Californians

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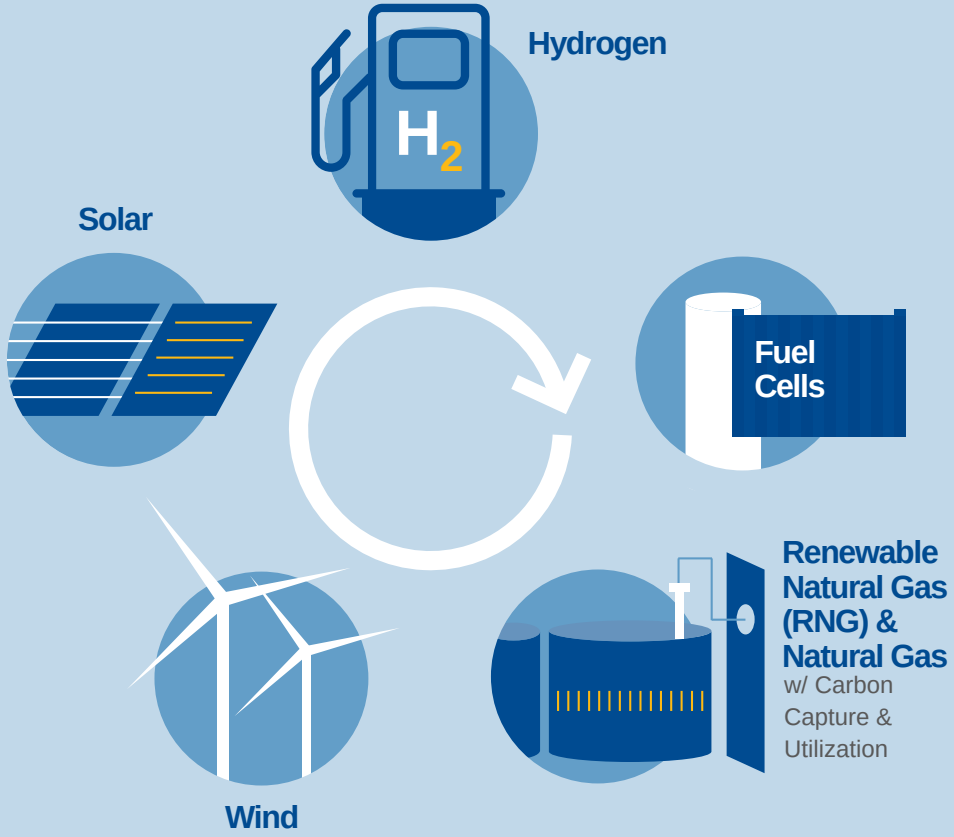
How will we get to 2045?

We need to work together, use all resources available, and foster policies that will allow for the development of innovative technologies and new ideas.



It starts by meeting our
our near-term goals

Governing Law – SB 32

By 2030, reduce GHG emissions

40%

below 1990 levels

Governing Law – AB 3232

Assess ability to cut building emissions

40%

below 1990 levels by 2030

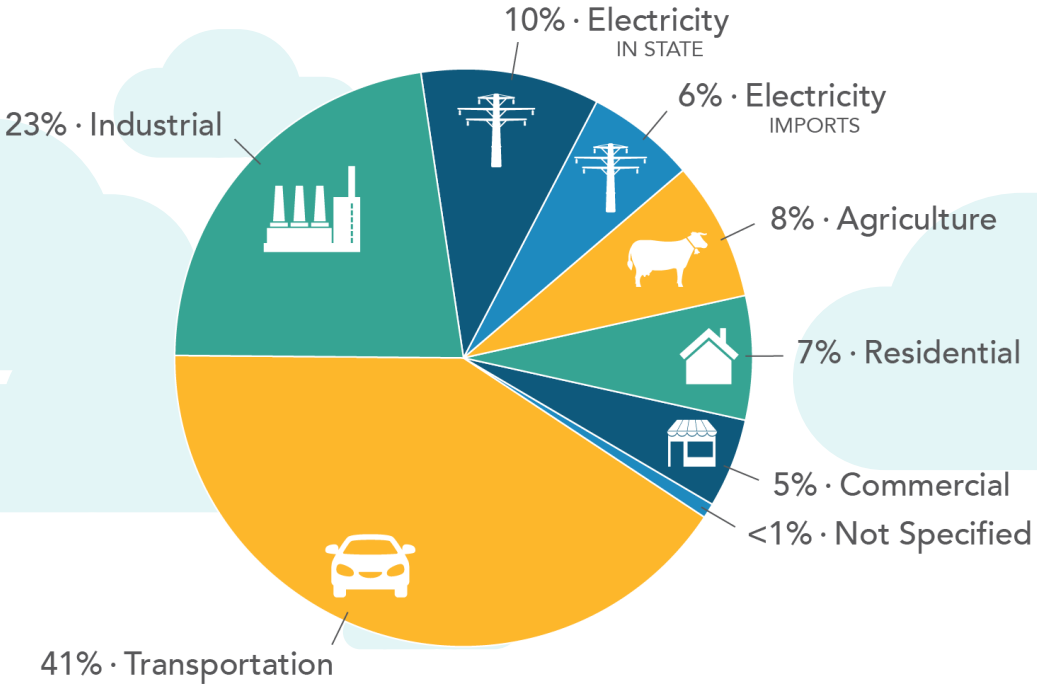
Governing Law – SB 100

By 2030, obtain

60%

of electricity from renewable sources
(and achieve 100% clean energy by 2045)

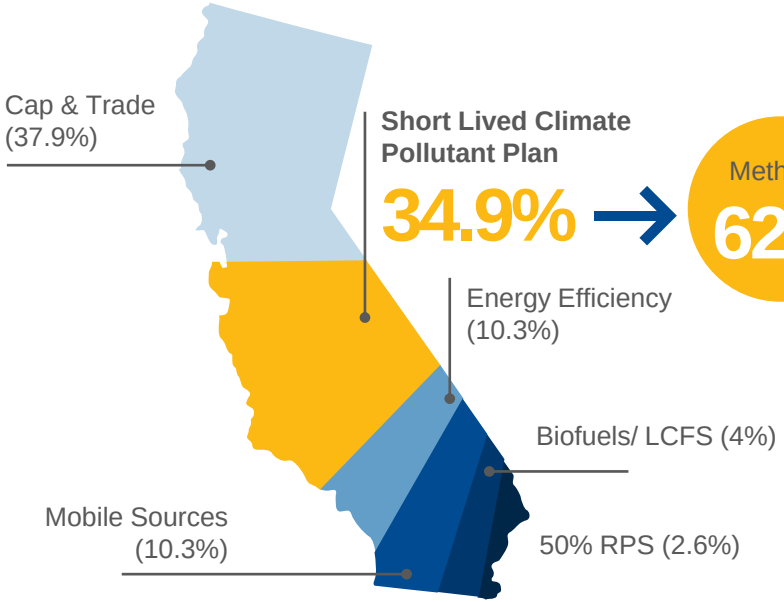
California Emissions
by sector



429.4 $MMTCO_2e$
2016 TOTAL CA EMISSIONS

Source: California Air Resources Board, 2018 GHG Inventory, 2016 Sector Emissions

CARB's Scoping Plan relies on reducing SLCPs



Methane
62%

Governing Law – SB1383

By 2030, reduce methane emissions

40%

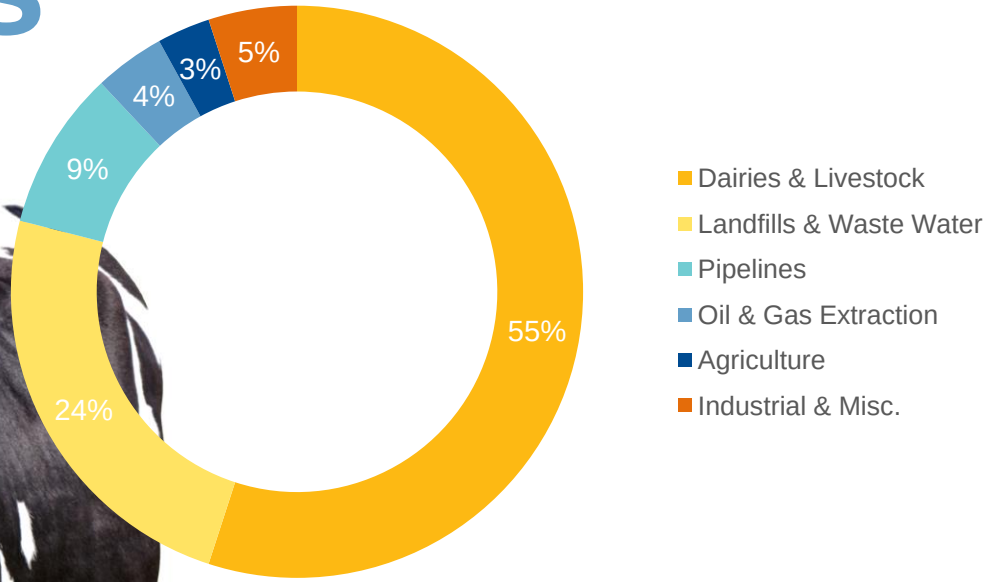
below 1990 levels

Stated Objective:

"Reduce the use of heating fuels while concurrently making what is used cleaner by minimizing fugitive methane leaks, prioritizing natural gas efficiency and demand reduction, and enabling cost-effective access to renewable gas."

Source: Percentages reflect reductions proposed in California Air Resources Board, AB 32 Updated Scoping Plan (2017).

RNG is a key strategy to address CA's biggest methane emitters



Source: CARB 2018 Greenhouse Gases Emissions Inventory, 2016 Methane Emissions

Decarbonizing energy is easier than switching appliances and equipment

=

100%
Building Electrification

RNG is
2-3x
More cost effective

Sources: Navigant Consulting, “Gas Strategies for a Low-Carbon California Future,” 2018.
California Building Industry Association (CBIA) and Navigant Consulting, “The Cost of Residential Appliance Electrification,” 2018.

The RNG supply is available:

in-state estimates (billion cubic feet)

94 BCF

UC Davis/ARB Study:
based on current federal and LCFS incentives

100-200 BCF

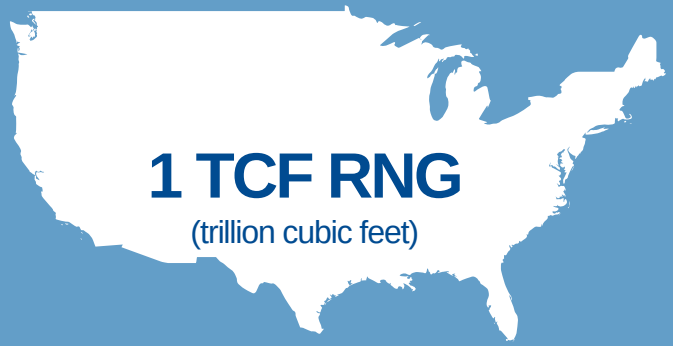
ICF Assessment:
CA with current regulation / incentives; 100 BCF conservative estimate

300 BCF

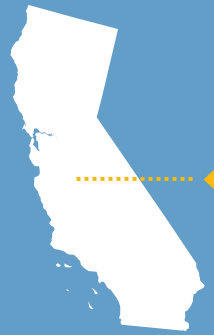
UC Davis/CEC Study

Sources: The Feasibility of Renewable Natural Gas as a Large-Scale, Low Carbon Substitute, Prepared for the California Air Resources Board and the California Environmental Protection Agency by Amy Jaffe, Principal Investigator. STEPS Program, Institute of Transportation Studies, UC Davis

The RNG supply is available:
out-of-state resources

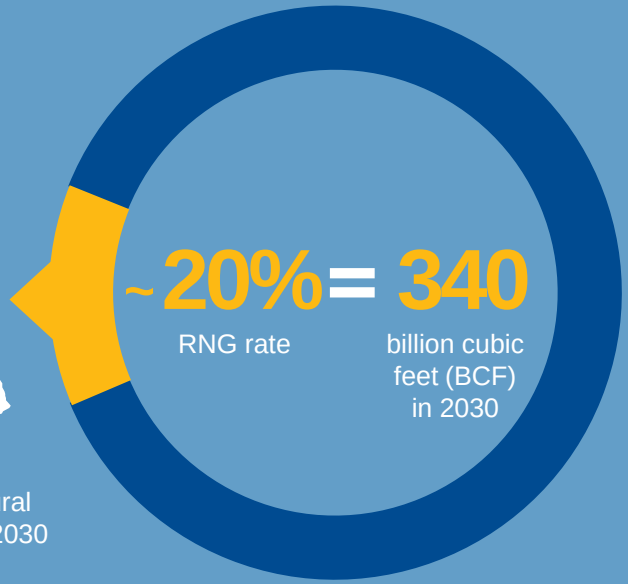


Available in the US today
(and growing)



Projected CA natural
gas throughput by 2030

1.7 TCF



Sources: U.S. Department of Energy. 2016. 2016 Billion-Ton Report: Advancing Domestic Resources for a Thriving Bioeconomy, Volume 1: Economic Availability of Feedstocks. M. H. Langholtz, B. J. Stokes, and L. M. Eaton (Leads), ORNL/TM-2016/160. Oak Ridge National Laboratory, Oak Ridge, TN. 448p. doi: 10.2172/1271651.

Consumer adoption
is critical to achieving climate goals

Electric Heat Pumps

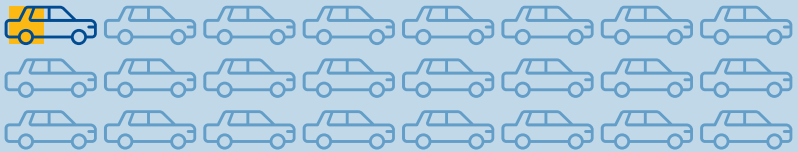
Palo Alto has offered up to $1,500 rebates since 2016, spending $900,000 in the first year alone.

Rate of adoption: **0.1%** per year among single family homes

Electric Vehicles

After distributing more than a half billion dollars in rebates, 329,626 EVs have been purchased in California (January 2011 – February 2018).

Rate of adoption: **~1.3%** of cars in California



Sources: CPUC, "Opening Comments of City of Palo Alto on the Preliminary Scoping Memo," March 11, 2019.
Alliance of Automobile Manufacturers, "Advanced Vehicle Technology Sales Dashboard," February 2018.
State of California Department of Motor Vehicles, "Statistics for Publication: January Through December 2017."

The real cost of living

is already too high for too many people

California has the **highest** effective poverty rate in the nation

Nearly **40%** of CA households are rent burdened

Low-income families pay **20%** of their income or more on energy costs

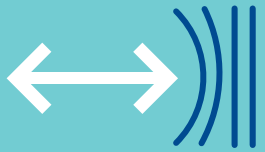
More than **1/3** of SoCalGas' and nearly **1/2** of SCE's customers qualify for bill assistance.

Sources: The United Way, *Real Cost of Living Report* (2018);
Adam Chandler, *"Where the Poor Spend More Than 10 Percent of Income on Energy,"* (2016)
Ron Nichols, Los Angeles Business Council, 12th Annual Sustainability Summit: Regional Solutions For A Clean, Inclusive Economy, April 20, 2018.

The case for a balanced approach

Preserves Consumer Choice

Minimizes Disruption & Cost



Promotes System Resiliency

Strengthens California's Economy

Stepping up our commitment to reduce GHG emissions

Our Vision

To become the cleanest natural gas utility in North America

Our Commitments

2022 **5% RNG** being delivered on our system

2030 **20% RNG** being delivered on our system

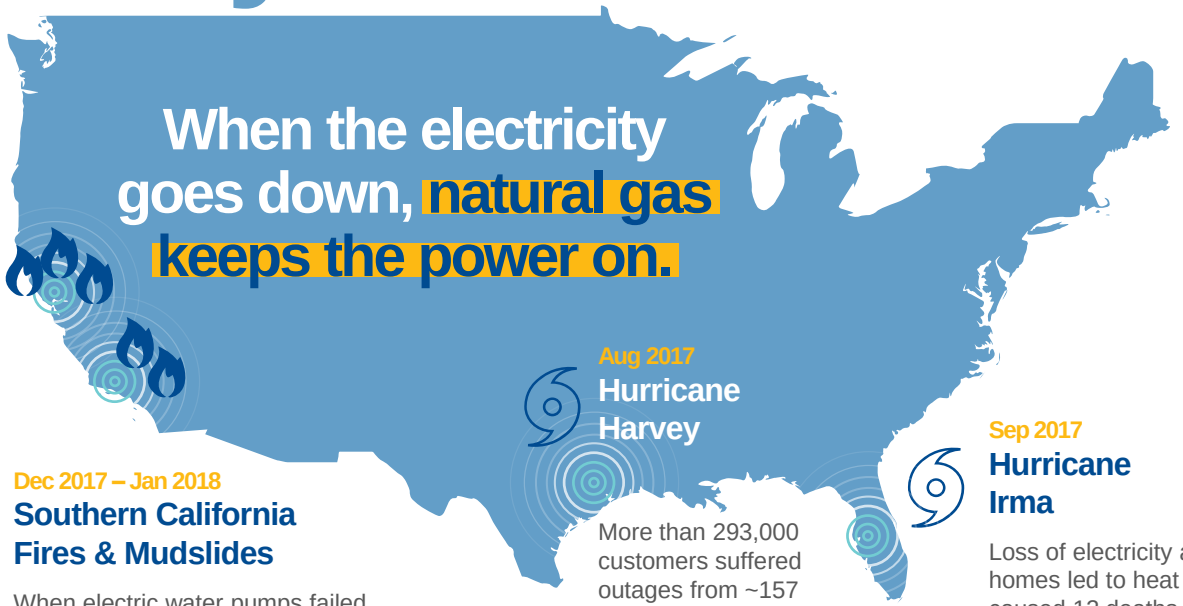
Thank You

SoCalGas
A Sempra Energy utility

Appendix

Supplemental Slides

Resiliency matters



Oct 2017

Northern California Fires

Electric power outages left water valves open leading to major leaks and loss of critical water resources that could have been used to fight the fires.

Emergency deliveries of compressed and liquified natural gas ensured the power stayed on at local hospitals affected by electricity outages.

Dec 2017 – Jan 2018

Southern California Fires & Mudslides

When electric water pumps failed, firefighters ran out of water to put out the fires.

SoCalGas' Advanced Meter network supported life-saving actions of first responders by pinpointing impacted areas.

Aug 2017

Hurricane Harvey

More than 293,000 customers suffered outages from ~157 damaged circuits just one day after Harvey landed.

Hospitals with natural gas powered Combined Heat and Power (CHP) Systems maintained uninterrupted service despite historic flooding.

Sep 2017

Hurricane Irma

Loss of electricity at nursing homes led to heat exposure and caused 12 deaths.

Local hospitals and businesses with natural gas backup generators kept AC and refrigeration working, saving both lives and livelihoods.

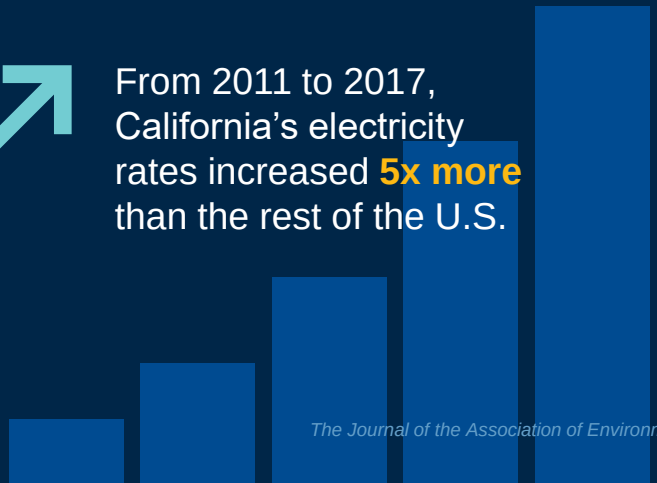
Will California electricity become expensive & inequitable?

Californians pay **45% more** than the national average for electricity.

From 2011 to 2017, California's electricity rates increased **5x more** than the rest of the U.S.

The burden of higher cost electricity and benefits of renewable energy subsidies fall unevenly:

- Californians with the highest incomes received **3x more** the solar subsidies than those with the lowest incomes



Sources: U.S. Energy Information Administration, 2017; *The Journal of the Association of Environmental and Resource Economists*, Volume 4, Number S1, September 2017, Part 2. The University of Chicago Press.