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November 19, 1996

You may be interested . . .

- As our recent mailings have indicated, PIRINC has participated in a number of meetings and conferences to discuss the seasonal outlook for heating oil. Attached is our most recent presentation, given by our Executive Vice President Cheryl Trench at the *Winter Fuels Outlook Conference* on November 7. This annual event, co-sponsored by the National Association of State Energy Officials and the US Department of Energy, brings together state and federal officials and industry executives to hear views about the coming heating season's market for heating oil as well as propane, gas and electricity.

Please call us if you wish to discuss this or other issues.

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Heating Oil Market, Autumn 1996: Market Signals and Supply Flexibility

by
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Presentation to the
Winter Fuels Outlook Conference

Sponsored by the
National Association of State Energy Officials
and the US Department of Energy

November 7, 1996
New York, NY

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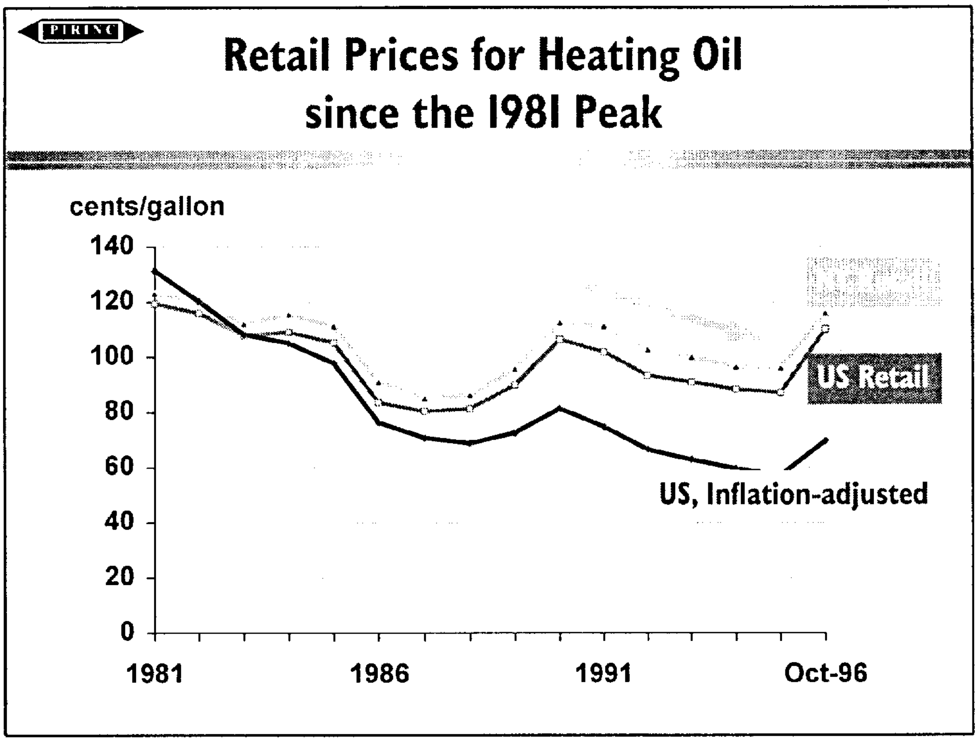
✔ What a difference a few weeks make! The very high distillate refinery output of recent weeks has contributed to a new view of the flexibility to get through this Winter with low stocks. Jay hakes and Ed Murphy have already talked about the supply/demand factors that got us here and a supply/demand balance that will get us through the Winter. I'm here to expand on the market signals that brought us to the low stock situation, because understanding them is critical to understanding the stock levels, and to talk about additional supply flexibility for the Winter.

✔ The supply/demand tug-of-war has contributed to one of the central components in low stocks: The market signal has been negative for a firm making a decision to store. A company will look for a price increase in the future high enough to cover the cost of capital for the purchase of the product, plus the cost of storage. The prices in the futures market contracts for October, November and December did not provide that increase.

✔ While market watchers are calmer now than they were a few weeks ago, we should be clear that low stocks will be a fact of life throughout the heating season. In the absence of traditional stock cover in the months ahead, the market will be unusually dependent on smooth refinery operations and a chain of uninterrupted imports. In this situation, prices are likely to move upward, perhaps significantly, in any supply disturbance or demand spike. The good news is that we have already had a demonstration of how strong the supply response can be.



✔ We've heard a lot about "just-in-time" inventories over the last few months. While you can question whether oil inventories are truly "just-in-time" in the traditional sense, there is little doubt that companies as a matter of policy are reducing their exposure by keeping inventories low. Those old fat inventories carried fat costs -- financing a 75 cent per gallon purchase at 8% would cost about half a cent per month. Then you have to pay for storage. So keeping inventories as low as practical reduces costs, and at the same time, risks. Without these cost and risk reductions, some companies would have found a better way to employ their capital. Reducing the number of companies would also have reduced the aggressive competition that characterizes petroleum marketing.

✔ These developments are among the ones that have kept prices low in the past. Last year, for instance, we marked the fifth straight year of retail price declines. How many commodities that you buy can you say that about? In terms of the bite that petroleum takes out of the budget, even today's high prices haven't brought us back to the old peak.

✔ Petroleum prices have been a pleasant bargain, and because of that, people haven't noticed them. Now that prices are up, they're getting a lot of attention. Some people have confused these higher prices with a shortage.

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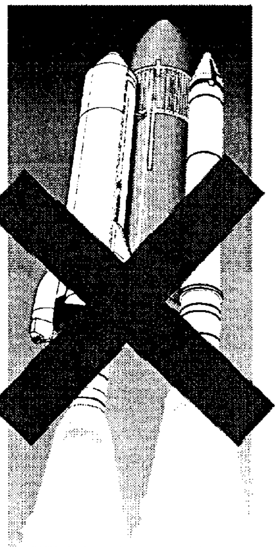
Low Inventories, 1996: Not Grand Strategy, but Market Signals

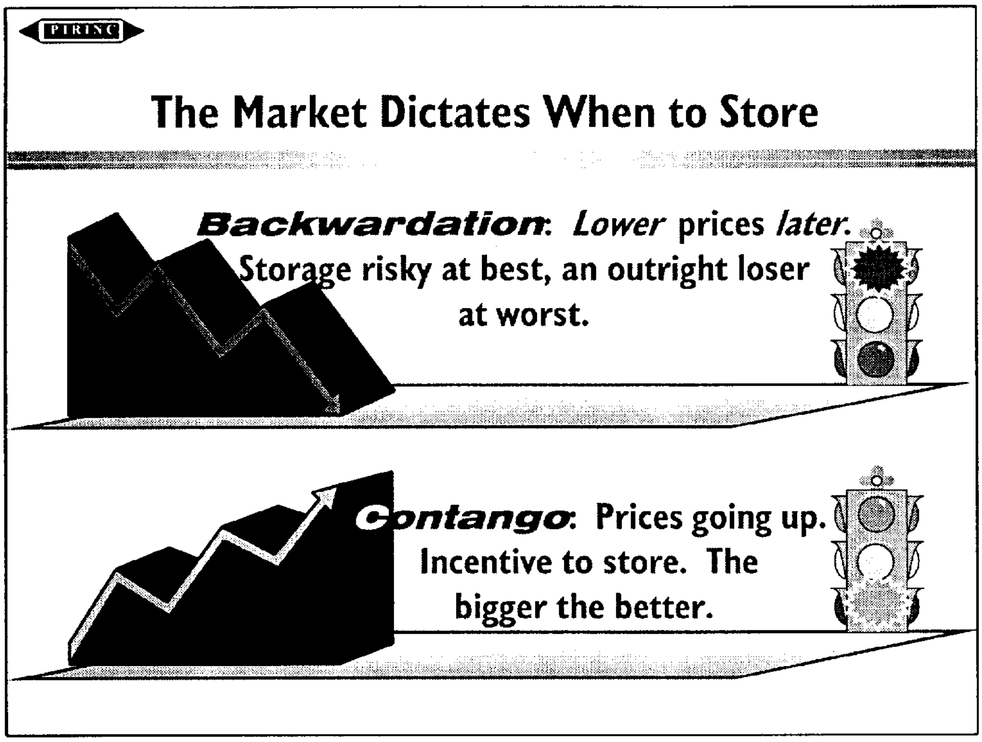


Backwardation

Contango

New, but
Not Rocket Science!

✔ While there's no doubt that companies now prefer to operate in a low stock environment, this season's levels aren't due to just-in-time philosophy but to the fact that the market expect prices to be lower, rather than higher, in the future. The new buzz words "backwardation" and "contango" are everywhere. The concepts are not difficult to understand, and their consequences are clear. What are they?

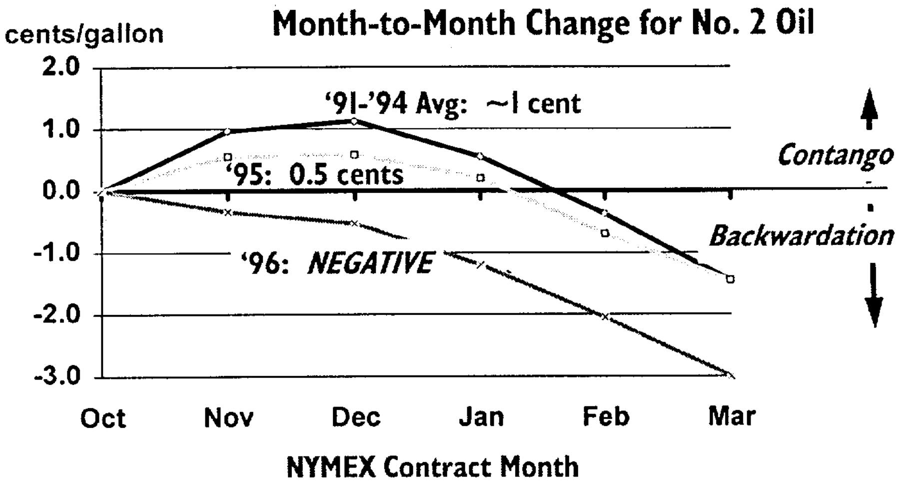


✔ As the heating season approaches, market participants ask, should I store No. 2 oil? First, they look for a big enough increase between today's prices and those in the future to pay for the cost of capital on the purchase of inventory and the cost of storage. Larger increases imply real price appreciation and hence profit.

✔ When the market is in "backwardation," it expects prices to drop. Backwardation is a big RED LIGHT for storage. Why spend money on a commodity whose price is falling? The value of your asset, the oil in the tank, will fall.

✔ When the market is in "contango," it expects prices to rise. You must have a contango market to make storage an economic decision, a GREEN LIGHT. Again, the minimum: a price increase large enough to pay for the cost of capital and the cost of storage.

The Early September Signal: Seasonal Contango? No, Backwardation!



✔ In years past, each Autumn month has shown an increase of about one cent per gallon over the month before, a great enough difference to encourage storage. In 1995, the difference was only 5/10th of a cent, about the minimum. (If a firm owned its own storage, for instance, it would be indifferent to storage if the next month's price were 0.5 cents higher than the current one, enough to pay the finance charges on the inventory purchase.)

✔ This year, the signal has been all wrong. During the summer, the futures market was showing a seasonal increase too small to justify storage. Throughout September, December futures actually traded for *less* than October! The same relationship carried over into the November contract.

✔ Where does this leave us? Without an incentive to store. Hence, given that the market is populated with economic actors making rational decisions, low inventory levels also become a given.

✔ A central factor: price premiums for prompt supply, even while the market is ratcheting upward.

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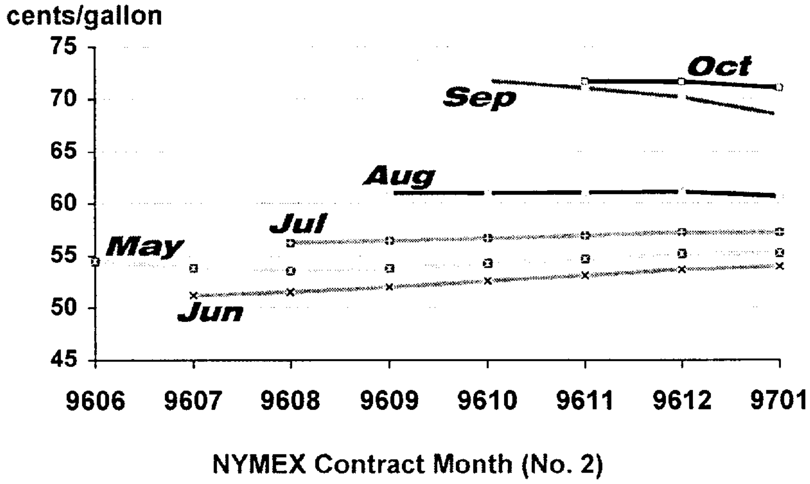
The Changing View of the Heating Season's Approach

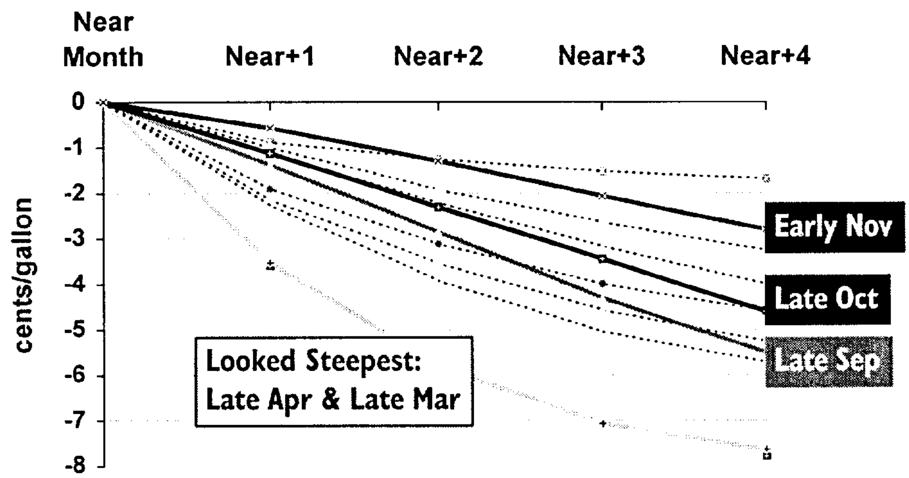


✔ Each one of these lines represents a snapshot of how things looked from each month's vantage point. The view from May, June and July suggested there would be a seasonal increase. But July marked a change. High demand brought higher current prices that carried over into August, flattening the curve.

✔ By September, the dust-up in the Middle East, the indefinite delay in Iraq's humanitarian aid exports, and a growing appetite for prompt supplies both here and in Europe had not only ratcheted up the price, but had firmly tipped the distillate market to backwardation -- lower prices later.

✔ As October wore on, we've seen a flattening in the backwardation, with an increase in the market's view of January and February prices.

Expectations of Falling Crude Oil Prices: Backwardation in 1996

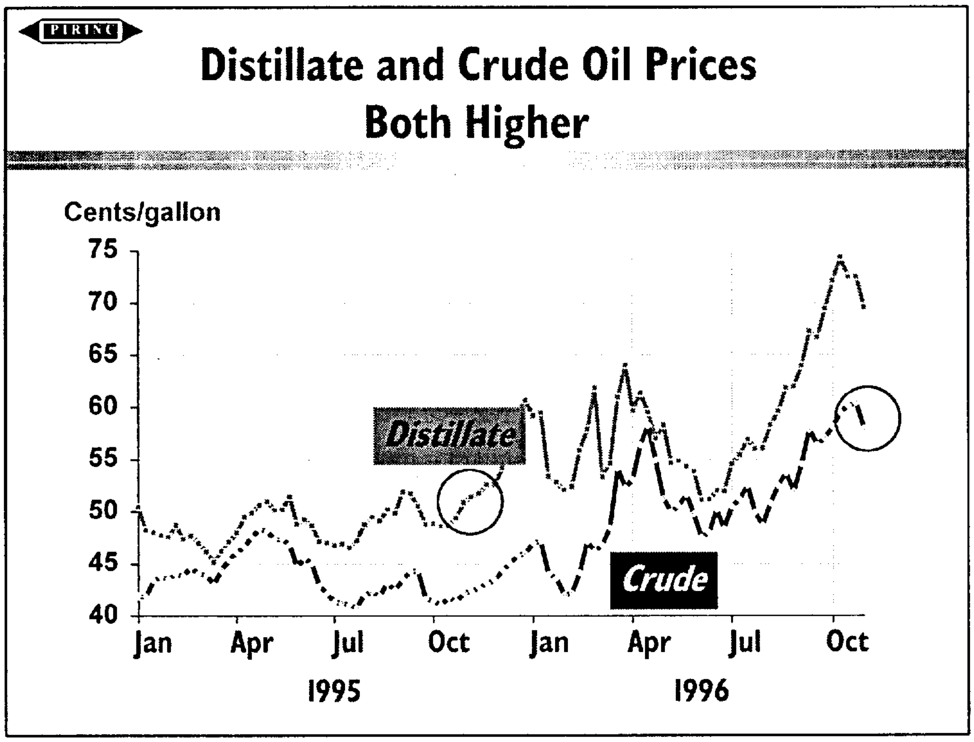


✔ The backwardation in the crude oil market helps to illustrate the situation, and is part of the distillate market story as well. The idea that prices would fall when Iraqi supplies were back in the market, and that Iraq's return was just around the corner, was an important market driver throughout the first half of the year. It encouraged purchasers to hold out until the last moment before buying, hoping the price decline would begin. When those buyers finally went into the market, they had no choice but to bid premium prices to get now-desperately needed oil. This strength in the prompt market makes the backwardation worse. We can see it reflected in the lower line -- the way the next few months looked at the end of March and the end of April.

✔ During the summer, the backwardation eased, but did not disappear. Near-term prices had fallen from their Spring peaks; Iraq's supplies became "known."

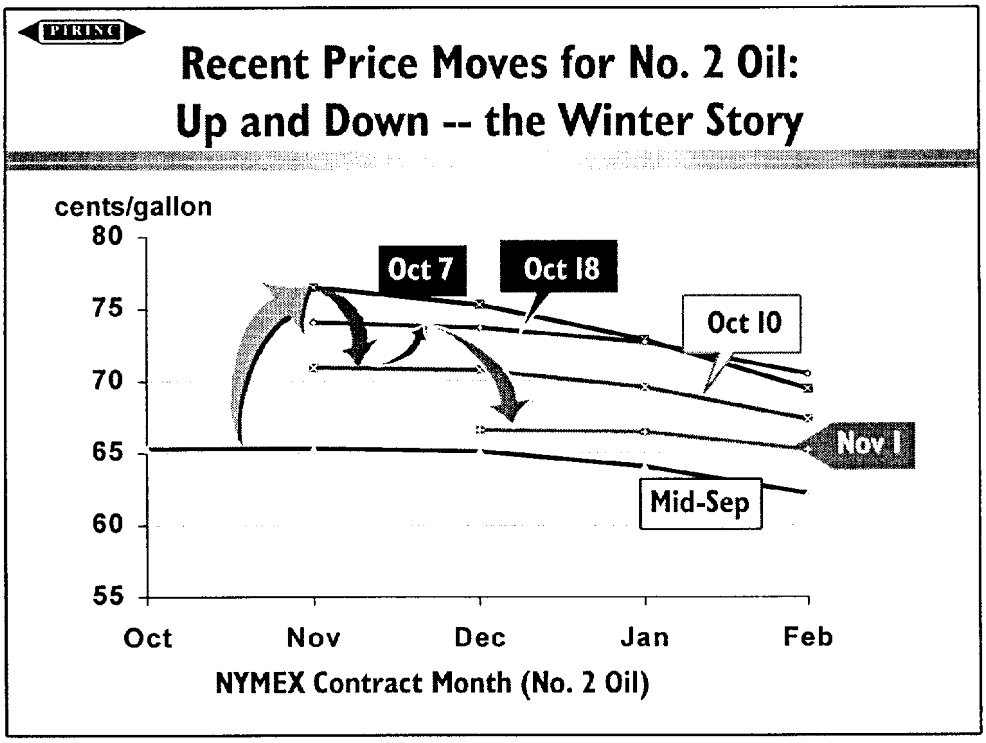
✔ Saddam Hussein's moves in the north of Iraq and the US response in the south, combined with the indefinite suspension of the humanitarian oil sales, caused crude oil prices to run near post-Gulf War highs during September: they reached as high as $25/barrel, and averaged almost $24. The backwardation steepened again.

✔ The backwardation in the crude oil market has again eased, but not disappeared. And the flattening backwardation has again come from easing in prices for prompt supply, a combination of a changing view of world crude markets and an end to the product demand push.



✔ It is good to remember that the distillate market does not operate in a vacuum. While politicians would like to "fix" it, any remedy will only cause other reactions in the market, often ones that have the opposite impact from that desired.

✔ Politicians, for instance, expressed concern when distillate prices were almost 25 cents per gallon above year ago levels, and supposed that low stocks were the cause. They often ignore that the price of heating oil's raw material, crude oil, recently ran as much as 20 cents above last year's level. Unprecedented supplies of distillate and a seemingly new market view of the likelihood of near term Iraqi exports have brought distillate and crude oil prices down. They currently show year-on-year increases of about 12 cents for crude oil and about 14 cents for heating oil. As shown by the circled areas on this slide, the price of crude oil this year is higher than the price of distillate was at this time last year.



✔ Recent price moves also give us a taste of Winter's price volatility. The prices will respond sharply to stimuli such as hiccups in supply or spikes in demand, or more recently, sharp moves downward in the crude oil market.

✔ When buyers are impatient for increased supplies *now*, they will pay premiums for "prompt" supplies; hence, the current price rises. The price in the future may rise by a lower amount, steepening the backwardation. In September, we saw this prompt price strength as Europe called for increased supplies, and bid up prices. Prices in Rotterdam reached 80 cents per gallon. We responded with export volumes. The price decline is also a natural phenomenon, as the European demand was sated by the increased supply. And so on.

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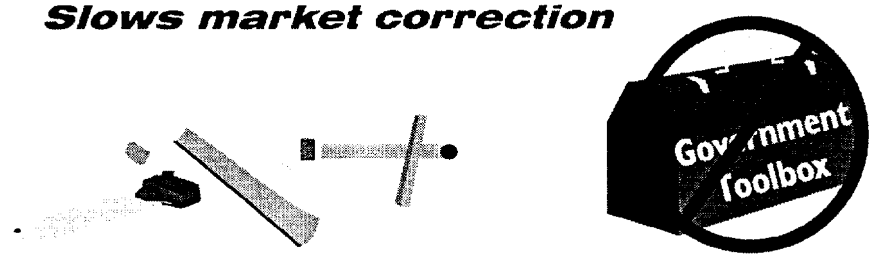
Why an SPR Swap Won't Work

- ***Now:*** *Must outbid Europe → higher prices →* ***Backwardation worse***
- ***Expected:*** *Dampens upward move →* ***Discourages risk-taking***
- ***Later:*** *Discourages buying during spike →* ***Slows market correction***

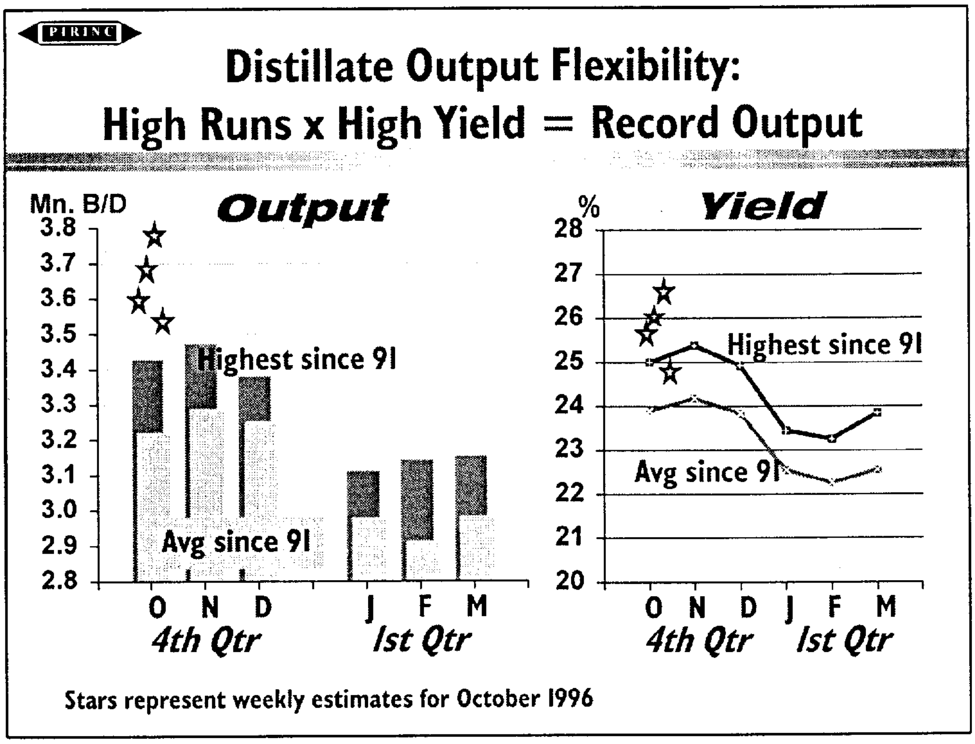


✔ The Department of Energy wisely resisted calls to use the Strategic Petroleum Reserve to intervene in the distillate heating oil market. The proposal would have sold crude oil held in the Strategic Petroleum Reserve, bought distillate to store in the Northeast, sold the distillate to the market this Winter when there was a price spike, and taken the proceeds to buy replacement crude oil next Spring.

✔ Government tinkering would have made the inventory situation worse. The market's backwardation is what makes rational people unwilling to build inventory, so the proposal would have sent the wrong signals. Near-term prices would have risen as government purchasers competed with marketers in the US and Europe for scarce supplies. Hence, the backwardation would have been worse. For anybody who *was* willing to take a chance on storage, hoping that prices in December and January would be higher than the market was saying, the SPR distillate sale during the Winter would have taken away the upside. Finally, during a price spike, you want people scrambling for supplies, not worrying that by the time a high-priced cargo lands, the government distillate sale will have made the oil a money-loser.

✔ Using contingent Low Income Heat Energy Assistance Program funds to help those consumers least able to pay the increased heating costs would be preferable. LIHEAP distribution mechanisms and criteria are already in place.

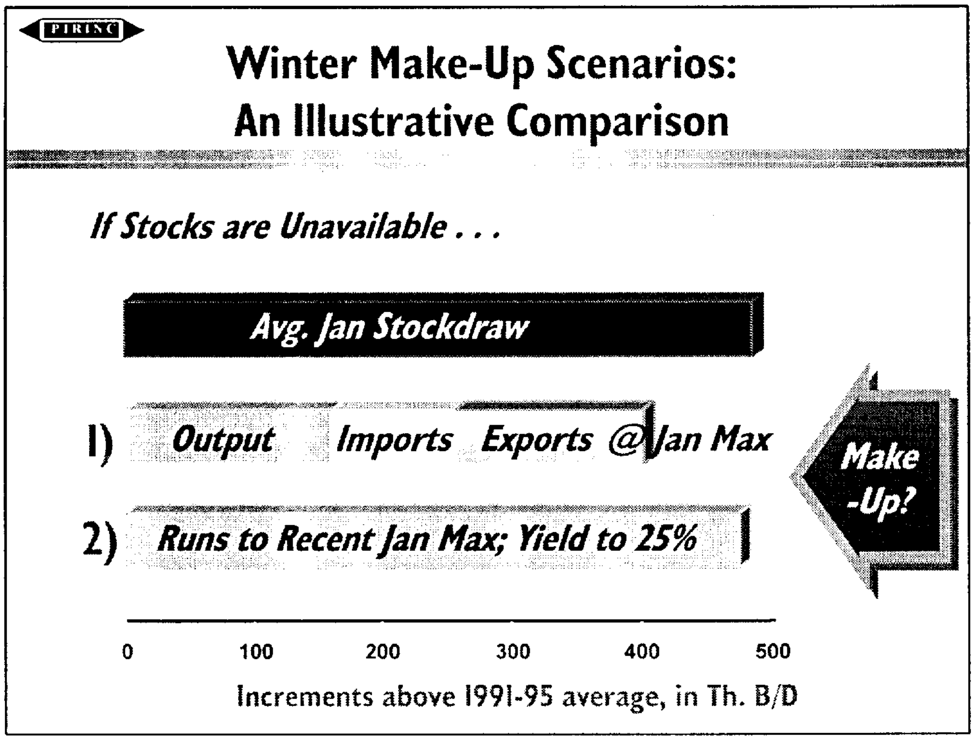
✔ We have seen again and again that the market works best. We've just had another demonstration of the market's responsiveness. Any government tinkering will make things worse, not better.



✔ Politicians and market observers must accept the fact the stocks are going to be low throughout the heating season. We are going to be unusually dependent on an unbroken supply chain -- fresh supply from refineries, especially, and from imports, as well as barge operations choreographed like a ballet. Each missed tide, each weather delay will be more important this year.

✔ What flexibility will we have if push really comes to shove? Ed Murphy's outlook covered the 4th quarter and the 1st quarter. On average, we should have enough supply. Is there additional flexibility to make up for stocks? What about supplies during a demand spike like a cold snap?

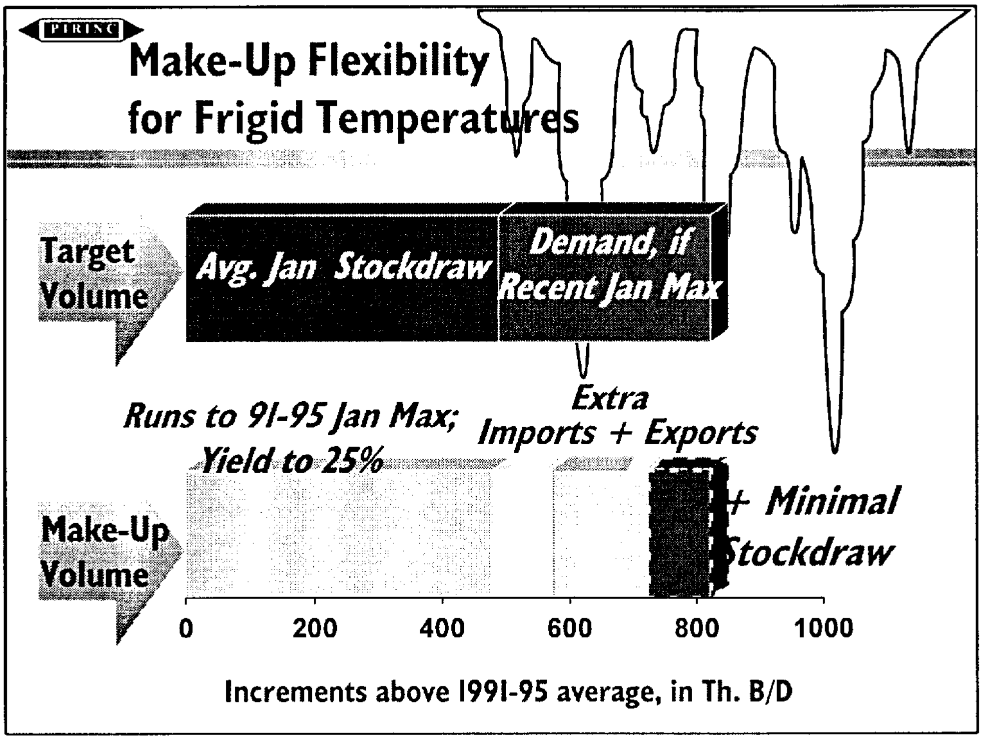
✔ Distillate output levels in 1996 have already broken the norms. Looking at the bars on the left, for example, average refinery output versus the highest refinery output since 1991, we see that the highest October level was just over 3.4 million B/D -- at least until this year. According to recent weekly API statistics, distillate output has been consistently above the old highs. It even hit 3.8 million B/D for one week, a level that stunned most observers. With it went a whopping 26.6% yield, well over the October norm, and higher than even the highest 1991-95 level in the peak month, November. These output levels give us confidence that low stocks won't spell disaster this Winter.



✔ To illustrate supply flexibility, I've compared the average January stockdraw of about 500 thousand B/D with some supply alternatives. Please note that the development of these scenarios is an analytical tool, not a prediction. We will consistently have *some* inventory available to balance supply and demand.

✔ How much supply would you add if you moved from business-as-usual levels for refinery output, imports and exports to the maximum shown for any January in the 1991-95 period? (For exports, we're actually comparing to the minimum level; lower exports will provide incremental supply.) These three items add just over 400 Th. B/D to supply, not quite enough to make up for a 500 Th. B/D "loss" if no stockdraw were available. Again, some stockdraw, albeit at reduced levels, will be.

✔ How much supply might we get from higher runs or a higher yield? The next comparison moves crude oil runs to the highest January level in the 1991-95 period, and moves the distillate yield to a level that used to be thought of as the effective maximum, 25%. (November distillate yield is routinely highest). This powerful combination results in just over 500 thousand B/D of incremental output. Additional imports and lower exports could be added.



✔ What if demand is also higher than the norm? Again, I've added that extreme "no-stockdraw" volume to the incremental demand we experienced in the worst January between 1991 and 1995. Together, they add to just over 800 thousand B/D of incremental demand.

✔ Can we replace this extreme volume? The combination of that high refinery run/high yield scenario with the additional imports, lower exports, and some limited inventory draw volumetrically makes up the difference. But at a price. The market will work effectively, responding to a price signal. But the signal will be strong.

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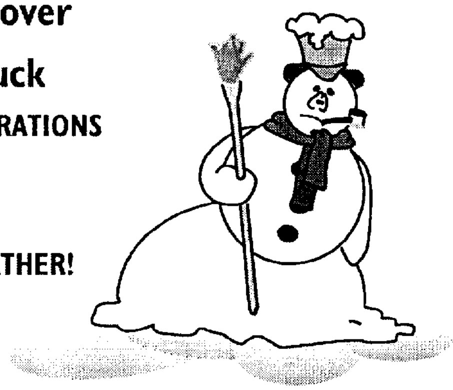
Summary

- **Dynamic, responsive market**
- **It's not over 'til it's over**
- **With a little bit o' luck**

  SMOOTH REFINERY OPERATIONS
  SMOOTH TRANSPORT
  EVEN BETTER, WARM
  --EVEN NORMAL-- WEATHER!



✔ The market is dynamic, making constant adjustments to price signals. As cargoes arrived in Europe, prices there eased, dampening the call for supply. High prices called forward record volumes of distillate output, dampening prices. This signal and response is critical to the operation of the market. It will work for us throughout the Winter.

✔ Low inventories are likely to have us on the edge of our chairs throughout the heating season. The story won't be over in December, or even in January. Refineries will have to continue to produce particularly high volumes of heating oil this season, providing those "fresh" volumes that are necessary to keep the market supplied when stocks are less unavailable. Are any refineries having problems? Is there icing in the river/creek/ harbor? What's happening in Europe? How many cargoes are on their way?

✔ Finally, I'll leave you with the image of the melting snowman, because even with the new assurance of output capability to meet peak demand, this Winter will be a lot calmer if the weather is warm.