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In April, a PIRINC senior executive responded informally to a request to assess oil market implications of certain “what if” scenarios regarding a possible U.S. led attack on Iraq. He was later asked by several U.S. government officials to put his views on paper.

Attached is a copy of the short briefing paper *A Window for Precautionary Action on Oil* prepared by PIRINC in response to this request.

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A Window for Precautionary Action on Oil

At the current time, there is a significant amount of world spare capacity, both in terms of crude oil production and in terms of logistics and refining. These conditions are going to change over the remainder of the year into early 2003 primarily as seasonal requirements move up from their second quarter low points. It should also be kept in mind that the terrorist attacks of September 11th last year and an exceptionally warm winter both depressed demand below normal levels so that year-on-year growth for late this year and early next will look particularly strong. These trends are particularly relevant for any contingency planning associated with the possibility of military action against Iraq in this time-frame. OPEC's recent decision to maintain official production levels for the time being will encourage future market tightening, although a return of Iraqi exports to more normal levels may ease its immediate market impact.

The period between the August 1990 Iraqi invasion of Kuwait and the March 1991 successful conclusion of military action to expel Iraqi forces from that country saw major repercussions in the world oil market. Between July 1990 and October, the monthly average price of crude oil nearly doubled as fears mounted that in addition to the immediate losses of Kuwaiti and Iraqi oil, supplies from Saudi Arabia could be curtailed by hostile Iraqi action. Crude oil prices thereafter first eased as it became clear that Saudi supplies were not only being maintained, but substantially increased, and then moved back to pre-crisis levels once it was evident the military action was meeting with success. While crude oil prices shot up with the onset of the crisis, certain product prices, especially jet fuel, moved up even more. Between July and October 1990, the spot price of jet fuel jumped by 120%, with the differential versus crude widening from just under \$5/barrel in July to over \$14 in October. The price movements for jet fuel reflected market concerns over and above those for crude oil, in particular the loss of the Kuwait refinery, a major supplier of jet fuel to the Far East, and rising requirements for the military. This time distillate could also be a problem. Demand is highly seasonal and the exceptionally warm winter that dampened demand even beyond the impact of the post-September 11th economic slow down is unlikely to repeat itself.

Should the prospect of military action during the winter months become imminent, oil markets will again reflect fears of lost supplies of crude and critical products, including potential supply losses from Iraq's neighbors. As before, as it becomes clear that supplies from neighboring countries are secure and military action is successful, initial price spikes will be reversed. But until that time, oil markets could continue to produce economically disruptive prices. As in that earlier period, the US and its allies have strategic stocks, but these are meant to be used only in response to a significant disruption in the oil markets. Moreover, the US SPR holds crude and while it can have a calming effect, it cannot address directly immediate spikes in prices of critical products.

However, the US and its allies can encourage a build-up of stocks now in both crude and critical products that need not involve explicit physical additions of oil to the salt caverns of the SPR. It would be enough simply to put extra crude and critical product on the water, both to remove it from the potential area of conflict and to add to potential

immediate inventories. With OPEC still holding back production, commercial tanker requirements are lower than they will be towards the end of the year, making this option relatively inexpensive.

The table below summarizes spare crude capacity within OPEC ex Iraq as estimated by the Energy Information Administration for the second quarter.

Overall, OPEC ex Iraq spare is estimated at 5.9-6.4 MMB/D, with the upper figure including the additional spare available within 90 days. About 75% of the total is in the Persian Gulf with Saudi Arabia the largest single holder. Significant spare is also held by Kuwait and the UAE, both supportive of US objectives. OPEC's recent agreement to maintain official production levels will lead to tighter markets but the decision also means that high levels of spare will continue for the time being.

OPEC Ex Iraq Spare Capacity EIA Q2 Estimates, MMB/D	
Saudi Arabia	2.6-3.1*
Kuwait	0.5
UAE	0.6
Other Persian Gulf	0.7
OPEC ex Persian Gulf	1.5
Total OPEC ex Iraq	5.9-6.4*

*The lower figure includes Saudi Arabia spare available for sustained production within 30 days. The upper figure includes spare available within 90 days

The latest inventory figures indicate that overall levels are still running ahead of year earlier levels, especially for distillates, the most strategic product. International statistics are only available with a lag. The upper half of the table below show OECD industry oil stocks for end-April as published by the IEA.

Total oil stocks for end-April of this year were 2% above year-earlier levels although differences are not uniform between crude and products. Industry crude inventories were running 1% below year-earlier levels. The gain is in products, especially the middle distillate category, up 7% versus the year earlier.

The more current U.S. data, shown in the lower part of the table, are broadly consistent with the less timely OECD

data. As of June 21st, total U.S. stocks, including the SPR, were up 3% versus end-June of last year. Crude stocks were up 5%. Of the 42 million barrel increase, 31 went into the SPR and the balance went into industry inventories. Distillate stocks were up 13%, where, unlike the broader middle distillate category, distillate in this case does not include jet fuel.¹ Jet fuel stocks were 5% below the end-June 2001 level. Stocks of other products were down 2%. In assessing the US figures it should be kept in mind that

OECD Industry Oil Stocks – Million Barrels			
	End of Month		
	April 2002	April 2001	% Difference
Total*	2,609	2,559	+2%
Crude	917	929	-1%
Middle Distillate	505	471	+7%
Other Products	883	870	+1%
U.S. Stocks	6/21/2002	6/2001	
Total including SPR	1,604	1,563	+3%
Crude including SPR	894	852	+5%
Distillate	129	114	+13%
Jet Fuel	41	43	-5%
Other	541	554	-2%

*Total includes NGLs, refinery feedstocks, additives, oxygenates and other hydrocarbons.

¹ The distillate stock figures do not include the 2 million barrel Northeast Heating Oil Reserve.

demand for distillate and jet fuel has not fully recovered from their post-September 11th declines. In the second quarter of this year, according to EIA latest short-term outlook estimates, distillate demand was still about 2% below year earlier levels while jet fuel demand was down by 7%. Both are recovering. For the third quarter, both distillate and jet fuel demand are projected to be only about 1% below year-earlier levels. In the fourth quarter, jet fuel demand is projected to be up 11% versus the severely depressed year-earlier levels and distillate up nearly 4%. Thus both in terms of current inventory levels and anticipated demand; the time to build strategic stocks is now, before any such activity is in direct competition with commercial requirements.

Conditions for acquiring and positioning strategic supplies are improved by the current availability of middle distillate refining capacity and low VLCC rates. With respect to refining, the reported refinery utilization rate for OECD countries in April of this year was 88%, down from the year-earlier 91.1%. US data for the four weeks ending June 21 show an average utilization rate of 92.9%, down from a 95.4% rate for the comparable four weeks in 2001. Outside of the OECD, there is substantial spare refining capacity in Singapore, where latest refinery utilization rates are between 60 and 65%. There may well be significant spare refining capability elsewhere in Asia and the Middle East. Both factors will become less favorable as tanker requirements move up to transport the higher volumes of OPEC production anticipated for later this while refining activity, particularly for middle distillates will move up to meet higher seasonal demands. As noted earlier, demand will be pushed up by comparison with the economically depressed post-September 11th conditions and by a return toward more normal winter weather in the Northern Hemisphere.

The issue is how to manage such a build-up and placement of strategic supplies while minimizing market impact and cost. During the Gulf War, the U.S. bore the brunt of the military effort, with support from certain allies. Others emphasized financial support or provided needed supplies. Presumably, supporters could help in the process, and with costs, of acquisition and placement of strategic supplies. A key role could be played by Saudi Arabia, which already maintains a strategic product reserve on its own shores. Perhaps they could be persuaded to put significant volumes on their own ships. The process need not involve a change in ownership nor would it necessarily violate OPEC production agreements since none of any increase in production would be for immediate sale to third parties. The U.S. could on its own accelerate the pace of planned purchases of strategic products, thereby raising its own inventory holdings.

It should be kept in mind that the yield of jet fuel from refineries is low, typically under 10%. A sudden, unanticipated increase in jet fuel demand coming on top of the already anticipated return to normal commercial requirements would not only strain the refinery system but also cause a spike in its price. Timely acquisitions now, when capacity is available, would greatly reduce this problem.