

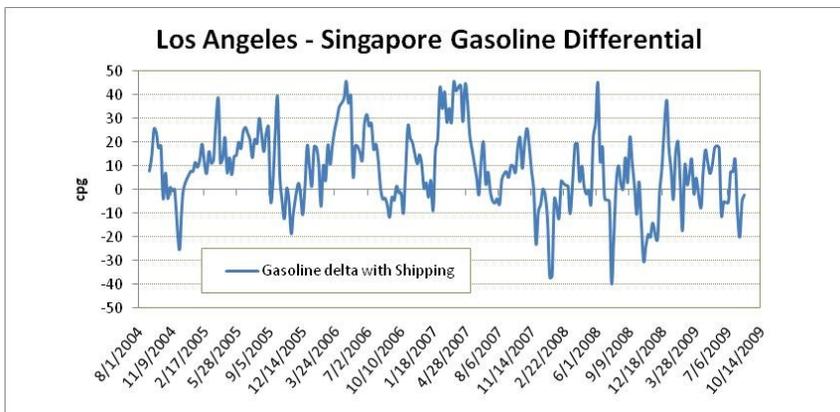
## Appendix 1

### Detailed Analyses of Non-California Refining Capabilities to Supply California Gasoline

Products will flow into California when:

1. the product price at the regional trading hubs [New York Harbor, Singapore, Gulf Coast, Rotterdam] + incremental cost to manufacture California fuel specifications + price of transportation is less than the California price and/or
2. when the cost of manufacturing and shipping is less than the California manufacture price

If the supply of non-California product increases, the product price volatility resulting from a supply disruption may be magnified over the current state. The curve below shows the difference between LA and Singapore California gasoline pricing. Korean shipping is included and averages around 10 cents per gallon (cpg) for 2009. Adding carbon costs will shift the curve downward, opening the California market to offshore supply. Singapore is the major trading hub for Asia-Pacific (AP) product and is the basis for AP product pricing. Historically, Los Angeles gasoline is priced higher than Singapore gasoline. Korea and India are major exporters and can supply product to the US.



Refineries in the Pacific Northwest (PNW) can also compete in California. While they are a member of the Western Climate Initiative, Washington has not developed a greenhouse gas program beyond state specific reporting requirements. California's lead time to create their program from legislation to implementation will be 5 years. Refineries in Washington can produce some California gasoline. Companies with refineries in both California and Washington currently optimize operations between their refineries. Adding additional costs to refinery operation in California will change this optimization. However, there is a limit to how much California gasoline and diesel the PNW refineries can make and still supply the PNW market

US Gulf Coast (GC) refiners are another possibility as a source of product. The GC states have not made any specific commitments to GHG reduction and don't make a California gasoline today. While GC refiners do not make it they do have the capability. However the major issue for importing from the Gulf to California is shipping. Shipping is expensive at ~12 cpg. In addition, it takes about 2-4 weeks to land product, since the product must go through the Panama Canal.

