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June 30, 2004

MEMORANDUM FOR MEMBERS OF THE GOVERNMENT REFORM SUBCOMMITTEE ON ENERGY POLICY, NATURAL RESOURCES AND REGULATORY AFFAIRS

FROM: Doug Ose 

SUBJECT: Briefing Memorandum for July 7, 2004 Hearing, "Driving Down the Cost of Filling Up"

On Wednesday, July 7, 2004, at 9:30 a.m., in Room 2154 of the Rayburn House Office Building, the Government Reform Subcommittee on Energy Policy, Natural Resources and Regulatory Affairs will hold a followup hearing on the factors affecting gasoline prices in the U.S. The hearing is entitled, "Driving Down the Cost of Filling Up."

For the first five months of 2004, the average retail price of a gallon of gasoline in the U.S. increased almost every week, climbing nearly 55 cents to a peak of \$2.05 per gallon on May 26th. Consumers on the West Coast, and in California particularly, were subjected to even higher fuel costs, as gasoline prices reached \$2.37 per gallon on June 1st. In recent weeks, gasoline prices have begun to decline; yet, average nationwide prices are expected to remain higher than historical averages for the rest of 2004.

Over the last four years, the Subcommittee has held four hearings on U.S. fuel markets, including, "Gasoline Supply – Another Energy Crisis?" in June 2001, "Fuel Markets: Unstable at Any Price" in April 2002, "California Gasoline Markets: From MTBE to Ethanol" in July 2003, and "Easing Pain at the Gasoline Pump: Finding Solutions for Western Woes" in May 2004. The most recent hearing explored a full range of supply-side and demand-side solutions to lower gasoline prices (see Attachment A). This hearing will explore additional actions the Federal government could take to reduce the volatility of U.S. fuel markets.

Global Crude Oil Markets

Since the cost of crude oil determines about 40 to 50 percent of the total price of gasoline, changes in the world oil market directly affect the price that consumers pay at the pump. On average, a one-dollar increase in the cost of a barrel of crude oil translates into a 2.5-cent increase in the price of a gallon of gasoline at retail gas stations.

Throughout 2004, world oil markets have remained tight, and crude oil prices have risen steadily, increasing more than \$12 per barrel from December 2003 to June 2004, to reach a record high of \$42 per barrel. These market conditions can be attributed to a number of factors, including a rising global demand for oil, political instability in Venezuela, Nigeria, and Iraq, and actions of the Organization of Petroleum Exporting Countries (OPEC). Although oil prices have begun to decrease in recent weeks, these factors will continue to affect supply and demand in the international crude markets.

Current Proposals Related to Oil Markets

Various proposals to temper crude oil prices, and thus gasoline prices, have gained attention as a result of the gasoline price spike. One of these solutions is to suspend deliveries of crude oil to the Strategic Petroleum Reserve (SPR),¹ which is currently filled to approximately 95 percent of its capacity. Although some have argued that SPR deliveries have significantly increased crude oil prices, it is unclear whether this is accurate. According to a February 2004 memorandum prepared by the Energy Department's Energy Information Administration (DOE/EIA), "the actual impact of SPR additions on oil prices could be close to zero" because of market dynamics and because of the small amount of oil being added to the SPR (see Attachment B). Does this conclusion still represent EIA's position?

Related to this solution is the proposal to release oil from the SPR to moderate gasoline prices.² Whether this policy would result in lower crude prices is highly debatable and raises numerous questions. For example, how would oil producing countries respond, where would the additional oil be refined, and would America's security be affected?

Also, the rise in crude oil prices has renewed the call for drilling on 2,000 of the 19,000,000 acres of the Arctic National Wildlife Refuge (ANWR) in northeastern Alaska. If projections regarding the amount of economically recoverable ANWR oil are correct, this policy could potentially provide a more secure and affordable domestic supply of gasoline in the long-term.

Petroleum Infrastructure Constraints

Another factor that affects gasoline prices is refinery capacity constraints. U.S. gasoline refineries are currently operating at or near full capacity, which limits their ability to respond to unexpected outages or imbalances between gasoline supply and demand. This situation increases the potential of price spikes when supply problems occur. Compounding this problem

¹ The SPR was authorized in the Energy Policy and Conservation Act of 1975 to prevent a repetition of the economic relocation caused by the Arab oil embargo. Following the events of September 11th, on November 13, 2001, President Bush directed the Secretary of Energy to fill the SPR to its capacity of approximately 700 million barrels with royalty-in-kind (RIK) acquisitions of crude from Federal off-shore leases. Under the current plan, deliveries of RIK oil are scheduled through October 2004, and are expected to average between 65,000 and 200,000 barrels per day.

² Under current law, a drawdown of the SPR may not be made unless the President finds that a drawdown and sale are required to respond, prevent, or reduce a "severe energy supply interruption" or by obligation of the U.S. under the international energy program (42 U.S.C. §6241).

is the fact that the U.S. petroleum infrastructure, which includes pipelines, storage tanks, and port facilities, is also strained and at its limits.

Looking to the future, demand for gasoline is expected to grow at a rate of approximately 2 percent per year, while refining capacity is expected to remain stagnant. In part, this is due to the regulatory difficulties and costs associated with building, expanding, and maintaining refinery facilities. If these capacity constraints are not addressed, or if demand is not significantly reduced, supply and demand within U.S. gasoline markets will continue to tighten, causing increased volatility and higher gasoline prices. There are a number of potential ways to affect both sides of this equation.

Boutique Fuels

The number of specialized fuel blends in the U.S. can affect gasoline prices. Due to overlapping Federal, State, and local air quality programs, and local refining and marketing decisions, today's gasoline market is comprised of as many as 60 types of gasoline that serve different regional markets. While using these specialized fuel formulations is seen as an efficient means of cleaning the air, the increase in these "boutique fuels" adds to the complexity of gasoline production, distribution, and storage.

In California and the Chicago/Milwaukee area, which have the most stringent air quality regulations in the country, and which are notorious "gasoline islands," the proliferation of boutique fuels has limited the number of refiners that have the technology and knowledge to create the compliant fuel blends for their specialized fuel markets. As a result, small disruptions in production, such as refinery outages or pipeline ruptures, can severely limit the supply of gasoline in these areas and cause sharp price spikes.

Responding to the boutique fuel problem is difficult given the ever-changing regulatory environment for gasoline. During this decade, refiners will need to develop fuels to comply with a myriad of new environmental regulatory programs. Any new policy must consider these changes so that additional boutique fuels are not inadvertently created and so that air quality is not degraded.

MTBE and Ethanol

In addition to balkanized markets, future markets may become even less stable as refiners deal with the effects of phasing out the fuel additive Methyl Tertiary-Butyl Ether (MTBE) and replacing it with ethanol. Under the Clean Air Act (CAA), refiners selling gasoline in areas with severe air pollution are required to add 2 percent oxygen by weight to the gasoline. Currently, there are only two viable oxygenates – MTBE and ethanol.

Due to water contamination concerns, on January 1, 2004, California, New York, and Connecticut banned the use of MTBE. These bans have reduced gasoline supply and fungibility, and have increased market volatility. Based on scientific data that neither MTBE nor ethanol is needed to meet current environmental standards, both California and New York have requested

the oxygen requirement be waived. The Environmental Protection Agency (EPA) is currently reviewing these waiver requests.

Market Competition

As with most commodities, low levels of market competition can lead to higher prices in the marketplace. Accordingly, when gasoline prices rise significantly, consumers and policymakers tend to call for industry investigations.

Most recently, in May 2004, the General Accounting Office (GAO) issued a report entitled, "Energy Markets: Effects of Mergers and Market Concentration in the U.S. Petroleum Industry," which asserted that mergers in the 1990s contributed to increases in market concentration in the downstream segment of the U.S. petroleum industry, increased vertical integration, and created barriers to entry.

In response to this report, on May 27, 2004, the Federal Trade Commission (FTC) released a statement criticizing GAO's accuracy. Specifically, FTC Chairman Timothy Muris wrote:

As the Commission unanimously said in its August 2003 letter to GAO, this report has major methodological mistakes that make its quantitative analyses wholly unreliable; relies on critical factual assumptions that are both unstated and unjustified; and presents conclusions that lack any quantitative foundation. As a result, the report does not meet GAO's own high standards of 'accountability, integrity, and reliability' that one expects from its reports and publications.

The Subcommittee hopes to reconcile these differing views during the hearing.

Witnesses

Invited witnesses include: Guy F. Caruso, Administrator, EIA, DOE; Mark R. Maddox, Acting Assistant Secretary for Fossil Energy, DOE; Jeffrey R. Holmstead, Assistant Administrator for Air and Radiation, EPA; William E. Kovacic, General Counsel, FTC; Jim Wells, Director, Natural Resources and Environment, GAO; Robert Slaughter, President, National Petrochemical and Refiners Association; Michael Ports, President, Ports Petroleum Company, Inc; Ben Lieberman, Senior Policy Analyst, Competitive Enterprise Institute; and, A. Blakeman Early, Environmental Consultant, American Lung Association.

Attachments

Potential Solutions to Reduce Gasoline Prices

Supply-Side

- EPA grants CA & NY oxygen content waivers
- Reduce the number of boutique fuels
- Streamline permitting processes for refinery & pipeline construction & expansion
- Increase imports of finished gasoline & gasoline components
- Increase product storage capacity
- Increase domestic oil drilling (possibly in the Arctic National Wildlife Refuge)
- Drawdown or cease filling the Strategic Petroleum Reserve

Demand-Side

- Properly inflate tires
- Improve vehicle maintenance
- Remove unnecessary items from vehicle trunk
- Improve corporate average fuel economy (CAFE) standard
- Provide incentives for public transportation and carpooling
- Encourage the use of hybrids
- Develop alternative fuels (e.g., hydrogen & biodiesel)



Department of Energy
Washington, DC 20585

February 6, 2004

MEMORANDUM TO: THE SECRETARY

FROM: GUY CARUSO 
ADMINISTRATOR
ENERGY INFORMATION ADMINISTRATION

SUBJECT: THE IMPACT OF STRATEGIC PETROLEUM RESERVE
ADDITIONS ON CRUDE OIL PRICES

This is in response to your request that the Energy Information Administration (EIA) provide you with its assessment of the impact of additions to the U.S. Strategic Petroleum Reserve (SPR) from April 2002 to date on U.S. and global crude oil markets. The average SPR fill rate since April 2002 was 120 thousand barrels per day, with a monthly peak rate of 210 thousand barrels per day. Our overall assessment of how these additions may have affected oil markets can be summarized as follows:

- Given OPEC members' recent demonstrated ability to alter production to influence prices, the actual impact of SPR additions on oil prices could be close to zero. Had SPR additions not been made, OPEC members who operate at variable production levels may well have responded with offsetting output adjustments, maintaining a price and inventory profile identical to that which actually occurred. In this case, price impacts at or near zero are entirely plausible.
- EIA has also developed a standard "rule of thumb" for assessing the effect of **unexpected** disruptions to commercial oil supply -- that 1 million barrels per day removed from the world market has a price impact of \$3 to \$5 per barrel. Applying this rule, SPR additions, even at 200 thousand barrels per day, would have a price impact of about 60 cents to \$1 per barrel. However, because SPR additions were announced and anticipated by the markets, the standard rule may overstate actual impacts.

EIA is aware that some market analysts have recently suggested that the SPR additions have had a much larger impact on oil prices. For example, a representative of the Air Transport Association, was recently quoted in press reports as saying that SPR additions "were adding enough demand to the world marketplace to drive up the price by more than \$6 per barrel." In EIA's view, however, impact estimates this high (or even higher) use reasoning that does not withstand scrutiny.

- One claim made is that SPR additions, especially during a time of rising crude oil prices, push prices higher by exacerbating the tightness of the global oil supply/demand balance. However, additions to the SPR at the average SPR fill rate since April 2002, amount to only 0.15 percent of global demand -- hardly enough to drive a 25% to 33% price



increases in the global market. A variant of the same approach focuses on the share of SPR additions in the overall **change** in oil demand. However, as Paul Horsnell of Barclays Capital Research puts it, "The world consumed 29.2 billion barrels of oil in 2003, while the SPR grew by less than 0.04 billion [*barrels*]. At the margin, barrels of incremental global demand outnumbered the SPR fill by about fifteen to one." [Note: EIA's figures are slightly different, showing a ratio of 13.4 to 1]

- Another line of argument focuses on the level of commercial oil inventories, making the assumption that all of the oil that has been added to the SPR would, but for those additions, have flowed into commercial storage, resulting in much higher commercial stocks than the current estimate (as of January 16, 2004) of 265.2 million barrels, the lowest level since 1975. This reasoning, however, relies on key assumptions regarding the operation of world oil markets that are both implausible and mutually inconsistent:
 - First, it assumes no supply response on the part of oil exporters to a change in the level of SPR additions. Given the pre-announced and steady pattern of the SPR additions, it could reasonably be expected that major oil exporters, which have increasingly in recent years sought to reassert control over oil prices by managing output, would in fact produce less if these purchases were not taking place, rather than allowing an equivalent amount of crude oil to flow into commercial inventories.
 - Second, even in the unlikely event that supply remained at an unchanged level in a scenario with no additions to the SPR, the significant lowering of oil prices that the "high impact" analysts claim in such a scenario should have raised world oil demand above the levels that actually occurred. Even with no supply adjustments (unlikely) there would also have to have been no demand response to significantly lower prices (also unlikely) for all of the SPR additions made over this period to have shown up in current commercial inventories.
 - Thirdly, oil companies are unlikely to have added to commercial inventories if the SPR oil had been made available. Company inventory positions are at current levels because of cost cutting measures, better inventory management techniques and fiscal incentives. Crude oil has been available on the international market and the companies have chosen to operate with leaner inventories.

What factors does EIA believe have significantly impacted oil markets?

Although you did not specifically request it, we thought you might also be interested in our assessment of key factors currently driving oil markets. Since early 2002, a number of important fundamental factors have contributed to high crude oil prices, including rising demand; OPEC production cuts; supply disruptions in Venezuela, Nigeria, and Iraq; and low inventories.

- **The rise in crude oil prices to the \$27-28-per-barrel range in late summer 2002 only represented a recovery to the levels seen prior to the terrorist attacks of September 11,**

2001, which depressed oil demand. By the second quarter of 2003, U.S. economic recovery began to accelerate. Coupled with surging Chinese growth and modest recovery elsewhere, strong economic activity has boosted U.S. and global oil demand significantly. Cold weather and fuel switching from natural gas to oil, both last winter and since mid-December 2003, have added to demand pressures.

- **OPEC cut its output quotas sharply at the beginning of 2002, in response to the sharp decline in prices after September 11, 2001.** This fourth cut, in a series of reductions that began in February 2001, sharply curtailed oil supplies just as oil demand began its recovery. In less than a year, OPEC reduced its ceiling level (for the 10 members excluding Iraq) by 5 million barrels per day, and actual production by up to 4 million barrels per day. This reduction in supply tightened the global oil balance significantly, resulting in declining inventories relative to normal throughout the second half of 2002. The roots of current oil price volatility trace to these actions, since OECD stocks had already reached the near-record lows seen in 2000 by November 2002, just ahead of Venezuela's oil disruption.
- **In December 2002, a strike by petroleum workers in Venezuela drastically reduced global crude oil supplies.** The impact was felt most in the United States, the largest consumer of Venezuelan crude oil. Nigerian production was also curtailed in early 2003 due to unrest.
- **Crude supply disruptions in Venezuela, Nigeria and Iraq in late 2002 and early 2003 were not fully offset by increased supply from other sources.** While there can be no doubt that Saudi Arabia and the OPEC 10 dramatically boosted production following the Venezuelan outage, as well as prior to and following the Iraq war, the initial increases were slow in coming, with December 2002 and January 2003 aggregate production levels down sharply from already-tight November 2002 supply levels. When the surge in OPEC supply did occur, the bulk of the increase (excluding Venezuela) appears to have gone to China and other Asian refiners, at least through the first half of 2003.
- **OPEC cut quotas twice during 2003, reducing global supplies.** The first was effective June 1, and they later agreed to cut quotas again effective November 1. While OPEC members continued to produce more than their agreed-upon quotas, production remained low enough to sustain WTI prices above \$30 per barrel for most of 2003.
- **By the end of 2003, there was some recovery in product inventories, but U.S. crude oil inventories reached their lowest levels since the mid-1970s.** While OPEC appears to have sustained high production levels over the second half of 2003, OECD stocks in November 2003 dipped back below November 2000 levels. Some recovery in either crude oil or product stocks relative to normal has occurred over the last 6 months both in the U.S. and worldwide, but supply has generally been inadequate to meet improving oil demand and at the same time rebuild both crude oil and product stocks. As such, the last year has been characterized by a "cycling" of this shortfall from region to region and product to product.

Obviously, it is impossible to address in full detail all of the important factors affecting oil markets in a brief memorandum. Please feel free to contact us if you have any additional questions.