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## **Oil Prices: Overview of Current World Market Dynamics**

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Lawrence Kumins  
Specialist in Energy Policy  
Resources, Science, and Industry Division

# Oil Prices: Overview of Current World Market Dynamics

## Summary

During the past three decades, oil prices have varied widely, rising after the 1973 Arab Oil Embargo, and increasing to nearly \$40 per barrel after the 1979 Iranian political upheaval. Prices declined after their 1982 peak, and collapsed in 1985 as a result of declining demand and overproduction by members of the Organization of Petroleum Exporting Countries (OPEC). Oil prices spiked upward when Iraq invaded Kuwait in 1990, but declined after the Gulf Crisis passed. Throughout most of the 1990s, oil prices remained low, declining to \$10 a barrel in early 1999. More recently, however, OPEC found the supply-demand balance in world oil markets favorable for raising prices.

The involvement of Middle Eastern terrorists in the recent attacks on the United States has raised concern that oil production in the region might somehow be affected. Crude oil price initially rose following the attacks. OPEC's reaction to the developing situation will be watched closely.

The four instances in which OPEC has succeeded in administering price increases have all been characterized by excess production capacity lying in the range of about 4 to 5 million barrels per day (mbd) or less. Current markets have produced this condition for OPEC, where its members' idle capacity lies in a range where production quotas have previously succeeded. This level of overhanging capacity, coupled with the pain endured during the 1990s' long drift downward to \$10, has encouraged OPEC to act with more vigor than in the past. Between the beginning of 1999 and the most recent adjustment taking effect in September 2001, OPEC adjusted quotas eight times to successfully pursue a price range of between \$22 and \$28 per average barrel produced by the cartel. As it fine tunes its operations, OPEC is currently focused on a more specific \$25 target.

OPEC faces several challenges in setting production quotas and trying to administer prices. The most immediate is the drop in demand following the events of September. Additionally, OPEC must make room for oil from Iraq, which began to flow in July. While an OPEC member, Iraq is not included in the quota program. Its exports are regulated by the United Nations under the oil-for-food program; squabbles with UN regulators have halted exports several times. Taken together with several members producing in excess of their national quotas, these factors have caused OPEC crude to fall below \$20 per barrel.

At issue is whether OPEC will be able to address these matters and stabilize prices at the \$25 target, or if crude oil prices will revert to the trends of the 1990s.

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# Oil Prices: Overview of Current World Market Dynamics

## Introduction

The United States plays a major role in the world oil market, consuming more than one-quarter of all the oil used on the planet. With declining domestic production and rising demand, the U.S. call on foreign crude supplies has been growing rapidly. In 1991, the United States imported 7.6 million barrels per day (mbd) of crude oil and refined products. Now, a decade later, year-to-date imports have averaged 11.7 mbd, an increase of 54%, or 4.3 mbd.

Just as the United States is a dominant factor in global oil consumption, the Organization of Petroleum Exporting Countries (OPEC) is a dominant factor in world oil supply. OPEC control over supply is imperfect – and it has little influence on demand. It has been able to assert control over prices only when there is no large imbalance between supply and demand, such that it would have to manage a large amount of potential oversupply. There have been four periods when OPEC has enjoyed this confluence of supply and demand and taken advantage of the situation to raise prices above long-term trends. Figure 1 illustrates this.

OPEC is now enjoying such a period. Crude prices have been ratcheted up from \$10 per barrel in early 1999 to a high exceeding \$30 in 2000. Prices are now in flux as OPEC attempts to maintain a \$25 price target. OPEC officials contend that 1 mbd of supply reduction is now necessary to hold a target price that is two and a half times what crude prices were just two years ago.

Does U.S. demand for OPEC oil play a role in OPEC's ability to administer prices? Is the relentless growth in U.S. oil imports placing pricing power in OPEC's hands? Without the increased U.S. call on foreign oil, would OPEC be in a position to even consider establishing a \$25 price? Will OPEC policy be affected by the U.S. response to the September 11 terrorist attacks, or by a possible U.S. recession? This report briefly examines the major parameters of the world oil market to provide perspective on those questions.

## Ramifications of Terrorist Attacks

The involvement of Middle Eastern terrorists in the recent attacks on the United States has raised concern that oil production in the region might somehow be affected. Concerns about supply disruptions resulted in an initial rise in crude oil prices. Called into question is the extent to which these fears are realistic in light of oil market fundamentals and how OPEC might react to the developing situation.

In the immediate reaction to the attack, prices for North Sea Brent crude for prompt delivery surged by \$3.60 per barrel to \$31.05, a nine-month high. In subsequent trading on the International Petroleum Exchange in London, prices backed off \$2 per barrel to \$29.06 for the benchmark Brent crude. Trading for prompt delivery contracts of U.S. West Texas Intermediate crude – a domestic benchmark not traded on Wall Street – were quoted on Bloomberg at \$29.10. This was roughly \$1.25 above the September 7 quote in Platts Oilgram Price Report and consistent with London trading.

OPEC reacted to the attacks with assurances of price stability. Bloomberg Energy News reported:

“OPEC’s members are prepared to use their spare capacity, if deemed necessary,” to smooth prices, Secretary General Ali Rodriquez said in a statement after the U.S. attacks. “All member countries remain committed to strengthening market stability and ensuring that sufficient supplies are available,” he said.

As Table 2 on page 8 below shows, OPEC currently has about 5 million barrels per day in spare productive capacity. Over half is in Saudi Arabia (see Table 3). It appears that enough unused capacity exists to stabilize any likely price spike that might occur as a result of the attacks and subsequent events. Iraq – the 11<sup>th</sup> member of OPEC – is not included in Table 1 because it has no quota and exports are controlled by the United Nations.

In addition to early concerns about global crude oil prices, there were sporadic reports of very high retail gasoline prices. CNN.com/U.S. reported price increases in Oklahoma City and Indianapolis,<sup>1</sup> and lines at gas stations in the southeastern United States. But documentation of these price concerns is thin. CNN notes:

Some consumers suggested gas station owners were taking advantage of a bad situation. The American Petroleum Institute, representing the petroleum industry, echoed that thought.

Retail gasoline prices have been extremely volatile since the start of 2000, with a tight supply-demand balance, refinery capacity and outage issues, and pipeline transport difficulties contributing to the situation. And since September 11, gasoline prices nationwide have declined significantly, falling from \$1.55 per gallon to \$1.28 in late October.

## **Oil Prices – Supply, Demand and OPEC**

As with other internationally traded commodities, the prices for crude oil are determined on world markets by the interaction of supply and demand. Demand is

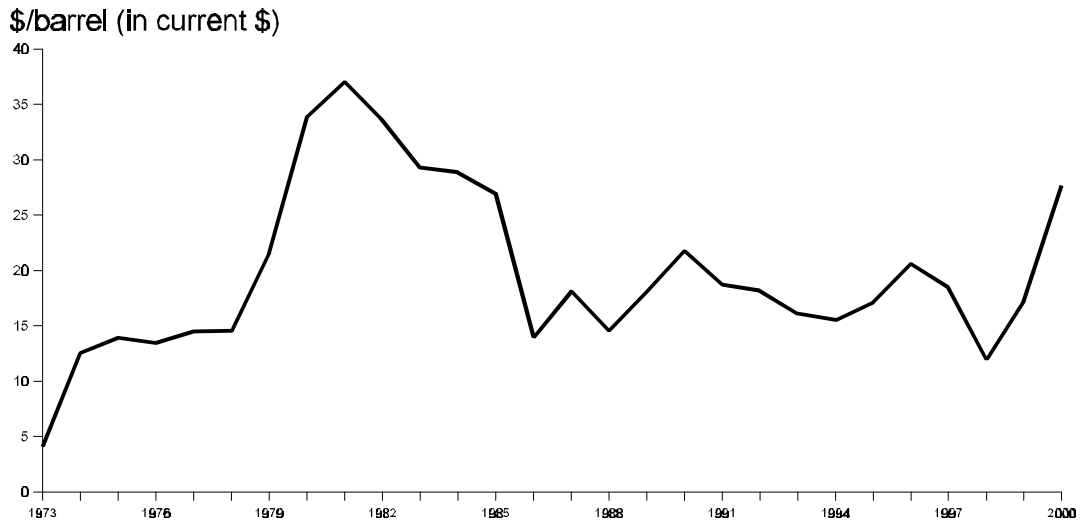
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<sup>1</sup>*Gasoline prices skyrocket in some parts of the country*, Sept. 12, 2001. Posted at 8:10 AM EDT.

determined independently by consumers globally, as they respond to their needs for oil at its prevailing price. Supply is determined by a diversity of producers, who attempt to meet the world's needs in the context of prevailing prices. If more oil is demanded than supplied, the price will rise; if more is supplied than demanded, the price will drop. In a competitive market, all three factors — supply, demand and price — fluctuate as supply and demand levels are constantly adjusted in trying to reach an ongoing dynamic balance. During recent years, this process of adjustment has resulted in very volatile prices.

In the case of crude oil, the OPEC cartel — an organization of 11 countries that hold nearly 80% of the world's proven oil reserves and over 40% of currently available production capacity — attempts to set target oil prices. The extent of OPEC's actual influence on the world oil market is the subject of some debate. Some hold that OPEC has little influence on crude prices because it has no control over demand and because there are a number of large unaffiliated oil producers around the globe. Furthermore, such skeptics about OPEC price hegemony point to the difficulty OPEC has faced in asserting production discipline over its own members. During its three decades as a significant entity, the cartel has frequently faced dissension among its members on setting petroleum output levels, and once output has been agreed upon, members have chronically overproduced.

Figure 1 traces the history of prices paid by U.S. refiners for imported crude since the Arab Oil Embargo of 1973-74. Imports are highlighted because — as the incremental source of supply — they tend to set prices for all petroleum consumption. The graph below shows four periods during which oil prices took a significant step up. Each of the first three are associated with a political event that reduced the amount of production capacity available to supply the world market. With the current situation, there is no political catalyst supporting OPEC. But the supply-demand fundamentals may be stacking up in a way that makes cartel pricing more easily administered.

**Figure 1. Crude Prices for U.S. Imports, 1973-2000**

Source: *Monthly Energy Review*. Table 9.1 Refiner Acquisition Cost of Imported Oil.

Events reflected on the graph are:

- Arab Oil Embargo.* At the outset of the embargo in 1973, Arab producers announced a 25% reduction in petroleum output. Subsequent events involved the eventual nationalization of oil production in most OPEC countries. Oil prices increased three-fold.
- Iranian Political Upheaval.* In 1978, protests in Iran led to a succession of events which would lower Iranian oil output by 75% by year-end. In early 1979, the Shah left Iran, never to return. Trade with Iran was halted; the United States had received 10% of its foreign oil supply from Iran. Iran's 5.5 million barrels per day (mbd) of exports essentially ceased. Price impacts reverberated for several years, ultimately resulting in U.S. crude prices more than doubling, before falling sharply in 1985.
- Persian Gulf Crisis.* Iraq invaded Kuwait in 1990, ultimately resulting in the cessation of exports from both countries. Extra supply from other countries quickly reduced a fly-up in worldwide prices, so that the full-year average price registered an increase of only 20%. After the war, production increased and prices averaged just under \$18.00 for the bulk of the 1990s.
- OPEC Asserts Market Power.* After averaging \$12.04 for all of 1998, when oil demand was reduced by a major financial crisis, prices returned to the 1990s trend line only to continue higher. They averaged \$27.69 for the full year 2000. The underlying market forces causing this price rise are still being debated, but there has been no political event to which this can be attributed.

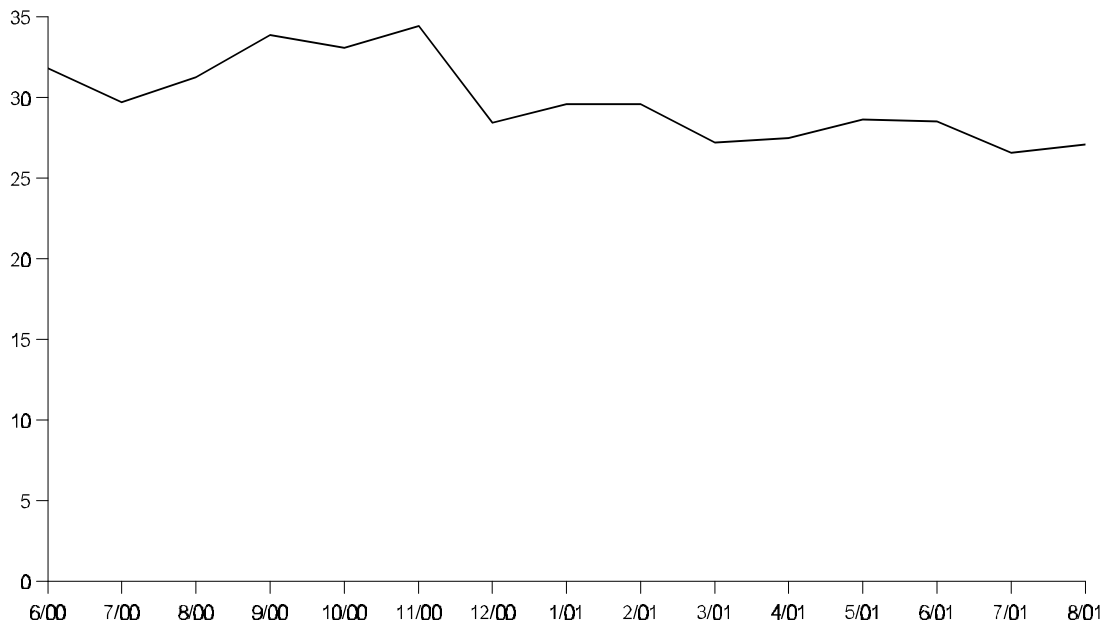
With regard to the most recent episode, which is still unfolding, it may well be that OPEC's unused productive capacity — estimated by EIA at 4 mbd<sup>2</sup> — is so small that the cartel can manage the supply situation well enough to administer price levels. By the same token, the earlier OPEC-engineered price hikes were also associated with supply situations in which the amount of productive capacity held off the market was in the range of 4 mbd or less. This could be the amount that OPEC can manage. Greater amounts of idle reserves may be difficult to keep capped, because some cartel members may face too much temptation to earn additional revenue by exceeding their production quotas.

## Recent Crude Prices

Comprehensive data on crude prices actually paid by refiners for the crude oil they purchase are collected with a few months' time lag. In order to assess crude price trends as developments occur, spot crude prices for West Texas Intermediate (WTI) are used. This price data series is available in real time, but it is not directly comparable to the data in Figure 1 above.

WTI prices are an internationally accepted reference point for the pricing of many different types of crude traded in transactions around the world. Absent current figures on the actual prices U.S. refiners are paying for imported crude, Figure 2 outlines the June 2000 – October 2001 crude price path. It shows increasing crude prices headed into the beginning of winter, a drop in December 2000, and continued erosion through summer.

**Figure 2. Spot Crude Prices, West Texas Intermediate,  
June 2000 to August 2001  
(\$/barrel)**



Source: *Weekly Petroleum Status Report*. Table 13 – Spot Market Postings at Cushing.

<sup>2</sup> Energy Information Administration, *OPEC Fact Sheet*, June 7, 2001. Page 1.



Oil prices appear to be in decline, but they are influenced by a number of strong crosscurrents, making interpretation (and extrapolation) of near-term trends difficult. At this writing, it is very hard to make a guess as to the direction of petroleum prices for the next few months. Factors at issue are the September 2001 OPEC quota, the amount of above-quota production from members producing more than they agreed too, and the response of Iraq to the five-month extension of the U.N. "oil for food" program made on July 5. By August, Iraqi output fully resumed at high levels and the resulting supply to world markets is contributing to October's low price situation, highlighting the overproduction of some OPEC members.

On the demand side, some question if the slow but steady growth in demand will be affected by weakening economic growth. Major industrial economies globally may be starting to falter, and whatever effects might result from slower growth have not as yet revealed themselves in oil demand figures. But the outlook for growing demand should be viewed as clouded until global economic trends become more clear.

## Has OPEC Gained Pricing Traction?

Since the start of 2000, OPEC has changed quotas much more frequently than in the past and by larger amounts. Table 1 shows the aggregate quota for the 10 OPEC members participating in the quota program. Quotas have changed eight times in 20 months, with quota adjustments spanning a fairly large 4 mbd range.

**Table 1. OPEC 10 Crude Production Quotas,  
January 2000 to September 2001**

Quota Date	Quota Amount (mbd)
1/00	23.0
4/00	24.7
7/00	25.4
10/00	26.2
11/00	26.7
2/01	25.2
4/01	24.2
9/01	23.2

**Source:** OPEC Fact Sheet, July 6, 2000, page 3. 9/01 figure from OPEC Press Release No. 17/2001, July 25, 2001

Comparing these data with the prices in Figure 2, it seems as though the January 2000 quota was low enough to support substantial price increases. Complaints from consuming nations, as well as producer concerns about

contributing to a worldwide economic slowdown that could hurt long-term energy demand, resulted in a succession of four quota increases during 2000. But weaker prices during 2001 were met with three quota reductions in a row (including the September cut now being implemented), as OPEC responded to what appears to be diminished world crude demand.

Stated OPEC pricing policy (ratified at the January 17, 2001, OPEC meeting) is to keep prices for the cartel's "basket" of crudes within a band of \$22 to \$28 per barrel. OPEC is more concerned about the downside of the price range. When prices are below \$22 for 10 days, cuts of 500,000 barrels per day are specified. But these measures are not automatic; they require OPEC approval on a situation-by-situation basis. Informal discussion indicates the price band may be evolving into a \$25 target,<sup>3</sup> suggesting OPEC is becoming more confident in its ability to control prices. But at this point there has been no formal agreement by the members of the cartel on a single-number price target.

OPEC's target prices represent sales in producing countries, and do not include transport costs to refinery markets. Additionally, some lower-quality oils are included, so they are not comparable on a dollar-for-dollar basis with the landed cost of imports in the United States or with other domestic crude prices. A rough rule of thumb is that the OPEC crude "basket" price differential compared to NYMEX crude is \$2.50 per barrel. For example, in late October, NYMEX crude traded in the \$22.50 range and the OPEC average price was roughly \$20.00.

Table 1 shows that OPEC adjusted quotas eight times in less than two years. This suggests a great deal of effort is being applied to quota-market synchronization. And it appears as if OPEC's efforts have borne fruit, since the cartel has succeeded in maintaining high prices for nearly two years.

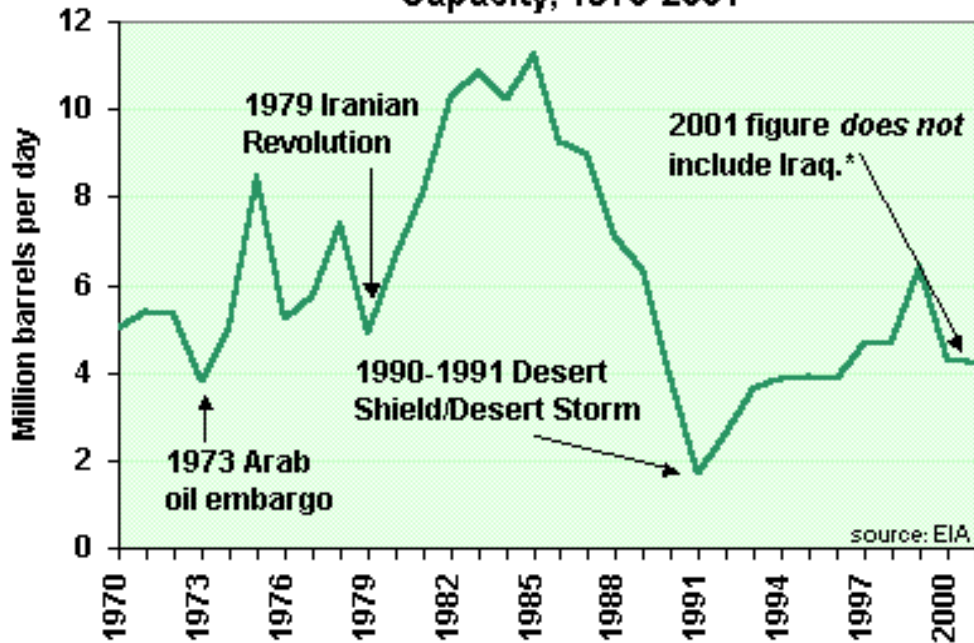
## **Can OPEC Maintain Quota Discipline?**

At least from the start of 2000, and through mid-2001, OPEC appears to have successfully maintained prices at levels well in excess of those prevailing during the post-Persian Gulf Crisis years of the 1990s. Part of the cartel's success may well stem from the fact that excess oil production capacity worldwide is now nearly as low as it was during the 1973 Arab Oil Embargo, with the exception of a brief period associated with the Gulf Crisis (Desert Storm/Shield on Figure 3). The smaller amounts of surplus capacity are more easily kept off markets than larger surpluses, and OPEC's success in administering prices is related to preventing surplus capacity from becoming surplus flowing oil and greater supply.

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<sup>3</sup> "OPEC to maintain output levels: Rodriquez." *Platts Oilgram News*, September 7, 2001. p 3.

**Figure 3**  
**World Excess Oil Production**  
**Capacity, 1970-2001\***



\*Note: All datapoints are annual averages, except 2001 (4.2 mmb/d), which is for the second quarter of 2001 and does not include Iraq.

Source: EIA *OPEC Fact Sheet*, June 7, 2001.

Table 2 below focuses on some key capacity data points in this chart that are associated with inflection points in the price trend. Taken together with Figure 3 above, it shows that OPEC succeeded in administering price increases during periods when there was not a great deal of surplus capacity. It may well be that the

**Table 2. OPEC Spare Production Capacity During Price Hikes (mmb/d)**

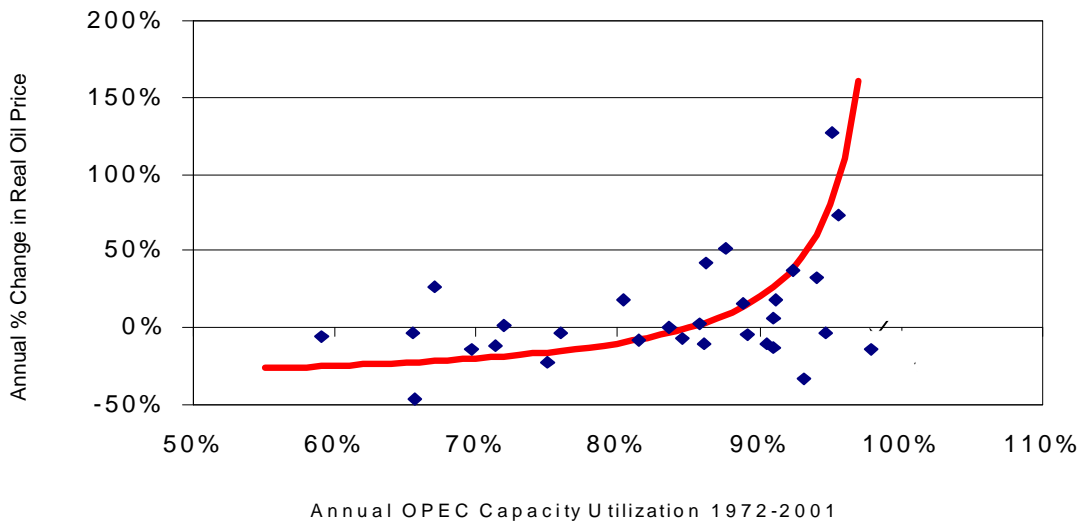
Year	Spare Capacity
1973	3.8
1979	4.9
1991	1.7
2001	4.6

Source: Unpublished EIA data received by author via E-mail communication.

2001 amount of excess capacity is such that OPEC can administer quotas and maintain prices at this year's high levels. However, market conditions after September 11 may present challenges to those wanting to administer high prices.

While not shown in Table 2 – but depicted on Figure 3 – price declines are associated with large amounts of excess capacity. The most graphic example here is the large price drop in 1985, which is linked to 11.2 mbd of excess capacity. graphically. This relationship is not mathematically precise, as the trend line drawn by the Deutsche Bank analysis suggests. But it is strongly suggestive that a

**Figure 4. Oil Price Changes and Annual OPEC Capacity Utilization, 1972-2001**



Source: IEA, DOE, Deutsche Bank estimates

Figure 4 illustrates that the relationship between price and spare capacity linkage does exist.

Table 3 shows data from *Platt's Oilgram Price Report* showing recent months' output and quotas for each of the OPEC members, except for Iraq (which has no quota).

**Table 3. OPEC Members September 2001 Output vs September 2001 Quota (mbd)**

Country	September Output	September Quota	Quota Exceeded By	Total Capacity
Algeria	0.810	0.741	.069	.975
Indonesia	1.200	1.203	(.003)	1.250
Iran	3.650	3.406	.244	3.910
Kuwait	1.970	1.861	.109	2.200
Libya	1.350	1.242	.108	1.550
Nigeria	2.220	1.911	.309	2.300
Qatar	0.660	0.601	.059	.735
Saudi	7.800	7.541	.259	10.000 to 10.500
U.A.E.	2.070	2.025	.045	2.650
Venezuela	2.700	2.670	.030	3.100
<b>Totals</b>	<b>24.430</b>	<b>23.201</b>	<b>1.229</b>	<b>28.670 to 29.170</b>

**Source:** *Platt's Oilgram Price Report*, Sept. 11, 2001, page 1 and *EIA OPEC Fact Sheet*, September 6, 2001, page 6.

As the figures in Table 3 indicate, in August the 10 members with quotas produced 1.2 million barrels per day more than they will be allowed to produce under their September quotas. Nearly all members exceeded their quotas, some by relatively small amounts. But Iran, Nigeria and Saudi Arabia overproduced significantly, accounting for three-quarters of the excess, an amount of roughly 800,00 barrels per day.

Spare capacity – viewed relative to the September quota rather than actual amounts produced – is estimated in a range of 5.5 mbd to 6.0 mbd. The range is used by the Department of Energy (DOE) because Saudi Arabian output can be ramped-up by an additional 0.5 mbd, given 90 days of lead time. Saudi Arabia holds about 2.5 mbd to nearly 3.0 mbd of above-quota production capacity. Iran holds over 500,000 barrels per day and the U.A.E. and Venezuela 625,000 and 430,000 barrels per day of over-quota capacity. Other OPEC members have smaller amounts.

To the extent that extra capacity stays within the general magnitude of past experiences where OPEC was able to manage output, the price target may be

defended. But can OPEC manage over 5.5 to 6.0 mbd of actual or potential above-quota supply and maintain a \$25 price? Will a weakening global economy – and the September 11 aftereffects – reduce oil demand? And can exports from Iraq (not included in the quota) be accommodated? Only the passage of time will provide answers. But, while the OPEC basket held in the \$25 area through mid-September, it fell below \$20 by late October, with U.S. crudes following suit.

EIA suggests that, based on previous behavior, the September production quota will not be met.<sup>4</sup> This contention is based on the fact that OPEC has, from time to time – including earlier in 2001 – overproduced stated quota levels and still achieved desired price targets.

## **Uncertainty About Iraq**

Iraq exports oil under U.N. Resolution 986, the so-called oil-for-food program. Res. 986 revenues are paid to the United Nations for subsequent disbursement for approved purchases and war reparations. Res. 986 exports are not limited in volume; Iraq can export as much as it chooses. The Res. 986 export program is extended for 6 month periods. Periodically, Iraq and the United Nations disagree over ancillary terms and conditions, and Iraq has halted oil-for-food exports. Most recently, Iraq halted Res. 986 exports on June 4, 2001, as the result of a dispute with the United Nations concerning direct cash payments for some portion of oil sales. Exports under Res. 986 resumed in July. For the year 2000, Iraq had been producing 2.6 mbd – and exporting as much as 2.0 to 2.2 mbd during periods of “normal” exports, that is in periods when Iraq was exporting at full capability and not withholding oil during negotiations with the U.N. over the oil for food program.<sup>5</sup>

During the first part of 2001, Iraq exports reached 2.6 mbd in some weeks. In addition, Iraq exports just under 100,000 barrels per day to Jordan (with U.N. approval). Other cross-border exports of oil – which are not U.N. approved – to Syria, Iran, and Turkey may total 400,000 barrels per day. Either by displacing other oil these countries might have imported or by transiting into world markets, this smuggled oil adds to global supply.

By August 2001, Iraq had ramped production up to 2.9 mbd<sup>6</sup>, suggesting the likelihood of again reaching old export amounts.

## **Managing OPEC Supply – A New Challenge?**

With the full stream of Iraqi oil on line, it is likely that OPEC production – Iraq is the 11<sup>th</sup> member, although it has no quota – will need adjusting to

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<sup>4</sup>EIA, *OPEC*, September, 6 2001, page 1

<sup>5</sup>EIA, *Iraq*, May 2001, page 3.

<sup>6</sup>*Platts Oilgram News*, OPEC August output up almost 1-mil b/d. September 11, 2001, page 3.

accommodate the renewed supply and to maintain price targets. With prices having fallen (absent Iraq's Res. 986 exports) from mid-June to mid-July of 2001, it seems that the 10 OPEC quota members will have to roll back the 849,000 barrels per day by which they have been exceeding their quotas, and further reductions in their output may need to be made to accommodate Iraqi production.

World oil prices, as Iraq exports came back on line in July, fell into the lower \$20s, and threatened to decline further. On July 19, 2001, OPEC President Chakib Khelil expressed worry about low prices and weak demand, indicating he was arranging a meeting of cartel members to lower output by 1 mbd.<sup>7</sup> At the same time, Platts quotes an unnamed Saudi source:

Our position is clear. We will work to keep the market at the targeted price of \$25/bbl. If there is a need to cut, we will do it.<sup>8</sup>

OPEC President Khelil's concern over a reading of \$23.46 per barrel for the OPEC basket as of July 24 trading prompted the above statement.<sup>9</sup> This statement announced the apparent success of a specific price target, and articulated a shift in de facto policy to support this level, the broad \$22 to \$28 – while official policy – having been rendered obsolete by better management of quotes and more regular adjustments to track apparent demand. For the first 8 months of 2001, *Platts* notes that the “OPEC basket” of crude averaged \$24.75.

Proving that it would defend prices, on July 25, 2001, OPEC announced a 1 mbd cut in member quotas, reducing target output for the 10 quota nations to 23.2 mbd, effective September 1. The press release also “recognized and expressed appreciation of the support being extended to OPEC by the Government of Mexico” – not an OPEC member and an important source of U.S. crude. Mexico announced a 70,000 barrel per day production cut on July 24.

Rising winter demand may help OPEC in its efforts to support prices. The world is transitioning into the normal heating season inventory build-up. Crude price firmness through August and into early September – with prices for WTI in the \$27 area – suggested OPEC had balanced supply and demand at least for that time frame. But the economic fallout from the terrorist events of September 11, as well as the full impacts of Iraq oil supply in the marketplace, is pointing toward lower than expected oil demand. OPEC's overproduction is clearly impacting prices, and it is open to question whether OPEC can manage its own members' output, deal with Iraqi production that has recovered to its previously high levels of 2.9 mbd, and manage as much as 6.0 mbd in productive capacity that must be kept off the market in order to stabilize prices at target levels.

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<sup>7</sup>Platts Oilgram Price Report July 20, 2001, *Khelil to call emergency OPEC meeting*, page 1.

<sup>8</sup>Platts Oilgram News, July 20, 2001, *OPEC considers meeting*, page 5.

<sup>9</sup>Platt's Oilgram Price Report, July 26, 2001, *OPEC cuts 1-mil*, page 1.

## A Note on World Oil Demand

Estimating world oil demand is a difficult process because few countries collect data as systematically, and in as timely a manner, as the Organization for Economic Cooperation for Development (OECD) nations. Statistics for much of the world's oil consumption are not actually measured for as long as two years, during which analysts and policymakers rely on estimates of undetermined accuracy. For OPEC decision makers attempting to match supply with demand to maintain a target price, lack of real-time hard data makes adjusting supply to match demand an uncertain exercise.

The accuracy and timeliness of demand data are currently at issue. The International Energy Agency (IEA) in August raised its demand estimates, going back to 1999, based on the fact that actual demand had been higher than previously tallied. Upward revisions to estimated future demand for the second half of 2001 and all of 2002 were also called for.

In reporting the new forecasts, Platts Oilgram News noted:

The upward revision for world demand is the first since late last year, when the agency began paring its demand forecasts to account for the impact of rising prices. Until May, the IEA had cut its demand forecasts six times, by a cumulative total of over 1 million barrels per day.<sup>10</sup>

One million barrels per day is the same amount by which OPEC has indicated it would reduce output on September 1. While appearing to be a small amount in comparison to the 76.4 mbd global average consumption for 2001, a 1 mbd amount is sufficient, in OPEC's estimation, to ramp-up oil prices by \$3 per barrel (from the \$22 low-end of the basket to the \$25 target).

OPEC was aided in its success in raising prices during 1999 and 2000 by the fact that demand was actually stronger than statistics showed, reflecting stronger than expected consumption. And the revised statistics<sup>11</sup> released in August show continued growth for the first half of 2001, which is forecast to continue into 2002. Oil demand for the full year 2001 is forecast to increase by 500,000 barrels per day, and in 2002 by 800,000 barrels per day. While these represent small rates of increase, they are nevertheless increases and not declines. And the amounts of oil are significant – each demand increment eases OPEC's task of managing its members' output.

Table 4 below shows IEA's August 2001 estimate of world demand for last year, this year, and 2002. These data show slow but steady annual demand growth. Since they are annual data, they tend to average out seasonal swings in demand and inventories. Table 4 also shows changed perceptions of demand growth, reflecting new information that demand had been stronger during 2000 and the first half of 2001 than had been previously estimated. The down-turn in world

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<sup>10</sup>Platts Oilgram News, August 13, 2001. "IEA, in switch, raises estimate for oil demand." Page 1.

<sup>11</sup>International Energy Agency. Monthly Oil Market Report, August 10, 2001. Page 4.



economic activity has not been reflected in lower oil demand, at least at this point in time.

The revised historic data (for 2000) called for an upward revision of projections for 2001 and 2002, and these revisions are shown in the last column below. Note that the revision for 2001 increased demand growth from 100,000 to 500,000 barrels per day, a significant change in amount as well as perception. The changed outlook suggests growing – rather than stagnant – world crude demand.

**Table 4. IEA World Crude Demand Estimates, 2000 to 2002**  
(mbd)

Year	Annual Demand	Annual Increase	July Revision
2000	75.9	0.6	+ 0.3
2001	76.4	0.5	+ 0.4
2002	77.2	0.8	+ 0.4

**Source:** IEA *Monthly Oil Market Report*, Aug. 10, 2001, page 4.

To a large extent, the higher demand figures have supported a combination of higher prices and more OPEC output, helping to explain why OPEC has been able to date to hold prices in the higher part of the target price band.

Of special interest is the annual change in U.S. demand, as measured volumetrically, in barrels per day. The EIA's Short-Term Energy Outlook, July 2001, contains estimates of U.S. demand for the full year 2001 and 2002. EIA notes:

Total petroleum demand in 2001 is projected to climb 220,000 barrels per day from that of the previous year, followed by a further increase of 280,000 barrels per day in 2002.

These increases follow an increase of about 180,000 barrels per day between 1999 and 2000. Comparing these figures to the amount of revision shown in Table 4, it can be seen that U.S. demand increases – actual and forecast – account for more than one-third the increase in global crude demand. The United States consumes roughly one-quarter of the world's crude.

How these revised perceptions of demand will hold up against declining economic activity in the U.S. and abroad – as well as the direct impact of September 11 on petroleum demand – remains an open issue. To date, lower economic growth has not affected oil demand, although many analysts expect that it is happening now.