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Transportation Fuel Prices and 50 Percent Petroleum Use Reduction in California

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On January 5, 2015, Governor Brown proposed a statewide goal of 50 percent petroleum use reduction from today's transportation vehicle mix by the year 2030. Sacramento legislators supported this goal and introduced SB 350 (de León), legislation that would establish the goal in statute. With a current consumption rate of approximately 18 billion gallons of gasoline and diesel annually, 50 percent use reduction represents about nine billion gallons of gasoline and diesel from the 2015 consumption rate.

Displacing nine billion gallons of petroleum fuels from the California transportation fuel mix by the year 2030 through efficiency, alternative fuels, and alternative mobility solutions represents economic benefits and opportunities for motorists and businesses, including:

- **Reduced aggregate fuel price volatility and associated enhanced economic stability**
- **Long-term declines in fuel prices of gasoline and diesel**
- **Retention of a massive fuel market for motorists desiring petroleum fuels**

Some reports by fossil fuel interests suggest a 50 percent decline in petroleum consumption will yield negative economic conditions across California. Those reports are likely overblown or, are on the whole selectively inaccurate. To the contrary, 50 percent petroleum use reduction would make California a stronger state overall by diversifying the fuel mix with a portfolio of options while continuing to afford drivers and the entrenched petroleum industry broad market opportunity.

The need for change in existing petroleum market dynamics is well documented and the effect on the economy is profound. A 50 percent petroleum use reduction fits squarely within the structural changes needed to stabilize California's fuel market.

Like elsewhere in the U.S., California drivers are subjected to seasonal and annual fluctuations in prices at the pump. But, while the timing of California's seasonal volatility is somewhat regular, the magnitude and duration of the price fluctuation is not – leaving California drivers vulnerable. Additionally, gasoline price "spikes" have become increasingly common – with steep price spikes

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generally followed by more gentle declines, often leaving consumers paying higher prices for prolonged periods of time.[1]

Over the past two decades, the cost and fluctuation of gasoline and diesel prices in California have received considerable attention. Several factors contribute to these conditions, including fluctuation in crude oil prices, a lack of basic fuel diversification (no alternatives to gasoline and diesel), concentration of market control amongst a few firms, and a relative supply / demand imbalance with little ability to shift either quickly.

For example, in 2004, then Attorney General Bill Lockyer observed [emphasis added]:

> *"the market conditions driving high gasoline prices in California are deeply rooted. It is unrealistic to suggest there is a quick fix… Without changes in public policy that address market conditions, California will not rid itself of high gasoline prices.* ***Policymakers must begin taking the steps necessary to increase competitiveness, supplies and fuel conservation … reduce California's petroleum dependence through increased fuel economy and non-gasoline based technology****."*
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> Report on California Gasoline Prices, Atty. General Bill Lockyer, March 2004

Just as the conditions that cause the variability in California's fuel market have been identified, the effect of fuel price volatility has also been evaluated. For example, documentation shows fuel price volatility harms the entire economy and is thought to have been a factor in both the 2001 and 2008 economic recessions (as well as major recessions in the 1970s and 1980s). Similarly, economic researchers have found a robust negative correlation between oil price volatility and economic growth (meaning high volatility hampers the economy).[2] Similarly, evidence shows that corporate stock prices respond inversely to increased price volatility of petroleum products.[3,4] Accordingly, the existing petroleum market dynamics facing California, a market with expensive fuel and highly volatile prices, can be empirically shown to drag down the state's economy, making it less secure.

Meeting a goal of 50 percent petroleum use reduction would require a multi-pronged effort – including a mix of vehicle and fuel efficiency measures, increased alternative fuels, and use of alternative mobility solutions like biking, walking and public transportation. By decreasing consumption, increasing supply, and cutting petroleum dependence, SB 350 will help to satisfy the long documented needs of California's fuel market and economy overall.

Cutting overall petroleum fuel use, while diversifying the fuel mix with alternatives, decreases fuel price volatility - helping the economy and enhancing security.

According to evidence from fuel and energy markets world-wide, markets characterized by a diverse portfolio of products will mitigate the impact of price shocks better than highly concentrated and homogenous markets.[5] The development of a diverse array of consumer options on the whole reduces reliance on any one product, allowing substitution among products and blunting economy-wide price shocks that occur due to price and supply fluctuations in any single product.[6] This is part of the core benefit that SB 350 could provide.

Through a 50 percent petroleum use reduction target, California can bolster the supply of alternative fuels in the state's fueling infrastructure while also reducing demand for petroleum fuels. In effect, this will yield an overall supply that is more responsive to any possible demand shock, reducing the effect on overall prices felt by consumers. State and federal policies like the Low

Carbon Fuel Standard, California's cap-and-trade program, and the Federal Renewable Fuel Standard help to grow the market share for alternative fuels – a market share expected to reach nearly 18 percent of the state's fuel mix by 2020,[7] and 25 – 30 percent across the Pacific Coast region by 2030.[8] In many cases, these fuels can be substituted directly for gasoline or diesel without the need for vehicle modifications.

By creating a more diverse portfolio of fuels for consumers to choose from, long-run price variability is expected to decline, making California more economically secure against unexpected price shocks. Alternatively, without a significant change in the supply and demand patterns of transportation fuel used in state, California can expect similar yearly and seasonable fluctuations in prices at the pump with continued price spikes of unpredictable size and duration.[9],[10]

Meeting a 50 percent petroleum use reduction goal can change the anti-competitive conditions inherent to California's fuels market, yielding lower gasoline and diesel prices.

It is well known that a limited number of fuel suppliers provide the bulk of transportation energy to California motorists. This basic market dynamic in California can yield anti-competitive practices which, although they may be technically legal, are bad for motorists because they can be responsible for manufactured price increases.

To ensure competitive conditions in California fuel markets, the diversity and volume of fuels in the California market must be modified. For example, California has relatively inelastic demand, (even if prices go up drivers can't choose to buy less on a day-to-day basis), capacity-constrained supply, and out-of-state fuel suppliers face barriers to entering the California market. As a result, fuel providers may be incented to strategically under-supply the market in order to drive prices upward and maximize profits by establishing a price above their marginal cost (what would occur in a competitive market). This strategic exercise of market power hurts consumers – yielding a price at the pump above where it would be if these companies had less overall market power.[11]

Policies that counteract the existing market conditions and the market power of individual companies – namely diversifying the fuel mix and expanding alternative fuels supply – can therefore reduce the prices of petroleum fuels. This is because, in a more diversified fuel market, companies face stronger overall competition and are less able to establish a selling price above their marginal cost (a measure of the distortion of resources) – yielding lower market prices. For more information on the effect of California fuel diversification on market power and fuel prices, please refer to the endnotes.

Even after a 50 percent reduction, California will have a massive gasoline and diesel market. The petroleum industry will retain considerable market share and value – gas and diesel will still be a large part of California's fuel infrastructure – but in a more competitive market.

Due to California's massive fuel consumption, even after reducing petroleum use by 50 percent, motorists will still likely spend approximately $27 billion per year on gasoline, making it the second largest market behind Texas, and tied with Florida. At a usage of roughly nine billion gallons, the state will continue to use its substantial petroleum infrastructure to produce, refine, and deliver California compliant fuels to motorists. Similarly, California drivers who wish to retain gasoline and diesel vehicles will be able to do so, joined by approximately 23.8 million cars and five million

trucks on the road today. By 2030, with a population which is expected to increase to 44 million people resulting in another three to four million vehicles – gasoline and diesel fuel refiners, and gas station owners will retain market share for decades.

California's economy will benefit from 50 percent petroleum reduction, and without a change the state will continue to suffer from business-as-usual price fluctuations.

By reducing petroleum fuel consumption through increased fuel efficiency, alternative fuels, and alternative mobility solutions, SB 350 will make California's economy less vulnerable to price fluctuations and can reduce fuel prices overall. Without change in policy, the Golden State's huge demand for petroleum and limited overall supply will continue to burden its economy –hindering California motorists and businesses throughout the state. SB 350's focus on petroleum demand reduction attempts to change this status quo dynamic.

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Citations

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