Implications of Climate Policies on Oil Demand in California

IEPR Workshop: Trends in Sources of Crude Oil
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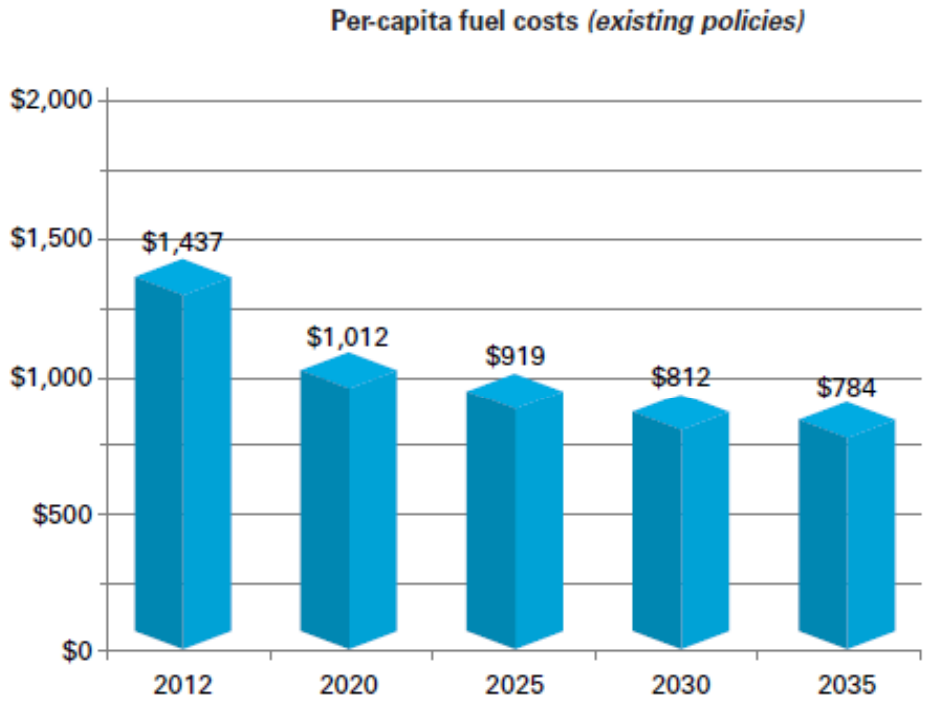
California GHG Policy Context

- GHG emissions overarching policy metric
  - 2020: Reductions at least to 1990 levels
  - 2050: 80% below 1990 levels (E.O. B-16-2012)
  - 2030: TBD
- Most comprehensive set of policies in the world to reduce oil use, emissions
- Performance-based policies allow flexibility
- *Scoping Plan* & *Update* describe California's Climate Plan to build on progress toward goals

Climate Policies Reducing Costs

- Suite of climate policies reducing fuel bills
- Avg. costs in 2020: $400 below 2012 levels



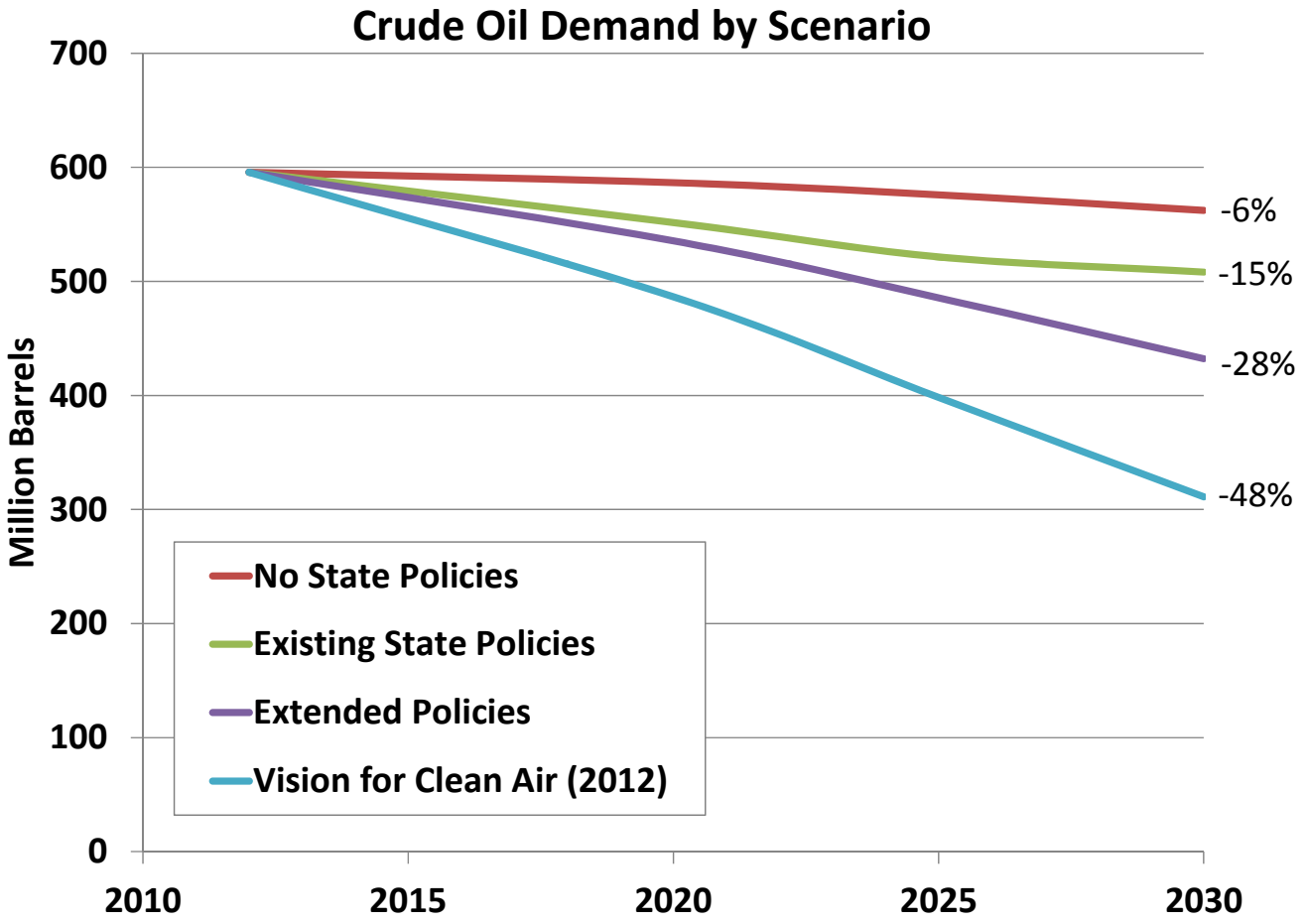
Climate Policies Reducing Oil Use

- "Business-As-Usual" is declining oil use, emissions in developed world
  - BP (2014): U.S. oil use down 15% in 2035
OECD oil use down 9% in 2035
  - Exxon (2014): OECD oil use down 15% in 2040
OECD GHGs down 24% in 2040
- California policies accelerating reductions
  - Bloomberg: Gasoline + diesel use down 9-13% in CA through 2020

Exploring Policy Impacts on Oil Use

- Initial, simplified analysis by ARB
- 4 scenarios:
  - No State Climate Policies
  - Existing State Policies
  - Extended Policies (per *2014 Scoping Plan Update*)
  - Vision for Clean Air (2012)
- Results illustrate climate policy impact on oil
- ARB will work with CEC to refine in IEPR

Climate Policies Reduce Oil Use



Climate Policies Reduce Emissions

- On-road GHG emissions reductions in 2030
  - Existing policies: 12% below 1990 levels
  - Extended policies: 27% below 1990 levels
- Significant reductions from passenger vehicles
  - Existing policies: 26% below 1990 levels
  - Extended policies: 34% below 1990 levels
- Diesel emissions up, without additional policy
- Significant GHG reductions in *Vision* scenario

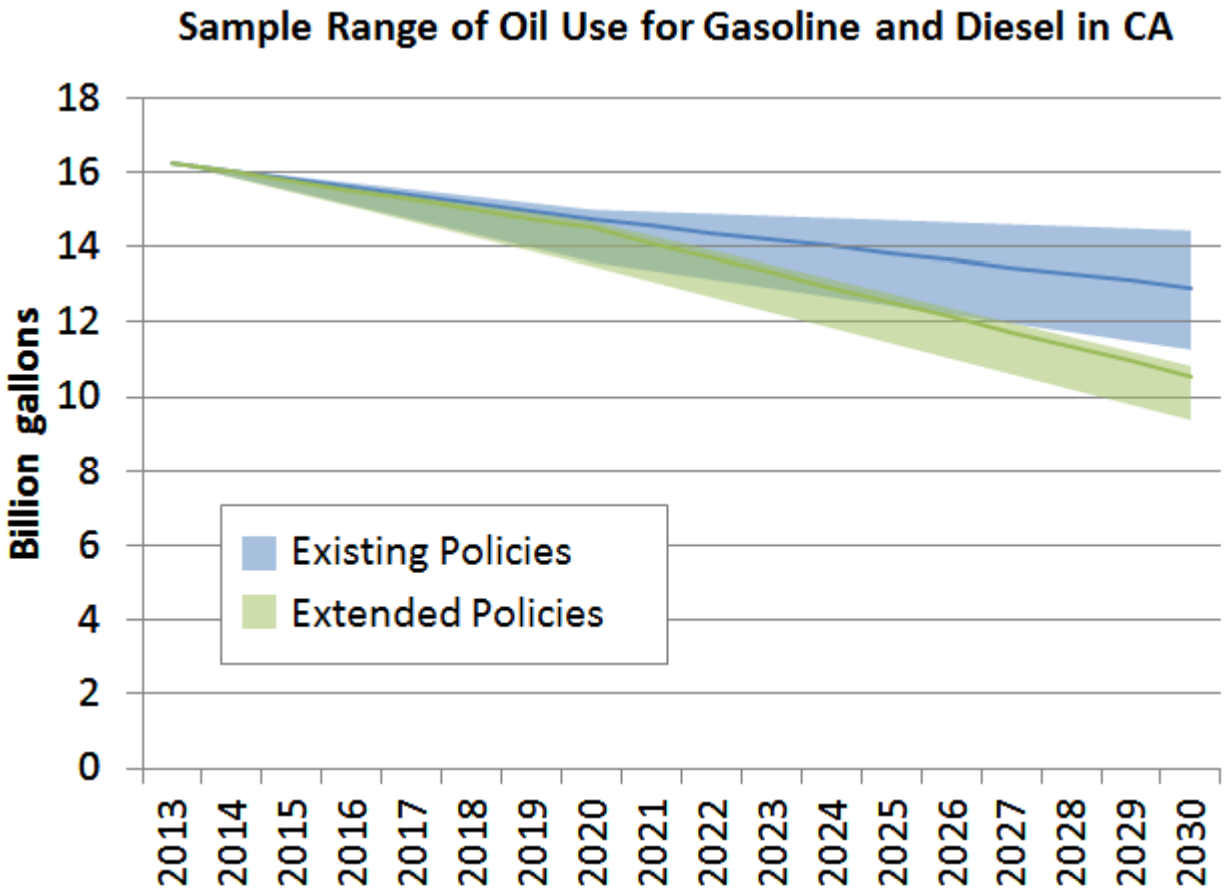
Certainty about Emissions

- Performance-based policies provide emissions certainty, compliance flexibility
- Low Carbon Fuel Standard
  - Certainty about lifecycle emissions for CA fuel use
  - Flexibility in meeting standard
- Cap-and-Trade Program
  - Certainty about CA GHG emissions
  - Flexibility in meeting standard

Flexibility for Oil Role

- Oil companies must reduce emissions, but have a choice:
  - Oil can continue supplying high fraction of fuel
    - Lower-CI oil and/or very low-CI alt fuels
  - Or… oil share of fuel mix can decline quickly
    - Higher CI oil and/or greater volumes of low-CI alt fuels
- Refineries can & must reduce emissions, too

Policies Allow Flexibility



Summary Findings (1)

- Oil use, GHGs are declining in CA
- Existing policies:
  - Passenger vehicle emissions on path to 2050
  - Diesel emissions increasing
- Extended policies:
  - Diesel emissions begin to decline
  - On-road transportation on path to 2050
- Aviation, rail, shipping sectors more difficult

Summary Findings (2)

- Emissions certainty from policies
- Flexibility for oil companies
  - Room for lower-CI oil to contribute
- Gasoline + diesel use in 2030:
  - Straight-line to 2050: <11 billion gallons
  - Climate stabilization path: <9.5 billion gallons
  - Air quality targets may reduce GHG and oil further

Thank you.