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*Clean Transportation*

# CEC PEV Investment Plan Workshop

October 12, 2009



## San Diego Gas & Electric and SoCalGas Perspectives

**Jeff Reed – Director Market Development and Emerging Technologies**

## Context



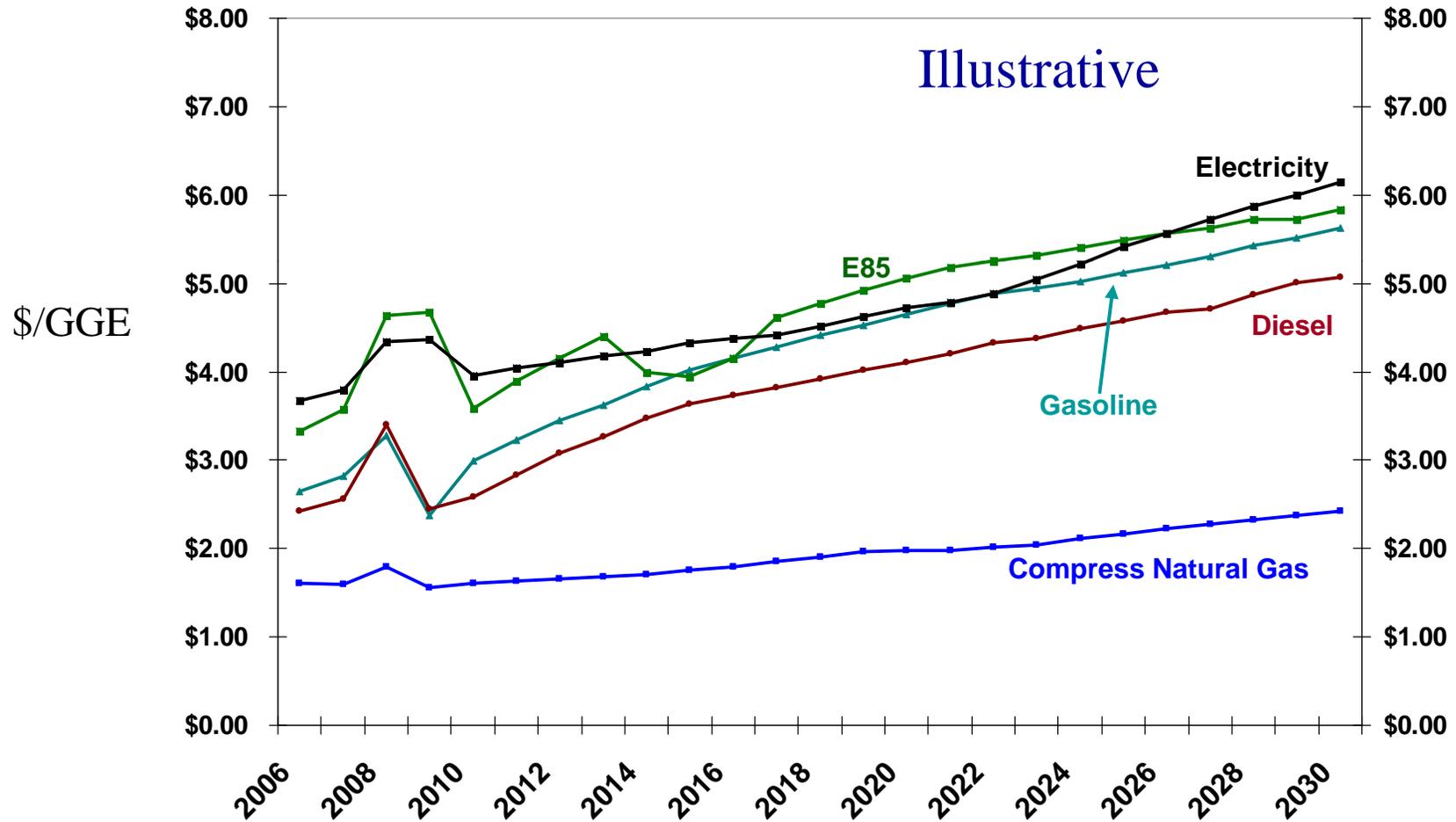
- Goals are straight forward
  - Advance PEV technology to support LCFS goals
  - Ensure that infrastructure is ready to support market growth while minimizing costs of new infrastructure and avoiding stranded investment
  - Maximize consumer choice and convenience while encouraging behaviors that support efficient utilization of infrastructure and energy policy goals
  - Protect the safety and reliability of the electric system (Req't #1)
- Planning environment is not straight forward
  - Automotive industry and electric power industries will move on their own paths
  - Consumer adoption and consumer behavior are uncertain
  - Underlying technologies (as well as competing technologies) are evolving

## Principles



- Focus on “no regrets” priorities – those that will be needed in almost any scenario
- Get real consumer data wherever it can be found (earlier markets, other markets, analogies) – be ready to track adoption and behavior carefully for first wave in 2010 - 2012
- Need to be scenario based
- Pilots and experiments aren’t stranded investment

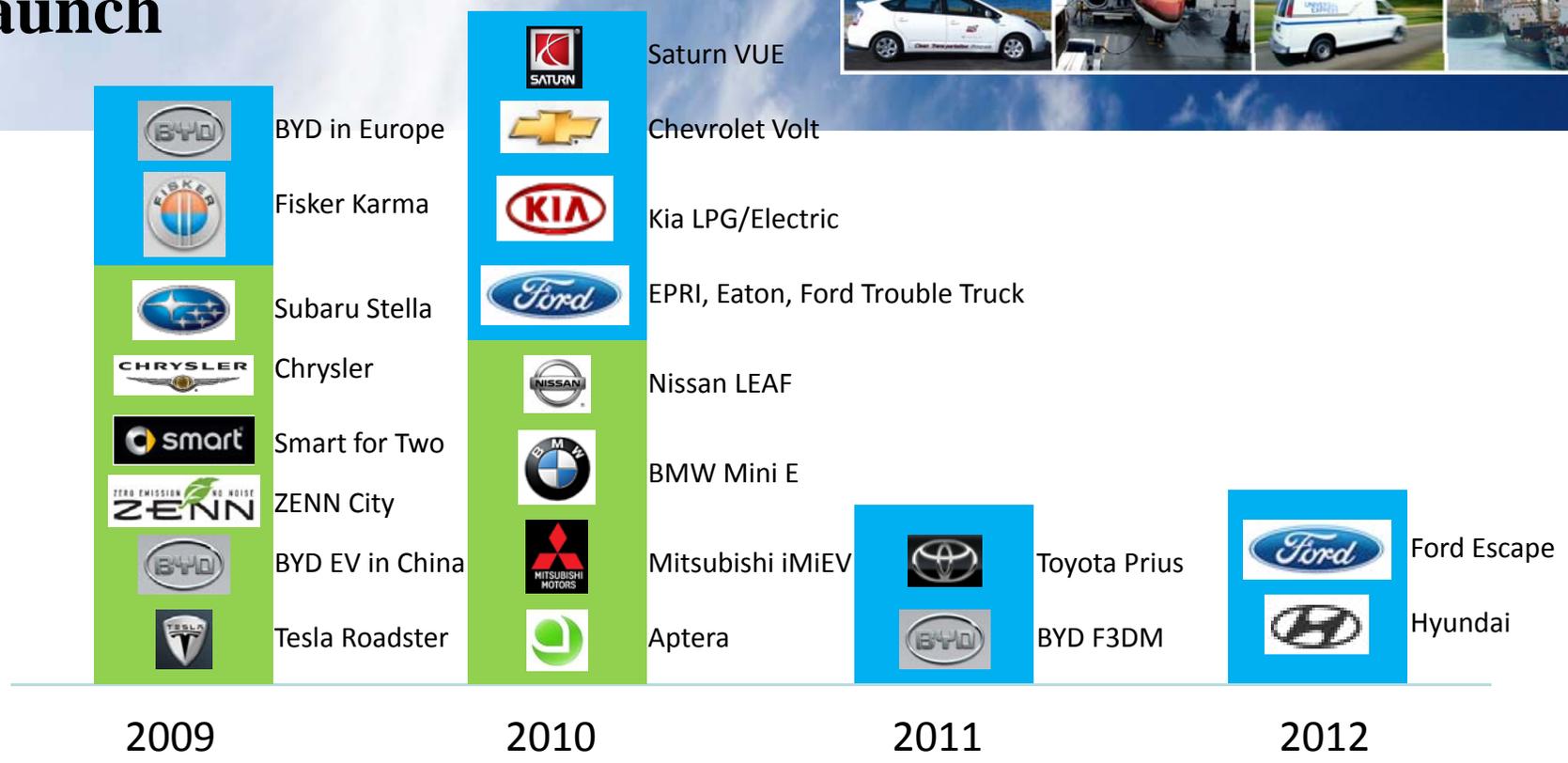
# Fuel-to-Fuel Cost Differential Uncertain



Source: EIA Annual Energy Review, Table 8, 12, 13.

Not adjusted for fuel economy.

# On the Doorstep of Market Launch



Tesla Roadster



Prius PHEV Prototype



Nissan Leaf



BYD F3DM

PHEV BEV

## Utility Role



- Provision of necessary infrastructure
- Tools and knowledge base for system impacts and integration with Smart Grid
- Development of rates and programs to support policy goals
- Consumer education and outreach
- Natural partner for pilots and demonstrations

## Recommended Priorities



- Modeling of potential PEV clusters and electric system impacts
- Smart Charging, interaction with Smart Grid and potential role of PEVs as a Distributed Energy Resource
- Behavioral studies and pilots
  - Impact of public charging availability on private charging patterns (e.g. “range anxiety”)
  - Impact of rates and programs on charging behavior
- Fast-charging on primary corridors
- Market development scenarios (adoption rates, segmentation, market roles)?