

**DOCKETED**

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# **SOCALGAS CLEAN ENERGY FUTURE AND ROLE OF HYDROGEN**

Yuri Freedman, Senior Director

CEC IEPR Commissioner Workshop on Role of  
Hydrogen in California's Clean Energy Future

June 21, 2022



# Journey To Be the Cleanest, Safest, Most Innovative Energy Company in America



## Climate Commitment

- Announced Climate Commitment
- Became the largest gas distribution utility in the nation to include scopes 1, 2, and 3
- Aligned with California's statewide decarbonization goals and the global Paris Agreement climate emissions

## ESG Financing Framework

- Aligns our investments/activities across Sempra with our sustainability goals to help drive our environmental, social and governance (ESG) commitments to support long-term, sustainable value for all shareholders and our other stakeholders

## Angeles Link Announcement

- Proposal to develop the nation's largest green hydrogen energy infrastructure system to deliver clean, reliable energy to the Los Angeles region
- Goal to drive deep decarbonization in hard-to-electrify sectors of the Southern California economy



## SoCalGas Clean Fuels White Paper

- A California economy-wide assessment of an integrated energy system
- Key study findings note the importance and requirement of a clean fuels network if we require an affordable, resilient, and risk mitigating solution that supports electrification.

## ASPIRE 2045 – SoCalGas Sustainability Plan

- Holistic approach to integrating sustainability across entire business to create positive impact and strengthen business outcomes
- Five focus areas to support our business in being the cleanest, safest, most innovative energy company in America as we advance our climate objectives

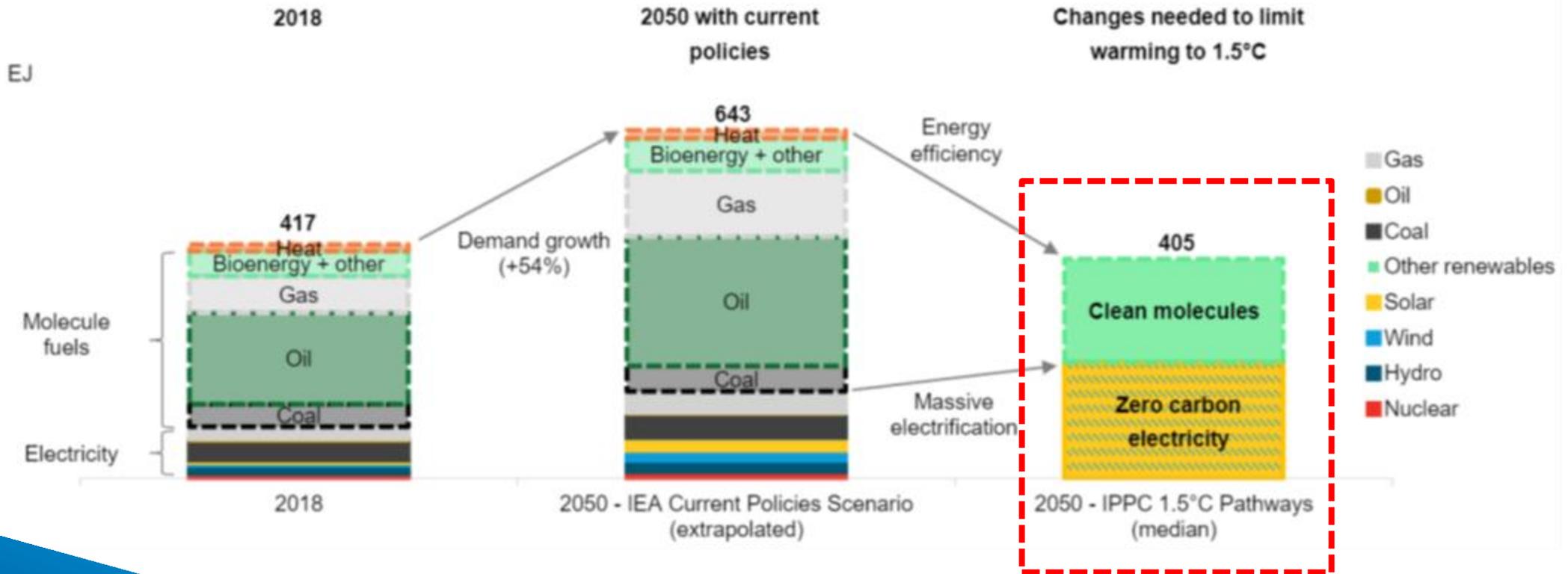


# Clean Molecules Are Critical for Decarbonization



In a scenario limiting global warming to 1.5° C by 2050, ~50% of global energy needs will be met with clean molecules

Projections for global final energy consumption in 2050



Source: Bloomberg New Energy Finance



# Clean Fuels Study Key Findings: Resiliency, Cost, Diversification

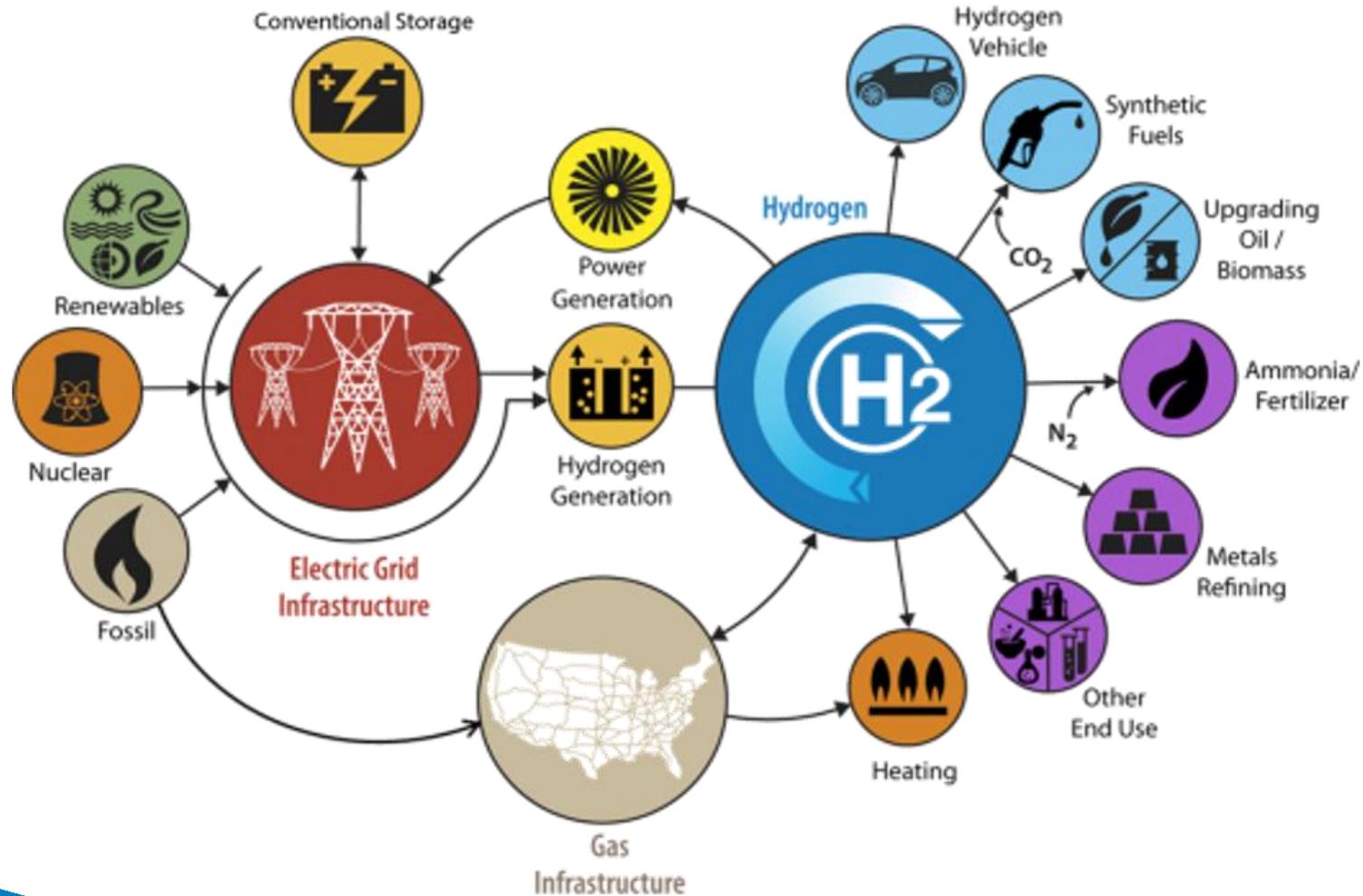


- The most affordable, resilient, and technologically proven decarbonization pathways require a clean fuels network.
- A clean fuels network that supports clean, thermal electric generation with carbon management is the most cost-effective solution.
- A clean fuels network supports electrification and reduces risk.



Pairing clean molecules with clean electrons builds **RELIABILITY AND STABILITY**

# Clean Fuels: Hydrogen Is Well Positioned to Play a Central Role



Source: U.S. Department of Energy



## The Challenge

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California's ambitious climate and clean air-quality goals will not be achievable unless hard-to-electrify sectors of the economy are fully decarbonized, and we're running out of time.

## Project Overview

This project to be developed and studied has the potential to replace natural gas-fired electric generation facilities with clean-burning hydrogen, service hard-to electrify industrial sectors, provide the fuel needed to convert the heavy-duty trucking industry from diesel to fuel cells, and could assist in facilitating permanent retirement of Aliso Canyon.

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## Project Attributes

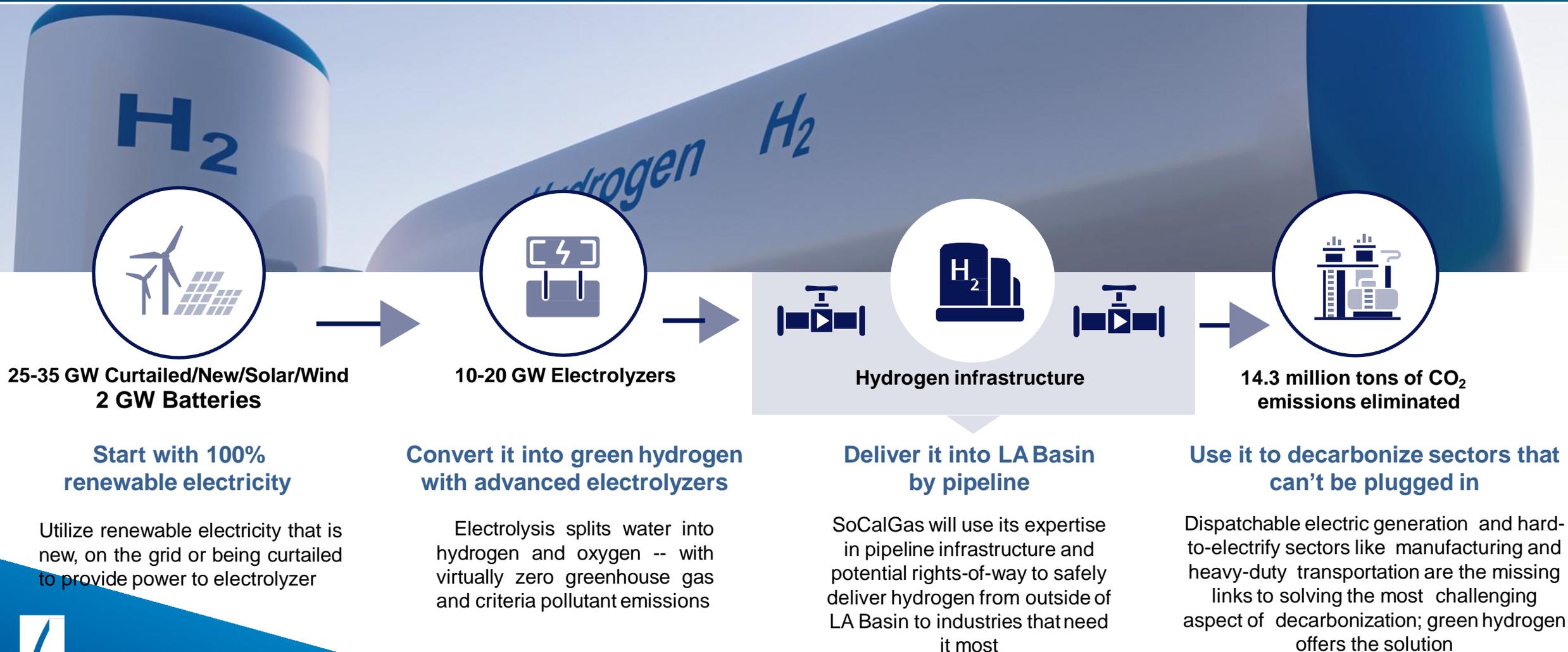
Produced entirely from renewable electricity – the project could expand our renewable energy storage capabilities, allow us to utilize more renewable electricity and avoid curtailment, reduce emissions in hard-to-electrify sectors, protect stakeholders and communities of concerns, and create and maintain thousands of union jobs in the process.

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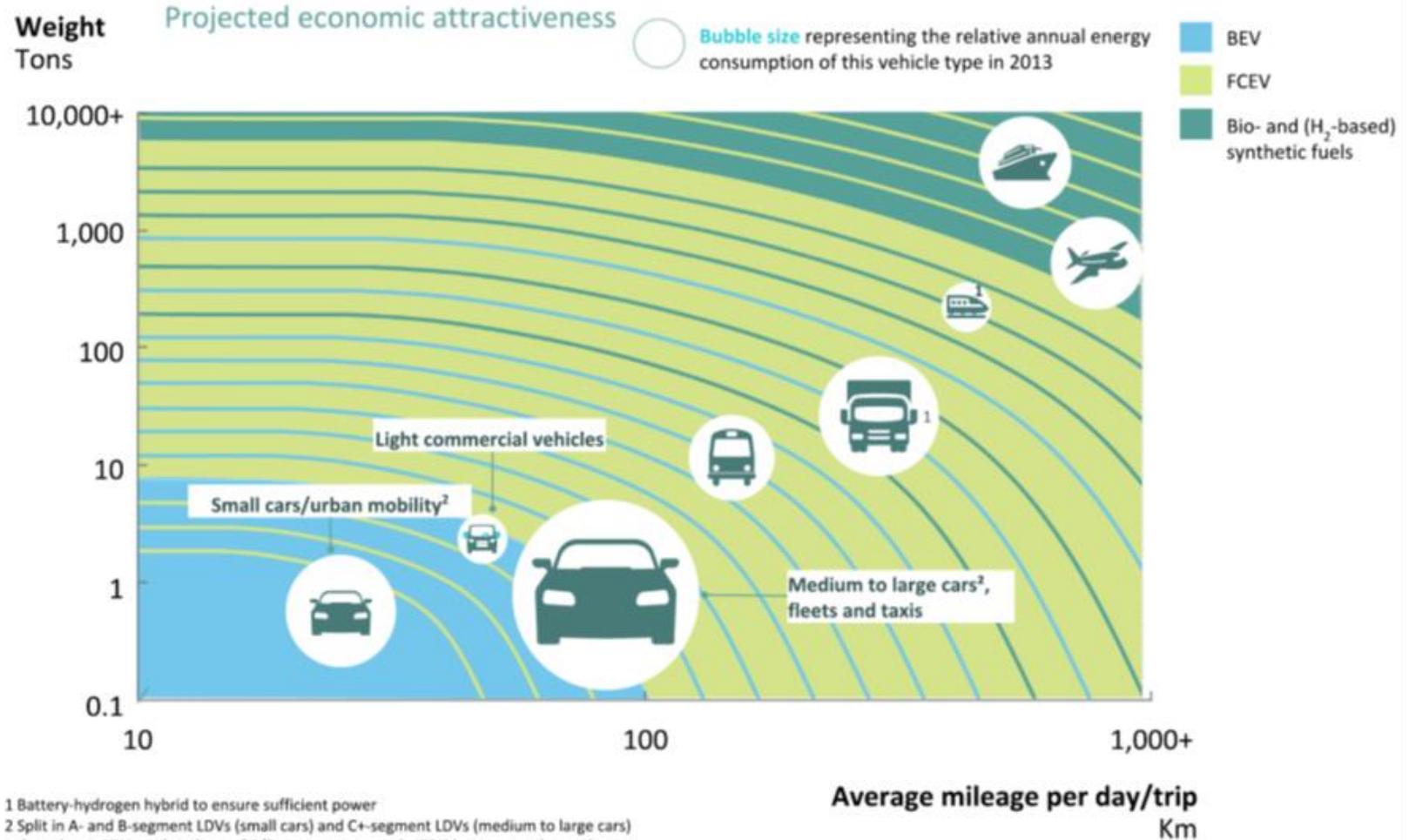
## Why SoCalGas?

With **22 million customers**, SoCalGas serves as a public utility under a regulated utility framework suitable for a project dedicated to public use, has decades-long relationship with the region's largest industrial end-users, more than 100,000 miles of transmission and distribution pipelines already in place, local expertise, and an established track record of project development at scale.

# Shaping the Future: How Could Angeles Link Work?



# Opportunity to Decarbonize Transportation: Fuel Cell and Battery EVs Are Complementary



1 Battery-hydrogen hybrid to ensure sufficient power  
2 Split in A- and B-segment LDVs (small cars) and C+ segment LDVs (medium to large cars) based on a 30% market share of A/B-segment cars and a 50% less energy demand  
Source: Toyota, Hyundai, Daimler



# Shaping The Future: Selected SoCalGas RD&D Projects



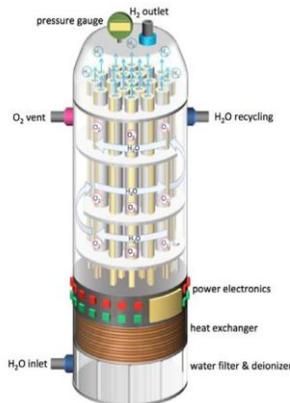
H2 Hydrogen Home



H2 PureComp



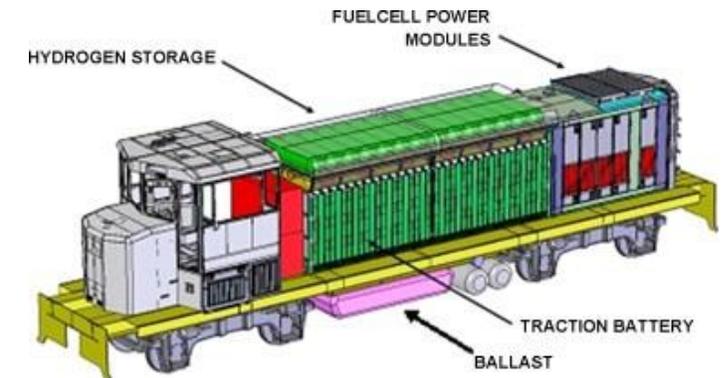
H2 SilverSTARS



H2U Technologies



Hydrogen Fuel Cells for Marine Vessels



Hydrogen for Commercial Transportation



# Shaping The Future: H2 Hydrogen Home Demonstration Project



- Demonstrates complementarity of clean hydrogen with renewable power and its long-duration energy storage potential
- Showcases hydrogen's use for decarbonization of buildings and homes
- Project components
  - Solar panels that generate renewable electricity
  - This electricity is used to produce hydrogen in an electrolyzer
  - Hydrogen is stored on site and used when needed as an energy source for a fuel cell to produce electric power
- Completion late 2022



**FAST COMPANY**

**2021 World Changing Idea**



**Thank You!**