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Series: Sununu, John, Files
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OA/ID Number: 29191
Folder ID Number: 29191-002

Folder Title:
Watkins (Energy) (1990) [1]

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The Secretary of Energy
Washington, DC 20585

October 31, 1990

THE CHIEF of STAFF
has seen

MEMORANDUM FOR THE HONORABLE JOHN SUNUNU
CHIEF OF STAFF TO THE PRESIDENT



THE HONORABLE BRENT SCOWCROFT
ASSISTANT TO THE PRESIDENT
FOR NATIONAL SECURITY AFFAIRS

SUBJECT: STRATEGIC PETROLEUM RESERVE TEST SALE-90
SITUATION REPORT #6

John:

This is to provide you a summary of the most recent SPR Test Sale events.

1. On October 29, the second and third Test Sale-90 crude oil deliveries took place as scheduled. Shell Oil received 95,000 barrels and Ultramar received 75,000 barrels via pipeline at the ARCO Terminal in Texas City, Texas.
2. The next Test Sale-90 deliveries are scheduled for November 1 to Marathon (75,000 barrels) and Amoco (200,000 barrels) via the Capline pipeline at the St. James Terminal in St. James, Louisiana.
3. SPR crude oil sales prices are based on an index of spot market prices for domestic crude oils during a 5-day period surrounding the day of delivery. The first Test Sale-90 delivery of October 19 took place at a price of \$27.07 per barrel, a price that reflects the temporary drop in prices that took place in the oil market.
4. The remainder of Test Sale-90 deliveries are scheduled to take place by November 30. The current schedule is attached. Changes in schedule may take place if requested by buyers.

Future planned event and date is as follows:

o Deliveries at Contracted Rate Occur November 1-30

I will continue to keep you advised of the progress of this test as deliveries take place. Thus far, all planned drawdown milestones have been achieved by the time planned and without difficulties.

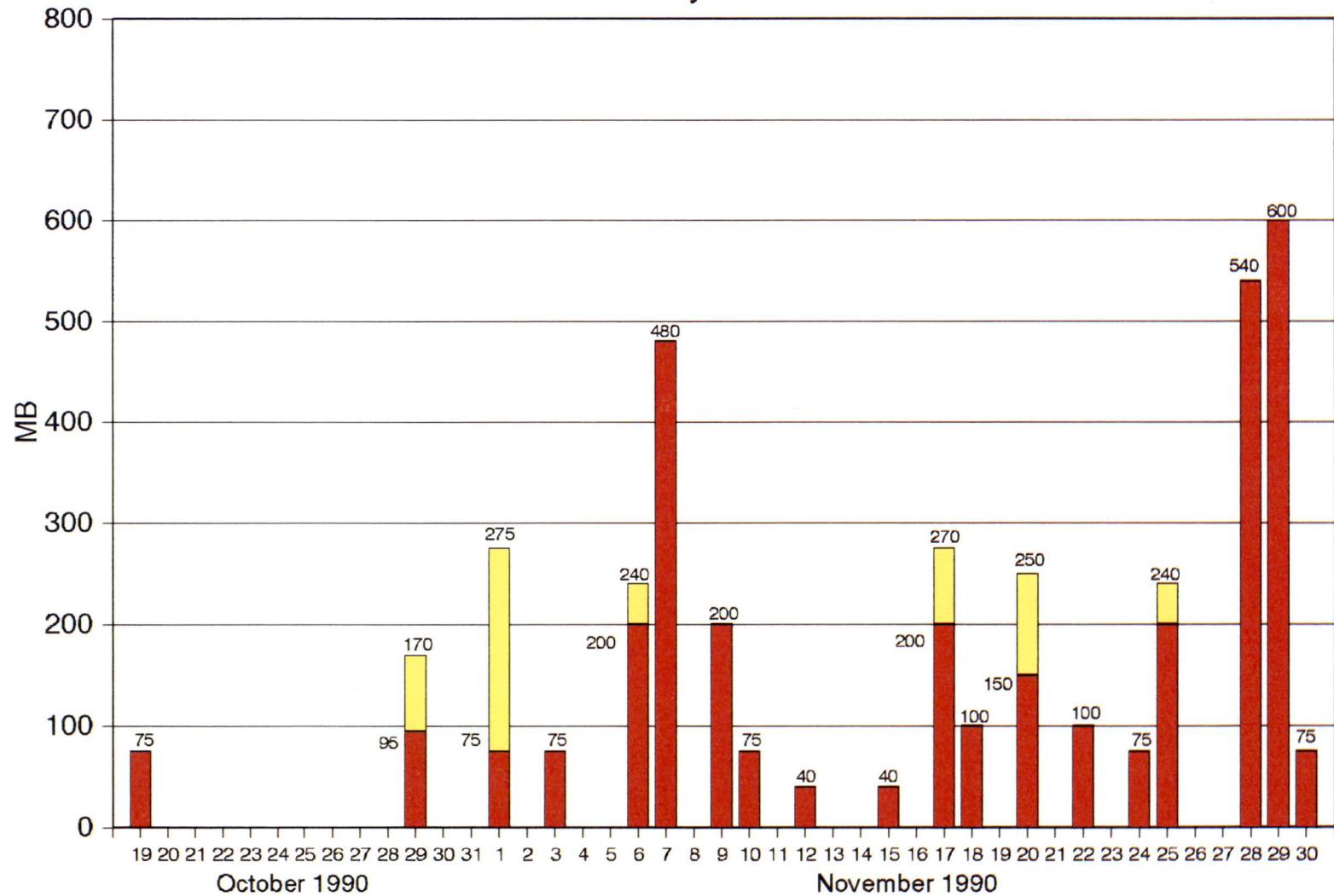

James D. Watkins
Admiral, U.S. Navy (Retired)

Attachment

STRATEGIC PETROLEUM RESERVE

Test Sale - 90

Delivery Schedule



Note: 1) Schedule as of 10/29/90; subject to change

2) Color represents separate deliveries on same day to different buyers

SPR 1979a

Withdrawal/Redaction Sheet

(George Bush Library)

Document No. and Type	Subject/Title of Document	Date	Restriction	Class.
01. Memo	From James Watkins to John Sununu Re: Shoreham Update (1 pp.)	11/30/90	P-5	

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 By JP (NLGB) on 5/12/05

Date Closed: 12/14/2004	OA/ID Number: 29191-002
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Re-review Case #: 2005-0426-S	Appeal Disposition:
P-2/P-5 Review Case #:	Disposition Date:
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AR Disposition:	MR Disposition:
AR Disposition Date:	MR Disposition Date:

RESTRICTION CODES

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The Secretary of Energy
Washington, DC 20585

November 30, 1990

THE CHIEF of STAFF
has seen

MEMORANDUM FOR THE HONORABLE JOHN H. SUNUNU
CHIEF OF STAFF TO THE PRESIDENT

SUBJECT: SHOREHAM UPDATE

I thought you would be interested in an update on our most recent actions in opposition to the Shoreham decommissioning.

In early November, the Department of Energy filed comments with the Nuclear Regulatory Commission (NRC) in support of the position in our earlier letters that an Environmental Impact Statement is required before the NRC takes any action, including the issuance of a "possession-only" license, which could lead to the plant's decommissioning. Mike Deland also filed very helpful comments in support of this position.

On November 28, 1990, Deputy Secretary Moore sent a letter to the NRC, opposing a proposed amendment to the operating license as piecemeal decommissioning. This amendment would allow the Long Island Lighting Company to remove and ship fuel support castings and core peripheral pieces to a low-level radioactive waste disposal repository in South Carolina.

Finally, in response to a letter from Governor Cuomo regarding Federal permits for the Iroquois natural gas pipeline project, I sent the attached response. In this letter, I noted the progress made in obtaining expedited consideration of pipeline projects (including Iroquois) and urged him to apply the standards set forth in his letter -- energy security and environmental quality -- to reconsider his opposition to Shoreham.

A handwritten signature in dark ink, appearing to read "Jim Watkins", is written over the typed name.

James D. Watkins
Admiral, U.S. Navy (Retired)

Attachment



The Secretary of Energy
Washington, DC 20585

November 29, 1990

The Honorable Mario M. Cuomo
Governor of New York
Albany, New York 12224

Dear Governor Cuomo:

Thank you for your letter concerning the consideration by the Federal Energy Regulatory Commission (FERC) of the Iroquois pipeline project. As you are probably aware, FERC granted its certification for the project on November 14, 1990. The Department of Energy issued its final approval of the related import applications on November 15th. While we understood your concern over FERC's decision in late July to hold an expedited hearing, FERC was able to meet its schedule which corresponded closely with the Canadian regulatory timetable. The project's sponsors have indicated that they expect to be able to begin service on November 1, 1991, as scheduled.

I have made known to FERC the Department's keen interest in the expeditious consideration of all pending gas pipeline projects, and we are working with FERC to identify any pending cases that could be processed more quickly. We are also looking at this issue as part of our National Energy Strategy. We believe that FERC is moving as quickly as it can to consider all of these projects.

One such project was certified by FERC on September 12th. This project, referred to as the Niagara Import Point Project (NIPP), will result in an additional 346,400 Mcf per day of Canadian and domestic natural gas that will serve the Northeastern U.S., including New York. This gas has the potential to displace 56,500 barrels of fuel oil per day. In addition, NIPP should be able to begin delivering at least a portion of its gas during the 1990-1991 heating season. I am pleased to note that the Department of Energy issued final approval of the related import applications for this project within two weeks of the FERC action.

I agree with the statement in your letter that "increased use of natural gas is a key strategy to reduce dependence on imported oil and to lower air emissions." Our work on the National Energy Strategy and the recent events in the Middle East have demonstrated the need to utilize all of our Nation's energy resources--coal, natural gas, oil, hydro, nuclear and the full

range of renewables and conservation technologies. I would urge you to apply the standards set forth in your letter--energy security and environmental quality--to reconsider your opposition to the Shoreham nuclear powerplant.

From every policy perspective, operating Shoreham makes more sense for the people of Long Island, the Northeast region and the Nation than destroying this plant. The energy security and environmental quality benefits of Shoreham are clear. Nevertheless, you have often cited safety and economics as reasons for your opposition to this plant. With respect to safety, the Nuclear Regulatory Commission (NRC)--the agency that is best suited and is in fact charged by law with making these decisions--completely endorsed the safety of the Shoreham nuclear powerplant. After a thorough and exhaustive process, the NRC issued a full power operating license for Shoreham, reaffirming its confidence in the safety of Shoreham and the viability of the evacuation plans in the unlikely event of an accident requiring off-site measures.

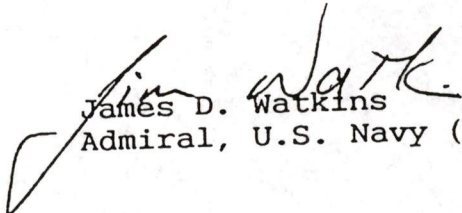
On the issue of economics, under the New York State plan, much of the cost of Shoreham (over \$4 billion) has been added to the rate base even though the ratepayers will not get the benefits of Shoreham's power. Over the life of the plant, operating Shoreham will be cheaper than tearing it down and paying to build replacement power. To the extent that economic alternatives are available, such as conservation measures and Canadian hydropower, these alternatives should be used in conjunction with Shoreham to displace more polluting and less secure oil-fired generation. In 1989, utilities in New York State consumed more than one-fourth of all of the oil used for electricity generation in the United States.

Recently, New York State officials have focused on "converting" Shoreham to natural gas. While this may be cheaper than building a new gas-fired plant, it would still be more expensive than operating Shoreham. The "conversion" has been estimated to cost \$485 million just to build a gas-fired plant of equivalent generating capacity according to a recent New York State-sponsored study. In addition, we estimate that the cost of the natural gas fuel alone would exceed the cost of operating the fully-built Shoreham plant. Since firm capacity on Iroquois is already almost completely subscribed, providing gas for a converted Shoreham would also require further expansion of pipeline capacity. I am hard pressed to find sufficient justification for imposing these additional costs on the residents of Long Island.

The study on converting Shoreham serves to confirm what I have said before--under the New York State plan, the residents of Long Island will pay for Shoreham three times: once to build it, once to tear it down and once to replace it.

The current fate of Shoreham stands in marked contrast to Seabrook, which was opposed by Governor Dukakis on similar concerns. Today, Seabrook is operating safely and without emissions, generating about 6.8 billion kilowatt-hours of electricity each year for New England and displacing roughly 11 million barrels of oil a year. It is time to allow Shoreham to do the same.

Sincerely,



James D. Watkins

Admiral, U.S. Navy (Retired)



OFFICE OF THE SECRETARY

FACSIMILE TRANSMITTAL SHEET

DATE 8 AUGUST 1990

TO Gov. JOHN SUNUNU

FAX NUMBER 456-2397

OFFICE NUMBER _____

COMMENTS ATTENTION: JACKIE

FROM W. HENSON MOORE - DEP. SEC. OF ENERGY

FAX NUMBER _____

OFFICE NUMBER 586-5500

NUMBER OF PAGES INCLUDING COVER 3 -

MEMO TO JOHN SUNUNU

SUBJECT: Potential for Increasing Alaska North Slope Production

Production from the North Slope at the beginning of August was 1.81 million barrels per day (MMB/D). This was reduced to 1.71 MMB/D on August 6 due to the start of maintenance operations in the Endicott Field. Although the fields are currently operating near their engineering limits, production could be increased by 400,000 B/D within 30 days primarily by flaring gas that is now reinjected to maintain reservoir pressure. Combining this with a delay in scheduled maintenance could result in maximum production of 2.2 MMB/D. This production would be constrained by a maximum flow capacity of the Alaska pipeline (TAPS) of 2.1 MMB/D.

Scheduled maintenance operations are due to reduce TAPS throughput to an average of 1.66 MMB/D between now and the end of September. A schedule of maintenance operations and TAPS flow is attached. Foregoing portions of this maintenance would raise near-term production levels, but could result in higher winter maintenance costs, possible safety concerns, and longer term loss of production. Delay of preventative maintenance on pumps, lines, etc. would increase risk of system problems, especially if throughput is increased to the design maximum. The best snap judgment call available as to the significance of the safety risk is that foregoing of maintenance until next year would not produce an unacceptable level of risk. Risk of long term loss of production translates into potential loss of 90,000 B/D beginning in 1991. Risk of system problems is also judged to be at an acceptable level.

Flaring Prudhoe Bay gas would allow an increase in near-term oil production of 400,000 B/D. However, it would cause longer term decreases in production and total recovery. The gas is currently used to maintain reservoir pressure for optimum recovery. A decrease in pressure would eventually result in a decrease in production because of a loss of reservoir energy that pushes the oil to the wells. The economic limit would be reached sooner and less oil would be recovered overall. This represents a loss of revenues to the operators as well as to the State. Flaring the gas also represents a revenue loss if operators are counting on eventually being able to market that gas. There are also environmental impact considerations in gas flaring.

This information is based on discussions with BP Alaska at 8:00 p.m. eastern time on August 7, 1990. We are discussing increased production options with BP and ARCO at the present time and anticipate we will receive more detailed responses this morning.

Subsequent discussions with BP indicate that 400,000 Bbl. increase is extremely optimistic. Foregoing maintenance does raise significant safety concerns as does flaring large volumes of gas to permit increased production. BP has called an all hands meeting in Alaska to review options and will be updating this information as soon as possible.

EXHIBIT A**ALASKA NORTH SLOPE MAINTENANCE EVENTS**

MAINTENANCE EVENT	START DATE	END DATE	PRODUCTION LOSS (B/D)
Endicott Field Maintenance	8/6	8/16	100,000
Flow Station 3	8/12	8/25	150,000
Gathering System 3	8/27	9/14	100,000
Central Gas Facility Compressor Installation	9/3	9/13	150,000
Flow Station 1	9/15	9/28	140,000

TAPS FLOW SCHEDULE

<u>DATE</u>	<u>EVENT</u>	<u>FLOW (Million B/D)</u>
8/5		1.81
8/6	Endicott Down	1.71
8/12	Flow Station 3 Down	1.56
8/16	Endicott Up	1.66
8/25	Flow Station 3 Up	1.81
8/27	Gathering System 3 Down	1.71
9/3	Compressor Install. Begins	1.56
9/13	Compressor Install. Complete	1.71
9/14	Gathering System 3 On-Stream	1.81
9/15	Flow Station 1 Down	1.67
9/28	Flow Station 1 Up	1.81



The Secretary of Energy

Washington, DC 20585

November 26, 1990

AC/ER

THE CHIEF of STAFF
has seen

The Honorable John H. Sununu
Chief of Staff to the President
The White House
Washington, D.C. 20500

Dear Governor ^{John} Sununu:

As a matter of review, on May 1, 1990, during my hearing before the Senate Committee on Armed Services, I announced the tentative restart schedule for the Savannah River reactors. At that time it appeared that the first reactor could be restarted for low power testing in December 1990. Since that time, a substantial amount of work has been completed on the reactors.

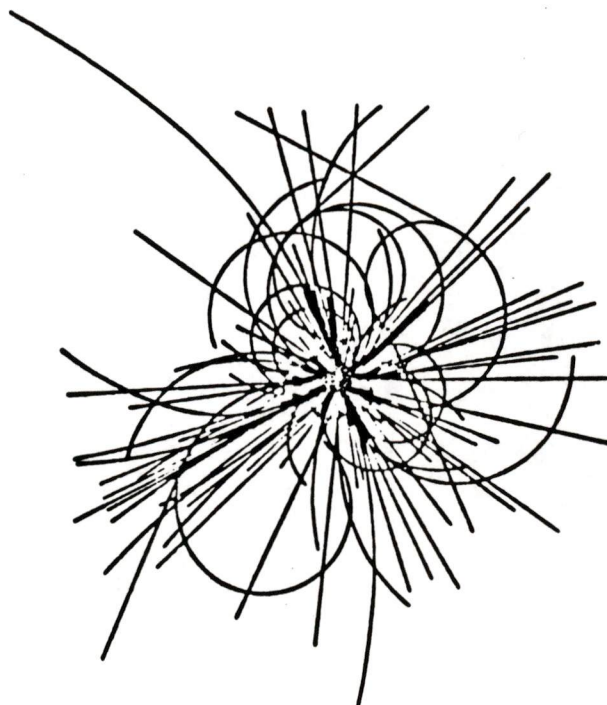
During August and September 1990, Westinghouse identified to the Department of Energy that a number of unanticipated work items had been discovered during system testing. These items include additional modifications and testing to the reactor supplemental shutdown system, additional rod control system testing and unanticipated overhaul of one emergency diesel generator.

Westinghouse management briefed me on November 14, 1990, on the reactor restart status, and it was apparent from that briefing that a slip in the restart schedule of at least several months has occurred. Westinghouse has strengthened the reactor management team with personnel experienced in restarting problem commercial nuclear power plants, and now Westinghouse is preparing a revised integrated restart schedule. I have scheduled another briefing by Westinghouse on December 14, 1990, and, subsequent to that briefing, I expect to be able to announce the revised restart schedule early next year. I will keep you informed of this matter.

Sincerely,


James D. Watkins
Admiral, U.S. Navy (Retired)

**SUPERCONDUCTING SUPER COLLIDER
STATUS REPORT**



OCTOBER 1990

U. S. DEPARTMENT OF ENERGY

"PORK" DEFEATS FUSION ENERGY PROGRAM

- o The Department just spent a year having its fusion program reviewed by a prestigious committee, the Fusion Policy Advisory Committee (FPAC).
- o I was ready to announce a new fusion energy policy, including both magnetic and inertial, consistent with FPAC's recommendations under constrained budget circumstances.
- o I see fusion as an important long-term element of the National Energy Strategy (NES).
- o Both the House and the Senate had passed FY91 appropriation bills funding Magnetic Fusion Energy at the President's request level.
- o Two weeks ago with no warning, the Conferees cut the Magnetic Fusion Energy budget for FY91 by \$50M, while adding "pork" in the form of buildings, hospitals, and science programs of low priority to DOE and with little or no relevance to our mission.
- o This Congressional action, coming on the heels of a \$30M Congressional cut last year and at this time of the fiscal year, makes it impossible to move this program out of fusion research and into fusion energy development, the right NES strategy for the long haul.
- o Congressional action will also force us to narrow the program to the tokamak concept only, prematurely cutting out any other desirable research concepts which would have otherwise remained to hedge against uncertainties.
- o This kind of reduction would require lay-offs of 600-750 people from the fusion program, from Princeton Plasma Physics Laboratory, Los Alamos National Laboratory, Oak Ridge National Laboratory, Spectra Technology (Washington State), and a number of universities and other organizations.

- o The Department is taking steps to deal with this situation:
 - I have asked the Director of Energy Research and the Controller to draft a memorandum, for my signature, tasking them to report on actions necessary to implement the Congressional budget cuts.
 - In this memorandum, I will call attention to the success of the fusion program, the role of fusion in the NES, the FPAC review, my readiness to announce a new policy, and my understanding of the impact on international collaboration and on scientific staff of such a cut.
 - The report from the Director of Energy Research and the Controller will outline the impact of the cut in detail, including what a partial restoration would buy and indicating the direction the program would take in FY92.
 - The Controller is preparing two requests to reprogram about \$25M back into the MFE budget for FY91.
 - One request would move funds from "science pork" (buildings, hospitals) to fusion.
 - The other request would use unobligated balances from Power Marketing (\$8M) and Uranium Enrichment (\$18.7M) for fusion.
 - The second option may be unpalatable to Senator Ford, who in the past has resisted any reprogramming from Uranium Enrichment, but the first option should be unattractive to several members of the Appropriation Committees.
 - Because Committee staff have indicated some sympathy with a reprogramming request, I expect the Committees to accept the second option.
- o Restoring \$25M in FY91 would put us in a position of "Fusion Energy Readiness," prepared to begin the transition from science to fusion energy development in FY92, even under austere fiscal constraints.

- o This partial restoration would preserve both ITER and CIT options in FY91, while giving up all of the alternative concepts.
- o Even this partial restoration would still eliminate programs at LANL (Senator Domenici), ORNL (Congresswoman Lloyd, Senator Gore), and other institutions, and it would still require a substantial lay-off of people from the fusion program.
- o The funding required in FY92 for a fusion energy program that matches my new fusion energy policy is:
 - MAGNETIC: \$360M, including participation in the ITER Engineering Design Activity and a construction start (engineering design) on CIT.
 - INERTIAL: \$15M for heavy ion driver development.
- o My plans for the inertial part of this effort assume that our Inertial Confinement program in Defense Programs is funded at the Department's request level of FY91 plus cost of living.
- o I will need your help to repair some of the damage to the fusion program this year and to launch a limited but real fusion energy program in FY92.

DEPARTMENT OF ENERGY SUMMARY

		91 <u>Enacted</u>	92 <u>Request</u>	% <u>Change</u>
Atomic Energy	BA	10,914	13,004	19.2
Defense	OL	10,363	12,035	16.1
Domestic Disc.	BA	5,810	6,380	9.8
	OL	5,490	6,139	11.8
Mandatory	BA	-1,711	-1,655	(3.2)
	OL	-2,040	-1,708	(16.3)
TOTAL DOE	BA	15,013	17,729	18.1
(w/o SSC & Fusion)	OL	13,813	16,456	19.1

DEAL

Defense	BA	288.9	291.6	0.9
	OL	297.6	295.7	(0.6)
Domestic Disc.	BA	182.7	191.3	4.7
	OL	191.1	210.1	6.1

Possible Adds

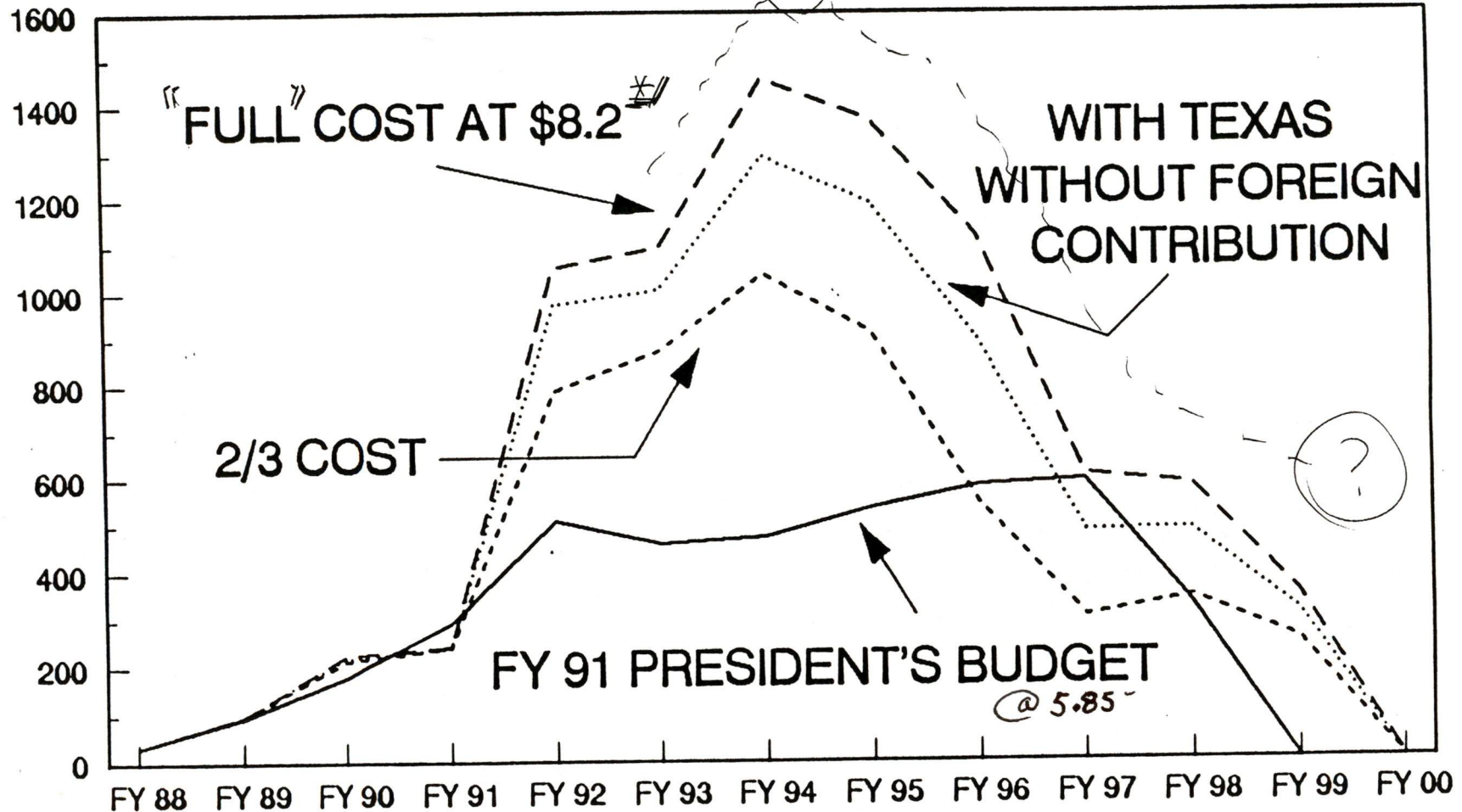
<u>SSC</u>	BA	268.0	DOE Baseline	774.0	189.0
	OL	256.0		651.0	154.0
			Alt DOE Baseline	650.0	143.0
				557.0	118.0
			Defer Construction	350.0	30.6
				350.0	28.9
<u>Fusion</u>	BA	275.0	Full FPAC Request	420.0	52.7
	OL	302.0		355.0	17.6
			Partial FPAC Req.	385.0	40.0
				32.0	9.9
			No Initiative	286.0	4.0
				288.0	(4.6)

DOE TOTALS WITH

FULL SSC REQUEST	BA	15,556	18,923	21.6
& FPAC FUSION PROG.	OL	14,371	17,472	21.6

SSC - SPENDOUT LEVELS

\$ IN MILLIONS



* / NOTE: ICE (DOE Independent cost estimate group)
puts cost at \$11.8 billion.

MILTON ESD 10/22/90

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SSC STATUS

EXECUTIVE SUMMARY

In January 1990, a revised design for the SSC was approved. This revised design increased the cost from the earlier estimate of \$5.9 billion to about \$8 billion. The Department has subsequently developed a project baseline with a cost of \$8.244 billion and scheduled completion in FY 1999.

Total foreign contributions for the SSC are targeted at \$1.7 billion, an amount that is highly unlikely without a significant investment by Japan and the Soviet Union; other countries, although interested in the proposed partnership, will most likely not make significant contributions. Texas has committed to contribute \$875 million to the cost of construction of the SSC, plus all the land.

Excellent magnet results have been achieved to date, with the current full-length 40 mm diameter dipole magnets exceeding specifications and key parameters of the 50 mm diameter design just demonstrated. General Dynamics and Westinghouse are under letter contract to begin engineering development and prototyping of the full-length 50 mm diameter magnets. We expect this final contract to be at or below budget.

Management has been substantially strengthened, with Edward Siskin recently appointed as General Manager, bringing large construction project management experience together with the strong technical expertise available at the SSC Laboratory. A DOE On-Site Project Director was also put in place earlier this year. The management team now exists to build the SSC on schedule and within budget.

Congress continues to be supportive. Both the House and Senate Appropriations Committees initially supported the requested \$318 million for FY 1991; however, this amount was cut a net of \$50 million in conference. Total Federal funds available for FY 1991 are \$267 million which, with \$149 million from Texas, totals \$416 million, the FY 1991 baseline figure.

A decision needs to be made to continue the project in view of the final project baseline and foreign contribution situation. DOE recommends continuation.

SSC STATUS

Table of Contents

- **COST AND SCHEDULE**

Cost and Schedule Baseline Report ready for release to Congress; alternative baseline developed with \$8.244 billion Total Project Cost and scheduled completion in FY 1999, but with reduced FY 1992 funding requirement of \$650 million

- **INTERNATIONAL**

Foreign contributions are targeted at \$1.7 billion; however, no substantial contributions are expected for several years

- **TEXAS STATUS**

The only non-Federal contributor thus far; committed a total of \$149 million for FY 1991 and a total of \$875 million plus all the land to offset costs of construction

- **MAGNET STATUS**

Magnet performance is meeting design objectives; recently selected General Dynamics and Westinghouse for prototype development

- **LABORATORY MANAGEMENT**

Strengthened management at the SSC Laboratory with the addition of large construction project management experience; have strong DOE management on-site

- **CONGRESSIONAL STATUS**

Budget Conferees reduced total Federal funding for FY 1991 by \$50 million to \$267 million; Texas is maintaining project momentum by committing \$149 million for FY 1991

- **CONCLUSION**

Withdrawal/Redaction Sheet

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02b. Report	SSC Status Cost and Schedule w/three Funding Scenarios (4 pp.)	10/90	P5	

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(b)(1) National security classified information [(b)(1) of the FOIA]
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SSC STATUS

COST AND SCHEDULE

- Cost and Schedule Baseline proposed by SSC Laboratory adjusted by Department
- Cost and Schedule Scenarios developed with an increased total project cost and schedule extension
- Cost Scenarios reflect reduced requirements for FY 1992 Federal funding, but an increase in total project cost and a delay in completion from that proposed by the SSC Laboratory
- Texas support key to maintaining project momentum

SCENARIO A

The proposed baseline submitted by the SSC Laboratory with a total project cost of \$7.837 billion (as-spent) and completion by the end of FY 1998.

This scenario, proposed by the SSC Laboratory in June 1990, requires a rapid buildup in both Federal and estimated non-Federal funds from assumed FY 1991 levels to a total funding level of \$1.25 billion (both Federal and estimated Non-Federal funds) in FY 1992.

Although the Department's Energy Research Review Committee and the HEPAP Subpanel both expressed concerns about the realism of the schedule and funding profile, neither advised that the SSC could not be built and commissioned as proposed by the SSC Laboratory. The Department's ICE staff took the position that the schedule and funding profile were unrealistic and unachievable. The Review groups recommended minor adjustments in several of the base-cost estimates and pointed out that there are several cost elements that need to be considered for inclusion in the total project cost estimate, particularly the FY 1988 and FY 1989 costs that were included in previous budget requests submitted to Congress.

Clearly this scenario is very aggressive and it entails significant cost and schedule risks.

SCENARIO B

A revised baseline developed by the Department in the Report on the SSC Cost and Schedule Baseline, with a total project cost estimate of \$8.244 billion (as-spent) and completion by the end of FY 1999.

This scenario developed by the Department provides for adjustments to the estimate initially proposed by the SSC Laboratory to address most of the major concerns expressed by the independent review groups

This scenario:

- incorporates increases in the base-cost estimate of some elements of the construction totalling \$130 million (constant FY 1990 dollars) based on an evaluation of review group concerns
- extends the schedule for completion by 1 year, with a related cost increase of \$318 million (as-spent)
- raises the overall contingency allowance to \$1.115 billion (as-spent), which is 22.5% of the base construction cost, and the mid-range of Department guidelines
- incorporates a reduction of \$219 million in the project contingency allowance for expected foreign in-kind contributions
- updates escalation estimates to reflect the latest Department and OMB rates
- includes \$131 million for prior year FY 1988 and FY 1989 funding

The schedule extension results in a revised funding profile with a more prudent ramp-up in FY 1992 to \$774 million Federal funds.

The combination of the schedule extension and increased contingency significantly reduces the schedule and cost risks addressed by the review groups.

SCENARIO C

A alternative baseline developed by the Department with a total project cost estimate of \$8.244 billion (as-spent) and completion by the end of FY 1999, as in Scenario B, but with a modified funding profile requiring less Federal funding in the FY 1992 through FY 1995 period.

This scenario incorporates all of the features outlined for Scenario B, but reflects a much slower buildup of Federal funding in the FY 1992 through FY 1995 period, with \$650 million in FY 1992 and held constant (but with escalation) through FY 1995.

This scenario is an attempt to restructure the SSC funding profile in a way that balances Total Project Cost, Schedule, and funding restraints imposed by budget deficit reduction agreements.

The funding profile proposed by the SSC Laboratory in June 1990 was in budget authority. Alternative scenarios subsequently developed by the Department have also used budget authority profiles.

Normally projects use a higher budget authority profile in the early years than the expected cost profile to fund multi-year contracts and long-lead items.

Upon closer examination by the SSC Laboratory and the Department's SSC On-Site Project Office, it has become apparent that the project can be executed with a less aggressive budget authority profile than Scenario B, while maintaining the \$8.244 billion Total Project Cost and completion by the end of FY 1999. This will entail a slightly higher cost risk and require phased funding of multi-year contracts. However, both the SSC Laboratory and the On-Site Project Office consider that any increased cost risk is manageable.

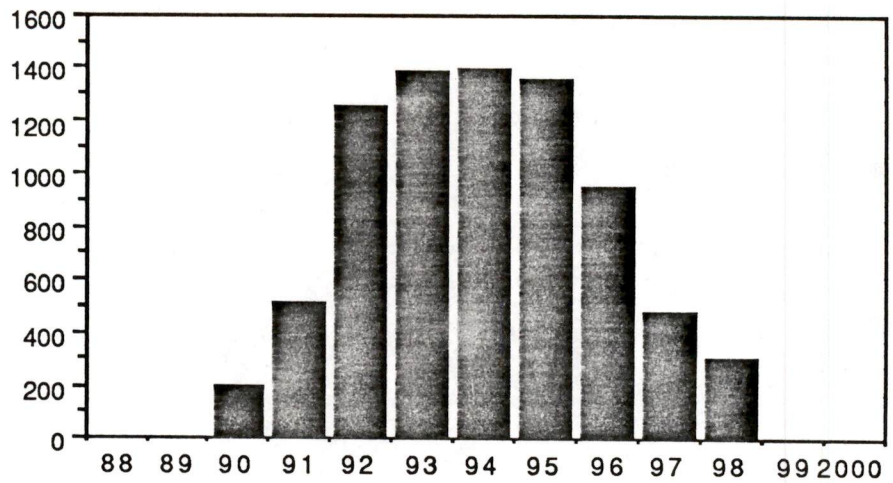
SSC BASELINE SCENARIOS

	TOTAL PROJECT COST	COMPLETION	DESCRIPTION
A	\$7837 million	End of FY 1998	SSC Laboratory Proposal
B	\$8244 million	End of FY 1999	DOE Baseline Incorporating Base Cost Increases, Increased Contingency, Schedule Extension of 1 Year, FY 1988 and FY 1989 Costs and Adjustments in Escalation Allowance to Reflect Latest Rates
C	\$8244 million	End of FY 1999	Alternative DOE Baseline Incorporating Reduced Funding in FY 1992 through FY 1995 to reflect Budget Agreement Restraints

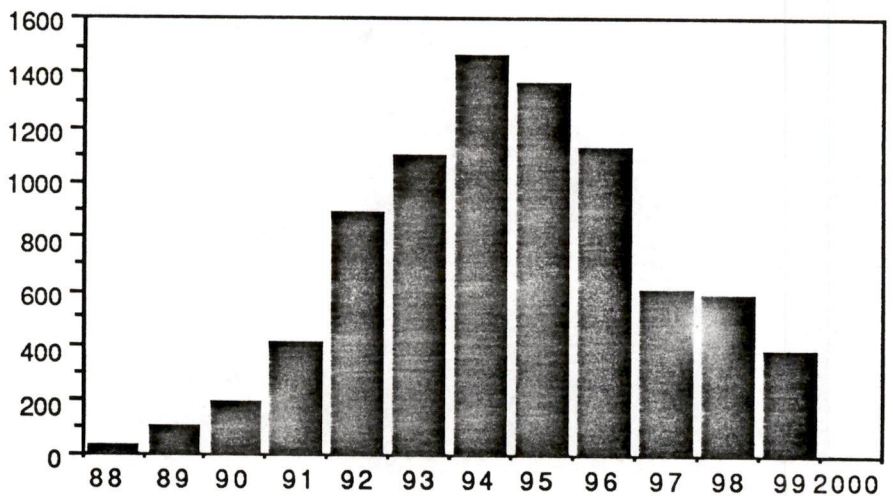
SSC Baseline Scenarios

(Total Funding in As-Spent Millions)

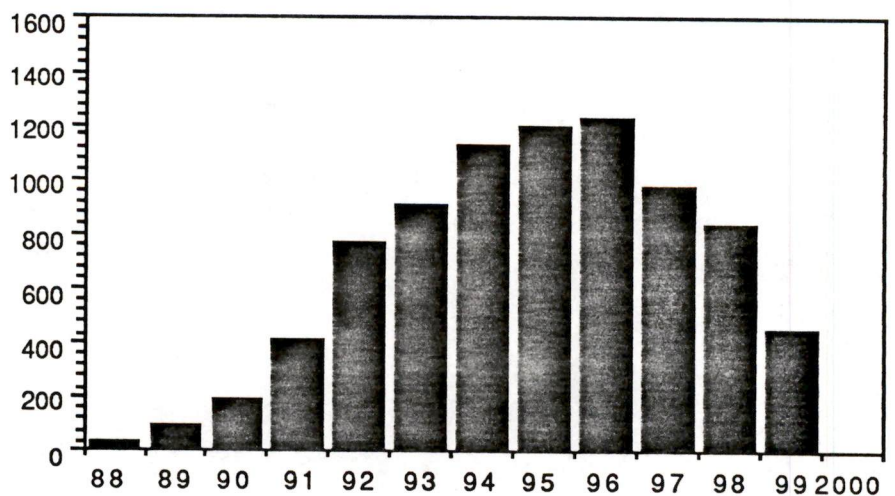
Profile A
(\$7837M)



Profile B
(\$8244M)



Profile C
(\$8244M)



SSC BASELINE SCENARIOS FUNDING PROFILES

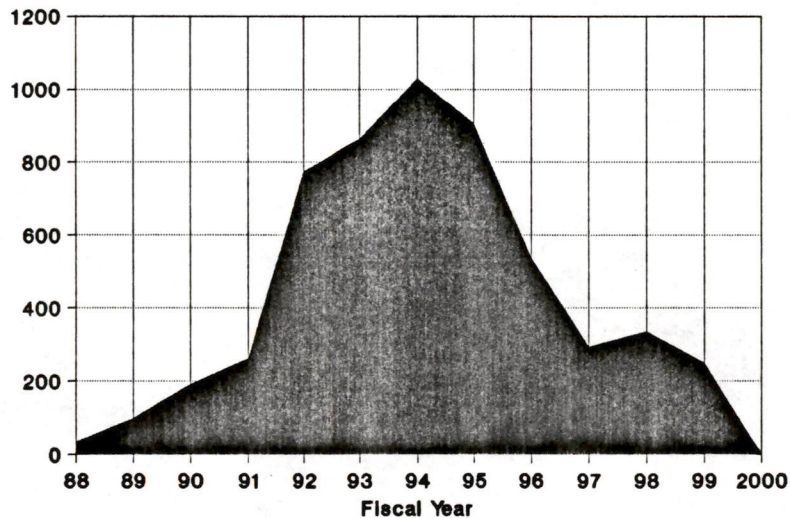
(Total Funding in As-Spent Millions)

	A SSC LABORATORY	B DOE BASELINE	C DOE ALTERNATIVE BASELINE
FY 1988	-	33	33
FY 1989	-	98	98
FY 1990	202	191 ⁽¹⁾	191 ⁽¹⁾
FY 1991	511	410 ⁽²⁾	410 ⁽²⁾
FY 1992	1250	895	771
FY 1993	1384	1096	909
FY 1994	1394	1456	1130
FY 1995	1352	1371	1197
FY 1996	952	1123	1226
FY 1997	484	606	978
FY 1998	308	585	844
FY 1999	-	380	457
TOTAL PROJECT COST	7837	8244	8244

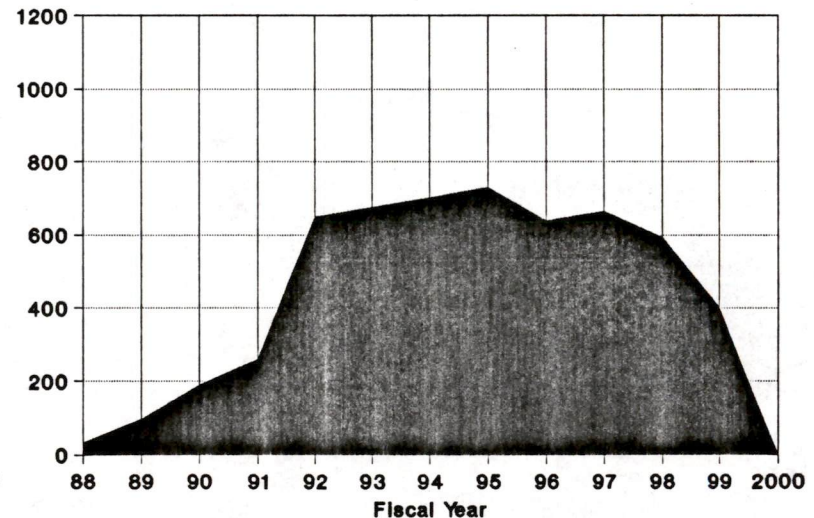
- (1) FY 1990 Appropriation of \$217 million, included \$191 million available for SSC project in FY 1990, \$2 million for DOE program direction costs and \$24 million appropriated for tunnel construction which is being held in DOE reserve.
- (2) Consists of FY 1991 appropriation of \$237 million for SSC project costs, the \$24 million of FY 1990 funds held in DOE reserve that Congress released from the tunnel construction restriction, and \$149 million of Texas funds. (Appropriation of \$243 million included \$6 million for DOE program direction in addition to the \$237 million of project funds.)

SSC BASELINE FUNDING SCENARIOS FEDERAL FUNDING PROFILES (In As-Spent Millions)

DOE Baseline and Alternative Baseline Comparison



SCENARIO B
DOE Baseline



SCENARIO C
DOE Alternative Baseline

SSC BASELINE SCENARIOS FEDERAL FUNDING PROFILES

(Funding in As-Spent Millions)

	B DOE BASELINE		C DOE ALTERNATIVE BASELINE	
	Federal	Non-Federal	Federal	Non-Federal
FY 1988	33	-	33	-
FY 1989	98	-	98	-
FY 1990	191 ⁽¹⁾	-	191 ⁽¹⁾	-
FY 1991	261 ⁽²⁾	149 ⁽²⁾	261 ⁽²⁾	149 ⁽²⁾
FY 1992	774	121	650	121
FY 1993	863	233	676	233
FY 1994	1029	427	703	427
FY 1995	905	466	731	466
FY 1996	537	586	640	586
FY 1997	294	312	666	312
FY 1998	335	250	594	250
FY 1999	324	56	401	56
TOTAL	5644	2600	5644	2600

- (1) FY 1990 Appropriation of \$217 million, included \$191 million available for SSC project in FY 1990, \$2 million for DOE program direction costs and \$24 million appropriated for tunnel construction which is being held in DOE reserve.
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Withdrawal/Redaction Sheet

(George Bush Library)

Document No. and Type	Subject/Title of Document	Date	Restriction	Class.
02c. Report	SSC Status Assessment of International Participation (1 pp.)	10/90	P-5	

Collection:

Record Group: Bush Presidential Records
Office: Chief of Staff, White House Office of
Series: Sununu, John, Files
Subseries: Cabinet Agencies Files
WHORM Cat.:
File Location: Watkins (Energy) (1990) [1]

Open on Expiration of PRA
 (Document Follows)
 By JP (NLGB) on 5/12/05

Date Closed:	12/14/2004	OA/ID Number:	29191-002
FOIA/SYS Case #:	1998-0004-F[1]	Appeal Case #:	
Re-review Case #:	2005-0426-S	Appeal Disposition:	
P-2/P-5 Review Case #:		Disposition Date:	
AR Case #:		MR Case #:	
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RESTRICTION CODES

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SSC STATUS

ASSESSMENT OF INTERNATIONAL PARTICIPATION

- Total foreign contributions for SSC construction is targeted at \$1.7 billion (\$8.244 billion TPC, one-third non-Federal equal to \$2.748 billion, less \$.875 billion from Texas, less \$.219 billion adjustment for foreign contingency, equals \$1.7 billion)

- Attaining this amount without a significant investment by Japan is very doubtful

Japanese participation is highly unlikely without intervention on the part of President Bush with Prime Minister Kaifu

- The next major potential contributor is the Soviet Union

The Soviet Union is clearly interested, but has worrisome domestic and infrastructure problems; SSC cooperation needs to be part of the Bush-Gorbachev Summit process

The SSC Laboratory has just recently signed an MOU with the Soviet Co-Chair of the Joint Coordinating Committee for the Fundamental Properties of Matter for cooperation on accelerator science and technology, including the SSC

- Italy is also possibly a contributor; but it is unclear at this time how significant and what form that contribution would take
- Other countries in Western Europe are unlikely to make significant contributions for the next several years, or perhaps never if CERN's LHC is constructed
- Canada, along with India and Korea, may make contributions, but will likely be limited
- Interest in international participation in detectors, although not formally a part of this partnership approach, remains high
- The U.S. may, therefore, with Texas support, need to carry most of the cost of constructing the SSC for several years (significant foreign contributions may not be forthcoming through the mid-1990s)

SSC STATUS

TEXAS

- Texas is our only non-Federal contributor and partner thus far; they are contributing \$875 million to the cost of construction of the SSC plus all the land. The remaining \$125 million from Texas will be used for contingency and other related research and development.
- MOU agreed to with Texas that establishes Principles of Agreement for Texas' role in SSC Project.
- Agreement reached with TNRLC on additional \$60 million funding for FY 1991 to maintain project momentum.
- First land has been acquired by Texas and title transferred to the Department for construction of Magnet Development Laboratory. Construction has begun on budget and on schedule.
- Public Hearings completed on the Supplemental Environmental Impact Statement, preparing the way for a Record of Decision on the construction and operation of the SSC in January 1991.
- This support from Texas is key to maintaining momentum of the project.

SSC STATUS

SUPERCONDUCTING MAGNET STATUS

- Changes to SSC design include increase in collider dipole aperture from 40 mm to 50 mm.
- Excellent results have been achieved with 40 mm diameter, full-length collider dipole magnets--FY 1990 magnets exceeded the required 6.6 Tesla field at the specified operating temperature of 4.35 K.
- Soundness of 50 mm magnetic design established September 1990, by 1 meter long model fabricated by KEK. Achieved 111 percent of required 6.6 Tesla field.
- Selection of industrial teams for engineering development and prototyping phase of the collider dipole magnets was just announced; General Dynamics has been chosen as the leader and Westinghouse as the follower. It is believed that these contracts will be on budget.
- First meeting with prospective collider quadrupole magnet vendors scheduled for October 30-31.
- Short 50 mm collider dipole magnet models will be built by Fermilab by end of 1990. Full-length dipole magnets will be built by the end of 1991 and will be ready for testing beginning in 1992.

Assembly of laboratory designed collider quadrupole magnets will begin at Berkeley within 9 months.

- Accelerator Systems String Test, with industrially assembled magnets to be completed late in FY 1992 to demonstrate magnet system performance.
- SSC magnet program is moving ahead, on schedule with preproduction beginning in 1994 and full rate production beginning in 1995.

SSC STATUS

MANAGEMENT

- SSC Laboratory recently announced steps to substantially strengthen Laboratory management with large project construction experience, combined with strong technical management

Edward Siskin	—	General Manager
Paul Reardon	—	Project Manager
George Robertson	—	Deputy Project Manager
Jon Ives	—	Director, Conventional Construction

- Department management already strengthened with appointment of Joe Cipriano in April 1990, as On-Site Project Director
- Management team in place to move out aggressively to demonstrate magnet performance and to build collider
- SSC Laboratory uses Advisory Committees to make world-wide scientific advice available to SSC:

Scientific Policy Committee
Program Advisory Committee
Machine Advisory Committee
Detector R&D Advisory Committee

Professor Jerome Friedman, Chairman of SSC Laboratory Scientific Policy Committee, was just selected as a 1990 Nobel Laureate.

SSC STATUS

CONGRESSIONAL

- H.R. 4380, passed by the House 309 to 109, places a Federal cap at \$5 billion, requires GAO to evaluate project plans, and cost estimates at critical phases of the project.
- House and Senate Appropriations Committees accepted President Bush's budget request of \$318 million for FY 1991.
- Appropriations Committee Conferees cut the SSC budget by \$75 million to \$243 million for FY 1991. But they removed the restriction on \$24 million in construction funds that was appropriated in FY 1990, for a net cut in FY 1991 of \$50 million. This represents a 15.7 percent cut from the budget request of \$318 million.
- Total funds available for FY 1991 are \$267 million Federal and \$149 million from Texas contributions.

Withdrawal/Redaction Sheet

(George Bush Library)

Document No. and Type	Subject/Title of Document	Date	Restriction	Class.
02d. Report	SSC Status Conclusion (1 pp.)	10/90	P5	

Collection:

Record Group: Bush Presidential Records
Office: Chief of Staff, White House Office of
Series: Sununu, John, Files
Subseries: Cabinet Agencies Files
WHORM Cat.:
File Location: Watkins (Energy) (1990) [1]

Open on Expiration of PRA
 (Document Follows)
 By JP (NLGB) on 5/12/05

Date Closed:	12/14/2004	OA/ID Number:	29191-002
FOIA/SYS Case #:	1998-0004-F[1]	Appeal Case #:	
Re-review Case #:	2005-0426-S	Appeal Disposition:	
P-2/P-5 Review Case #:		Disposition Date:	
AR Case #:		MR Case #:	
AR Disposition:		MR Disposition:	
AR Disposition Date:		MR Disposition Date:	

RESTRICTION CODES

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SSC STATUS

CONCLUSION

This group met once before to approve continuation of the project when it became necessary to increase its cost by \$2 billion due to design changes. It is necessary to meet once again due to information developed since that meeting concerning foreign contributions.

The Reagan Administration established a goal/requirement that one-third of the project cost come from non-Federal sources. The only such source thus far is Texas' \$875 million. We must, therefore, obtain the balance (\$1.7 billion) from foreign contributions. At this point, there is no certainty we can accomplish that goal. If the President makes this a priority issue with Japan, there is a reasonable chance of success.

It would now seem appropriate that before additional Federal or Texas funds are expended, a decision be made to proceed, or not, considering the questions of whether the one-third figure is a goal or a requirement and the priority of this project with Japan.

The Department is now confident of the cost estimate and the new site management's ability to construct the project on time and on budget. We recommend that a decision be made to proceed.

Withdrawal/Redaction Sheet

(George Bush Library)

Document No. and Type	Subject/Title of Document	Date	Restriction	Class.
03. Memo	From James Watkins to John Sununu Re: Strategic Petroleum Reserve (1 pp.)	10/23/90	P 2 5	

Collection:

Record Group: Bush Presidential Records
Office: Chief of Staff, White House Office of
Series: Sununu, John, Files
Subseries: Cabinet Agencies Files
WHORM Cat.:
File Location: Watkins (Energy) (1990) [1]

Open on Expiration of PRA
 (Document Follows)
 By JP (NLGB) on 5/12/05

Date Closed:	12/14/2004	OA/ID Number:	29191-002
FOIA/SYS Case #:	1998-0004-F[1]	Appeal Case #:	
Re-review Case #:	2005-0426-S	Appeal Disposition:	
P-2/P-5 Review Case #:		Disposition Date:	
AR Case #:		MR Case #:	
AR Disposition:		MR Disposition:	
AR Disposition Date:		MR Disposition Date:	

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The Secretary of Energy
Washington, DC 20585

October 23, 1990

THE CHIEF of STAFF
has seen

MEMORANDUM FOR THE HONORABLE JOHN H. SUNUNU
CHIEF OF STAFF TO THE PRESIDENT

THE HONORABLE BRENT SCOWCROFT
ASSISTANT TO THE PRESIDENT
FOR NATIONAL SECURITY AFFAIRS

SUBJECT: STRATEGIC PETROLEUM RESERVE

John:

The purpose of this memorandum is to inform you that we seem to have weathered the Iraqi-caused crude oil storm during the most critical transition months of September and October. It now appears that new production coming on line combined with energy restraint measures in effect within IEA nations have been sufficiently successful to place the SPR drawdown on the "back burner" once again -- barring, of course, unforeseen events which would disrupt a very tight world-wide petroleum system. As a result, projected availability of crude oil stock for delivery to market in November/December now seems to be assured.

I appreciate the assistance you have provided as we moved through this period of tight oil supplies. If, at a later date, I feel that the world oil supply situation warrants reconsideration, I will keep you advised.


James D. Watkins
Admiral, U.S. Navy (Retired)

Withdrawal/Redaction Sheet

(George Bush Library)

Document No. and Type	Subject/Title of Document	Date	Restriction	Class.
04. Memo	From James Watkins to John Sununu Re: Impressions of the DoE Delegation to the IPCC Fourth Plenary Session (2 pp.)	9/6/90	(b)(1)	

Collection:

Record Group: Bush Presidential Records
Office: Chief of Staff, White House Office of
Series: Sununu, John, Files
Subseries: Cabinet Agencies Files
WHORM Cat.:
File Location: Watkins (Energy) (1990) [1]

Date Closed:	12/14/2004	OA/ID Number:	29191-002
FOIA/SYS Case #:	1998-0004-F[1]	Appeal Case #:	
Re-review Case #:	2005-0426-S	Appeal Disposition:	
P-2/P-5 Review Case #:		Disposition Date:	
AR Case #:		MR Case #:	
AR Disposition:		MR Disposition:	
AR Disposition Date:		MR Disposition Date:	

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THE WHITE HOUSE
WASHINGTON

September 27, 1990

MEMORANDUM FOR ADMIRAL WATKINS

FROM: GOVERNOR SUNUNU 
SUBJECT: NATIONAL ENERGY STRATEGY

When we met in my office last week, you had raised the need for streamlining the decision-making process on the National Energy Strategy as we enter the final phase. We had agreed that the White House would form a small EPC task force, including DOE, that would staff me in an effort to provide greater White House policy guidance to the NES Working Group in these closing weeks.

I want you to know that I am anxious to move this task force along rapidly, and that I have asked Larry Lindsey (who will chair), Dick Schmalensee, Bob Grady, Olin Wethington, and your representative (presumably Henson Moore or Linda Stuntz) to be on the group. I have also asked Andy Card and Ede Holiday to stay in close contact with the group.

I am asking the task force to meet immediately to begin working to hone the options for EPC consideration. We must assure that we move to the EPC an appropriate package of options within the next 4-6 weeks. I believe that this task force will facilitate decision-making in the short time that remains.

Withdrawal/Redaction Sheet

(George Bush Library)

Document No. and Type	Subject/Title of Document	Date	Restriction	Class.
05. Memo	From James Watkins to John Sununu Re: Shoreham Status Report (2 pp.)	9/12/90	P5	

Collection:

Record Group: Bush Presidential Records
Office: Chief of Staff, White House Office of
Series: Sununu, John, Files
Subseries: Cabinet Agencies Files
WHORM Cat.:
File Location: Watkins (Energy) (1990) [1]

Open on Expiration of PRA
 (Document Follows)
 By JP (NLGB) on 12/12/07

Date Closed:	12/14/2004	OA/ID Number:	29191-002
FOIA/SYS Case #:	1998-0004-F[1]	Appeal Case #:	
Re-review Case #:	2005-0426-S	Appeal Disposition:	
P-2/P-5 Review Case #:		Disposition Date:	
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The Secretary of Energy
Washington, DC 20585

September 12, 1990

THE CHIEF of STAFF
has seen

CLOSE HOLD

PRIVILEGED ATTORNEY
WORK PRODUCT

MEMORANDUM FOR THE HONORABLE JOHN H. SUNUNU
CHIEF OF STAFF TO THE PRESIDENT

SUBJECT: Shoreham Status Report

John!

Following up on our conversation on Shoreham yesterday, I wanted to update you on the status of the Department of Energy's actions in opposition to the dismantling of this plant. Recent events in the Persian Gulf have served to underscore the folly of the decision to dismantle Shoreham which could displace 21,000 barrels of oil per day (almost 8 million barrels per year) in an area heavily dependent on imported oil for electricity generation. We are currently working on three fronts: state court lawsuit on absence of environmental impact statement under state statute, opposition to NRC licensing amendments, and exploratory discussions with alternative purchasers. While we have a reasonable (but at best, 50/50 chance) on prevailing in the first two areas, the latter is clearly a long shot. The current status of these actions is as follows:

- A. State Court Lawsuit: As you may recall, the Justice Department on behalf of DOE intervened in an existing lawsuit challenging the Cuomo Settlement Agreement for failure to comply with state law requirements on environmental impact statements. At the intermediate level, the court found that there would "undoubtedly...be highly significant environmental effects" from the decommissioning of Shoreham and the replacement of its generating capacity by other non-nuclear facilities. However, the court ruled that the actions of the state agencies were exempt from the state environmental review act. The Justice Department has recently agreed to pursue an appeal of that decision.
- B. NRC Licensing Amendments: The Long Island Lighting Company (LILCO) has filed a "possession-only" license amendment and an amendment to transfer the license to the Long Island Power Authority (LIPA). Under the Settlement Agreement, LIPA would then contract for the decommissioning of the plant. The NRC has recently noticed the possession-only license amendment in the Federal Register and is holding the

license transfer amendment pending resolution of the possession-only application. Our analysis indicates that under a possession-only license, LILCO could take actions inconsistent with "mothballing" (i.e., LILCO could effectively dismantle and render inoperable large portions of the facility without prior NRC approval). DOE is preparing a letter to be sent within the next few days to the NRC urging them to prepare an environmental impact statement under NEPA prior to granting a possession-only license.

- C. Alternative Purchasers: A DOE consultant is quietly contacting George Edwards, Chairman and CEO of United Illuminating, to explore whether his company would be interested in purchasing Shoreham. The purchaser would maintain the plant in a "mothballed" status with the potential, at some point, for operating the facility as an independent power producer. The cost of decommissioning (whether or not the plant ultimately operates) would remain with LILCO which bears the cost under the current Settlement Agreement. A potential purchaser would need to weigh the projections for electricity demand; the probability that the political climate could change as a result of economics (e.g., high oil prices) or power needs; the potential financial rewards of purchasing an 809 MW generating facility at a low cost; and the financial costs of mothballing. It should be stressed that these discussions are very preliminary and are a long shot. In addition, it is unclear whether enough pressure could be placed on Governor Cuomo to have him agree to change the current Settlement Agreement. As an inducement, we would propose that the plant would be activated only with the consent of the then-elected Governor.



James D. Watkins
Admiral, U.S. Navy (Retired)

Withdrawal/Redaction Sheet

(George Bush Library)

Document No. and Type	Subject/Title of Document	Date	Restriction	Class.
06. Memo	From Ede Holiday to John Sununu Re: DoE's Concerns on WH Process (2 pp.)	9/18/90	P 5	

Collection:

Record Group: Bush Presidential Records
Office: Chief of Staff, White House Office of
Series: Sununu, John, Files
Subseries: Cabinet Agencies Files
WHORM Cat.:
File Location: Watkins (Energy) (1990) [1]

Open on Expiration of PRA
 (Document Follows)
 By JJ (NLGB) on 1/19/09

Date Closed:	12/14/2004	OA/ID Number:	29191-002
FOIA/SYS Case #:	1998-0004-F[1]	Appeal Case #:	
Re-review Case #:	2005-0426-S	Appeal Disposition:	
P-2/P-5 Review Case #:		Disposition Date:	
AR Case #:		MR Case #:	
AR Disposition:		MR Disposition:	
AR Disposition Date:		MR Disposition Date:	

RESTRICTION CODES

Presidential Records Act - [44 U.S.C. 2204(a)]

P-1 National Security Classified Information [(a)(1) of the PRA]
 P-2 Relating to the appointment to Federal office [(a)(2) of the PRA]
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 P-6 Release would constitute a clearly unwarranted invasion of personal privacy [(a)(6) of the PRA]

C. Closed in accordance with restrictions contained in donor's deed of gift.

PRM. Removed as a personal record misfile.

Freedom of Information Act - [5 U.S.C. 552(b)]

(b)(1) National security classified information [(b)(1) of the FOIA]
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EPA to correct the record although not in a way that would publicly reveal internal disagreements.

Question No. 3: Will the Governor privately reprimand Bill Reilly?

Response: I have called Bill Reilly myself and communicated to him our dismay over the release of these numbers, particularly in light of the clear rejection of them by the EPC. I would note that on recent energy issues, we have experienced several leaks benefitting DOE -- particularly the leak of the contents of the decision memorandum to the President on medium term energy measures. DOE denies that it is the source of this leak.

Question No. 4: Is the EPC the process within which DOE should continue to develop the National Energy Strategy?

Response: Henson, on Friday, expressed the need for streamlining the NES interagency process and for closer White House guidance as we enter the difficult, final phase of the NES. We should use his invitation to make some changes in the process for finishing the NES.

We should continue to use the EPC process and the EPC's NES Working Group chaired by Henson. However, I would also recommend that EPC create a small White House chaired group that would, while working with DOE, be charged with pulling together the final NES report to the President. This would permit the present NES Working Group to continue analysis, but it would streamline the decision-making on options and provide much closer White House direction. My suggestion is that this group be composed of Larry Lindsey, Bob Grady, Dick Schmalensee, Olin Wethington, and Henson Moore, and that it be chaired by Larry Lindsey.

The Governor
will handle _____

Holiday
will handle _____

Let's
discuss _____

THE WHITE HOUSE

WASHINGTON

AC/ER

September 18, 1990

THE CHIEF of STAFF
has seen

MEMORANDUM FOR GOVERNOR SUNUNU

FROM:

EDE HOLIDAY *EH*

SUBJECT:

DOE'S CONCERNS ON WHITE HOUSE PROCESS

Last Friday afternoon in my office, Henson Moore described DOE's outrage at the release by Bill Reilly of figures characterizing the benefits of the Clean Air Act for reduced oil dependency. He asserted that this was another example of the inability of the White House decision process on domestic energy issues to function fairly -- his major complaint being the the process leading up to the EPC decision memorandum to the President on medium term energy measures.

Henson, apparently at the request of the Admiral, left the meeting demanding that the Admiral receive from you answers to four questions which are listed below. DOE refuses to continue dealing through the EPC process until he receives these answers.

Secretary Watkins continues to complain about the White House decision process, as recently as yesterday morning. I believe it is important to cut this off soon.

Question No. 1: How did the White House permit EPA to release inaccurate figures to the press?

Response: The White House did not authorize Reilly to release his numbers. EPA did not receive clearance through the EPC or any other White House process. In fact, when EPA raised these numbers at the EPC meeting on September 5, they were thoroughly trashed. It appears that, subsequent to the meeting, Reilly talked with Boyden about the numbers, but Boyden says he did not clear these numbers for public release.

Question No. 2: Will the White House require that Reilly publish a retraction of the numbers?

Response: This morning, Michael Boskin offered to prepare a document which would state the Administration's view on these numbers, perhaps for public consumption. If EPA's numbers are clearly in error, we should ask

Withdrawal/Redaction Sheet

(George Bush Library)

Document No. and Type	Subject/Title of Document	Date	Restriction	Class.
07. Memo	From Ede Holiday to John Sununu Re: Legislative Proposals on Energy (2 pp.)	8/23/90	P5	

Collection:

Record Group: Bush Presidential Records
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Series: Sununu, John, Files
Subseries: Cabinet Agencies Files
WHORM Cat.:
File Location: Watkins (Energy) (1990) [1]

Open on Expiration of PRA
(Document Follows)
 By gf (NLGB) on 5/12/05

Date Closed: 12/14/2004	OA/ID Number: 29191-002
FOIA/SYS Case #: 1998-0004-F[1]	Appeal Case #:
Re-review Case #: 2005-0426-S	Appeal Disposition:
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faxed to NH 8/24

AC/ER

THE WHITE HOUSE

WASHINGTON

August 23, 1990

MEMORANDUM FOR GOVERNOR SUNUNU

FROM:

EDE HOLIDAY *RWP for*

THE CHIEF of STAFF
has seen

SUBJECT:

Legislative Proposals on Energy

Henson Moore has provided a list of four energy initiatives that could emerge from Congress in September, despite the Administration's opposition. These issues, in addition to the Administration's current approach, are outlined below. As you know, DOE is preparing a second package of near-term measures that the Administration might undertake. This package may permit us to anticipate and respond to Congressional action.

o Strategic Petroleum Reserve

The President's authority to draw down the SPR expires on September 15. In connection with reauthorizing the Energy Policy and Conservation Act, DOE thinks that Congress will attempt to:

- expand the SPR to 1 billion barrels;
- require development of regional petroleum product reserves in New England, and perhaps California and Hawaii;
- mandate at least a small draw down at a specified time.

The Administration's policy position, established through the EPC, has been to maintain the 750 million barrel target and to oppose regional product reserves. OMB and DOE will continue to press this position in Congressional negotiations. Furthermore, the Administration has opposed a draw down of the SPR and would strongly resist Congress usurping Presidential decision-making authority.

o Auto Fuel Economy

The Corporate Average Fuel Economy (CAFE) law currently mandates auto makers to produce fleets averaging at least 27.5 miles per gallon. Legislation to raise the standard had significant support in the Senate even prior to the Iraqi situation. In April, Sen. Bryan's bill (which would raise CAFE standards by 20% in 1995 and by 40% in 2001) was reported out of the Commerce Committee by a 14-4 vote and will likely pass the Senate by a wide margin in September. Rep. Dingell will probably

be able to stop CAFE legislation in the House.

The EPC's National Energy Strategy Working Group is currently identifying reform options, including options that would eliminate CAFE standards. The analytic modelling has been completed, and the Working Group is now discussing the merits of various options. This work is being placed on an accelerated schedule.

o Global Climate Change

The Senate passed Sen. Wirth's National Energy Policy Act on August 4 without the Administration's recommended amendments. The House Energy Subcommittee on Energy & Power and the Science Subcommittee on Energy Research & Development have tentatively scheduled hearings on a global change bill for September 13 and 18, respectively. Although DOE had thought House passage unlikely this year, the current situation and the upcoming IPCC Plenary Session in Sweden (August 28-30) may spur Congressional concern.

Linda Stuntz (DOE), who testified before the Senate, will testify at the House hearings. Although the House might develop a tolerable proposal, we will work with the relevant agencies to monitor House action. In addition, the DPC Global Change Task Force will be tasked with carefully reviewing House proceedings.

o Federal Energy Efficiency

Sen. Lieberman has proposed legislation (S. 2191) that would require the President to issue a new Executive Order on energy efficiency in the federal government. All federal agencies would have to install "all renewable and alternative clean" energy measures that have a "payback" of ten years or less, by January 1, 2000. The "payback" would consider externalities. This bill could be appended to legislation on any of the issues discussed above. In the House, Rep. Sharp has proposed a similar measure.

Such legislation does not sufficiently focus on cost-effectiveness. In addition, DOE believes that the budget impact would be significant, perhaps reaching \$5 billion.

We have asked DOE to identify any market-related improvements, including fuel switching, that the Administration might undertake in the area of federal government energy use. Proposed improvements will be included in DOE's second package of measures, due next week.

6 -
Energy

ENERGY MARKETS -- 1973 TO 1989

MANY CHANGES, OFTEN FAVORABLE, HAVE OCCURRED DURING
THE PAST 16 YEARS.

A collection of pertinent information and data on:

- . World oil markets.
- . U.S. oil markets.
- . Other U.S. energy markets.
- . OPEC.

To help place in context the recent disruption of
oil markets.

Glenn R. Schleede*

September 4, 1990

* President, New England Energy Incorporated & Vice President, New England Electric System, 25 Research Drive, Westborough, Massachusetts 01582.

ENERGY MARKETS -- 1973 TO 1989

Many changes, often favorable, have occurred in energy markets during the past 16 years.

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ENERGY MARKETS -- 1973 TO 1989

Many changes, often favorable, have occurred in energy markets during the past 16 years.

Introduction

Unexpected disruptions in energy markets, such as those resulting from the Iraqi invasion of Kuwait, tend to focus attention primarily on short term considerations; e.g., potential oil shortages, disruption of supply channels and high prices.

Once immediate concerns are addressed, it is important to consider longer term implications of developments for energy supply, demand and prices, and for potential for changes in government policies affecting energy.

When looking to the future, there is often a tendency to assume that the most recent trend will continue indefinitely. However, experience with energy markets over the past 16 years suggests that a better course of action is to pause and take a new look at market fundamentals and at changes that have been occurring. That is the purpose of this collection of information.

Energy markets are entirely too complex and dynamic to capture all important information in one place. This collection of data merely captures some of the important developments, focusing on such key matters as:

- . World petroleum production, consumption, import dependence, stocks and crude oil reserves.
- . U.S. oil consumption and dependence on imports.
- . Other U.S. energy market factors including consumption by energy source, oil consumption by end use sector, crude oil prices, electric generation by energy source, changes in energy efficiency, and cost of energy to end users.
- . OPEC oil export revenue, imports from other countries, and current account balances.

In most cases, data are presented for 1973 (beginning of the Arab oil embargo), 1979 (overthrow of the Shah of Iran and just prior to the start of the Iran-Iraq war), and 1989 (the last year for which data are readily available, and the year prior to the latest dramatic development). In some cases, data are presented for other years where this is necessary to show a sharp change in direction of a particular market condition.

WORLD CRUDE OIL PRODUCTION* – 1973, 1979 & 1989

1. World crude oil (including condensate) production:
 - Grew from 55.6 million barrels per day in 1973 to 62.5 million in 1979;
 - Then declined to 53.0 million in 1983;
 - Then grew to 59.5 million in 1989; and
 - Then to an average of 61.1 during the 1st 5 months of 1990.
2. During the 1973 to 1989 period, crude production (including condensate) by various countries changed as follows:
 - OPEC declined from 31.0 million barrels per day to 22.6 million.
 - United States declined from 9.2 to 7.6 million.
 - Canada declined from 1.8 to 1.6 million.
 - Mexico grew from .5 to 2.5 million.
 - The United Kingdom grew from virtually 0 to 1.8 million.
 - The USSR grew from 8.3 to 11.4 million.
 - China grew from 1.1 to 2.7 million.
 - Other non-OPEC countries grew from 3.8 to 9.2 million./wir.

* Excludes natural gas liquids.

WORLD CRUDE OIL PRODUCTION - 1973, 1979 & 1989

(In 1,000 Barrels per day)

<u>COUNTRY</u>	<u>1973</u>	<u>1979</u>	<u>1989</u>	<u>Increase (Decrease) 1989 v. 1979</u>
<u>MIDEAST OPEC</u>				
Saudi Arabia*	7,596	9,532	5,148	(4,384)
Iran	5,861 **	3,168 **	2,863	(305)
Iraq	2,018	3,477	2,822	(655)
Kuwait*	3,020	2,500	1,802	(698)
UAE Total	1,533	1,831	1,959	128
Qatar	<u>570</u>	<u>508</u>	<u>391</u>	<u>(117)</u>
Total M/E OPEC	20,598	21,016	14,985	(6,031)
<u>OTHER OPEC</u>				
Venezuela	3,366	2,356	1,883	(473)
Nigeria	2,054	2,302	1,689	(613)
Indonesia	1,339	1,591	1,374	(217)
Libya	2,175	2,096	1,092	(1,004)
Algeria	1,097	1,224	1,100	(124)
Gabon	175	200	270	70
Ecuador	<u>204</u>	<u>210</u>	<u>280</u>	<u>70</u>
Total Other OPEC	10,410	9,979	7,688	(2,291)
TOTAL OPEC CRUDE	30,988	30,998	22,634	(8,364)
(Inc. Persian Gulf Nations' total of)	(20,668)	(21,066)	(15,028)	
<u>NON-OPEC</u>				
United States	9,208	8,552	7,613	(939)
Canada	1,798	1,500	1,560	60
Mexico	465	1,461	2,507	1,046
United Kingdom	2	1,568	1,787	219
USSR	8,329	11,187	11,360	173
China	1,090	2,122	2,760	638
Other	<u>3,804</u>	<u>5,089</u>	<u>9,238</u>	<u>4,149</u>
TOTAL WORLD	55,684	62,477	59,460	(3,017)
OF WHICH:				
Market Economies	45,805	48,725	44,934	(3,791)
Central Plan. Economies***	9,879	13,752	14,526	774

* Includes half of Saudi Arabia & Kuwait's share of oil from the neutral Zone.

** Iran's high production point was in 1974 with 6,022,000 barrels per day.

*** Includes Albania, Bulgaria, Cambodia, China, Cuba, Czechoslovakia, East Germany, Hungary, Laos, Mongolia, North Korea, Poland, Romania, USSR, Vietnam & Yugoslavia

Source: U.S. DOE, International Petroleum Statistics Report, July 1990, Table 1.1.

OPEC & PERSIAN GULF PRODUCTION AS A SHARE OF TOTAL WORLD PRODUCTION*

1. World petroleum production (liquids):

- Rose from 59.3 million barrels in 1973 to a high of 67.0 million in 1979;
- Then declined to a low of 59.3 million in 1985;
- Then rose to a new high of 67.5 million barrels during the 1st 5 months of 1990.

2. OPEC petroleum production:

- Rose from 31.4 million barrels in 1973 to 31.7 million in 1979;
- Then declined to a low of 17.5 million barrels in 1985;
- Then rose to 25.4 million during the 1st 5 months of 1990.

WHICH COUNTRIES COULD HELP MAKE UP THE 4 MILLION PER DAY LOST BARRELS?

OPEC:

1. August Production from OPEC countries was estimated at 23.36 MMB/D.
2. With July OPEC agreement, production was expected to drop to 22.5 MMB/D.
3. About 4 MMB/D of crude oil, plus liquids, is being lost from Iraq, Kuwait & Neutral Zone.
4. PIRA estimates that, in the short term (30 days), OPEC crude production could be increased on a sustainable basis.

NON-OPEC:

1. Little capacity exists outside OPEC to increase production.
2. Petroleum Intelligence Weekly estimates about 350,000 barrels of sustainable non-OPEC increases.

OPEC & PERSIAN GULF PRODUCTION AS A SHARE OF TOTAL WORLD PRODUCTION*

(In thousands of barrels per day, average)

<u>YEAR</u>	<u>WORLD PETROLEUM PRODUCTION</u>	<u>OPEC PRODUCTION</u>	<u>OPEC AS A % OF WORLD PRODUCTION</u>	<u>PERSIAN GULF PRODUCTION</u>	<u>PERSIAN GULF AS % OF WORLD PRODUCTION</u>
1973	59,305	31,376	52.9%	20,895	35.2%
1979	66,989	31,720	47.4%	21,569	32.2%
1985	59,267	17,549	29.6%	10,261	17.3%
1989	65,718	23,742	36.1%	15,800	24.0%
1st 5 Mo. 1990	67,467	25,375	37.6%	16,960	25.1%

*Crude Oil, Natural Gas Liquids, other Liquids & Refinery Gain)

Source: U.S. DOE, International Petroleum Statistics Report, July 1990, Table 1.4

OPEC Includes: Algeria, Ecuador, Gabon, Indonesia, Iran, Iraq, Kuwait, Libya,
Nigeria, Qatar, Saudi Arabia, the United Arab Emirates, & Venezuela.

Persian Gulf Includes: Bahrain, Iran, Iraq, Kuwait, Qatar, Saudi Arabia,
and the United Arab Emirates.

WHICH COUNTRIES COULD HELP MAKE UP THE 4 MILLION PER DAY LOST BARRELS?

OPEC: (Millions of barrels per day):

<u>COUNTRY</u>	Est. Jul. '90	Expect Aug. '90	Est. Aug. '90	Est. Sustain- able Capacity	Potential Inc. Above expected Aug. Prod	
					<u>Sustain*</u>	<u>Surge</u>
Saudi Arabia	5.38	5.23	5.50	7.20	1.97	+ .80
Neutral Zone	0.30	0.32	0.20	0.30 *	0.11	
Iran	3.00	3.14	3.14	3.25	0.11	
UAE	1.95	1.50	1.80	2.20	0.70	
Qatar	0.35	0.37	0.35	0.45	0.08	
Algeria	0.75	0.75	0.75	0.75	0.00	
Libya	1.20	1.23	1.30	1.50	0.27	
Nigeria	1.75	1.61	1.80	1.80	0.19	
Gabon	0.28	0.28	0.28	0.28	0.00	
Venezuela	1.95	1.95	2.00	2.30	0.35	+ .15
Indonesia	1.28	1.30	1.30	1.30	0.00	
Iraq	3.20	3.14	1.00	0.50 *	0.00	
Kuwait	<u>1.70</u>	<u>1.40</u>	<u>0.10</u>	<u>0.10</u> *	<u>0.00</u>	
Total OPEC	23.09	22.22	19.52	21.93 *	+ 3.78	+ .95
Sustainable capacity lost				4.04		

* Assuming loss of 2.64 from Iraq, 1.3 from Kuwait and .10 of Kuwait's share of Neutral Zone production.

** With Embargo in place, losing 4.04 MMB/D.

NON-OPEC (PIW estimates of potential expansion capability):

<u>COUNTRY</u>	Est. Jul. '90	Potential Inc. Above expected Jul. Prod	
		<u>Sustain*</u>	<u>Surge</u>
Mexico	2.46	0.50	
Malaysia	0.53	0.75	0.15
U.S	7.13	0.50	
China	2.75	0.50	0.50
Oman	0.64	0.50	
Canada	1.68	0.30	
Brunei	0.15	0.25	0.15
Columbia	0.42	0.25	0.15
Subtotal	15.76	3.55	0.95

INDUSTRIALIZED COUNTRY DEPENDENCE ON IMPORTS

1. Oil demand was lower in 1989 than in 1979 (near historical high) in Europe, Japan and the U.S.
2. Oil imports in 1989 were also somewhat lower in 1989 than 1979 in Europe, Japan and the U.S.
3. Net oil imports were substantially lower in 1989 than 1979 in Europe, due principally to Britain and Norway's North Sea production.
4. The share of energy provided by oil was down in 1989 from 1979 in Europe, Japan and the U.S., much lower in Europe and Japan.
5. Strategic reserves were up in 1989 compared to 1979 in terms of days of Japan, particularly in Japan and the U.S.

OIL STOCKS – OECD COUNTRIES – 1973, 1979, 1989, 1990

1. At the End of March 1990, OECD oil stocks were up 60 million barrels from December 1989.
2. The U.S. accounted for most stock gain reported through March 1990, but other stocks are believed to have grown substantially thereafter.
3. The Saudis and Iranians are believed to have had 25 to 40 million barrels of oil in "floating storage" (large ships) near key markets.

INDUSTRIALIZED COUNTRY DEPENDENCE ON IMPORTS

	<u>Europe</u>		<u>Japan</u>		<u>U.S.</u>	
	1979	1989	1979	1989	1979	1989
Oil Demand (MMB/D)	13.86	11.95	5.85	4.89	18.51	17.24
Total Oil Imports(MMB/D)	16.49	14.04	5.52	5.19	8.46	7.98
Net Oil Imports (MMB/D)	12.42	8.04	5.52	5.05	7.92	7.06
Net Imports as % of demand	90%	67%	94%	103%	43%	41%
%Total Imports from OPEC	69%	44%	78%	73%	67%	52%
Oil as % of Energy Demand	54%	44%	71%	57%	47%	42%
Cost of Crude Imports(\$ Bil)*	\$64.8	\$36.8	\$33.5	\$21.5	\$49.0	\$37.7
Strategic Reserves in Days of imports	12	16	6	38	11	70

* Note that this line is price for crude imports only. In 1989, the U.S. imported about 5.6 million barrels per day of crude and an additional 1.7 million per day of oil products. Those products added about \$11 billion to the U.S. oil import bill.

OIL STOCKS – OECD COUNTRIES – 1973, 1979, 1989, 1990

(in million barrels)

<u>Total Oil Stocks</u>					
<u>Country</u>	<u>Dec. 1973</u>	<u>Dec. 1979</u>	<u>Dec. 1989</u>	<u>Mar. 1990</u>	<u>Gov't Share Mar. 1989</u>
France	201	226	138	136	0
Italy	152	163	164	163	6
West Germany	181	272	271	267	53
United Kingdom	156	169	114	121	0
Total OECD Europ	1,070	1,118	1,125	1,122	60
United States	1,008	1,341	1,583	1,643	582
Canada	140	150	116	120	0
Japan	303	460	576	577	208
Others*	<u>67</u>	<u>75</u>	<u>71</u>	<u>71</u>	<u>0</u>
TOTAL OECD	2,588	3,144	3,471	3,534	850

* Australia, New Zealand & US Territories

Source: U.S. DOE, International Petroleum Statistics Report, July 1990

Tables 1-5, 1-6

ESTIMATED PROVED CRUDE OIL RESERVES

Estimated proved crude oil reserves are estimates. They are not always accurate in the sense of describing the quantities of crude oil that will ultimately be recovered. However, they are the best available numbers on crude oil that might be produced with current technology and economics.

The estimates for 1980, 1985 and 1990 shown in the table that follows are particularly interesting in light of current and continuing concern about oil prices and the adequacy of supplies.

It is clear from the table that proved reserves are heavily concentrated in a few countries. However, the table shows a number of other interesting points, including the following:

1. From 1980 to 1990, estimates of proved reserves increased as follows:
 - . OPEC - by 291.5 BILLION barrels (from 410.4 to 701.9 billion).
 - . NON-OPEC - by 68.4 BILLION barrels (from 231.3 to 299.7 billion), despite a drop in U.S. reserves of 1.6 billion barrels.
 - . Total world (including centrally-planned economies) - by 360 BILLION barrels.
2. From 1980 to 1990, centrally-planned economies' estimates of proved reserves declined by 6.2 billion barrels (from 90.3 to 84.1 billion).

When evaluating the adequacy of world oil reserves, it is useful to keep in mind that TOTAL WORLD OIL CONSUMPTION from January 1, 1980 to January 1, 1990 was about 225 BILLION BARRELS. (Total oil consumption includes condensate and natural gas liquids that are not included in estimates of proved CRUDE reserves.)

Thus, the total proved reserves added between 1980 and 1990 (360 billion barrels) were roughly 1.6 times the petroleum consumed during the same period.

Of course, the United States, Japan and most other industrialized countries have relatively few proved reserves -- compared to their high consumption levels. (For example, the U.S. consumed about 6.4 billion barrels of oil during 1989 and currently reports only 25.9 billion barrels of crude oil reserves. During 1989, the U.S. imported about 2.1 billion barrels of oil.

In recent years, U.S. oil companies have increasingly focused their exploration for oil outside the U.S. (while increasing exploration for natural gas within the U.S.). Whether these efforts will result in additional significant increases in Non-OPEC proved reserves remains to be seen.

ESTIMATED PROVED CRUDE OIL RESERVES (In millions of barrels)

<u>REGION & COUNTRIES</u>	<u>1/1/80</u>	<u>1/1/85</u>	<u>1/1/90</u>	<u>REGION & COUNTRIES</u>	<u>1/1/80</u>	<u>1/1/85</u>	<u>1/1/90</u>
NORTH AMERICA	64,550.0	82,975.0	88,358.5	MIDDLE EAST	361,822.3	398,380.8	660,247.2
Canada	6,800.0	7,075.0	6,133.5	Bahrain	240.0	170.0	111.7
Mexico	31,250.0	48,600.0	56,365.0	Iran*	58,000.0	48,500.0	92,860.0
United States	26,500.0	27,300.0	25,860.0	Iraq*	31,000.0	44,500.0	100,000.0
				Israel	1.0	0.8	1.5
CENTRAL & SOUTH AMERIC	25,222.5	34,715.7	68,661.9	Jordan	0.0	0.0	5.0
Argentina	2,400.0	2,266.0	2,279.9	Kuwait*	65,400.0	90,000.0	94,525.0
Barbados	1.5	0.6	3.2	Neutral Zone	6,260.0	5,420.0	5,200.0
Bolivia	150.0	158.0	182.0	Oman	2,400.0	3,500.0	4,250.0
Brazil	1,220.0	1,976.0	2,816.0	Qatar*	3,760.0	3,350.0	4,500.0
Chile	400.0	736.0	300.0	Saudi Arabia*	163,350.0	169,000.0	254,959.0
Colombia	710.0	624.0	2,060.0	Syria	2,000.0	1,450.0	1,730.0
Ecuador*	1,100.0	1,400.0	1,514.0	United Arab Emirates*	29,411.3	32,490.0	98,105.0
Guatemala	16.0	500.0	41.6	Abu Dhabi	28,000.0	30,500.0	92,205.0
Peru	655.0	670.1	412.0	Dubai	1,400.0	1,440.0	4,000.0
Suriname	0.0	0.0	28.2	Ras al Khaimah	0.0	100.0	400.0
Trinidad & Tobago	700.0	540.0	521.0	Sharjah	11.3	450.0	1,500.0
Venezuela*	17,870.0	25,845.0	58,504.0	Yemen, North(Sana)	0.0	0.0	1,000.0
				Yemen, South (Aden)	0.0	0.0	3,000.0
WESTERN EUROPE	23,326.4	24,425.5	18,822.1	ASIA-PACIFIC	19,355.2	18,529.9	22,545.4
Austria	141.4	118.5	66.0	Australia	2,130.0	1,430.9	1,676.5
Denmark	375.0	400.0	849.1	Bangladesh	0.0	0.0	0.5
France	50.0	148.0	190.0	Brunei	1,800.0	1,400.0	1,375.0
West Germany	480.0	299.0	400.0	Burma	25.0	28.0	51.3
Greece	150.0	51.0	72.5	Taiwan	10.2	5.7	4.6
Italy-Sicily	645.0	800.0	727.1	India	2,600.0	3,500.0	7,516.4
Netherlands	60.0	310.0	169.8	Indonesia*	9,600.0	8,650.0	8,200.0
Norway	5,750.0	8,300.0	11,546.2	Japan	55.0	56.0	60.8
Spain	150.0	115.0	25.0	Malaysia	2,800.0	3,000.0	2,950.0
Turkey	125.0	294.0	520.8	New Zealand	110.0	155.0	146.0
United Kingdom	15,400.0	13,590.0	4,255.6	Pakistan	200.0	82.0	118.6
AFRICA	57,072.1	55,540.5	58,836.6	Papua New Guinea	0.0	50.0	200.0
Algeria*	8,440.0	9,000.0	9,200.0	Philippines	25.0	16.3	15.0
Angola-Cabinda	1,200.0	1,800.0	2,024.0	Thailand	0.0	156.0	230.7
Benin	0.0	100.0	100.0				96.1
Camaroon	140.0	550.0	400.0	EASTERN EUROPE &			
Congo	400.0	480.0	830.0	SOVIET UNION	70,275.0	65,000.0	60,100.0
Egypt	3,100.0	3,200.0	4,500.0	Soviet Union	67,000.0	63,000.0	58,400.0
Gabon*	500.0	510.0	733.0	Others**	3,275.0	2,000.0	1,700.0
Ghana	7.0	3.8	1.0	CHINA	20,000.0	19,100.0	24,000.0
Ivory Coast	0.0	108.0	100.0				
Libya*	23,500.0	21,100.0	22,800.0	TOTAL OPEC	410,361.3	443,750.0	701,882.0
Morocco	0.1	0.2	2.5	TOTAL NON-OPEC	231,262.2	254,917.4	299,689.7
Nigeria*	17,400.0	16,650.0	16,000.0	TOTAL MARKET ECONOMIES	551,348.5	614,567.4	917,471.7
South Africa	0.0	114.5	0.0	TOTAL CENT. PLAN.	90,275.0	84,100.0	84,100.0
Sudan	0.0	300.0	300.0	ECONOMIES			
Tunisia	2,250.0	1,514.0	1,750.0	WORLD TOTAL	641,623.5	698,667.4	1,001,572
Zaire	135.0	110.0	96.1				

Sources: PennWell Publishing Co., International Petroleum Encyclopedia, Vol. 13, pp. 224-5; Vol. 18, pp. 258-9; Vol. 23, pp. 284-5.

** Other Centrally Planned Economies (CPE) include Albania, Bulgaria, Cuba, Czechoslovakia, East Germany, Hungary, Mongolia, North Korea, Poland, Romania, Viet Nam and Yugoslavia. * OPEC Member.

U.S. PETROLEUM PRODUCTS SUPPLIED & DOMESTIC PRODUCTION

1. U.S. PETROLEUM PRODUCTS SUPPLIED -- OFTEN A SURROGATE FOR "CONSUMPTION":

- GREW FROM 17.3 MILLION BARRELS PER DAY IN 1973 TO 18.8 MILLION IN 1978;
- THEN DECLINED TO 15.2 MILLION IN 1983;
- THEN GREW TO 17.3 MILLION IN 1989.

2. U.S. PETROLEUM PRODUCTION (CRUDE AND NATURAL GAS LIQUIDS):

- DECLINED FROM 11 MILLION BARRELS PER DAY IN 1973 TO 9.8 MILLION IN 1976;
- THEN GREW TO 10.6 MILLION IN 1985;
- THEN, WITH THE SHARP 1986 DROP IN OIL PRICES, BEGAN DECLINING.
- PRODUCTION IN 1989 AVERAGED 9.2 MILLION BBL/DAY, AND 8.9 MILLION DURING THE 1ST 6 MONTHS OF 1990.

3. U.S. PRODUCTION AS A SHARE OF PRODUCTS SUPPLIED:

- WAS 63.4% IN 1973, BEFORE DECLINING TO 54.8% IN 1978,
- THEN RISING TO 67.6% IN 1983-1985, BEFORE DECLINING TO 53.2% IN 1989.

U.S. PETROLEUM PRODUCTS SUPPLIED & DOMESTIC PRODUCTION

THOUSANDS OF BBLS/DAY

<u>YEAR</u>	<u>PETROLEUM PRODUCTS SUPPLIED IN U.S.</u>	<u>U.S. PRODUCTION*</u>	<u>PRODUCTION AS % OF PRODUCTS SUPPLIED</u>
1973	17,308	10,975	63.4%
1976	17,461	9,774	56.0%
1978	18,847	10,328	54.8%
1979	18,513	10,179	55.0%
1983	15,231	10,299	67.6%
1985	15,736	10,636	67.6%
1989	17,325	9,219	53.2%
1st Half 1990	17,001	8,910	52.4%

*Crude oil and natural gas liquids.

U.S. DEPENDENCE ON PETROLEUM IMPORTS

1. U.S. DEPENDENCE ON IMPORTED PETROLEUM:

- . GREW FROM 34.8% IN 1973 TO 46.5% IN 1977;**
- . THEN DECLINED TO 27.3% IN 1985;**
- . THEN CLIMBED TO 41.6% IN 1989 AND 45% IN THE 1ST QUARTER OF 1990.**

2. U.S. DEPENDENCE ON IMPORTED PETROLEUM FROM OPEC:

- . GREW FROM 17.3% IN 1973 TO 33.6% IN 1977;**
- . THEN DECLINED TO 11.6% IN 1985;**
- . THEN CLIMBED TO 20.3% IN 1989 AND 26.9% IN THE 1ST QUARTER OF 1990.**

U.S. DEPENDENCE ON PETROLEUM IMPORTS

<u>PETROLEUM IMPORTS</u>					
<u>YEAR</u>	<u>PETROLEUM PRODUCTS SUPPLIED IN U.S. IN THOUSANDS BBLs/DAY*</u>	<u>FROM ALL COUNTRIES</u>		<u>FROM OPEC</u>	
		<u>THOUSAND BBLs/DAY</u>	<u>% OF TOTAL SUPPLIED</u>	<u>THOUSAND BBLs/DAY</u>	<u>% OF TOTAL SUPPLIED</u>
1973	17,308	6,025	34.8%	2,991	17.3%
1977	18,431	8,565	46.5%	6,190	33.6%
1979	18,513	7,985	43.1%	5,633	30.4%
1985	15,726	4,286	27.3%	1,821	11.6%
1989	17,325	7,202	41.6%	4,124	23.8%
1st Qtr. 1990	17,025	7,661	45.0%	4,578	26.9%

**Products Supplied" is not the same as "consumption" but is often used as such.
Source: U.S. DOE, MONTHLY ENERGY REVIEW, APRIL 1990.

U.S. ENERGY CONSUMPTION BY SOURCE

1. TOTAL U.S. ENERGY CONSUMPTION GREW BY 9.4% IN THE 16 YEARS FROM 1973 TO 1989.
2. TOTAL U.S. ENERGY CONSUMPTION GREW BY 3.0% IN THE 10 YEARS FROM 1979 TO 1989.
3. SHARE SUPPLIED BY OIL, NATURAL GAS AND HYDRO DECLINED.
4. SHARE SUPPLIED BY COAL AND NUCLEAR GREW.

U.S. ENERGY CONSUMPTION BY SOURCE

<u>YEAR</u>	<u>COAL</u>	<u>OIL</u>	<u>GAS</u>	<u>HYDRO</u>	<u>NUCLEAR</u>	<u>OTHER</u>	<u>TOTAL</u>
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In trillion Btu's:

1973	12,971	34,840	22,512	3,010	910	39	74,282
1979	15,039	37,123	20,666	3,141	2,776	152	78,898
1989	18,916	34,211	19,358	2,860*	5,687	248	81,279

In percentage share:

1973	17.5%	46.9%	30.3%	4.1%	1.2%	0.05%	100.0%
1979	19.1%	47.1%	26.2%	4.0%	3.5%	0.2%	100.0%
1989	23.3%	42.1%	23.8%	3.5%	7.0%	0.3%	100.0%

* 1989 was a drought year.

Source: U.S. DOE, Monthly Energy Review, April 1990

U.S. CONSUMPTION OF PETROLEUM BY END USE SECTOR

From 1973 to 1989:

- 1. U.S. total consumption of petroleum decreased by 1.8%.**
- 2. Residential and commercial use of petroleum decreased by 39.2%.**
- 3. Industrial use of petroleum decreased by 8.6%.**
- 4. Transportation use of petroleum increased by 20.8%.**
- 5. Electric utilities use of petroleum decreased by 52.2%.**

U.S. CONSUMPTION OF PETROLEUM BY END USE SECTOR

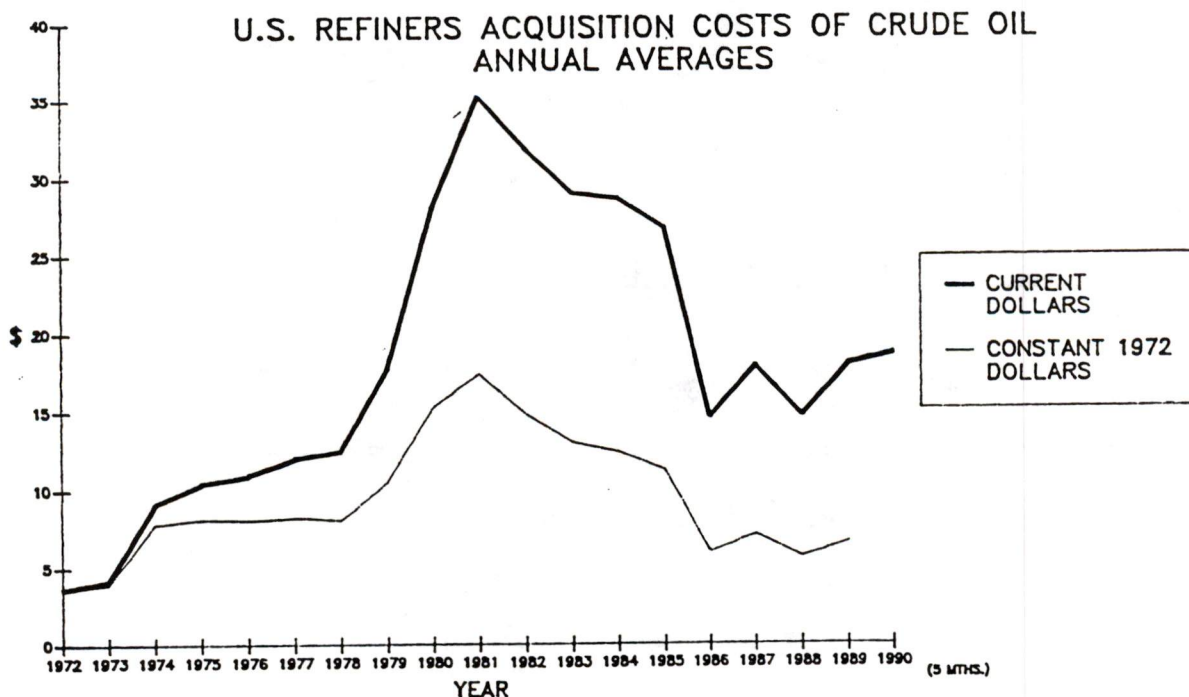
<u>YEAR</u>	<u>RESIDENTIAL & COMMERCIAL</u>	<u>INDUSTRIAL</u>	<u>TRANSPORTATION</u>	<u>ELECTRICAL UTILITIES</u>	<u>TOTAL</u>
<u>In quadrillion Btu's</u>					
1973	4.391	9.104	17.831	3.515	34.841
1979	3.448	10.568	19.825	3.283	37.124
1982	2.449	7.794	18.420	1.568	30.231
1985	2.573	7.725	19.534	1.090	30.922
1989	2.668	8.321	21.541	1.681	34.211
<u>Percentage share of total U.S. Petroleum Consumption</u>					
1973	12.6%	26.1%	51.2%	10.1%	100.0%
1979	9.3%	28.5%	53.4%	8.8%	100.0%
1982	8.1%	25.8%	60.9%	5.2%	100.0%
1985	8.3%	25.0%	63.2%	3.5%	100.0%
1989	7.8%	24.3%	63.0%	4.9%	100.0%
<u>Petroleum consumption in 1989 compared to 1973:</u>					
	-39.2%	-8.6%	20.8%	-52.2%	-1.8%

Source: U.S. DOE, Monthly Energy Review, April 1990.

U.S. REFINERS ACQUISITION COSTS OF CRUDE OIL *

In current and constant 1972 U.S. dollars

1. In current dollar terms (including inflation), U.S. refiners' cost of crude oil grew from an average of \$3.58 per barrel in 1972 to a high of \$35.84 in 1981, then declined to \$14.55 in 1986 (the year of unrestrained Saudi production), then reached \$17.97 in 1989.
2. Changes in the REAL price of oil (removing effects of inflation) have been much less dramatic. Real prices in 1972 U.S. \$ grew from an average of \$3.58 in 1972 to a high of \$17.41 in 1981, then declined to \$5.61 in 1988 and increased to \$6.60 in 1989.



U.S. REFINERS ACQUISITION COSTS OF CRUDE OIL * **In current and constant 1972 U.S. dollars**

Annual Averages		
<u>Year</u>	<u>Current Dollars</u>	<u>Constant 1972 Dollars</u>
1972	\$3.58	\$3.58
1973	\$4.15	\$3.90
1974	\$9.07	\$7.81
1975	\$10.38	\$8.14
1976	\$10.89	\$8.02
1977	\$11.96	\$8.26
1977	\$12.46	\$8.02
1979	\$17.72	\$10.47
1980	\$28.07	\$15.22
1981	\$35.24	\$17.41
1982	\$31.87	\$14.80
1983	\$28.99	\$12.96
1984	\$28.63	\$12.34
1985	\$26.75	\$11.19
1986	\$14.55	\$5.93
1987	\$17.90	\$7.07
1988	\$14.67	\$5.61
1989	\$17.97	\$6.60
1990 (5 Mos)	\$18.69	

* Composite price, including both foreign and domestic crude.

Source: Oil Cost (current \$), U.S. DOE, Monthly Energy Review, April 1990,
Table 9.1; U.S. DOE, Weekly Petroleum Status Report, Aug. 10, 1990.

Implicit GNP Price Deflator: 1972-1989: U.S. Council of Economic
Advisers, Economic Report of the President, February 1990. Table C-3

U.S. ELECTRIC NET GENERATION BY FUEL SOURCE 1973, 1977, 1979, 1985, 1989, EARLY 1990

1. During the 16 year period from 1973 to 1989, U.S. electric generation grew by 49.5%.
2. During the same period, the mix of fuels used in generating electricity changed dramatically:
 - a. Coal's share increased from 45.6% to 55.8%.
 - b. Oil's share declined from 16.9% to 4.6%.
 - c. Natural gas' share declined from 18.3% in 1973 to 9.5% in 1989.
 - d. Nuclear's share growing from 4.5% in 1973 to 19% in 1989.
 - e. Hydro's share declining from 14.6% to an abnormally low 9.5% during 1989 (drought year).
3. Electric utilities consumption of oil:
 - a. Grew from 1.5 million barrels per day in 1973 to 1.7 million in 1977;
 - b. Then declined dramatically to 560,000 barrels in 1985 (drop of nearly 2/3rds).
 - c. Grew slightly to 731,000 barrels in 1989 (drought year); and
 - d. Is declining sharply in 1990 -- a year of very low natural gas prices and availability of new nuclear plants.

U.S. ELECTRIC NET GENERATION BY FUEL SOURCE 1973, 1977, 1979, 1985, 1989, EARLY 1990

<u>YEAR</u>	<u>COAL</u>	<u>PETROLEUM</u>	<u>NATURAL GAS</u>	<u>NUCLEAR</u>	<u>HYDRO</u>	<u>OTHER</u>	<u>TOTAL</u>
<u>Million Killowatthours</u>							
1973	847,651	314,343	340,858	83,479	272,083	2,294	1,860,710
1978	975,742	365,060	305,391	276,403	280,419	3,315	2,206,331
1979	1,075,037	303,525	329,485	255,155	279,155	4,387	2,247,372
1985	1,402,128	100,202	291,946	383,691	281,149	10,724	2,469,841
1989	1,551,852	158,241	264,957	529,355	265,061	11,309	2,780,775
1ST 4 MOS 1990	488,462	41,209	62,368	189,685	101,038	3,513	886,277
<u>PERCENT SHARE</u>							
1973	45.6%	16.9%	18.3%	4.5%	14.6%	0.1%	100.0%
1977	44.2%	16.5%	13.8%	12.5%	12.7%	0.2%	100.0%
1979	47.8%	13.5%	14.7%	11.4%	12.4%	0.2%	100.0%
1985	56.8%	4.1%	11.8%	15.5%	11.4%	0.4%	100.0%
1989	55.8%	5.7%	9.5%	19.0%	9.5%	0.4%	100.0%
1ST 4 MOS 1990	55.1%	4.6%	7.0%	21.4%	11.4%	0.4%	100.0%

AVERAGE BARRELS OF OIL CONSUMED PER DAY BY ELECTRIC UTILITIES:

<u>YEAR</u>	<u>TOTAL BBLS USED</u>	<u>AVG. BBLS PER DAY</u>
1973	560,248,000	1,534,926
1977	623,705,000	1,708,781
1979	523,297,000	1,433,690
1985	204,479,000	560,216
1989	266,836,000	731,058
1990 (1ST 4 MOS)	69,168,000	189,501

Source: U.S. DOE, Monthly Energy Review, April 1990.

MEASURES OF CHANGES IN ENERGY EFFICIENCY IN THE U.S.

Energy Consumption per Dollar of Gross National Product

From 1973 to 1989:

1. The U.S. GNP grew by 51 % (constant \$).
2. Total energy consumption per dollar of GNP decreased by 27.7%.
3. Reflecting some shift away from oil and natural gas to other energy sources:
 - a. Consumption of oil & natural gas per \$ of GNP declined by 38.3%.
 - b. Consumption of other energy sources per \$ of GNP increased by 8.1%.

Energy consumption per Dollar of GNP

<u>Year</u>	<u>Gross National Product - In Trillion 1982 \$</u>	<u>Petroleum & Natural Gas (Thousand Btu per 1982 dollar)</u>	<u>Other Energy</u>	<u>Total</u>
1973	2.744	20.9	6.2	27.1
1979	3.192	18.1	6.6	24.7
1985	3.619	13.5	7	20.4
1989	4.144	12.9	6.7	19.6
1st Qtr* 1990	4.193	12.2	6.7	18.9

Change from 1973 to 1989

51.0%	-38.3%	8.1%	-27.7%
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* Seasonally adjusted, annual rates

MEASURES OF EFFICIENCY IN THE USE OF ENERGY IN THE U.S.

Passenger Car Efficiency

1. Passenger car fuel efficiency has increased by 50% from 1973 to 1988, reflecting a miles-per-gallon increase from an average of 13.30 to 19.95.
2. Miles driven per passenger car declined from 10,256 in 1973 to a low point of 9,141 in 1980, before increasing again to an estimated 10,119 in 1988.
3. Fuel consumption per car decreased steadily from 771 gallons in 1973 to an estimated 507 gallons in 1988.

<u>YEAR</u>	<u>Mileage</u>		<u>Fuel Consumption</u>		<u>Fuel Rate</u>	
	<u>Miles Per Car</u>	<u>Index 1973=100.</u>	<u>Gallons per Car</u>	<u>Index 1973=100.0</u>	<u>Miles per Gallon</u>	<u>Index 1973=100.0</u>
1973	10,256	100.0	771	100.0	13.30	100.0
1979	9,403	91.7	653	84.7	14.41	108.3
1980	9,141	89.1	591	76.7	15.46	116.2
1985	9,560	93.2	525	68.1	18.20	136.3
1988*	10,119	98.7	507	65.8	19.95	150.0

*Preliminary

Source: U.S. DOE, Monthly Energy Review, April 1990.

COST OF FUEL TO END USERS – IN CONSTANT (1982–84) DOLLARS

The real cost of energy to end users -- i.e., in constant dollars -- has not increased as much as we sometimes assume. In fact:

1. From 1973 to 1989:

- The real cost of leaded regular gasoline declined by 8%.
- The real cost of residential natural gas increased by 54.7% (in \$ per MMBtu), undoubtedly reflecting increased costs at the wellhead -- which had been held to very low levels by Federal regulation -- and increased distribution costs at the local gas company.
- The real cost of electricity increased by 7.7%.

2. From 1978 until 1989, the cost of residential heating oil declined by 3.5%.
(Data on end user cost of heating oil had not previously been collected.)

3. Oil costs reached their high point in 1981. From 1981 until 1989:

- The real cost of leaded regular gasoline declined 44.2%.
- The real cost of residential heating oil declined by 44.7%.
- The real cost of residential natural gas declined by 4.1% (in \$ per MMBtu).
- The real cost of residential electricity declined by 9.7%.

COST OF FUEL TO END USERS – IN CONSTANT (1982–84) DOLLARS

<u>Year</u>	<u>Leaded Regular Motor Gasoline</u>		<u>Residential Heating Oil</u>		<u>Residential Natural Gas</u>		<u>Residential Electricity</u>	
	<u>Cents/Gal</u>	<u>\$/MMBtu</u>	<u>Cents/Gal</u>	<u>\$/MMBtu</u>	<u>Cents/Mcf</u>	<u>\$/MMBtu</u>	<u>Cents/kWh</u>	<u>\$/MMBtu</u>
1973	87.4	6.99	NA	NA	290.5	2.85	5.72	16.77
1977	102.6	8.21	NA	NA	387.8	3.81	6.68	19.59
1978	96.0	7.68	75.2	5.42	392.6	3.86	6.61	19.37
1979	118.0	9.44	97.0	6.99	410.5	4.03	6.39	18.73
1981	144.2	11.53	131.4	9.47	471.9	4.60	6.82	19.99
1985	103.6	8.29	97.9	7.06	568.8	5.52	7.24	21.22
1988	76.0	6.08	68.7	4.96	462.4	4.49	6.33	18.56
1989	80.4	6.43	72.6	5.23	454.0	4.41	6.16	18.06
<u>% Increase or (decrease)</u>								
'89 v. '73	-8.0%	-8.0%	NA	NA	56.3%	54.7%	7.7%	7.7%
'89 v. '78	-16.2%	-16.3%	-3.5%	-3.5%	15.6%	14.2%	-6.8%	-6.8%
'89 V. '81	-44.2%	-44.2%	-44.7%	-44.8%	-3.8%	-4.1%	-9.7%	-9.7%

Source: U.S. DOE, Monthly Energy Review, April 1990

COMPARISON OF GROWTH IN ELECTRICITY SALES AND REAL GNP 1973 - 1989

U.S. electricity sales growth is a matter of particular importance since, on a nationwide basis:

- . Electricity sales have grown at a rate very close to the growth in real U.S. Gross National Product (GNP). Use of oil and total U.S. energy consumption has grown slower than real GNP.
- . In order to respond to demands for electricity, utilities consume about 36% of all the Btu's consumed in the U.S.

The more rapid growth in electricity use is due in large part to the preference of consumers for electricity for many energy uses -- rather than the direct use of oil, coal or natural gas.

Growth in electricity sales is also important because electric utilities have become a principal focus of energy conservation measures -- as electric utilities, often encouraged by state utility commissions, have increased efforts to encourage their customers to use energy more efficiently.

The table below shows electricity sales and real GNP by year, year-to-year growth, and cumulative growth after 1973 and after 1979. Points of interest include:

1. Total U.S. electricity sales grew by 44% from 1973 to 1989 -- slightly faster than real GNP which grew at 42.2%.
2. Total U.S. electricity sales grew by 24.59% from 1973 to 1989 -- slightly slower than real GNP which grew at 26.68%.
3. Total U.S. electricity sales, in total, have grown some in each year except 1982. (Actually, sales to industrial users declined in 1980 - by 3.19%; 1982 - by 9.78%; 1985 - by 1.91%; and in 1986 - by 1.97%, years of economic slowdown, but were offset by growth in other user sectors: residential, commercial and other.)

COMPARISON OF GROWTH IN ELECTRICITY SALES AND REAL GNP 1973 - 1989

Electricity Sales in Million Kilowatthours					Real GNP -- in 1982 Dollars			
<u>YEAR</u>	<u>TOTAL</u>	<u>INC. OVER PRE. YR.</u>	<u>CUM. INC SINCE '73</u>	<u>CUM. INC SINCE '79</u>	<u>REAL GNP (1982 \$)</u>	<u>INC. OVER PRE. YR.</u>	<u>CUM. INC SINCE '73</u>	<u>CUM. IN SINCE '7</u>
1973	1,712,908		0.00%		2,744.1		0.00%	
1974	1,705,924	-0.41%	-0.41%		2,729.3	-0.54%	-0.54%	
1975	1,747,091	2.41%	2.01%		2,695.0	-1.26%	-1.80%	
1976	1,855,246	6.19%	8.20%		2,826.7	4.89%	3.09%	
1977	1,948,361	5.02%	13.22%		2,958.6	4.67%	7.76%	
1978	2,017,922	3.57%	16.79%		3,115.2	5.29%	13.05%	
1979	2,071,099	2.64%	19.42%	0.00%	3,192.4	2.48%	15.53%	0.00%
1980	2,094,449	1.13%	20.55%	1.13%	3,187.1	-0.17%	15.36%	-0.17%
1981	2,147,102	2.51%	23.06%	3.64%	3,248.8	1.94%	17.30%	1.77%
1982	2,086,441	-2.83%	20.24%	0.82%	3,166.0	-2.55%	14.75%	-0.78%
1983	2,150,954	3.09%	23.33%	3.91%	3,279.1	3.57%	18.32%	2.79%
1984	2,278,372	5.92%	29.25%	9.83%	3,501.4	6.78%	25.10%	9.57%
1985	2,309,543	1.37%	30.62%	11.20%	3,618.7	3.35%	28.45%	12.92%
1986	2,350,833	1.79%	32.41%	12.99%	3,717.9	2.74%	31.19%	15.66%
1987	2,455,440	4.45%	36.86%	17.44%	3,853.7	3.65%	34.85%	19.32%
1988	2,567,949	4.58%	41.44%	22.02%	4,024.4	4.43%	39.27%	23.75%
1989	2,633,833	2.57%	44.01%	24.59%	4,142.6	2.94%	42.21%	26.68%

Sources: Electricity sales by end use sector: U.S. DOE, Monthly Energy Review, April 1990, Table 7.2, Monthly Series.
Real GNP - 1973-1989, U.S. Council of Economic Advisers, Economic Report of the President, Table C-2.

OPEC OIL REVENUES

(In Billions of U.S. Dollars*)

1. Oil export revenues for the 13 members of OPEC have fluctuated dramatically during the past 19 years. Specifically, in current U.S. dollar terms:

- For the 13 members in total revenues grew from \$14.5 billion in 1970 to a high of \$287 billion in 1980; then declining to \$78.7 billion in 1986; then remaining in the \$ 90 billion to \$120 billion in 1987 - 1989.
- The 6 Arabian Gulf members of OPEC had revenues growing from \$7.9 billion in 1970 to a high of \$190.4 billion in 1980; then declining to \$47.8 billion in 1986; and then remaining in the \$55 - \$75 billion range in 1987 - 1989.
- The 7 other members of OPEC had revenues growing from \$6.6 billion in 1970 to a high of \$96.6 billion in 1980; then declining to \$31 billion in 1986; then remaining in the \$30 to \$45 billion range in 1987 - 1989.

2. Individual member countries also showed wide variation, with:

- Saudi Arabia growing from \$2.4 billion to a high of \$108.2 billion, before dropping by 80%.
- Iran also had \$2.4 billion in 1970, but never grew above \$23.6 billion.
- Iraq reached a high of \$26.3 billion in 1980 and, in recent years, has been half that level.

<u>Country</u>	<u>1970</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>
Saudi Arabia	2.4	9.0	35.5	29.5	38.2	43.3	40.3	62.8	108.2
Iran	2.4	5.6	20.9	19.6	22.9	23.6	21.7	19.2	13.3
Kuwait	1.6	3.5	10.4	8.4	9.0	8.8	9.4	16.8	17.7
Iraq	0.8	1.8	6.5	8.2	9.2	9.6	10.9	21.4	26.3
UAE	0.5	1.9	6.9	6.8	8.3	9.1	8.6	12.9	19.6
Qatar	0.2	0.6	2.0	1.8	2.1	2.0	2.3	3.6	5.4
Subtotal Arabian Gulf	7.9	22.4	82.2	74.3	86.6	96.4	93.3	136.8	190.4
Libya	2.4	3.9	8.2	6.7	9.4	11.2	9.7	15.7	21.4
Algeria	0.7	1.5	4.3	4.3	4.8	5.6	5.9	8.7	12.6
Nigeria	0.7	2.9	8.6	7.6	9.9	11.0	9.0	16.3	25.3
Gabon	0.1	0.2	0.7	0.8	0.9	0.9	1.0	1.3	1.9
Ecuador		0.3	0.7	0.5	0.6	0.5	0.6	1.2	1.6
Venezuela	2.4	4.3	10.5	8.3	8.8	9.1	8.7	13.6	18.2
Indonesia	0.4	1.6	5.2	5.3	6.0	7.3	7.4	8.9	15.6
Subtotal Other OPEC	<u>6.6</u>	<u>14.8</u>	<u>38.2</u>	<u>33.5</u>	<u>40.3</u>	<u>45.7</u>	<u>42.3</u>	<u>65.7</u>	<u>96.6</u>
Total OPEC	14.5	37.2	120.5	107.8	130.0	142.0	135.6	202.4	287.0

OPEC OIL REVENUES (Continued)

(In Billions of U.S. Dollars*)

Country	1981	1982	1983	1984	1985	1986	1987	Est. 1988	Est. 1989
Saudi Arabia	119.0	78.1	44.8	36.3	25.9	17.8	20.5	23	26
Iran	12.1	19.2	19.2	12.3	13.1	7.2	10.0	7	12
Kuwait	13.8	8.8	9.7	10.7	9.8	6.4	7.5	6	10
Iraq	10.4	10.1	9.9	12.0	11.4	7.2	11.3	11	14
UAE	18.8	15.3	12.2	13.0	11.8	7.5	8.7	8	11
Qatar	5.3	4.1	3.1	4.4	3.6	1.7	1.8	*	*
Subtotal Arabian Gulf	179.4	135.7	99.0	88.6	75.6	47.8	59.8		
Libya	14.5	13.2	11.9	10.7	10.5	6.1	5.6	5	7
Algeria	13.0	10.8	9.5	9.2	9.2	4.8	5.9	6	7
Nigeria	17.6	12.8	10.2	11.7	12.3	6.2	7.2	7	9
Gabon	1.7	1.7	1.5	1.8	1.7	0.7	1.0	*	*
Ecuador	1.7	1.5	1.7	1.8	1.9	1.0	0.8	*	*
Venezuela	19.0	16.6	113.8	12.1	10.4	6.7	9.0	8	9
Indonesia	18.1	15.2	13.6	12.5	9.1	5.5	6.3	4	6
Subtotal Other OPEC	<u>85.7</u>	<u>70.9</u>	<u>62.2</u>	<u>58.9</u>	<u>55.1</u>	<u>31.0</u>	<u>35.9</u>		
Total OPEC	265.1	206.7	161.3	148.5	130.7	78.8	95.7	89	117

Source: 1970 to 1987, Arthur Anderson & Co./Cambridge Energy Research Associates, World Oil Trends, Page 70.

1988 & 1989 Estimates, Petroleum Industry Research Associates (PIRA), made in November 1989.

* Individual country estimates were not made for Ecuador, Babon and Qatar. In total, these three countries were estimated to have oil export revenues of \$4 billion in 1988 and \$5 billion in 1989.

DEVELOPED COUNTRIES EXPORTS TO OPEC

1. The wealth flowing from oil consuming countries to oil producing countries is an important matter. It is useful, however, to keep in mind that oil producing countries also spend significant amounts of money in oil consuming countries.
2. This point is illustrated by the table below which shows exports from 7 industrialized countries to the 13 members of OPEC. To help assess the significance of the return flow of "petrodollars," the table also shows, in the last two columns, each OPEC member's oil export revenue for 1985 and 1987, and the percentage relationship between total oil export revenue and exports from the 7 selected countries.
3. For example:
 - a. Saudi Arabia, in 1987, received \$20.481 billion in oil export revenue and spent the equivalent of 68.8% (\$14.093 billion) on imports from the 7 selected countries.
 - b. Iraq, the OPEC member with 2nd highest oil export revenue in 1987, \$11.300 billion, spent the equivalent of 23.9% (\$2.703 billion) on imports from the 7 industrialized countries.
 - c. Indonesia, in 1987, received \$6.335 billion in oil export revenue and spent the equivalent of 87.7% (\$5.553 billion) on imports from the 7 industrialized countries (over half, \$3.017 billion) in Japan.
 - d. The 13 OPEC members, in 1987, received \$95.699 billion in oil export revenues and spent the equivalent of 53.6% (\$51.278 billion) on imports from the 7 industrialized countries.

DEVELOPED COUNTRIES EXPORTS TO OPEC

In millions of U.S. Dollars

Country & Year	UNITED STATES	JAPAN	WEST GERMANY	FRANCE	UNITED KINGDOM	ITALY	CANADA	Total of Seven Dev. Countries' Exports to OPEC Member	OPEC Member's Total Oil Export Revenue in Year from All countries	% Share of Oil Export Revenue to Developed Countries
Algeria										
. 1985	\$430	\$435	\$989	\$2,444	\$224	\$956	\$243	\$5,721	\$9,170	62.4%
. 1987	\$426	\$204	\$677	\$1,965	\$120	\$777	\$153	\$4,322	\$5,920	73.0%
Ecuador										
. 1985	\$591	\$176	\$134	\$27	\$76	\$48	\$37	\$1,089	\$1,927	56.5%
. 1987	\$621	\$220	\$155	\$45	\$62	\$65	\$33	\$1,201	\$820	146.5%
Gabon										
. 1985	\$91	\$45	\$48	\$407	\$40	\$34	\$1	\$666	\$1,668	39.9%
. 1987	\$52	\$31	\$32	\$365	\$20	\$20	\$1	\$521	\$955	54.6%
Indonesia										
. 1985	\$795	\$2,191	\$589	\$414	\$229	\$128	\$190	\$4,536	\$9,083	49.9%
. 1987	\$767	\$3,017	\$668	\$330	\$386	\$154	\$231	\$5,553	\$6,335	87.7%
Iran										
. 1985	\$74	\$1,360	\$1,647	\$160	\$678	\$611	\$47	\$4,577	\$13,115	34.9%
. 1987	\$54	\$1,055	\$1,581	\$180	\$506	\$506	\$126	\$4,008	\$10,000	40.1%
Iraq										
. 1985	\$427	\$1,318	\$842	\$689	\$573	\$691	\$52	\$4,592	\$11,380	40.4%
. 1987	\$684	\$395	\$462	\$368	\$448	\$256	\$90	\$2,703	\$11,300	23.9%
Kuwait										
. 1985	\$551	\$1,548	\$507	\$259	\$447	\$427	\$23	\$3,762	\$9,817	38.3%
. 1987	\$505	\$865	\$409	\$251	\$368	\$302	\$20	\$2,720	\$7,520	36.2%

DEVELOPED COUNTRIES EXPORTS TO OPEC (CONT).

In millions of U.S. Dollars

<u>Country & Year</u>	<u>UNITED STATES</u>	<u>JAPAN</u>	<u>WEST GERMANY</u>	<u>FRANCE</u>	<u>UNITED KINGDOM</u>	<u>ITALY</u>	<u>CANADA</u>	<u>Total of Seven Dev. Countries' Exports to OPEC Member</u>	<u>OPEC Member's Total Oil Export Revenue in Year from All countries</u>	<u>% Share of Oil Export Revenue to Developed Countries</u>
LIBYA										
. 1985	\$311	\$255	\$516	\$244	\$308	\$1,255	\$70	\$2,959	\$10,523	28.1%
. 1987	\$0	\$300	\$511	\$242	\$361	\$1,114	\$22	\$2,550	\$5,650	45.1%
Nigeria										
. 1985	\$676	\$344	\$649	\$571	\$1,217	\$344	\$52	\$3,853	\$12,327	31.3%
. 1987	\$295	\$349	\$537	\$404	\$788	\$320	\$18	\$2,711	\$7,166	37.8%
Qatar										
. 1985	\$64	\$166	\$104	\$109	\$182	\$62	\$4	\$691	\$3,584	19.3%
. 1987	\$76	\$152	\$87	\$80	\$172	\$53	\$3	\$623	\$1,781	35.0%
Saudi Arabia										
. 1985	\$4,474	\$3,922	\$1,778	\$1,226	\$1,609	\$1,826	\$176	\$15,011	\$25,936	57.9%
. 1987	\$3,374	\$3,270	\$1,438	\$1,114	\$3,245	\$1,457	\$195	\$14,093	\$20,481	68.8%
UAE										
. 1985	\$597	\$1,173	\$429	\$384	\$798	\$456	\$15	\$3,852	\$11,799	32.6%
. 1987	\$619	\$1,128	\$745	\$414	\$783	\$378	\$16	\$4,083	\$8,721	46.8%
Venezuela										
. 1985	\$3,399	\$356	\$358	\$316	\$217	\$435	\$238	\$5,319	\$10,352	51.4%
. 1987	\$3,586	\$509	\$694	\$367	\$260	\$480	\$294	\$6,190	\$9,050	68.4%
TOTAL										
. 1985	\$12,169	\$13,034	\$8,074	\$7,006	\$6,290	\$6,018	\$1,078	\$53,669	\$120,158	44.7%
. 1987	\$11,059	\$11,195	\$7,485	\$5,883	\$7,158	\$4,768	\$1,180	\$48,728	\$90,049	54.1%

Sources: Exports from the seven developed countries to OPEC: U.S. Central Intelligence Agency, International Energy Statistical Review, 26 June 1990, Page 5 (from International Monetary Fund Data).

OPEC Oil Revenues: "World Oil Trends," 1988-89 Edition, Arthur Andersen & Co/Cambridge Energy Research Associates, p. 70.

OPEC MEMBERS' CURRENT ACCOUNT BALANCES (U.S. \$, in billions)

<u>COUNTRY</u>	<u>1970</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>1981</u>
Saudi Arabia	0.07	2.5	23.0	14.4	14.4	12.0	-2.2	11.2	42.7	41.1
Iran	-0.50	0.2	12.3	4.7	4.7	5.1	1.5	6.1	-2.4	-3.4
Kuwait	1.20	2.6	9.1	5.9	6.9	4.6	6.1	14.0	15.3	13.8
Iraq	0.10	0.8	2.6	2.7	2.5	3.0	4.1	11.0	11.1	-11.2
UAE	0.13	0.6	3.6	2.9	3.4	1.9	1.5	5.3	10.1	9.2
<u>Qatar</u>	<u>0.15</u>	<u>0.3</u>	<u>1.7</u>	<u>1.2</u>	<u>1.0</u>	<u>0.6</u>	<u>0.9</u>	<u>1.3</u>	<u>2.6</u>	<u>2.4</u>
 Total Persian Gulf	1.16	7.0	52.3	31.8	32.9	27.1	12.0	48.8	79.5	51.8
 Libya	0.64	0.1	2.7	0.4	2.8	2.2	0.7	3.8	8.2	-4.0
Algeria	-0.12	-0.4	0.2	-1.7	-0.9	-2.3	-3.5	-1.6	0.2	0.1
Nigeria	-0.37	*	4.9	*	-0.4	-1.0	-3.8	1.6	5.1	-6.2
Gabon	*	*	0.2	0.1	0.1	0.1	0.1	0.2	0.4	0.4
Ecuador	-0.11	*	*	-0.2	*	-0.3	-0.7	-0.6	-0.6	-1.0
Venezuela	-0.10	0.9	5.8	2.2	0.3	-3.2	-5.7	0.4	4.7	4.0
<u>Indonesia</u>	<u>-0.31</u>	<u>-0.5</u>	<u>0.6</u>	<u>-1.1</u>	<u>-0.9</u>	<u>-0.1</u>	<u>-1.4</u>	<u>1.0</u>	<u>2.9</u>	<u>-0.6</u>
 Total Other OPEC	-0.38	*	14.4	-0.3	1.0	-4.7	-14.4	4.8	20.9	-7.3
 Total OPEC	0.78	7.0	66.7	31.5	33.9	22.4	-2.4	53.6	100.4	44.6

Source: Arthur Andersen & Company/Cambridge Energy Research Associates, World Oil Trends,
1988-89 Edition, Page 72.

* Less than .05 or - .05

OPEC MEMBERS' CURRENT ACCOUNT BALANCES

OPEC members' current account balances give a good indication as to the extent to which the various member countries are living within the limits of the wealth provided by oil export and other revenues.

As the table below indicates:

1. OPEC members, in total, accumulated \$357.7 billion in current account surpluses during the period from 1973 thru 1981 (when world oil prices began to decline from peak levels).
2. Most (\$343.2 billion or 96%) of the surpluses were accumulated by Persian Gulf members of OPEC, with Saudi Arabia accounting for \$159.1 billion or 44.5%.
3. The next 6 years (1982-1987) were quite different as oil prices and OPEC production dropped and spending patterns developed during the late 1970's used up available oil export revenue.
4. For the 6 years, OPEC members in total, had \$51 billion negative balances, with Saudi Arabia (negative . The countries with the largest negative balances were Saudi Arabia (\$64.1 billion); Iraq (\$27 billion) Indonesia (\$21 billion) and Nigeria (\$9 billion).
 . Member countries having a positive balance during the period included Kuwait (\$31.1 billion), UAE (\$32.4 billion), Iran \$6.4 billion) and Venezuela (\$6.3 billion).
5. In 1970, OPEC members' positive current account balances totaled only \$780 million, then grew to a high of \$100.4 billion in 1980, before turning negative in 5 of the 6 years from 1982-1987.

Most members of OPEC have strong needs and desires for the revenue provided by oil exports. They will continue to try to maximize oil import revenue through some combination of increased production and/or higher prices, depending upon their particular circumstances, their perception as to the best ways to achieve their goals, and the actions of other producers -- and consumers of petroleum -- both within and outside OPEC.

OPEC MEMBERS' CURRENT ACCOUNT BALANCES (U.S. \$, in billions)

<u>COUNTRY</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>Total (9 Yrs.) 1973 - 1981</u>	<u>Total 6 Yrs. 1982 - 1987</u>
Saudi Arabia	7.6	-17.1	-18.4	-12.9	-11.9	-11.4	159.1	(64.1)
Iran	5.7	0.4	-0.4	2.5	-1.3	-0.5	28.8	6.4
Kuwait	4.9	5.3	6.4	4.8	5.3	4.4	78.3	31.1
Iraq	-14.1	-6.0	-1.7	-0.8	-4.3	-0.1	26.6	(27.0)
UAE	7.0	5.3	7.5	6.9	1.9	3.8	38.5	32.4
Qatar	<u>1.1</u>	<u>0.4</u>	<u>0.8</u>	<u>0.5</u>	<u>-0.2</u>	<u>0.1</u>	<u>12.0</u>	<u>2.7</u>
Total Pers. Gulf	12.2	-11.8	-5.9	1.0	-10.5	-3.7	343.2	(18.7)
Libya	-1.6	-1.6	-1.5	2.1	-0.1	0.2	16.9	(2.5)
Algeria	-0.2	-0.1	0.1	1.0	-2.2	-0.3	-9.9	(1.7)
Nigeria	-7.2	-4.3	0.1	1.3	0.4	0.7	0.2	(9.0)
Gabon	0.3	0.1	0.1	-0.2	-1.0	-0.7	1.6	(1.4)
Ecuador	-1.2	*	-0.1	0.1	-0.6	-0.9	-3.4	(2.7)
Venezuela	-4.3	4.4	5.4	3.1	-2.0	-0.3	9.4	6.3
Indonesia	<u>-5.3</u>	<u>-6.3</u>	<u>-1.9</u>	<u>-1.9</u>	<u>-3.9</u>	<u>-1.7</u>	<u>-0.1</u>	<u>(21.0)</u>
Total Other OPEC	<u>-19.5</u>	<u>-7.9</u>	<u>2.2</u>	<u>5.5</u>	<u>-9.4</u>	<u>-3.1</u>	<u>14.4</u>	<u>(32.2)</u>
Total OPEC	-7.3	-19.7	-3.7	6.5	-20.0	-6.8	357.7	(51.0)

Source: Arthur Andersen & Company/Cambridge Energy Research Associates, World Oil Trends,
1988-89 Edition, Page 72.

* Less than .05 or - .05

CURRENCY EXCHANGE RATES

Exchange rates between the U.S. dollar and foreign currencies are important when evaluating developments in oil markets because oil is traded internationally in U.S. dollar-denominated terms. The value of the U.S. dollar against foreign currencies affects:

- . The value of OPEC members' oil export revenues -- if they wish to use those revenues to import goods and services from countries other than the U.S.
- . The real price of oil imported by other countries.

More specifically:

- A STRONG dollar vs. other currencies:
 - . Raises prices for oil importing countries such as France, Germany, Japan and the United Kingdom.
 - . Raises the value of OPEC's oil import revenue when buying things from these countries.
- A WEAK dollar vs. other currencies:
 - . Lowers the pre-tax price of oil in countries with the strong currencies.
 - . Lowers the value of OPEC's oil import revenues in countries with strong currencies.

The table below shows the value of the U.S. dollar vs. currencies of other major industrialized countries. As the numbers indicate:

- . In 1973, the U.S. dollar was strong against the Yen and Mark, but relatively weak against the Franc and Pound.
- . In 1979, the U.S. dollar was quite strong against the Yen but weak against the Mark, Franc and Pound.
- . In 1989, the U.S. dollar was relatively weak against the Yen and Mark, and somewhat stronger against the Franc and Pound.

A dollar of OPEC's oil revenue would have purchased:

- . Only about 43 % as much in Japan in 1988 as it would have in 1975 (i.e., 128.17 yen in 1988 compared to 296.78 yen in 1975).
- . About 109% more in France in 1985 than in 1975 (i.e., 8.98 Francs per dollar in 1985 compared to 4.29 francs in 1975).

CURRENCY EXCHANGE RATES

<u>Year</u>	<u>Japanese Yen</u>	<u>German Marks</u>	<u>French Francs</u>	<u>United Kingdom Pounds</u>
1973	271.30	2.67	4.45	0.408
1975	296.78	2.46	4.29	0.450
1977	268.62	2.32	4.92	0.573
1979	219.02	1.83	4.26	0.471
1981	220.63	2.26	5.44	0.494
1983	237.55	2.55	7.62	0.660
1985	238.47	2.94	8.98	0.771
1986	168.35	2.17	6.93	0.681
1987	144.60	1.80	6.01	0.610
1988	128.17	1.76	5.96	0.561
1989	138.07	1.88	6.38	0.610
1990 8/31	143.50	1.57	5.26	0.527

Source: U.S. Council of Economic Advisers, Economic Report of the President, February 1990, Table C-109.

FACTS ABOUT OPEC AND OTHER MIDDLE EAST COUNTRIES

<u>Country</u>	<u>Population</u>	<u>Square Miles</u>	<u>In Million U.S.\$**</u>		<u>Exports</u>
			<u>Exports</u>	<u>Imports</u>	<u>Exceed Imports</u>
<u>OPEC-MIDDLE EAST</u>					
Iran	56,800,000	636,293	20,047	18,296	X
Iraq	18,048,000	167,924	9,785	6,636	X
Saudi Arabia	12,939,000	839,996	20,085	19,113	X
Kuwait	2,096,000	6,880	8,357	5,299	X
United Arab Emirates	1,731,000	32,000	15,387	5,838	X
Qatar	369,000	4,247	3,541	1,139	X
<u>MIDDLE EAST OIL PRODUCERS NOT IN OPEC</u>					
Oman	1,469,000	82,030	3,776	1,823	X
Bahrain	516,000	258	2,384	2,717	
<u>OTHER MIDDLE EASTERN COUNTRIES</u>					
Turkey	56,549,000	301,380	10,127	14,149	
Eqypt	53,522,000	386,650	4,352	16,226	
Sudan	23,797,000	966,757	333	961	
Syria	12,471,000	71,498	1,345	2,231	
Yemen(Sana)	7,993,000	75,290	8	1,123	
Israel	4,585,000	7,847	9,145	12,506	
Jordan	3,065,000	37,737	734	2,703	
Lebanon	2,947,000	4,015	500	2,200	
Yemen(Aden)	2,486,000	128,560	29	483	
Cyprus	701,000	3,572	731	1,859	
<u>OPEC MEMBERS OUTSIDE THE MIDDLE EAST</u>					
Indonesia	180,594,000	735,268	17,136	12,370	X
Nigeria	112,765,000	356,667	7,383	3,917	X
Algeria	25,174,000	918,497	8,168	7,029	X
Venezuela	19,744,000	68,037	9,629	11,461	
Libya	4,356,000	679,359	5,000	4,500	X
Gabon	1,172,000	103,346	1,271	866	X

** 1988 Est.

Sources: World Book Encyclopedia, except sq. miles from World Almanac.

RECENT DEVELOPMENTS IN ENERGY MARKETS

- A. IN JUNE 1990, OPEC AGREED ON A HIGHER TARGET PRICE (\$21 INSTEAD OF \$18 PER BARREL) FOR THE "OPEC BASKET" OF CRUDES.
 - . IRAQ INSTIGATED.
 - . SINCE 1986, PRICE HAS SELDOM REACHED OPEC "TARGET" LEVEL.
 - . SOME OPEC COUNTRIES WISH TO MAXIMIZE CURRENT REVENUES (E.G., IRAQ, LIBYA), SOME WISH TO PRESERVE LONG TERM MARKET SHARE (E.G., KUWAIT), SOME WOULD PREFER BOTH (E.G., SAUDI ARABIA).
- B. DURING PAST TWO YEARS:
 - . WORLD ECONOMIC GROWTH HAS BEEN SLOW.
 - . U.S. & WORLD DEMAND FOR OIL HAS INCREASED SLOWLY.
- C. NON-OPEC OIL PRODUCTION HAS CONTINUED TO GROW, DESPITE DECLINE IN U.S. PRODUCTION AND ACCIDENTS IN THE NORTH SEA.
- D. INVESTMENTS IN OIL EXPLORATION HAVE INCREASED OUTSIDE THE U.S.
- E. SOVIET OIL EXPORTS HAVE DECLINED, BUT SOVIETS DESPERATELY NEED HARD CURRENCY AND ARE SEEKING TECHNICAL ASSISTANCE.
- F. U.S. ENERGY EFFICIENCY HAS CONTINUED TO IMPROVE, BUT MORE SLOWLY THAN IN THE EARLY 1980'S.
- G. U.S. STRATEGIC PETROLEUM RESERVE HAS ABOUT 590 MILLION BARRELS; JAPAN 208, MILLION AND EUROPEAN, 60 MILLION.
- H. THUS FAR IN 1990:
 - . U.S. OIL CONSUMPTION HAS AVERAGED 17.1 MILLION BARRELS PER DAY, DOWN .3% FROM 1989.
 - . U.S. OIL & NATURAL GAS LIQUIDS PRODUCTION HAS AVERAGED 8.8 MILLION BARRELS PER DAY, DOWN FROM 9.3 IN 1989.
 - . U.S. OIL IMPORTS HAVE AVERAGED 7.8 MILLION BARRELS PER DAY, UP 8.8% FROM 1989.
- I. U.S. OIL STOCKS AS OF 8/10/90 TOTALLED 1,705 MILLION BARRELS, UP 3.3% FROM 1,650 MILLION BARRELS ON 8/10/89.
- J. U.S. OIL IMPORTS UNDOUBTEDLY WILL CONTINUE TO GROW.

USEFUL POINTS TO KEEP IN MIND

- A. FORECASTS OF ENERGY MARKETS, EVEN IN "NORMAL" TIMES ARE MERELY EDUCATED GUESSES WITH HIGH PROBABILITY OF BEING WRONG.
- B. MEMBERS OF CONGRESS AND THE MEDIA HAVE A STRONG TENDENCY TO OVERREACT TO ENERGY CRISES OR PERCEIVED CRISES AND TO DEMAND GOVERNMENT ACTIONS.
- C. IN FACT, THERE ARE RELATIVELY FEW EFFECTIVE ACTIONS -- OTHER THAN DIPLOMATIC AND MILITARY -- THAT THE GOVERNMENT CAN TAKE. AS DEMONSTRATED IN 1973-74 & 1979-80, GOVERNMENT CAN TAKE ACTIONS THAT ARE VERY COUNTERPRODUCTIVE.
- D. FORECASTS OF FUTURE MARKET CONDITIONS MADE DURING CRISES OR PERCEIVED CRISES ARE OFTEN BE BASED ON "STRAIGHT LINE" PROJECTIONS FROM THE LAST TWO DATA POINTS -- IGNORING THE IMPACT OF:
 - . COUNTERVAILING FORCES (POLITICAL, ECONOMIC, MILITARY, WORLD OPINION).
 - . ENERGY MARKET FUNDAMENTALS.
 - . MARKET DYNAMICS: ENERGY MARKETS ARE VERY DYNAMIC, PARTICULARLY IN MID TO-LONG TERM. INDIVIDUAL AND COMPANY DECISIONS ARE FAR MORE IMPORTANT IN DETERMINING SUPPLY & DEMAND THAN GOVERNMENT DECISIONS.
- E. THE U.S. NOW IMPORTS ABOUT 7.8 MILLION BARRELS OF OIL PER DAY -- OR AN ANNUAL RATE OF 2,847,000,000 BARRELS PER YEAR.

ANNUAL OIL IMPORT BILL:

. AT \$17 PER BARREL	\$48.4 BILLION
. AT \$22 PER BARREL	\$62.6 BILLION
. AT \$27 PER BARREL	\$76.9 BILLION

(HOWEVER, AT HIGHER PRICES, ECONOMY WILL SLOW AND DEMAND LESSEN SO OIL IMPORTS WOULD DECLINE SOMEWHAT.)

(MORE)

F. OIL IS A HIGHLY FUNGIBLE COMMODITY.

G. OIL IS TRADED ON INTERNATIONAL MARKETS IN U.S. DOLLAR DENOMINATED TERMS. THUS:

1. A STRONG DOLLAR VS. OTHER CURRENCIES:

- . RAISES PRICES FOR OIL IMPORTING COUNTRIES SUCH AS FRANCE, WEST GERMANY, JAPAN AND THE U.K.
- . RAISES THE VALUE OF OPEC'S OIL IMPORT REVENUE WHEN BUYING THINGS FROM OTHERS.

2. A WEAK DOLLAR VS. OTHER CURRENCIES:

- . LOWERS THE PRE-TAX PRICE OF OIL IN FRANCE, GERMANY, JAPAN AND THE U.K.
- . LOWERS THE VALUE OF OPEC'S OIL IMPORT REVENUE.

H. NEAR TERM FACTORS AFFECTING OIL MARKETS WILL PUSH PRICES (AND PANIC) IN BOTH DIRECTIONS:

1. DOWNWARD PRESSURES WILL COME FROM:

- RELATIVELY HIGH STOCK LEVELS.
- 580 MILLION BARRELS IN STRATEGIC PETROLEUM RESERVE (SPR) OR ABOUT 70 TIMES U.S. IMPORTS.
- 208 MILLION BARRELS IN STRATEGIC RESERVES IN JAPAN AND 60 MILLION IN EUROPE.
- ABILITY OF SOME COUNTRIES TO INCREASE PRODUCTION; E.G., SAUDI ARABIA, VENEZUELA AND UNITED ARAB EMIRATES.
- HIGHER GASOLINE TAXES AND PRICES.
- SLOW ECONOMIC GROWTH.
- LOW PRICES AND PLENTIFUL SUPPLIES OF NATURAL GAS IN THE U.S. AND EUROPE.

2. UPWARD PRESSURES WILL COME FROM:

- REDUCED SUPPLY FROM IRAQ & KUWAIT (ABOUT 4 MILLION BARRELS PER DAY, INCLUDING 1 MILLION OF REFINED PRODUCTS).

(MORE)

- MINIMAL STRATEGIC OIL RESERVES IN SOME OIL IMPORT-DEPENDENT COUNTRIES.
- PANIC BUYING (NORMAL TENDENCY WHEN THERE IS FEAR OF PRICE INCREASES. IF ON AVERAGE, PEOPLE IN THE U.S. KEEP THEIR TANKS 3/4 FULL RATHER THAN 3/8 FULL, SHORT TERM GASOLINE DEMAND INCREASES BY 1.75 MILLION BARRELS.)
- MARKET PSYCHOLOGY.

I. OTHER FACTORS THAT WILL HELP OR HURT IF OIL SUPPLIES ARE LIMITED AND PRICES RISE SHARPLY:

1. STABILIZING:

- . PLENTIFUL NATURAL GAS SUPPLIES - U.S. & EUROPE.
- . SOME PIPELINE EXPANSION COMPLETED.
- . CONSERVATION EFFORTS INCREASING.

2. DESTABILIZING:

- . FEWER NUCLEAR AND COAL-FIRED POWERPLANTS "IN THE PIPELINE."
- . LIMITED ABILITY TO INCREASE U.S. OIL PRODUCTION.

Withdrawal/Redaction Sheet

(George Bush Library)

Document No. and Type	Subject/Title of Document	Date	Restriction	Class.
08a. Memo	From James Watkins to John Sununu Re: Medium Term Measures to Mitigate Energy Effects of the Middle East Situation (2 pp.)	9/7/90	P -5	

Collection:

Record Group: Bush Presidential Records
Office: Chief of Staff, White House Office of
Series: Sununu, John, Files
Subseries: Cabinet Agencies Files
WHORM Cat.:
File Location: Watkins (Energy) (1990) [1]

Open on Expiration of PRA
 (Document Follows)
 By *Jp* (NLGB) on 5/12/05

Date Closed:	12/14/2004	OA/ID Number:	29191-002
FOIA/SYS Case #:	1998-0004-F[1]	Appeal Case #:	
Re-review Case #:	2005-0426-S	Appeal Disposition:	
P-2/P-5 Review Case #:		Disposition Date:	
AR Case #:		MR Case #:	
AR Disposition:		MR Disposition:	
AR Disposition Date:		MR Disposition Date:	

RESTRICTION CODES

Presidential Records Act - [44 U.S.C. 2204(a)]

P-1 National Security Classified Information [(a)(1) of the PRA]
 P-2 Relating to the appointment to Federal office [(a)(2) of the PRA]
 P-3 Release would violate a Federal statute [(a)(3) of the PRA]
 P-4 Release would disclose trade secrets or confidential commercial or
 financial information [(a)(4) of the PRA]
 P-5 Release would disclose confidential advice between the President
 and his advisors, or between such advisors [(a)(5) of the PRA]
 P-6 Release would constitute a clearly unwarranted invasion of
 personal privacy [(a)(6) of the PRA]

C. Closed in accordance with restrictions contained in donor's deed of
 gift.

PRM. Removed as a personal record misfile.

Freedom of Information Act - [5 U.S.C. 552(b)]

(b)(1) National security classified information [(b)(1) of the FOIA]
 (b)(2) Release would disclose internal personnel rules and practices of an
 agency [(b)(2) of the FOIA]
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 (b)(7) Release would disclose information compiled for law enforcement
 purposes [(b)(7) of the FOIA]
 (b)(8) Release would disclose information concerning the regulation of
 financial institutions [(b)(8) of the FOIA]
 (b)(9) Release would disclose geological or geophysical information



AC/ER

The Secretary of Energy
Washington, DC 20585

September 7, 1990

THE CHIEF of STAFF
has seen

8
MEMORANDUM FOR THE HONORABLE JOHN H. SUNUNU
CHIEF OF STAFF TO THE PRESIDENT

SUBJECT: MEDIUM TERM MEASURES TO MITIGATE ENERGY
EFFECTS OF THE MIDDLE EAST SITUATION

John:

The purpose of this memorandum is to inform you that we have reached an impasse with EPC staff (Olin Wethington) over our attempts to present to the President a set of EPC options that fairly and honestly represent two weeks of intense effort on the part of EPC members.

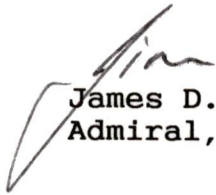
Last evening, after what we felt had been a good day of Treasury/DOE negotiations on and resolution of the one remaining tax incentive issue, we were "faxed" an EPC staff description of EPC actions which did not accurately reflect what the EPC members had either considered or decided. New unsubstantiated facts and figures were included (details of the inaccuracies are attached at TAB A).

Given the importance of Presidential action on these initiatives no later than Tuesday, and based on our experience in working on this document with the EPC staff, I believe continued efforts with Olin Wethington to arrive at a consensus description of EPC action for the President would be fruitless. As a consequence, a clean new draft has been prepared at TAB B which is my best effort to convert a seriously flawed EPC staff paper to one that truly reflects what the EPC members feel should be presented to the President. Mosbacher and Skinner both agree with this new draft.

It is ironic that oil and gas production tax incentive proposals, which are at the center of this dispute are but a minuscule part of the package the Administration

Page 2 - MEMORANDUM FOR THE HONORABLE JOHN H. SUNUNU

is expected to discuss at the Budget Summit with Senators Dole and Domenici. In fact, DOE dropped many additional tax provisions from its initial recommendations at the request of the EPC staff. Now, the Congress, and not the President, could well get the credit for enactment of these provisions.



James D. Watkins
Admiral, U.S. Navy (Retired)

Attachments

Withdrawal/Redaction Sheet

(George Bush Library)

Document No. and Type	Subject/Title of Document	Date	Restriction	Class.
08b. Report	Tab "A": Significant Distortions/Inaccuracies in EPC Staff 9/6/90 Draft on Medium Term Measures to Mitigate the Energy Effects of the Middle East Situation (3 pp.)	9/7/90	P-5	

Collection:

Record Group: Bush Presidential Records
Office: Chief of Staff, White House Office of
Series: Sununu, John, Files
Subseries: Cabinet Agencies Files
WHORM Cat.:
File Location: Watkins (Energy) (1990) [1]

Open on Expiration of PRA
 (Document Follows)
 By JP (NLGB) on 5/12/05

Date Closed:	12/14/2004	OA/ID Number:	29191-002
FOIA/SYS Case #:	1998-0004-F[1]	Appeal Case #:	
Re-review Case #:	2005-0426-S	Appeal Disposition:	
P-2/P-5 Review Case #:		Disposition Date:	
AR Case #:		MR Case #:	
AR Disposition:		MR Disposition:	
AR Disposition Date:		MR Disposition Date:	

RESTRICTION CODES

Presidential Records Act - [44 U.S.C. 2204(a)]

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SIGNIFICANT DISTORTIONS/INACCURACIES IN EPC STAFF 9/6/90 DRAFT ON
MEDIUM TERM MEASURES TO MITIGATE THE ENERGY EFFECTS OF THE MIDDLE
EAST SITUATION

1. There is uniform agreement that the loss of Iraqi and Kuwait oil will not be fully offset this year and that there may be supply difficulties in the fourth quarter. See, for example, guidance to US Delegation to IEA Governors meeting in late August. The memo suggests that there will be no problem once offsetting measures are "implemented" later this year.
2. Introductory section minimized the domestic leadership argument, which was strongly voiced at the EPC meeting.
3. The EPC did not consider nor did DOE propose measures relating to OCS and refinery capacity. The only nuclear issue considered was Shoreham, which at the request of White House staff, was dropped prior to EPC principal consideration.
4. The EPC never discussed the Strategic Petroleum Reserve. It is, therefore, inaccurate to suggest some EPC opinion on SPR.
5. The drastic condensation of the consensus measures deprives the President of the ability to evaluate their significance. This is most damaging for initiatives to promote fuel switching from oil to natural gas.
6. The EPC consensus to pursue aggressively enactment of the Administration's previously proposed tax incentives for oil and gas has been dropped as a separate petroleum supply consensus item.
7. The aggregation of all three tax incentives for treatment with a general set of pros and cons is extremely misleading. Not all the tax incentive proposals are long term. The majority of the cost of these proposals is for efficiency and renewable incentives. Thus, the argument that these incentives would appear to be special benefits to the oil industry and other energy interests is misleading. The other arguments for and against the tax incentive measures on page 4 are not fairly presented. For instance, pros are discussed as "mays" or "give the appearance," and cons are stated as "in fact, will". Setting the paper out as two options and the discussion of these options biases the reader against action on these items.
8. The discussion of utility rebates to consumers for energy efficiency equipment is unbalanced because it presents the Treasury Department side of the issue (that this would be a

departure from existing tax policy) without presenting the other side of this issue (that nontaxable treatment would be consistent with other consumer rebates). This is typical of the treatment of all of these tax incentives

9. Inadequate discussion is provided to the environmental benefits and balance to the existing Administration oil and gas tax package that the new measures would provide.

Withdrawal/Redaction Sheet

(George Bush Library)

Document No. and Type	Subject/Title of Document	Date	Restriction	Class.
08c. Report	Tab "B": Department of Energy Draft of 9/07/90 Subject: Medium Term Measures to Mitigate the Energy Effects of the Middle-East Situation (15 pp.)	9/7/90	P- 5	

Collection:

Record Group: Bush Presidential Records
Office: Chief of Staff, White House Office of
Series: Sununu, John, Files
Subseries: Cabinet Agencies Files
WHORM Cat.:
File Location: Watkins (Energy) (1990) [1]

Open on Expiration of PRA
 (Document Follows)
 By JP (NLGB) on 5/12/05

Date Closed:	12/14/2004	OA/ID Number:	29191-002
FOIA/SYS Case #:	1998-0004-F[1]	Appeal Case #:	
Re-review Case #:	2005-0426-S	Appeal Disposition:	
P-2/P-5 Review Case #:		Disposition Date:	
AR Case #:		MR Case #:	
AR Disposition:		MR Disposition:	
AR Disposition Date:		MR Disposition Date:	

RESTRICTION CODES

Presidential Records Act - [44 U.S.C. 2204(a)]

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DEPARTMENT OF ENERGY DRAFT OF 9/07/90: 5:00 P.M.

SUBJECT: Medium Term Measures To Mitigate the Energy Effects of the Middle-East Situation.

On September 5, 1990, the Economic Policy Council (EPC) considered a package of medium term energy measures that would exhibit on the domestic side the same leadership that the Administration has exercised internationally, in response to the Middle East situation.

The EPC believes that the President should provide forceful leadership that would underscore the ability and the determination of the U.S. to effectively manage the effects of the embargo of Iraqi and Kuwaiti oil.

This decision memorandum summarizes the proposals for which there is EPC consensus, and sets forth others on which opinion is divided.

Background

Although efforts are underway internationally to offset supply shortages from the loss of Iraqi and Kuwaiti oil, there is general agreement that a supply shortfall is likely to emerge in the last three months of 1990.

The American public is concerned about higher oil and gas prices and potential shortages during the upcoming winter heating season. In response to this concern, Congress is likely to act, perhaps precipitously, on energy issues upon its return from recess.

The EPC believes a window of opportunity exists to exert energy policy leadership, and for the Administration to achieve some of its policy objectives.

On August 15, in the wake of your speech to the Nation on the Middle East situation, the Department of Energy announced a series of immediate measures aimed at increasing domestic oil production and fostering increased energy efficiency. These measures, which include raising Alaskan production; increasing allowable production in Texas and other States; facilitating fuel switching; and launching a National information campaign, sponsored by the Advertising Council, to encourage energy efficiency, if fully successful, would reduce U.S. oil dependence by 525,000 barrels/day by December 1990.

The medium term measures considered by the EPC on September 5, would further reduce U.S. oil dependence by an additional 725,000 B/D. Some of the measures would have immediate effects, while others, if successfully implemented, would provide benefits in the next 12 to 24 months. These measures would contribute positively to the environment, increase the use of domestic natural gas, and mitigate the impact on consumers of higher oil prices.

The Consensus Package

The EPC has reached a consensus on most of the medium term measures proposed by the Department of Energy, in the areas of energy efficiency, fuel switching, alternative fuels, and petroleum supply.

A particularly strong EPC consensus emerged on the issue of removing regulatory barriers to increased use of domestic natural gas. Natural gas pipeline projects are awaiting regulatory action which, if completed, would displace 55,000-170,000 B/D of oil by 1991; as much as 300,000 B/D by 1992; and nearly 600,000 B/D by 1994.

To facilitate the construction of new gas pipelines, the Secretary of Energy would, by October 1, 1990, propose rules and regulations of general applicability to the Federal Energy Regulatory Commission (FERC), with the objective of expediting approval of construction applications. FERC would be requested to complete action on these proposed regulations by January 1, 1991.

Furthermore, legislative proposals would be developed to remove barriers to entry, and facilitate construction of needed natural gas facilities. These proposals would be completed by December 1990.

Unresolved Items for Presidential Decision

The EPC did not reach a consensus on three tax incentives proposals. Moreover, because of its importance, a proposal to open ANWR for exploration, requires your attention.

If you agree to support any new tax incentive measures on energy, the EPC recommends that these proposals be pursued through the current budget summit negotiations. It is likely that several GOP Senators will offer new tax incentive proposals at the budget summit. Such an approach would have the benefit of structuring

Congressional interest in new energy initiatives within the framework of budget summit discussions.

The National Energy Strategy: Longer Term Proposals

The medium term measures proposed here are drawn from work done for the National Energy Strategy (NES), but do not replace it. The NES will offer a coherent, long-term policy to address fundamental energy supply and demand problems, including analyses of alternative fuel policies such as the extension of the current ethanol tax credit. Intensive inter-agency efforts are being made to complete the NES policy options package, and forward it to you for consideration in December, as planned.

The Consensus Package

These proposals are summarized below and could be announced as early as next week:

A. ENERGY EFFICIENCY MEASURES

1. DOE would expand its public awareness campaign to encourage use of lower octane gasoline.
2. DOE would work with petroleum marketers and States to encourage oil burner tune-up and replacement.
3. DOE and DOT would work with industry and States to distribute Driver Energy Conservation Awareness Techniques (DECAT) material.
4. DOE would work with oil dependent electric utilities and with industry associations to encourage energy efficiency.
5. The President would issue an Executive Order to increase energy efficiency in Federal operations.

B. FUEL SWITCHING, ALTERNATIVE FUELS, AND OIL BACK-OUT

1. The Administration would expedite Federal regulatory processing of natural gas pipeline projects.
2. DOE, FERC, and State regulators would examine the feasibility of reducing the dispatching of oil-fired electricity generation.

3. The Administration would accelerate the conversion of the Federal fleet to alternative fuels.
4. DOE would work with EPA to resolve technical and regulatory issues affecting waste to energy plants.
5. The Secretary of Energy, by October 1, 1990, would propose rules and regulations of general applicability to the FERC with the objective of expediting FERC consideration and approval of applications to construct or extend natural gas pipelines.

C. PETROLEUM SUPPLY OPTIONS

1. A multi-agency task force would expedite issuance of Federal permits for new Alaska oil projects.
2. The Administration would attempt to resolve regulatory barriers hampering construction of natural gas pipelines needed for California heavy oil production.

Non-consensus Issues for Presidential Decision

The EPC did not reach a consensus on three tax incentive proposals. Moreover, because of its importance, a proposal to open ANWR for exploration requires your attention.

If you wish to support any new tax incentive measures on energy, an Administration legislative group would assess Hill strategy. The EPC believes that these proposals may be best pursued through the current budget summit negotiations.

In its budget for the past two years, the Administration has proposed a set of tax incentives for enhanced oil recovery projects and other oil drilling activities. The EPC believes that the Administration should aggressively pursue these proposals.

The tax incentive proposals set forth below would expand the Administration's current oil tax incentive package, would rectify a anomaly in the tax treatment of conservation investments by utilities, and would transform current renewable energy tax credits into more efficient production credits.

A. The Three Tax Incentive Proposals Are Summarized Below:

1. Proposed Action: The Administration would support tax-free treatment of certain electric utility rebates to consumers for investment in energy efficient technologies.

Background

State public utility commissions are authorizing electric utilities to invest in programs, equipment, and customer rebates to reduce existing electricity demand so as to avoid the need for new generation facilities.

On February 22, 1989, the Internal Revenue Service, in a Technical Advice Memorandum, determined that energy efficiency rebates given to utility customers "are (to be included) in the recipient's gross income unless specifically excluded by law." This decision adversely affects residential utility customers, the American energy efficiency industry, and the environment.

Under the proposal, no taxes would be assessed for benefits received by households as a part of a utility demand reduction plan approved by the regulatory organization responsible for utility rates. Business customers would pay taxes on benefits received. Two bills under consideration in Congress, S-2312 and HR 4249 that have a high probability of enactment, would exclude residential rebates, but would also extend the exclusion to industrial and commercial customers.

The Treasury Department believes that statutory changes would be required to alter the 1989 Technical Advice Memorandum (TAM), and that the proposal represents a departure from past statutory interpretation and tax policy. DOE believes that a TAM can be revoked or altered by regulatory action, and that rebates are not uniformly treated by the IRS. For example, automobile rebates are not taxed as income.

Treasury estimates the costs of this proposal to be \$50 million per year, and \$250 million over the five-year budget period.

Pros: o Removes a deterrent to consumer investment in the most energy efficient technologies.

- o This is a pro-environment measure because it promotes energy efficiency and reduces the need for new generating plants.
 - o Would likely pre-empt more costly Congressional action.
 - o Maintains balance between oil production incentives and energy efficiency incentives.
- Cons:
- o Gains that would accrue to the Treasury from taxing consumer benefits would be lost.
 - o Impact on oil consumption would be limited because nationally only 5 percent of electricity is oil-generated.
 - o Could be interpreted as a departure from existing tax policy.
 - o Could open the door to demands by other interest groups for similar treatment.
2. Proposed Action: The Administration would support restructuring the current renewable energy investment tax credit as a production incentive.

Background:

The investment tax credit for renewable energy technology is scheduled to expire at the end of September 1990. The Administration does not currently support extension of this credit. In all likelihood, Congress will extend the credit as presently structured. The DOE proposal would replace the investment credit with a production credit paid for renewable electric power delivered to a utility grid. Electric equipment eligible for the credit would include: wind, solar thermal, photovoltaics, geothermal (excluding dry steam systems), and biomass electric systems (excluding those using direct combustion of waste).

Experience to date indicates that approximately 20% of the systems constructed as a result of the current credit work poorly or not at all. A production credit could eliminate this inefficiency because it would be obtained only by actually producing electricity, and not merely by investing in a plant.

Credits against taxable earnings could be claimed for a period of seven years including the first tax year in which the facility was synchronized with a utility grid.

The amount of oil saved by the renewable electric technologies depends on the nature of the system and the fuel mix of utilities. Oil use is very high in several regions with large renewable energy resources. Hawaii depends on oil for 93% of its electricity, Florida is 20% oil dependent, and New England is 37%.

Treasury estimates the cost of this proposal to be \$380 million per year, and \$1.9 billion over the five year budget period.

- Pros:
- o The production credit is estimated to be less costly and more efficient than the investment credit.
 - o The production credit would stimulate non-polluting renewable energy technologies, and would underscore the Administration's pro-environment leadership.
 - o Congress may extend the existing tax credit with no modification, in the absence of a Administration substitute.
 - o The proposal would give balance to oil and gas supply incentives.
- Cons:
- o The proposed new production credit would result in costs to the Treasury, and complicate budget summit negotiations.
 - o Producers of other energy sources may seek similar tax incentives, in order to maintain a "level playing field."

3. Proposed action: The Administration would consider expanding its proposed tax incentive package for oil and gas production by increasing the percentage depletion allowance applicable to new enhanced oil recovery projects.

Background:

The proposal would expand the President's tax incentive package in several ways.

It would allow percentage depletion to be claimed at a 27.5 percent rate for oil produced from enhanced recovery projects. This allowance would apply to all producers, including integrated oil companies that cannot claim percentage depletion under current law. This would be a departure from the current Administration EOR credit proposal which would apply only to independent producers. DOE's rationale for the proposed change is that most EOR production is undertaken by major producers and not by independents. The current Administration proposal would therefore not elicit much new EOR production. The allowance would apply only to incremental production from new application of EOR methods.

The DOE proposal would also allow a 100 percent alternative minimum tax offset rather than the 80 percent contained in the current Administration proposal. The allowance would be phased out when oil prices average more than \$25 per barrel, in contrast to the \$21 per barrel phaseout for the Administration's EOR tax credit.

Nearly two-thirds of the original oil in place in the U.S. remains after conventional production ceases. Enhanced oil recovery technologies are frequently the only viable means of recovering this resource, estimated at 341 billion barrels. With current EOR technology, an estimated 17 billion barrels or 5 percent of the remaining resource could be recovered. With advanced EOR technology, an estimated 36 billion barrels could be recovered. EOR accounts for 657,000 barrels per day of oil production in 1990, or almost 9 percent of total U.S. crude oil production.

Treasury estimates the cost of the proposed EOR credit to be on average \$160 million per year, (starting at \$36 million in FY '91 and rising to \$274 million in FY '95), and \$800 million over the 5-year budget period. Annual Treasury costs could rise or fall depending on oil market prices.

The reaction to this credit would be immediate. It would stimulate producers' reaction to current high oil prices by reducing risks of later oil price declines.

DOE estimates that the production impact by 1995 attributable solely to this proposal would be 88,000 B/D, at average wellhead prices of \$18/bbl. If average wellhead prices rise to \$21 per barrel, the production impact by 1995, attributable solely to this proposal, would be 94,000 B/D.

- Pros:
- o Enhanced oil recovery is key to future domestic oil production. The incentive encourages the development of advanced EOR technologies.
 - o The \$25/barrel ceiling protects producers against some risk of very low world oil prices, and reduces Treasury costs if oil prices remain high.
 - o The proposal could prevent abandonment of wells and permanent loss of reserves.
- Cons:
- o The proposal could merely shift EOR production into earlier years at a higher cost to the economy.
 - o Could be politically costly to support tax benefits for the major oil companies when oil prices have increased to around \$28/barrel.
 - o The proposal could complicate current budget summit negotiations.

B. Arctic National Wildlife Reserve Exploration/Development

As a possible means of substantially increasing domestic oil resources and ultimately reducing the decline in domestic production, leasing and exploration of ANWR could be permitted. The Department of Interior's mid-case estimate for ANWR reserves is 3.23 billion barrels. Production could start in 10-12 years.

On March 16, 1989, the Senate Committee on Energy and Natural Resources approved a bill to authorize the opening of the ANWR coastal plain for oil and gas exploration and development. Similar legislation was introduced the following week in the House, but no further action was taken. After the March 24, 1989 Valdez oil spill, consideration of both bills was postponed indefinitely.

The Administration could, as part of the budget summit, move to secure Congressional authorization to explore and develop ANWR. A compromise could be sought with Congressional environmental interests whereby initial exploratory activity would be confined to the least sensitive areas of the ANWR plain. If no action is taken on ANWR now, a full examination of ANWR prospects would be presented in the National Energy Strategy, which is on schedule for completion in December.

- Pros:
- o Proven discovery of oil in ANWR would help offset the decline in production from Prudhoe Bay and other North Slope fields.
 - o Production from ANWR would enable other smaller discoveries between ANWR and TAPS to become economic.
 - o ANWR production would extend the economic life of TAPS and allow other fields to continue to produce for a longer period of time.
 - o Window of opportunity may not soon re-emerge to press for consideration of ANWR.
- Cons:
- o Strong opposition can be expected from environmental groups.
 - o A Congressional compromise could be difficult to achieve without spillover into other issues such as tougher fuel efficiency standards for automobiles.
 - o A decision to develop ANWR will not increase domestic oil production for 10-12 years, and may detract attention from other measures to be announced by the Administration, that would improve the domestic supply/demand balance more quickly.

Recommendation

1. That you approve the consensus package outlined above.

Approve _____ Disapprove _____ Let's Discuss _____

2. That you decide whether to support one or more of the tax incentive proposals or defer consideration to the National Energy Strategy.

- a. Treatment of Utility Rebates as Non-taxable

Support _____ Defer _____ Let's Discuss _____

- b. Restructure Renewable Energy Tax Credit

Support _____ Defer _____ Let's Discuss _____

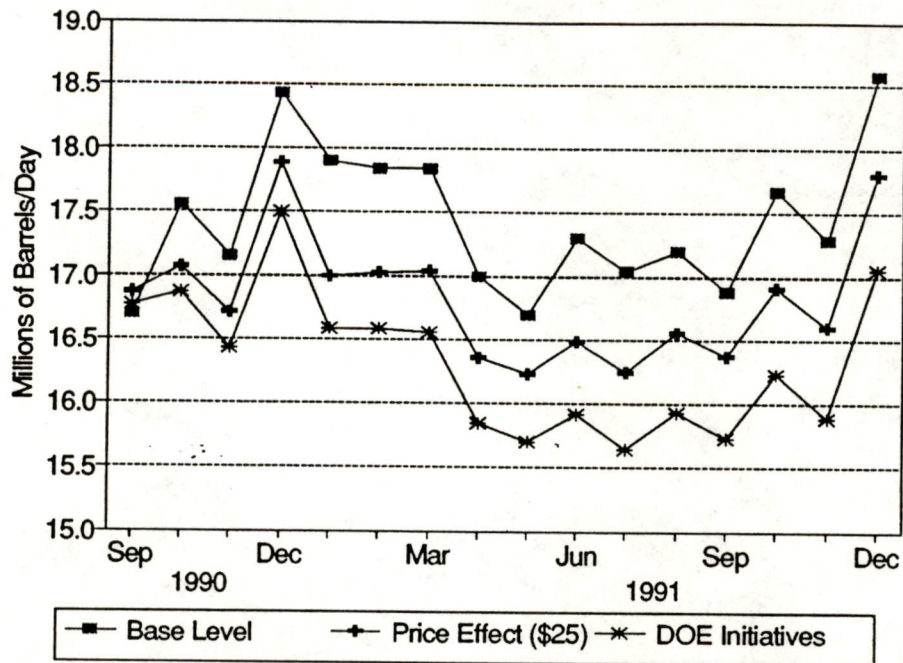
c. Support Expansion of the Percentage Depletion Allowance
for Enhanced Oil Recovery

Support _____ Defer _____ Let's Discuss _____

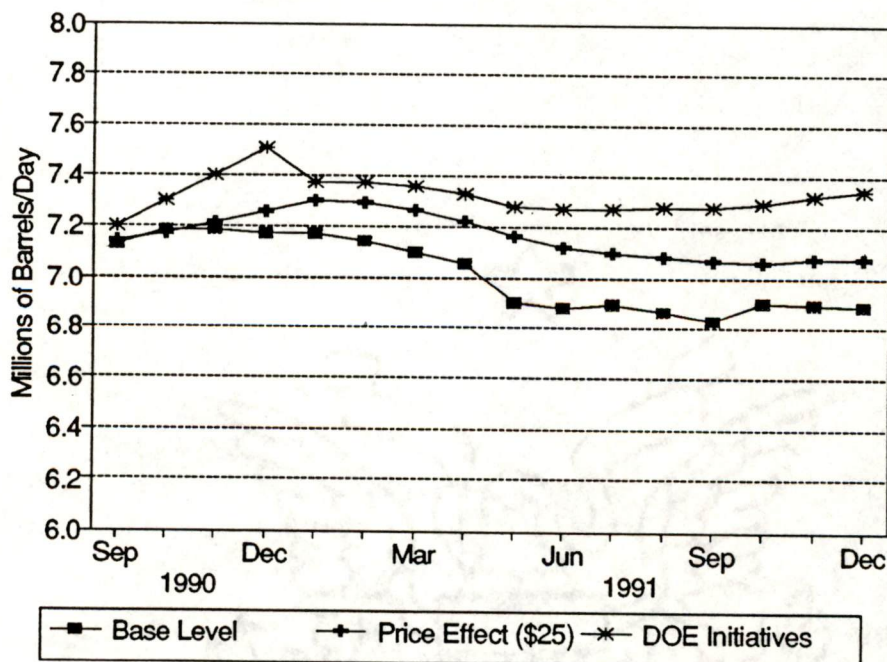
3. That you approve the proposal with respect to ANWR.

Approve _____ Defer _____ Let's Discuss _____

U.S. Consumption of Petroleum Products



U.S. Crude Oil Production



*Source: Base level from Short-Term Energy Outlook, April 1990

September 6, 1990

Response to Iraqi Situation
Immediate Measures (by Dec. 1990)

I. Efficiency Measures

Note (1)

	<u>Goal (B/D)*</u>	<u>Achieved (B/D)</u>
Exhortatory Campaign		
- Proper Tire Pressure	100,000	
- Compliance with Speed Limits	50,000	
- More Efficient Vehicle Use	40,000	
- Car Pool/Van Pool	<u>90,000</u>	
<u>SUBTOTAL</u>	280,000	

II. Fuel Switching Measures

Note (2)

1. Utility/Industry Switching	100,000
2. Gasohol Use	<u>10,000</u>
<u>SUBTOTAL</u>	110,000

III. Supply Measures

1. Increase Alaska Production	100,000	226,000
2. Increase States Allowables	30,000	20,000
3. Increase NPR Production	5,000	5,000
4. Start Pt. Arguello Production	<u>(75,000)</u>	<u>Note (3)</u>
<u>SUBTOTAL</u>	135,000	251,000
<u>TOTAL</u>	525,000	

Note (1): Cannot be measured without new data collection effort.

Note (2): System in place to track.

Note (3): Transferred to Medium Term measures. Excluded from
Immediate Measures Total

* Exclusive of market price effects on supply and demand.

September 6, 1990

Response to Iraqi Situation
Medium Term Measures

<u>I. Efficiency Measures</u>	<u>Goal (B/D)*</u>	<u>Achievement Date</u>
Exhortatory Campaign	(feasible)	Response
1. Lower Octane Gasoline	50,000	Dependent
2. Oil Burner Tune-Up/Replacement	45,000	On Consumer
3. Better Driving Habits	120,000	
4. Utility/Industrial Conservation	75,000	
5. Tax-Free Treatment of Demand		
Investments	N/A	
6. Federal Energy Efficiency	<u>10,000</u>	
<u>SUBTOTAL</u>	300,000	
<u>II. Fuel Switching Measures</u>		
1.a. Natural Gas Pipeline Projects	55,000	By Dec. 1991 (1)
1.b. Dispatching Oil-Fired Generation	N/A	Winter 1990/1991
2. Accelerated Use of Alt. Fuels	N/A	By 1992
3. Waste-to-Energy Permitting	N/A	To Be Determined
4. Renewable Energy Tax Credit	<u>N/A</u>	To Be Determined
<u>SUBTOTAL</u>	55,000	By 1991
<u>III. Supply Measures</u>		
1. Point Arguello Production	75,000	By Dec. 1991
2. New Alaska Production	100,000	By 1992
3. California Heavy Oil	100,000	Probably 1992
4. EOR Tax Incentive	<u>95,000</u>	Probably 1992
<u>SUBTOTAL</u>	370,000	
<u>TOTAL</u>	725,000	

(1) Sixteen projects under regulatory consideration would increase gas supply by an additional 540,000B/D of oil equivalent by 1994.

* Numbers do not include market price effects on supply and demand.

September 6, 1990