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to the

Committee on Government Reform
Subcommittee on Energy Policy, Natural Resources & Regulatory Affairs

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Easing Pain at the Gasoline Pump: Finding Solutions for Western Woes

Mr. Chairman and Members of the Committee:

Thank you for offering me the opportunity to discuss Nevada's perspective on the continuing challenge presented by the price volatility of gasoline and other refined petroleum products in western states generally, but particularly in Nevada, California and Arizona. As you might surmise, Nevada's geography, with two large population centers – both dependent in significant measure on tourism – and remote farming and ranching communities, results in considerable reliance on the availability and price of gasoline, diesel fuel and jet fuel. When prices of these fossil fuels rise, this reliance produces consequences that directly affect employment, our tax base and, of course, nearly every citizen.

It is also important for me to thank this Committee, the Energy Information Agency and the California Energy Commission for their ongoing efforts to provide analysis, objective information and sustainable relief to all transportation energy consumers in the west.

Western Refined Products Markets Are Not "Free" Markets

Much has been said about the preference for using a "free market" to allocate products to consumers. This is, of course, what markets are supposed to do. Moreover, they perform this function in the most efficient manner, when the markets are "free." Conversely, if a market is not free, the manner in which it allocates goods and services is not necessarily efficient. It is also likely that economic "rents" – a less inflammatory term than "excess profits" – are collected when markets are inefficient.

The truth is that there are virtually no markets that are "free," or competitive, in the classical sense of the word. To an economist the word implies, for example, (1) that no one market participant has the ability to unilaterally affect the market price, (2) that information – price discovery – is easily accomplished, (3) that there are no implicit or explicit subsidies, and a series of other standard assumptions. For example, the market for automobiles is often thought of as being free, but in fact, there are a relatively small number of manufacturers. Individual

companies in the resulting oligopoly are able to extract rents by carefully managing pricing strategies, even in the absence of collusion.

Price discovery during the western energy crisis three years ago was exceedingly difficult because, as the Federal Energy Regulatory Commission determined, some market participants manipulated the electricity and natural gas markets and extracted substantial rents that nearly bankrupted the Nevada electric utilities and the State of California. Perhaps it would also be useful to speak with representatives of Boeing and ask them how effective allegedly anti-competitive government subsidies have been in sustaining their European competitor.

Nonetheless, we still refer to the markets for automobiles, wholesale electricity and aircraft as "free" – or, for those who like to hedge their bets – as "governed by free market principles." And, if the only defects in the western gasoline market were the limited number of competitors or the difficulty of determining the "market price" or the intrusion of government subsidies, I would not object.

The crucial defect or fatal flaw of the gasoline market is more fundamental. In a reasonably free gasoline market, when supply shortages occur, prices would increase until they are high enough to allocate available gasoline to its most efficient use. Generally this means that some suppliers will collect rents, ordinarily a "bad" thing. But in a free market these rents are used to provide the capital needed to build new refineries. The rents may also attract new capital to the market. Those who failed to make such investments would lose market share and perhaps profitability. But that is not what happens in the western gasoline market. The rents are, indeed, extracted, but they are not reinvested to improve supply capacity, nor is the system self-correcting. Every time a supply interruption occurs in Nevada – a pipeline is shutdown, a refinery fire occurs, a port facility is unable to offload crude – a price spike occurs. Consternation and investigations ensue, but the root cause is never identified. And the rents…it should be clear where they end up.

The result often is, in my opinion, an unjust result – in times of supply crisis, the market is not efficient and rents (sometimes quite substantial) are retained by suppliers who, basically, are unable to apply them in a manner that would be beneficial to the market.

Who is at fault? The refiners…probably not. There is no evidence that I'm aware of that they have colluded or behaved illegally, and board members of those companies have an obligation to maximize returns to their shareholders. Speculators…probably not. There is a great deal of uncertainty in gasoline markets and speculators perform the useful function of shifting risk to those who are willing to accept it – at a price commensurate with the risk. The State of California because a new refinery can't be built…probably not. Seventy percent of the state is already non-attainment. The Environmental Protection Agency…probably not. Clean Air Act requirements, I believe, generally reflect the will of the Congress and of the people.

Rather, it is my opinion that we in the west have allowed ourselves to drift into a situation that is economically untenable. We are, appropriately, cowed by alternative forms of market allocation – regulation, or rationing, by the government or "first-come-first-served" – both quite objectionable. But we are increasingly aware that the rents collected, principally by the refiners, are not being used to serve the public interest, ***as they would be in a truly free market***.

Organization of Western Markets

There are actually four market segments to what I have been calling the western gasoline market; and they involve not only gasoline, but also other refined products and additives. To begin to address the problem it is important to understand how these four market segments interact and how they respond to the types of events that cause price spikes. The four segments are (1) the international crude market, (2) the refined-products market, (3) the wholesale distribution market, and (4) the retail market. A special branch of economics dealing with limited natural resources governs the first of these segments but, with that one exception, the output of one segment becomes the input to the next.

The international crude market is not a free market. It is characterized by the institutional collusion of the Organization of Petroleum Exporting Countries (OPEC). Such collusion is illegal in the United States. The consequence is higher crude oil prices, now exceeding forty dollars per barrel. If it were known that crude prices would remain this high, the domestic supply of crude would increase substantially. After all, there is a great deal more $40 per barrel oil than there is $23 per barrel oil. Unfortunately, it is not known what the price of crude will do six months from now and that is why there are speculators and that is why there are risk premiums. This ability of OPEC to drop prices is very effective in minimizing competition from renewable energy development and hydrogen technology.

That said, OPEC does not cause price spikes in western U.S. markets. Crude prices are like tidal forces beneath the waves. The waves are the price spikes caused by conditions unique to our markets. Crude prices certainly have contributed to the current high price of gasoline, but not directly to spiking. Similarly, state taxes do not cause price spikes. Taxes are generally fixed and are, hopefully, consistent with the development and repair needs of individual states. Nevada, for example, has high gasoline taxes, but must deal with a very large number of square miles and a very rapidly growing population, both of which place extraordinary demands on the need for highway funds. Finally, exceptionally clean burning gasolines, such as California reformulated gasoline blendstock for oxygenate blending (CARBOB) should not cause price spikes on a going-forward basis. As western states moved away from the additive methyl tertiary-butyl ether (MTBE) in 2002 and 2003, significant spiking did occur. And, while this environmental choice may affect the general price level of gasoline, like taxes and crude oil prices, it should not cause spiking (this statement depends, in part, on how seasonal blends are handled and State Implementation Plans are administered on a going-forward basis).

Distributor wholesale and retail markets generally do not cause price spikes. It is true that price movements in the international crude and refined-products segments of the market will affect inventory levels. It is also likely that the tendency for retail prices to rise quickly and fall slowly is linked to both the distributor wholesale and the retail market segments, largely due to the storage capacity owned both by wholesalers and retailers.

Normal pipeline operation does not cause price spikes. Reno, NV is connected to refineries located in northern California by an eight-inch pipeline that originates in Rocklin, CA and ends at a tank farm in Sparks, NV (it then continues on to Fallon, NV to serve the naval air station). All types of refined products are shipped in this pipeline, including gasoline, diesel fuel and jet fuel. Las Vegas, NV is connected to refineries located in southern California by an eight-inch pipeline and a fourteen-inch pipeline, both if which begin in Colton, CA and terminate in

Kinder Morgan, Rebel Oil and McCarran Airport facilities in Las Vegas, NV. The eight-inch pipeline provides jet fuel to McCarran, while the other delivers gasoline, diesel, and military fuels. Fuel additives are either mixed in storage tanks or, in the case of ethanol, splash blended in delivery trucks. Fuels throughout the state are typically delivered by truck. This type of batch delivery may also be used to supplement interstate deliveries to the more urban areas, but attempts to meet all of the demand in this way are likely to be insufficient and usually result in some level of supply interruption. Importantly, pipeline rates are cost-of-service regulated, so the owner of all three pipelines used to serve Nevada, Kinder Morgan, should have a very limited ability to collect economic rents [the Federal Energy Regulatory Commission (FERC) may soon be heard on this subject].

What, then, causes price spikes? Price spikes are caused by excess demand; that is, when demand exceeds available supply. Because the refineries are operated so close to full capacity, it is possible for them simply not to be able to make enough product at times of peak demand. Given the growth rates in all three states served by the existing refineries, it seems that this situation will occur more and more frequently.

Supply interruptions can also result in price spikes and unwarranted collection of rents by refiners. There have been four types of interruptions: (1) unplanned maintenance of refining facilities, (2) seasonal changes in the need for gasoline additives, (3) abnormal pipeline operations, such as breaks or emergency repairs, and potentially, (4) limitations in the unloading of tankers or pumping of domestic reservoirs. The fourth is added in the event that crude deliveries to a refinery are reduced, but not below a minimum level needed to recover fixed costs.

Unplanned maintenance of refineries is an especially troublesome category. All of the refineries in California are old, so maintenance, of all kinds, is to be expected. On the other hand, it is very difficult to ascertain whether the occurrence or duration of an unplanned maintenance outage was the result of a legitimate problem or the withholding of capacity. This situation is uncomfortably close to the electricity crisis of 2000 and 2001, where FERC – eventually – determined that manipulation, in the form of withholding capacity, actually occurred. It took two years to make that determination where the federal government had unprecedented access to the books and records of the companies suspected of manipulation. It is not clear just exactly how the government (state or federal, or both) would proceed against a refinery that simply withheld capacity. It's a matter for the lawyers to sort out, but my concern is that it may not even be illegal.

Governor Guinn and Senator Reid had just these concerns in mind when they jointly sought Federal Trade Commission review of the price spike earlier in the year. At the very least, gasoline consumers in these three states need some form of systematic oversight of the refined-products market segment to protect them from market manipulation that would be as easy to accomplish, as it would be financially rewarding. Refiners not only regulate themselves with regard to operating and maintenance practices (excluding safety regulation), they also are able to shield much of their cost data from governmental oversight. This is the equivalent of the fox both guarding the chicken house and counting the chickens.

Seasonal formula changes, pipeline breaks and abnormalities in crude oil deliveries also have the potential to produce supply interruptions that result in price spikes. These events, however, do not uniformly benefit any market participant, but they almost always result in higher prices for consumers.

"Finding Solutions for Western Woes" – the Supply Side

The most direct solution of our refined products supply problem is to build more refineries. While it may still be possible to improve the capacity of existing refineries, it seems very unlikely that new refineries can be built before growth in the Nevada, California and Arizona markets simply overwhelms the meager existing "excess" capacity. Improving short-term refining capacity is, then, largely a matter of relying on the importation of refined products, a practice common in the eastern U.S. This has obvious consequences on our balance of payments and reliance on foreign suppliers.

There is one potential mid-term solution that is of interest in Nevada, though a comprehensive evaluation has not yet been completed. Renewable transportation fuels, largely ethanol and biodiesel, offer an opportunity to offset market growth. Such fuels are good substitutes and are generally cost competitive when crude oil is about $35 per barrel, or more. Biodiesel is already being produced in Nevada and expansions and new facilities are planned. Ethanol and ethanol refineries, however, have yet to prove their suitability for broad-based development in Nevada. Of particular concern are the economics associated with shipping grain feedstock to the state – Nevada can't grow enough without significantly expanding the use of water for farming. The primary question being whether the resulting product would be cost-competitive with ethanol refined elsewhere and shipped to Nevada. Also, ethanol production in farming states typically requires about 4 gallons of water for each gallon of ethanol. At this rate, to add 5 percent ethanol to gasoline consumed in Nevada would require about 200,000,000 gallons of water each year, not a trivial sum for our state.

The long-term solution is widely believed to be some form of hydrogen technology. It is very discouraging to hear some of those involved in developing this technology say, in informal conversations, that hydrogen fueled automobiles are decades away. I believe that we don't really have decades, so the commitment of federal funds to hydrogen research and deployment seems like a wise investment.

"Finding Solutions for Western Woes" – the Demand Side

The most direct demand-side solution also appears to be unattainable, at least in the short-run, because it involves changes in individual behaviors. There are three behaviors that bear most directly on reducing demand for gasoline: vehicle gas mileage, proximity of ones employment to his/her home, and the decision to opt for public transportation. Broad-based programs to reduce drunk driving and to encourage the use of automobile seat belts have shown that it is possible to change behavior, but not without significant commitment by all branches of government with the aid of private sector champions. Besides, a lot of Nevadans are independent and don't appreciate being told by the government what they should do. In any event, this is a long-term process which would be helped most by what we want the least – high gasoline prices.

Aside from informational campaigns, there are myriad ways to "tinker" with the relative cost of gasoline. For example state governments could enact sales and gasoline taxes that shift the tax burden to owners of inefficient vehicles; much the way highway space at peak times is preferentially allocated to vehicles with multiple passengers – carpool lanes. Another, more direct approach, would be for the federal government, the National Highway Traffic Safety Administration, to seek meaningful increases in the Corporate Average Fuel Economy (CAFE) standard – one that would include pick-up trucks and sport-utility vehicles and access hybrid technology now becoming available. States could also require that driver education classes include specific instruction on vehicle fuel economy. But the real point is that demand reductions will mostly be unremarkable and opportunistic. They will be tied to an on-going careful analysis of what behaviors and equipment produce the least efficient transportation, and then taking steps to encourage modification of that behavior or elimination of that equipment. These changes come slowly because, ultimately, the one essential hallmark of a truly free market is that consumers make their own decisions about the goods and services they buy.