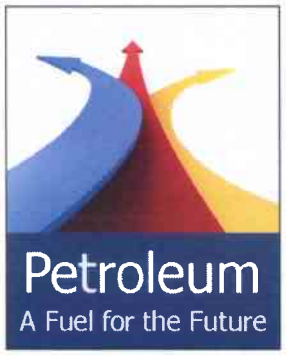
WESTERN STATES PETROLEUM ASSOCIATION

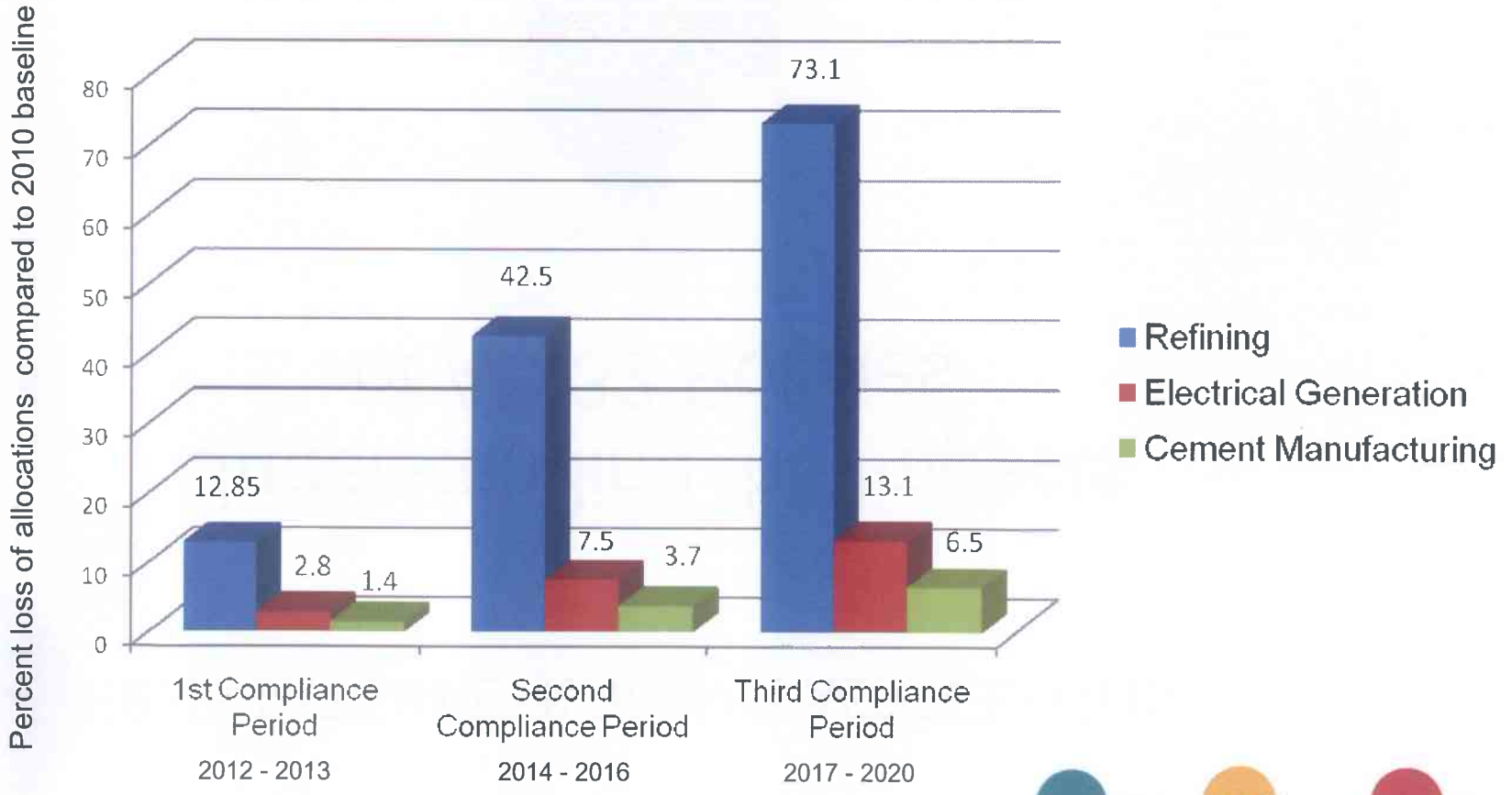
Understanding the Impacts of AB 32 Policies



Patty Senecal
Western States Petroleum Association
September 13, 2012

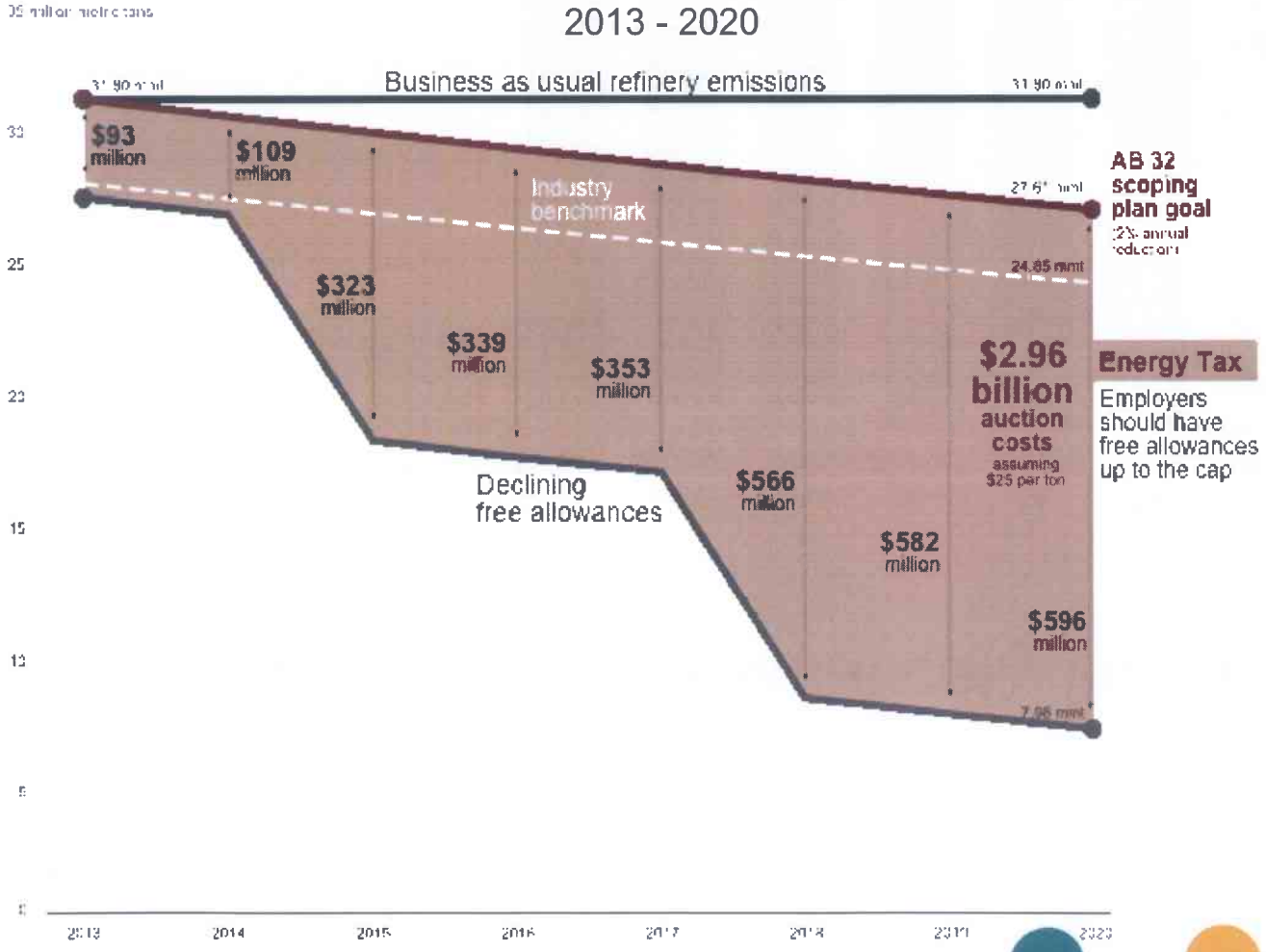
AB 32, Cap and Trade

Sector compliance obligations as a percent of sector emissions under existing cap and trade regulation



Source: WSPA calculations based on CARB regulatory packages, CARB emissions data

CARB's Auction will cost refiners $2.96 billion



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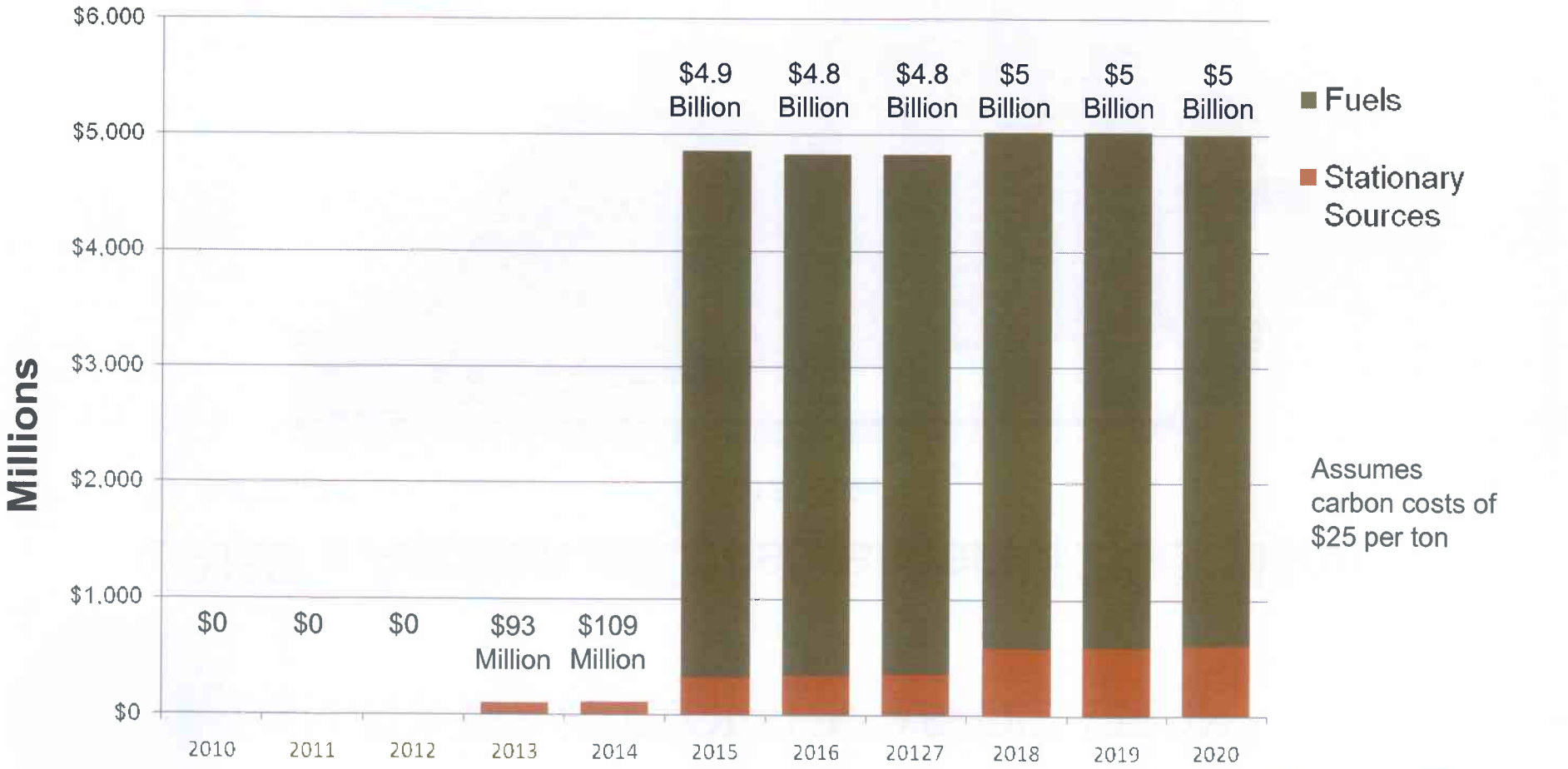
Fuels under CA cap and trade dramatically increase costs



Source: WSPA calculations based on CARB regulatory packages, CARB emissions data

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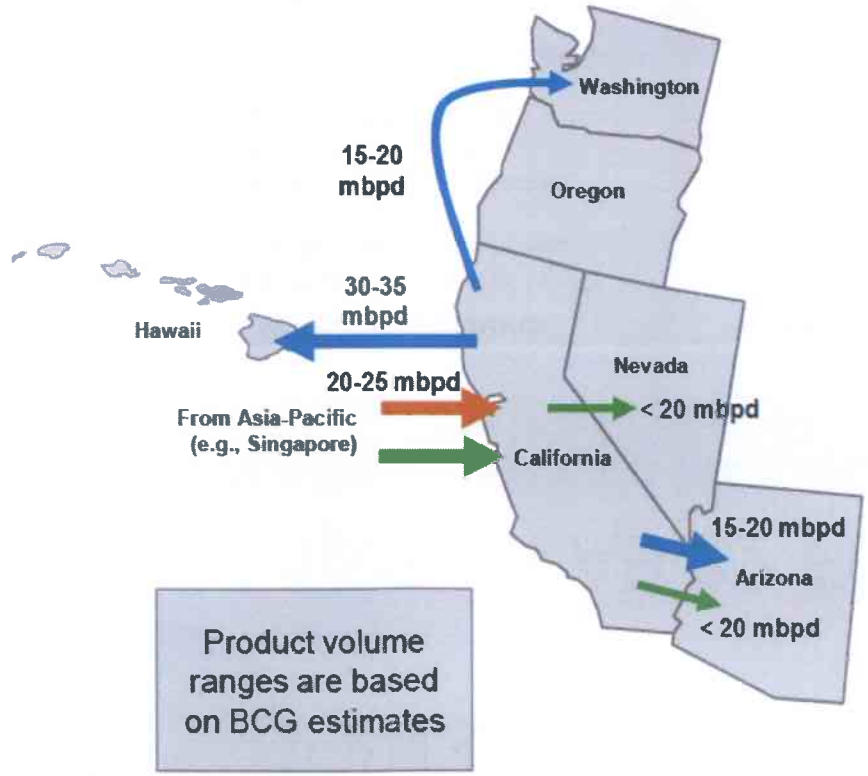
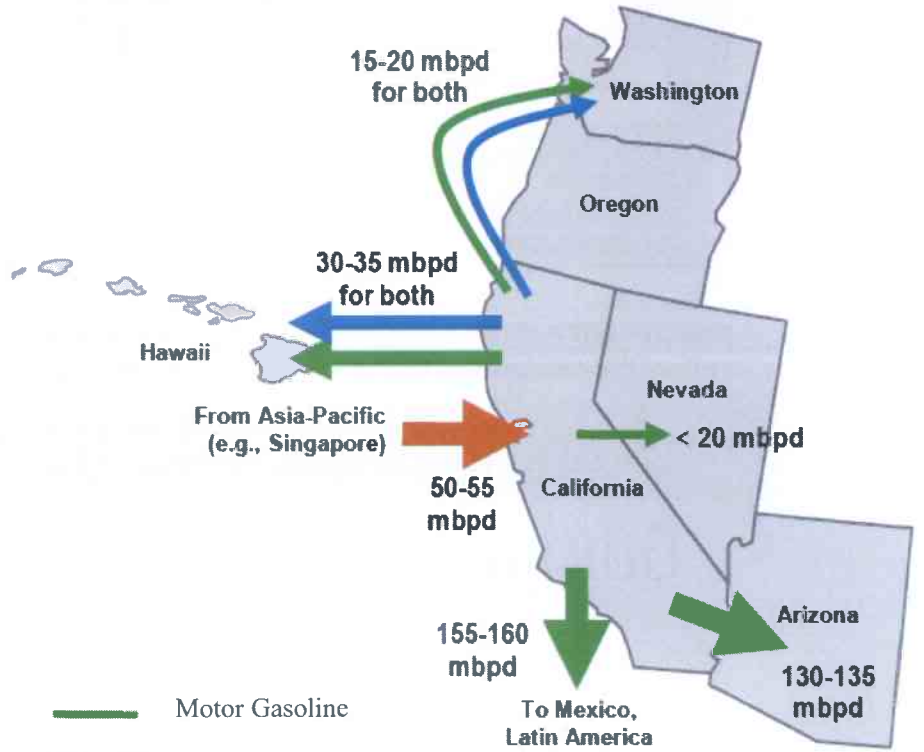
AB 32 Policies Impact on Trade Flows

Status quo



Product volume ranges are based on BCG estimates

2017 - Prior to capacity rationalization



Source: Boston Consulting Group, Understanding the Impacts of AB 32, June 19, 2012

Impact of AB 32 Fuels Policies - Refining

Scenario if LCFS compliance is achieved solely through blending low CI blendstocks (e.g., sugarcane ethanol)

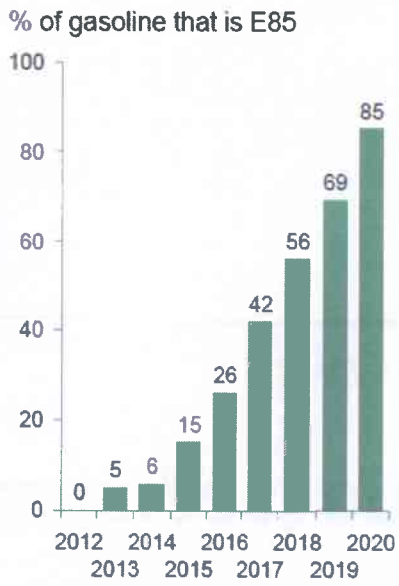
Model assumptions

No widespread adoption of low CI vehicles[1] by 2020, which would require:

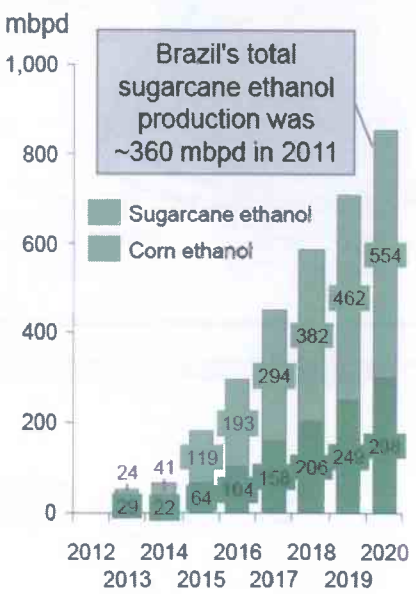
- Faster consumer uptake than historical hybrid uptake
- Significant technological advances
- Brand-new infrastructure network

Volume of sugarcane ethanol reaches 65% of total ethanol volume by 2014

LCFS targets will require majority E85 adoption



LCFS targets would require 554 mbpd of cane ethanol



Projected ethanol adoption would also require rapid development of shipping and transport infrastructure

1. Powered by renewable electricity, low CI hydrogen, or CNG

Source: CARB, Bloomberg, BCG analysis, Renewable Fuels Association

THE BOSTON CONSULTING GROUP

Source: Boston Consulting Group, Understanding the Impacts of AB 32, June 19, 2012

Impact of AB 32 Fuels Policies - Refining

Impact on refining industry

- LCFS is unlikely to be fully implementable by 2015-2017 time period
- To avoid being out of compliance, California refiners may opt to export fuels versus supplying the local market, potentially resulting in product shortages
- If LCFS regulation is changed abruptly after 2015, it will likely result in additional costs for refiners, consumers, and suppliers of alternative fuels
- Reduction of demand for hydrocarbon gasoline in the 2015 to 2017 time period will shift gasoline trade balances from Singapore imports to Mexico exports
- As a result, between 4 and 6 refineries representing 20-30% of California's refining capacity will likely close
- If LCFS is completely implemented, an additional 1 to 2 refineries, representing another 5% to 10% of state's refining capacity will likely close
- Energy efficiency projects will have a minimal impact on stationary refinery emissions, given that most in-state refineries are already highly energy efficient

Source: Boston Consulting Group, Understanding the Impacts of AB 32, June 19, 2012

Impact of AB 32 Fuels Policies - Economy

Impact on California's economy

- Loss of 28,000-51,000 jobs, including high-paying skilled manufacturing jobs
- Loss of up to $4.4 Billion of tax revenue per year by 2020
- Transfer of at least $3.7 billion per year by 2020 from refineries and fuel suppliers to the California Air Resources Board
- GHG emissions associated with making gasoline for export will remain in California
- Increased costs will disproportionately impact low income households
- Energy intensive industries will be discouraged from locating in the state and existing industry will have an incentive to relocate elsewhere
- AB32-related measures can achieve the goal of reducing GHG emissions in California to 1990 levels, but at a high cost. These reductions will be at least partially offset by increased emissions outside of California from crude and bio-fuel shuffling

Source: Boston Consulting Group, Understanding the Impacts of AB 32, June 19, 2012

Impact of AB 32 Fuels Policies – Costs of Compliance

Cost of compliance

- Total cost recovery to comply and meet California demand $0.49 per gallon to $1.83 per gallon by 2020
  - ✓$0.14 per gallon to $0.69 per gallon due to tailpipe emissions being included under cap and trade
  - ✓$0.02 per gallon to $0.08 per gallon results from stationary refinery emissions
  - ✓$0.33 per gallon to $1.06 per gallon (average $0.70 per gallon) due to Low Carbon Fuel Standard
- Cost of compliance could be much higher if the cost of carbon rises and becomes volatile
- The estimated total cost of compliance would increase by an additional $0.87 per gallon, to a total of $2.70 per gallon, in 2020 if carbon price raises to $150/ton

Source: Boston Consulting Group, Understanding the Impacts of AB 32, June 19, 2012

Petroleum's economic contribution to California

- 332,968 jobs (direct and indirect)
- $17 billion in labor income
- $22 billion in supplemental and proprietor income
- $9.2 billion in taxes and fees to federal, state and local governments*

* Excludes property tax revenues

Source: Purvin & Gertz, Assessment of Petroleum Industry Economic Impact to the State of California, June 2011, based on 2009 data