DEPLETION ALLOWANCE

HEARING

BEFORE THE

SUBCOMMITTEE ON ENERGY

OF THE

COMMITTEE ON FINANCE

UNITED STATES SENATE

NINETY-FOURTH CONGRESS

FIRST SESSION

ON

DEPLETION ALLOWANCE AND OTHER ENERGY-RELATED AMENDMENTS TO H.R. 2166

MARCH 17, 1975

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DEPLETION ALLOWANCE

MONDAY, MARCH 17, 1975

U.S. SENATE,
SUBCOMMITTEE ON ENERGY OF THE
COMMITTEE ON FINANCE,
Washington, D.C.

The subcommittee met, pursuant to notice, at 10:05 a.m., in room 2221, Dirksen Senate Office Building, Senator Mike Gravel (chairman of the subcommittee) presiding.

Present: Senators Long, Gravel, Curtis, Fannin, Hansen, Packwood, and Brock.

Senator GRAVEL. The hearings will come to order.

By way of introduction, let me just say that we tried to secure the presence of Senator Hollings and Senator Kennedy at these hearings so they could amplify their proposal on the depletion wipeout. They were not able to be present to testify before this committee. I then inquired of Congressman Green if he would be willing to put together a panel to bring them forward and testify before the committee and expand upon the data involved. He was not able to accommodate his schedule to this offer of testifying before this subcommittee.

In addition to that, I had sent a letter to Senator Hollings and to Senator Kennedy reaffirming the request which was made here by me at the hearing a week ago, Monday or Tuesday, I believe it was a week ago Monday, requesting them to provide specific data on the profits and taxes and on the counterproductivity that they alleged of depletion allowance.

These hearings will just be for today. It will be for the Finance Committee to try to get some grip on the subject, so that we can report to the Senate in the course of that debate which will take place tomorrow or Wednesday.

[The press release announcing this hearing follows:]

SUBCOMMITTEE ON ENERGY SETS HEARINGS ON DEPLETION, OTHER ENERGY-RELATED AMENDMENTS TO ANTI-RECESSION TAX CUT BILL (H.R. 2166)

The Honorable Russell B. Long (D., La.), Chairman of the Senate Committee on Finance, and the Honorable Mike Gravel (D., Alaska), Chairman of the Finance Committee's Subcommittee on Energy, announced today that the Subcommittee on Energy would hold a hearing on the provision of H.R. 2166 (the anti-recession tax cut bill) repealing percentage depletion on oil and natural gas, as well as amendments to H.R. 2166 pending in the Committee which deal with the subject of energy. The hearing will be held Monday, March 17, beginning at 10 a.m. in room 2221, Dirksen Senate Office Building.

The witnesses who will present testimony include the following:

John S. Chalsty, President, Donaldson, Lufkin and Jenrette (securities corporation);

C. John Miller, President, Independent Petroleum Association of America; and

Paul A. MacAvoy and Robert S. Pindyck, Professors, Massachusetts Institute of Technology.

Written Statements.—Persons who desire to present their views to the Subcommittee are urged to prepare a written statement for submission and inclusion in the printed record of the hearings. These written statements should be submitted to Michael Stern, Staff Director, Committee on Finance, Room 2227 Dirksen Senate Office Building no later than Monday, March 17, 1975.

Senator GRAVEL. We are privileged to have as our first witness a member of the Finance Committee, and also a person who is probably the most expert individual within the Senate on this particular subject since it so vitally involves his constituency. I am glad to welcome as our first witness the Honorable Lloyd Bentsen, Senator from the State of Texas, who will now make his presentation on the subject. I hope he will then join us in the hearing to hear the balance of the witnesses.

Senator Bentsen?

STATEMENT OF HON. LLOYD BENTSEN, A U.S. SENATOR FROM THE STATE OF TEXAS

Senator BENTSEN. Thank you very much, Mr. Chairman. I particularly appreciate your generous remarks considering your long interest and experience in this field and your expertise in it.

Mr. Chairman, as this committee is well aware, the House of Representatives has voted in H.R. 2166 to repeal the percentage depletion allowance for oil and natural gas production. Later today I will introduce an amendment to H.R. 2166 to limit the use of the percentage depletion allowance for oil and natural gas to the first 3,000 barrels of average daily production of crude oil and the first 18 million cubic feet of average daily production of natural gas. The exemption will not be available to any producer who is engaged in marketing or distributing refined petroleum products. This amendment is simply an embodiment of the recommended reform of percentage depletion contained in the congressional program of economic recovery and energy sufficiency adopted in February of this year. The 3,000 barrel per day figure was chosen by the House Ways and Means Committee as a definition of a small producer after extensive consideration last year. The 18 million cubic feet of natural gas is the general energy equivalent of that level of crude oil production.

However, in addition to my amendment limiting percentage depletion to the generally accepted levels of a small producer, it makes the additional reform of limiting these permanent exemptions from the repeal of percentage depletion only so long as the producers to which they apply reinvest the tax savings into additional oil and gas related activities.

This additional requirement will insure that independents' percentage depletion accomplishes its purpose of providing our Nation with new oil and natural gas reserves.

Mr. Chairman, I regard the exemptions to any repeal of the percentage depletion provided in this amendment as being absolutely essential

for two reasons of national importance. First, it will further the cause of greater self-sufficiency in that it will retain a necessary tax incentive for the independent producers who are looking for and finding the new domestic oil and gas reserves in this country.

Second, it is the only way we will be able to prevent a further concentration at every level of the domestic petroleum industry. Anyone familiar with the domestic energy industry is aware of the extraordinary contribution of the exploration efforts of the domestic independents. While independent producers with no retail outlets control only 27 percent of the Nation's present oil production, they drill over 85 percent of the exploratory wells; and even when offshore exploration, where independents operate at a serious disadvantage, is included, when only the continental United States is considered, that figure is 88 percent of the exploratory wells. The dominance of the independent exploratory effort is apparent at every depth of exploration. At the 12,000 to 15,000 foot range, they still drilled 70 percent of the exploratory wells. Even at the extreme depths of 20,000 feet, independents drilled more exploratory wells than major oil companies.

Mr. Chairman, they are not just drilling wells. They are finding new reserves. Last year there were over 7,000 more successful wells brought in than in 1973. Independent producers brought in almost 80 percent of those new wells. Every one of them added to the future domestic energy supplies of this Nation. I believe it is worth noting that that is the largest number of new wells completed since 1969, when the depletion allowance was last reduced. The repeal of the percentage depletion allowance for this group of producers would put an end to this extraordinary effort they have underway to help this country achieve greater energy independence.

Independents have no profits from sales of refined products and no means of passing on the higher burden resulting from loss of depletion. Independents rely heavily on outside risk capital to finance their exploratory activities. Without the benefits provided by the percentage depletion allowance, these funds will become increasingly unavailable, and force a substantial reduction in exploration budgets.

Independents engage in the higher risk operation of drilling in unproven areas as indicated by 88 percent of their production from discoveries in Texas, between 1967 and 1971 coming from previously unproven areas, while only 11 percent of major oil companies' production came from discoveries in unproven areas during the same period.

In short, the independents find the fields; the major develop them. The independents take the big risks and the majors come in later, buying up the leases, to develop for their refineries and retail marketing. That has been the traditional pattern of the industry. But it is only a partial explanation of why the independent segment of the industry has traditionally done 80 percent of the exploration, but produces less than 30 percent of the reserves.

The other answer is that until very recently the oil industry was not profitable in the absence of down stream refining and marketing operations. During the period of 1958 to 1972, approximately 10,000 independent oil and gas producers went out of business, selling their interest to the major companies.

Mr. Chairman, I am sure that you and Senator Hansen have gone to some of those association meetings over the years, and over the last years you just did not see any young, new members coming into those associations. People were going out of the business. There was not any new blood coming into it. Now, for the first time, you are seeing additional capital moving in, and you are seeing young people moving into that business, and you are seeing a great increase in the exploration effort.

A study released by the Federal Trade Commission last year indicated that between 1957 and 1970, the 20 largest major integrated oil companies purchased 106 substantial American oil and gas producers, seven of which were large integrated companies themselves. The price increases for domestic oil have changed this economic climate where wholesale sellouts are no longer the standard practice. However, these increases alone will not maintain this climate indefinitely, and certainly not in the absence of the depletion allowance.

Since the embargo, the average price of an average 4,800-foot exploratory well has risen from $85,000 to $165,000, a 100-percent increase. Let me repeat that again. The cost of an exploratory well since the embargo, a 4,800 foot average exploratory well, has increased over 100 percent, just since the embargo. Pipe, drilling line, rigs, labor, everything connected with oil production is increasing. It will not take long for these price escalations to remove any initial windfall which may have resulted from the sudden price increases.

Removal of the percentage depletion allowance will provide independents an economic incentive to sell their existing oil and gas producing leases to the major oil companies who can take cost depletion on the appreciated base. But that is only half the story. Removal of percentage depletion will leave more of the Nation's future reserves to the major companies by reducing the ability of independents to finance their exploratory activities.

A recent analysis of independent producers' ability to finance future explorations without percentage depletion has been estimated to be between 15 percent to 30 percent lower due to reduced cash on hand; less cash flow that they would have and an estimated additional reduction which would be very substantial, and I am sure far more than the other, due to the unavailability of outside investment.

The repeal of the percentage depletion allowance without some form of small producer exemption will not only increase major oil company control over the existing petroleum resources of this country, but will insure their control over the bulk of those yet to be found. Such a result can only further increase the market position of major integrated companies in the areas of petroleum marketing and refining.

Mr. Chairman, there has been a great deal of discussion with Congress over the last year and a half about the need to preserve a strong and viable independent marketing and independent refining sector. I share those concerns and I know that the chairman does. I know that Senator Hansen does. But we are not going to be able to preserve that strong independent industry in the absence of the independent producer. This industry is a three-legged stool, and it is not going to stand if Congress saws off one of those legs. That is what repeal of depletion allowance would do.

Mr. Chairman, years ago my brother and I owned a small group of independent service stations, and I know what a tough time it was to have supplies available. I know also that the competition of the major was such that finally we sold out, and we sold out to a major. It is a tough league that you are operating in there. We ought to do all we can to try to keep that independent producer and marketer in the competitive area where they can compete with the major.

Mr. Chairman, the repeal of the percentage depletion allowance on oil and gas with the small producer exemption provided by this amendment, raises over two-thirds of the revenue that a complete repeal of the allowance would bring about. But it allows the independent producer to continue his efforts on behalf of self-sufficiency, and avoids an additional concentration in an industry basic to our entire economy.

I believe the American taxpayer and our energy consumers will be very well served by its adoption, and I would ask, Mr. Chairman, that some additional documents I have and the charts that indicate the contribution of the independent producer be made a part of the hearing record.

Senator GRAVEL. Without objection, so ordered.

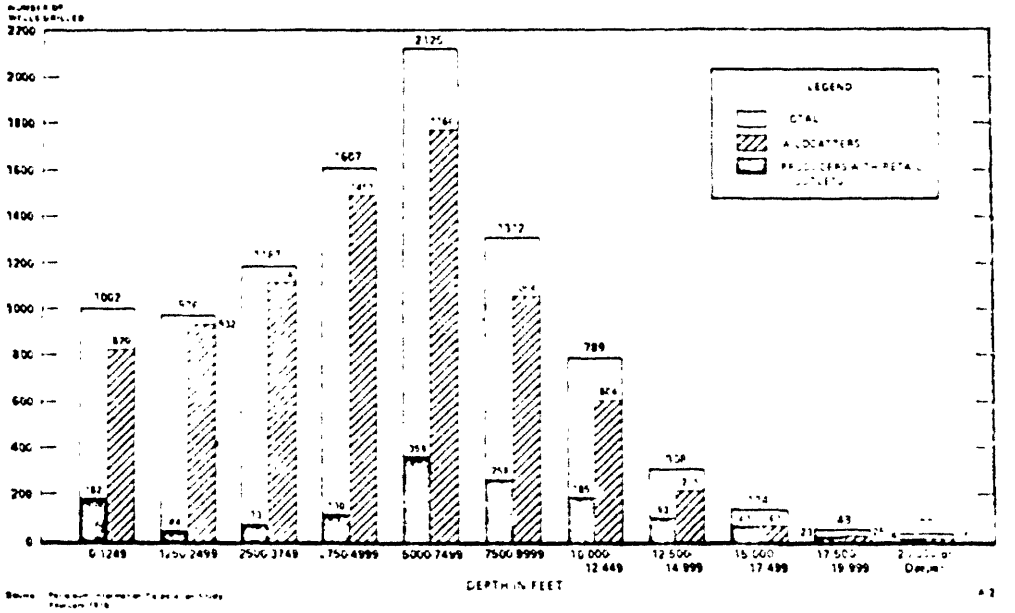
[The charts referred to follow:]

1974 TOTAL U.S. EXPLORATORY WELLS BY DEPTHS, CHASE GROUP AND OTHERS

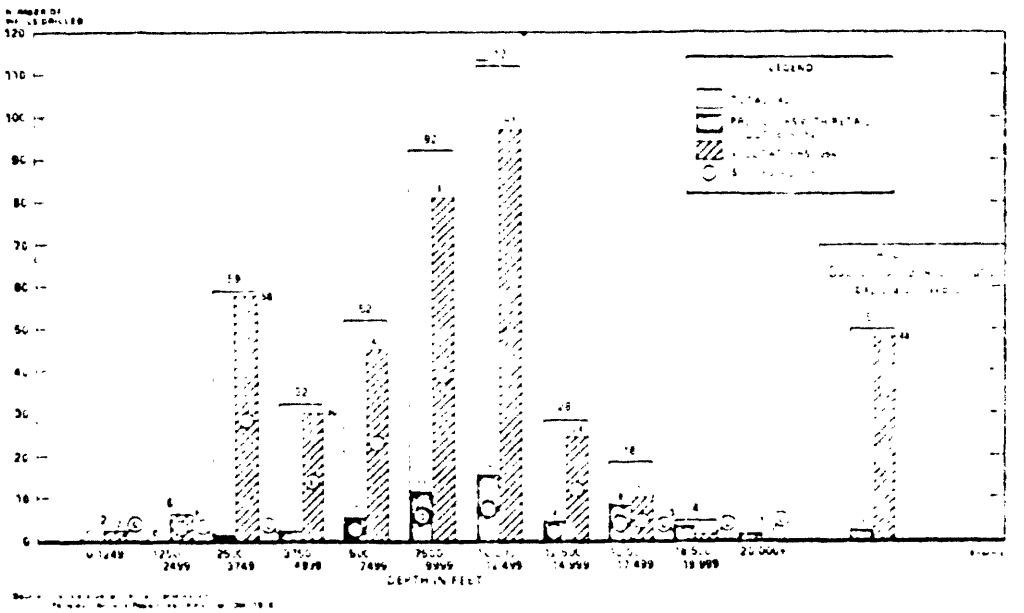
	BOPD	Total exploratory wells	To number of feet deep— 1,249	2,499	3,749	4,999	7,499	9,999	12,499	14,999	17,499	19,999	20,000 or deeper	Total exploratory footage drilled
Amerada Hess	108,082	16	1	0	0	1	5	2	5	1	1	0	0	141,871
American Petrofina	17,315	7	2	0	0	0	1	2	1	0	1	0	0	49,950
APCO	3,430	4	0	0	1	1	1	1	0	0	0	0	0	22,381
Ashland	12,293	12	0	1	1	0	0	2	4	3	1	0	0	124,732
Atlantic Richfield	270,484	33	6	0	1	1	13	3	7	3	2	1	1	300,034
British Petroleum														
Champlin	34,737	11	2	0	0	1	1	0	4	1	2	0	0	102,881
Cities Service	98,000	76	20	1	4	6	15	15	13	0	2	0	0	447,964
Clark		5	0	0	0	0	1	3	0	1	0	0	0	42,464
CFP (France)														
Conoco	246,983	65	3	0	6	6	16	12	8	9	4	1	0	531,434
Exxon	769,726	145	52	1	10	2	20	26	16	6	8	3	1	850,963
Getty	158,803	26	0	4	2	1	8	1	4	2	3	0	1	216,688
Gulf	464,214	41	1	0	7	2	8	8	8	3	0	1	3	357,911
La. Land & Explor		16	0	1	0	6	0	2	3	2	2	0	0	135,772
Marathon	109,795	28	7	0	0	3	12	5	1	0	0	0	0	146,220
Mobil	291,425	48	8	3	3	5	8	10	6	3	1	0	1	318,908
Monsanto	4,844	17	3	0	0	0	1	6	6	0	1	0	0	146,889
Murphy	3,978	7	1	0	0	0	0	2	1	1	1	1	0	77,118
Phillips	88,014	53	1	0	1	1	15	12	12	8	2	1	0	505,375
Shell	681,441	152	7	0	15	28	79	7	9	3	1	1	2	964,391
Signal (Burmah)	101,800	14	0	0	0	1	6	4	1	1	0	0	1	116,493
Skelly	53,668	20	5	0	0	2	1	3	0	4	2	2	1	186,717
Standard of California (Chevron)	599,627	56	6	4	3	1	3	11	9	6	10	0	2	527,525
Standard of Indiana (Amoco)	527,778	178	6	5	3	10	46	52	25	18	10	3	0	1,568,903
Standard of Ohio (Sohio)	28,395	19	0	2	0	4	6	1	3	3	0	0	0	143,082
Sun	208,745	80	25	3	5	3	18	11		3	2	1	1	447,718
Superior	29,980	31	7	1	3	0	6	5		3	0	1	0	211,447
Texaco	667,956	109	18	12	2	13	26	22	8	2	3	2	1	659,080
Union	350,301	43	2	0	3	5	12	6	3	4	3	4	1	389,297
Total	5,931,814	1,317	183	38	70	103	328	235	170	90	62	22	16	9,734,440
Percent of total	71.3	13.8	18.3	3.9	5.9	6.4	15.4	17.9	21.5	29.2	46.3	45.8	50	18
All others	2,389,624	8,203	819	938	1,117	1,504	1,797	1,077	619	218	72	26	16	44,358,310
Percent of total	28.7	86.2	81.7	96.1	94.1	93.6	84.6	82.1	78.5	70.8	53.7	54.2	50	82

Source: Petroleum Information Corporation Study, February 1975.

1974 TOTAL U.S. EXPLORATORY WELLS BY DEPTHS PRODUCERS WITH RETAIL OUTLETS AND WILDCATTERS



1974 LOUISIANA EXPLORATORY WELLS (NEW AREA) DRILLED BY PRODUCERS WITH RETAIL OUTLETS AND WILDCATTERS



ANALYSIS OF TEXAS RAILROAD COMMISSION DATA ON NEW DISCOVERIES IN TEXAS 1967 - 1971

CUMULATIVE PRODUCTION IN BARRELS THROUGH 12-31-73

	FROM PRODUCTION DISCOVERED BY PRODUCERS W/RETAIL OUTLETS	% OF TOTAL	FROM PRODUCTION DISCOVERED BY WILDCATTERS	% OF TOTAL
A. New Area Wildcat Wells	10,728,171	11.30	84,498,549	88.70
B. Producing Area Discoveries				
(i) Deeper production found in existing field	30,737,143	67.50	14,769,565	32.50
(ii) Shallower known reserves brought into production ("plug back")	33,730,941	52.50	30,546,540	47.50
(iii) Lateral extension of existing field	13,923,635	68.80	6,323,832	31.20
TOTAL	89,119,890	39.60	136,138,486	60.40

JANUARY, 1974.

ECONOMIC REPORT.—CONCENTRATION LEVELS AND TRENDS IN THE ENERGY SECTOR OF THE U.S. ECONOMY

(By Joseph P. Mulholland and Douglas W. Webbink)

STAFF REPORT TO THE FEDERAL TRADE COMMISSION

TABLE III-6.—ACQUISITIONS OF CRUDE OIL PRODUCING COMPANIES BY THE MAJOR CRUDE OIL PRODUCERS 1955-70

1970 crude rank, acquiring and acquired firm	Year of acquisition	Assets (millions)
1. Exxon Corp.:		
1. Louisiana Furs Corp	1958	----
2. Monterey Oil Co	1960	$102.2
3. Lincoln Oil Co. (partial)	1960	----
4. General American Oil	1961	----
5. Olin Oil & Gas Corp	1962	57.0
6. Pauley Petroleum (partial)	1962	----
2. Texaco, Inc.:		
1. Trinidad Oil (foreign)	1956	180.0
2. Seabeard Oil Co	1958	93.1
3. TXL Oil Corp	1962	36.7
3. Gulf Oil Corp.:		
1. Warren Petroleum Corp	1956	163.9
2. British American Oil Co. Ltd. (partial)	1956	----
3. Universal Consolidated Oil Co	1962	28.4
4. Shell Oil Co.:		
1. Section 30 Oil Co	1960	----
2. Bishop Oil Co	1961	5.9
3. Producers Oil Corp. American	1961	----
4. Western Natural Gas Co. (partial)	1961	[1].8
5. McCullough Oil Corp. (partial)	1963	[1]4.5
6. El Paso Natural Gas Co. (partial)	1964	[1]37.0
7. E. E. Fogelson	1964	6.6

See footnotes at end of table.

TABLE III-6.—ACQUISITIONS OF CRUDE OIL PRODUCING COMPANIES BY THE MAJOR CRUDE OIL PRODUCERS 1955-70—Continued

1970 crude rank, acquiring and acquired firm	Year of acquisition	Assets (millions)
5. Standard Oil Co. Calif.:		
1. Producing Properties Inc. (partial)	1962	[1] 4.2
2. Mt. Diablo Co.	1964	2.3
6. Standard Oil Co. Ind.:		
1. Utah Oil Refining Co.	1956	54.6
2. Kewanee Oil Co. (partial)	1960	[1] 51.0
3. Hondo Oil & Gas Co. (partial)	1960	----------
4. Honolulu Oil Corp. (majority of assets—other portion acquired by Getty)	1961	99.2
5. Midwest Oil Corp.	1964	62.7
6. General Crude Oil Co.	1964	[1] 1.8
7. Nafco Oil Gas Inc. (subsidiary of Chris-Craft Industries)	1965	[1] 6.0
7. Atlantic Richfield Co.:		
1. Houston Oil Co. of Texas	1956	77.5
2. Southern Production Co., Inc.	1956	77.4
3. Daube Oil Department (partial)	1956	----------
4. Texas Pacific Coal & Oil Co.	1958	62.7
5. John W. Mecum	1958	----------
6. Major Petroleum Co.	1959	6.1
7. Buckley Scott Co.	1961	----------
8. Argo Oil Corp.	1961	37.1
9. Cabot Corp. (partial)	1961	----------
10. Headwaters Oil	1962	2.0
11. Dome Petroleum Ltd. (Canada), (partial)	1962	[1] 8.7
12. Calumet Creek Oils (Canada)	1962	----------
13. Petro Gas Prod. (Subsidiary of Delhi-Taylor)	1963	1.3
14. Hondo Oil and Gas Co.	1963	27.1
15. Western Natural Gas Co. (partial)	1963	[1] 10.0
16. Drilling & Exploration Co., Inc.	1963	22.9
17. Ambassador Oil Corp (partial)	1963	[1] 4.6
18. Hiawatha Oil & Gas Co. (partial)	1964	----------
19. Texas Gulf Producing Co.	1964	69.7
20. Penn-Ohio Gas Co.	1964	1.1
21. Richfield Oil Corp.	1966	499.6
22. Oil Reserves (subsidiary of Barber Oil)	1966	[1] 11.6
23. Sinclair Oil Corp	1966	1,851.3
24. C. B. Wrightsman	1958	----------
25. J. M. Rault Jr. & Associates (partial)	1962	----------
26. Davis Oil Co.	1966	----------
27. Great American Industries, (Canada), (partial)	1967	[1] 1.0
28. Wainwright Producers & Refiners, Monterey Petroleum, Le Duc Calmar Oil Co., Canada, (partial)	1966	[1] 1.6
8. Mobil Oil Corp.:		
1. Hallmark Oil	1956	----------
2. Basin Oil Co. of California	1956	1.3
3. Liberty Bell Oil	1956	2.5
4. Franklin Fuel (partial)	1958	----------
5. Freeport Sulphur Co. (partial)	1958	[1] 100.0
6. Republic Natural Gas Co.	1961	48.0
7. Anchor Petroleum	1961	6.7
8. Northern Natural Gas (primarily Canadian)	1964	78.0
9. Bayview Oil Corp.	1964	5.9
10. Magna Oil Co. (partial)	1964	[1] 1.0
11. Franco Wyoming Oil (partial)	1965	----------
12. Texas Eastern Transmission	1967	----------
9. Union Oil Co of California:		
1. Paul Moss	1959	----------
2. Woodley Petroleum Co.	1960	30.1
3. Rockwood Oil Corp.	1960	----------
4. Dominguez Oil Fields Co.	1961	5.1
5. Davidson Drilling Co.	1961	----------
6. Texas National Petroleum Co.	1962	36.1
7. Albion-Scipio, Inc.	1962	----------
8. Rovsek & Volk Co. (partial)	1962	----------
9. Williamson Oil & Gas (Canada)	1962	----------
10. Pure Oil Co.	1965	766.1
10. Getty Oil Co.:		
5. Wheless N.H. Oil	1960	1.0
2. Honolulu Oil Corp. (partial, other portion acquired by Standard Oil Co. of Ind.)	1961	----------
3. Magee Oil Co. (partial)	1962	----------
4. Claremont Oil	1965	2.0
5. Reef Corp. & J. R. Butler	1967	----------
6. Shamrock Oil & Gas Corp. (partial)	1967	----------
11. Sun Oil Co.:		
1. Arkla Oil Co.	1957	----------
2. Seneca Oil Co. (partial, 16 percent interest)	1957	----------
3. Abaca Oil Co. (partial)	1962	----------
4. Band Oil & General Exploration (partial)	1965	[1] 1.5
5. B. E. Oil, Tex.	1965	----------
6. J. G. Catlett Co. (partial)	1965	----------
7. Mayer-McClellan (partial)	1965	----------
8. Woods Petroleum (partial)	1967	----------
9. Sunray DX Oil Co.	1968	749.0

See footnotes at end of table.

TABLE III-6.—ACQUISITIONS OF CRUDE OIL PRODUCING COMPANIES BY THE MAJOR CRUDE OIL PRODUCERS 1955-70—Continued

1970 crude rank, acquiring and acquired firm	Year of acquisition	Assets (millions)
12. Continental Oil Co:		
1. Condor Petroleum Co	1956	
2. Rowland Drilling Co	1957	
3. Buffalo Oil Co	1958	2.5
4 Hamilton Dome Oil Co subsidiary of Westates Petroleum (partial)	1959	
5 Fuhrman Petroleum Corp	1959	
6 Kewanee Oil Co (partial)	1959	[1] 10.0
7. San Jacinto Petroleum Corp	1959	35.6
8. Charles W. Scott	1959	
9 Oak Hill Co	1959	
10 Davis & Wegener	1960	[1] 1.3
11. W F. Turner	1960	[1] 3.0
12. Calvert Petroleum Corp	1960	9.2
13 Southwest Resources, Inc	1961	
14 Royal Blue Ventures, Inc	1961	
15 Douglas Oil Co. California	1961	18.2
16 Poppy Oil Co	1962	
17. Asoman-Hillard Co	1962	
18. Pauley Petroleum, Inc	1962	49.1
19. Victory Oil Co	1962	
20 Hudson Gas & Oil (partial)	1962	[1] 20.0
21. Security Freehold Petroleums Ltd. (controlled by Hudson's Bay)	1963	4.5
22. Delhi Taylor Oil Corp (partial) (Other 50 percent acquired by Tenneco Corp.)	1964	[1] 20.0
23. Mayfair Minerals (partial) (Other portion acquired by Tenneco Corp.)	1964	
13. Marathon Oil Co.:		
1. Tower Oil Co	1959	.4
2. McClure Oil Co. (partial)	1960	[1] 7.0
3. Oregon Basin Oil & Gas Co. (partial)	1960	
4. Kinney-Coastal Oil Co	1960	2.8
5. Plymouth Oil Co	1961	80.8
14. Phillips Petroleum Co.:		
1. Consolidated Gas Co	1958	
2. Union Oil Co. of California (partial)	1960	
3. Anton Oil Corp	1958	
15. Cities Service Co.:		
1. National Oil Co	1957	2.5
2. Llano Grande (partial)	1957	
3. G. C. Parker	1960	
4. V. M. Harrison	1960	
5. L. R. Development Ltd (Argentina)	1961	6.7
6. Felmont Petroleum (partial)	1961	[1] 13.9
7. Fairway Oil	1961	
8. Valor Oil	1965	
9. Tern Oil	1965	
10. Harold D. Baker, et. al	1967	[1] 20.0
16. Amerada-Hess:		
1. Gulf Oil Corp. (partial)	1960	
2. Delhi-Taylor Oil Corp. (partial)	1963	[1] 25.0
3. Hess Oil & Chemical Corp	1969	491.5
17. Tenneco:		
1. Delhi-Taylor Oil Corp. (partial) other 50 percent acquired by Continental Oil (50 percent)	1964	
2. Mayfair Minerals (partial), other portion acquired by Continental Oil	1964	
3. Wilcox Oil Co	1964	13.7
4. Leonard Oil Co	1965	
5 Middle States Petroleum Corp	1958	29.6
19. Union Pacific:		
1. Champlin Petroleum Co., Subsidiary of Celanese Corp	1970	[1] 240.0
2 Pontiac Refining Co	1970	
20. Signal Companies, Inc.:		
1. Hancock Oil Co	1958	62.7
2. Bankline Oil Co	1959	13.1
3. Eastern States Petroleum & Chemical Corp	1959	

[1] Consideration paid.

Note: "Partial" indicates partial acquisition.

Source: U S. Federal Trade Commission, Bureau of Economics, Statistical Report No. 7, "Large Mergers in Manufacturing and Mining 1948-70"; "Moody's Industrial Manuals, Various Years."

Senator GRAVEL. Would the Senator repeat what he was saying about two thirds? Would you repeat that point again?

Senator BENTSEN. The point is that the repeal of the percentage depletion allowance on oil and gas with the small producer exemption provided by this amendment would still raise over two-thirds of the revenue that you would receive from a complete repeal of this allowance.

Senator GRAVEL. Very good.

Senator BENTSEN. Mr. Chairman, another point has been made by some that the independent today—and they cite some figures—has been getting a very substantial return on capital. Well, he is getting a better return on capital than he did in the past, and that is why you are seeing an increase in exploratory effort there. But the figures that are cite recently in this debate, I had a chance to examine them; they supposedly took a random survey of small publicly owned U.S. oil and gas producers. But I really cannot agree with that kind of a description, when I note that over one-third of these companies that are listed here are companies that have over 3,000 barrels a day in production. And yet, amongst the independents as a whole, only 3 percent of the independents have over 3,000 barrels a day.

Senator GRAVEL. Thank you very much.

Senator Hansen, do you have any questions?

Senator HANSEN. First, Mr. Chairman, I would like to express my appreciation to the distinguished Senator from Texas for his appearance here this morning. He is a very knowledgeable and able representative of his State. He is certainly one who understands the mechanics and financial problems that are extremely important to the energy industry.

I have in my hand a copy of the March 1975 issue of World Oil. If I may, I would just like to read a couple of paragraphs from it, Senator Bentsen, and then ask you to comment.

The article is entitled "Here Is What Is Needed To Get Tertiary Recovery Going."

> About 40 billion barrels of oil are currently recoverable in the United States through conventional primary and secondary techniques, but the tertiary recovery target could be 1½ times that much under proper economic and political conditions. Further technology could add even more oil to U.S. reserves. However, to tap this bonanza, the oil industry must take risks involving huge expenditures with capital investments returned slowly over long periods of time.

Turning to the second page of that story, it says—

> Economic factors can overshadow physical ones in commercial oil production, even if provisions are made to improve recovery by increasing displacement and sweep efficiencies, costs to accomplish this can not be higher than added oil value.

The article goes on to mention that the variables in commercial oil production include the estimated amount of oil recoverable, and cost to conduct the operation in value. The author's schematic drawing shows it could be done through tertiary recovery efforts.

As I said earlier, the present reserves are estimated at 40 billion barrels of oil. With the kind of tertiary recovery effort being discussed, the estimate is that 59 billion barrels instead of 40 billion would be available. Roughly, this would mean 50 percent more or 1½ times as much.

You have pointed out very clearly the importance of depletion to the independent, I have read some of the majors' reports. I have gone through and scanned Texaco's report to stockholders and I have one from Sun. At least these two major companies have been able because of the money that they have generated, to make substantial investments in further exploratory and recovery efforts that are important to this country. Texaco, in 1973, invested $907 million in the United States and $427 million abroad. That is, as I figure it, about 68 percent. The investments of 10 of the major companies have also been studied. The letter I have from Texaco, includes this quote:

> For Texaco and its subsidiary companies, our investments for 1973 amounts to $907 million in the United States and $427 million abroad as reported by the recent study entitled "Profitability in Selected Major Oil Company Operations" released by the Senate Finance Committee in December of 1974. The study further shows that for the 10-year period 1964 to 1973, the 10 selected companies invested a total of $70 billion of which $42.9 billion was invested in the United States, and $27.1 billion was invested abroad. Texaco's investments for the same period were $5.97 billion, or $5,970,000,000 and $3,430,000,000 respectively.

This is my question. However money can be generated by the oil industry, is it not fair to say that reflecting upon these two facts of what Texaco has invested and what major companies have invested, that the depletion allowance to the extent that it applies is important to everyone in the oil business.

Senator BENTSEN. Those numbers you have been citing, and I do not have them before me to study in great detail, but I would assume that a great part of those numbers in the way of investment in this country is in the development of already proven fields. And again, the numbers that I have cited you shows that the independent is the one that does most of the discovery of the new fields, and then in turn, where there is less risk involved, the major goes ahead with development.

Now I think one of the problems that you run into, Senator Hansen, in the present regulations is that with the two-tier price system between old and new oil, the tendency on the part of companies is not to go in and do tertiary recovery because they have a problem that they still stay in a no-oil category, and we ought to have some way that we can evaluate the dwindling reserves. And I think that can be done. I do not think it is that difficult. I think petroleum engineers can do it where you can evaluate the dwindling reserves and then, if they had increased the supply of oil by tertiary recovery, which is a much more expensive process, that they be given credit for that above the line of the depleting reserves found in the conventional manner and recovered in the conventional manner.

I think that is the way to attack that kind of a problem, and I think that would be helpful and that really does not get into the depletion question.

Senator HANSEN. Well, I certainly would suspect that you are right that a substantial amount of the investment to which I alluded would go into proven fields. And yet, the point that I wanted to focus on is the extreme importance of generating enough cash to do the entire job.

The oil industry does many things. It explores for oil, and that, of course, as you pointed out very accurately in your statement, is undertaken in this country largely by independents on the Outer Continental Shelf. I suspect it is also true in foreign countries. Exploration has been an effort left mainly to the major oil companies.

I happen to think that we are fortunate that the major oil companies have gone around the world. Today's world is comprised of energy-intensive countries. This is particularly true in the developing countries. Whatever can be done to add to the sum total of energy worldwide seems to me to benefit America as well because we are all competing one with another.

I made a trip to the Middle East with some other members of the Interior Committee about a year ago, and everywhere we went we encountered delegations from Japan. The Japanese are extremely conscious of their dependency upon petroleum reserves and they were in the Middle East, I suspect, to try and work out arrangements which would insure their supply for future use.

Nevertheless, I mention first about the possibility of an expanded tertiary recovery effort, making nearly half again as much oil available as we presently have. Those people who say that we ought to do away with the depletion allowance and that we ought to try to put the major oil companies out of the international business, seem to me to take a short-sighted view. I know you are not saying that, but there are some who do say it.

A look at figures tells a great deal. You spoke about the cost of drilling a well now as compared to that cost just before that embargo. A figure I have from Texaco spans a little broader period of time. As I remember that figure, to build a 100,000-barrel-a-day refinery in 1972, would cost $185 million. In 1978 with the inflation and stricter environmental controls required by law, that same refinery will cost $535 million.

So any way you look at it, any part of the industry that you examine seems to me to reflect a clear picture of an intensified capital need.

Senator BENTSEN. There is no question about an intensified capital need, Senator Hansen. One thing, though, so far as the international oil companies, I am not for in any way limiting their work overseas, but I do not believe that we should have tax incentives for them to do it overseas. And I am deeply concerned about the foreign tax offset and some abuses that have occurred in the multiple-country accounting approach. I think we should change that because there are some abuses that have been incurred there.

And I think further that we ought to develop a hemispheric energy policy. We made a mistake in this committee when it came to the question of the trade bill when we included Ecuador and Venezuela into the OPEC countries on the question of denying them any kind of favorable trade status. And I think the State Department made a mistake in not really bringing that to our attention.

I have introduced legislation to take Venezuela and Ecuador, out from under that limitation because they did not join in the embargo against this country. Venezuela increased its production by over 25 percent during that embargo. Now if it had not been for that, we would have been in much tougher straits than we were.

Senator HANSEN. Senator Bentsen, you have worked with these problems for many years. Is it your opinion that the Senate can amend the tax rebate, the industry incentive bill that the Finance Committee just reported out last Friday on the floor of the House, and give it the consideration that it deserves? Or would it be your idea that we ought to keep that bill clean like it was reported by the Senate Finance

Committee and consider this whole subject of tax reform legislation? You have identified a number of important areas that I think are deserving of consideration but which I feel could not be adequately discussed and understood in the week before us.

Would you comment on that?

Senator BENTSEN. Well, Senator Hansen, I do not think we can carry out a total tax reform bill here but I do think we can handle this depletion question, and that is one of the reasons I am here testifying and that is one of the reasons I assume these hearings are being held. And the question of the small independent is not a new question. It is one that we discussed at some length. And hopefully, my testimony will contribute to that dialog.

Senator HANSEN. I think it has indeed. I am not certain, though——

Senator BENTSEN. So what I am saying is I am going to support such an amendment on the floor to try to preserve—and I will be introducing legislation for that purpose. Whether it is my amendment or someone else's I support, I am going to support one that tries to protect the depletion allowance for the small independent so he is not put out of business, so all of his business does not go to the majors. I think the majors should have the competition of the small independent.

Senator HANSEN. Well, I certainly want to join with you in trying to do everything we possibly can to protect the independent. I have an uneasy feeling about what may happen on the floor when we start getting into this particular area, though. I am afraid that the ball may get out of our court and all sorts of things could wind up, given the emotion that I think characterizes the average person's view of the oil industry these days and the brainwashing that I think has occurred as a result of repeated headlines in the press and stories on television, reports on television. I am not certain that we are going to be able to contain it precisely to the objective you have in mind, or that we will have enough time to afford all interested parties an opportunity to be heard so as to make the right decision.

Thank you very much, Senator Bentsen.

Senator GRAVEL. Thank you. Would any other Senator like to question?

Senator Packwood.

Senator PACKWOOD. I have no questions.

Senator GRAVEL. Senator Brock.

Senator BROCK. Just a couple of questions for our colleague with regard to this matter of small versus large. I am sympathetic with what you suggested. I think I have perhaps leaned toward that same position. But the problem that I find is that I wonder if it really does deal with the problem of developing new resources. I wonder if it would not be more logical, Senator, to tie a removal of the depletion allowance for those parts of the marketplace, independent, small, large, or anything else, that are currently completely deregulated and out from under price control, if that does not make more sense, because in the instance of an existing well, for example, with tertiary recovery, which is an expensive operation, if you maintain price control, then you are not going to get that process undertaken and the investment made if there is not an adequate potential for return on the investment.

I wonder if we would not be better off or better advised to take a look at this thing not from the point of view of just protecting the smalls—while I am sympathetic to that—but from the point of view of enhancing the production of oil.

Senator BENTSEN. Senator Brock, you make a very salient point and I touched on that just before you came in, but I will do that again, if I may.

I think that what you are talking about—there is no question about tertiary recovery being much more expensive and that we have a great addition to the reserves that can be made for this country and should be made. But your problem in the regulation as it is now structured is, there is a deep concern about trying to increase the reserves of a proven field because they feel they come under the limitation of the $5.25 price, whereas tertiary recovery, and particularly in deep wells, is a very expensive process.

So what I said earlier, what we ought to be able to do is take the petroleum engineers' estimates of the continuing life of the field and how those reserves will go down based on the production, and then we ought to give credit under the new price for the addition to reserves by things like tertiary recovery. And you see, they are not doing that and I think they could, and I think they should, otherwise you are going to see those fields wasted and those recoveries not made.

Senator BROCK. Senator, we have on the floor at the moment a bill out of the Interior Committee to, in effect, give the Congress a total veto over any action with regard to pricing, the President's efforts to regulate or deregulate in any particular area. I think Senator Hansen's question is well founded given the emotional mood of the moment.

Are we, in truth, going to have any realistic price adjustment with the current complexion of the Congress compounding the whole problem with this depletion argument which is not related to production? It is related more to an effort to "sock it to" a particular group.

It seems to me that if we were really going to be constructive on the floor with regard to the depletion allowance in the tax bill, we would take a look at tying this removal of the depletion to removal of price controls—and not so much with regard to maintaining existing price authority. In other words, you have got to have the money to get that oil out of the ground one way or the other.

Now either the Government subsidize it, in effect—if you want to call depletion a subsidy—or the marketplace pays the price. One way or the other. As it goes now, I do not see either. I think you run a very sizable risk when you talk about depletion in the context of large versus small. I just do not think that is relevant to the problems that have been created by the two-tier price system itself.

Senator BENTSEN. Well, I think, Senator Brock, that we get into a situation where the major, with his cash flow and with his ability to finance—and problems in doing it, I understand, but in comparison to the independent they pale into insignificance—I think the independent just goes out of business. I do not think he can be funded without the depletion allowance. Therefore, I am trying to save that, and I would like to take the other approach that I just outlined to you, which, of

course needs some additional study, and that is when they try to add to reserves by doing something that is a very expensive process.

Senator BROCK. What we are going to do is we are going to drive the independents out of business and the internationals out of the country.

Senator BENTSEN. No, I really do not think so. I think the internationals are going to stay in this country. You get into a situation with the internationals overseas now. What they are becoming more and more aware of is that they run a very major political risk in some of these places with expropriation, and that is what has been happening to them. A lot of them have been transferring their profits into their downstream operations, into their retailing outlets and that type of thing. I do not think they will be leaving the country.

Senator BROCK. They have, though. They have up until now.

Senator BENTSEN. They have for their exploration.

Senator BROCK. That is correct.

Senator BENTSEN. But you see they have had some things in the way, as you know, in their accounting practices that have been conducive to some of this exploration overseas. And in addition to that, in the past they have been able to find great reserves over there with a much lower cost of production than what they have been able to find here. But now that problem overseas is compounded with the very serious political situation of expropriation and nationalization.

Senator GRAVEL. Does anyone else have any questions?

Senator FANNIN. Mr. Chairman.

Senator GRAVEL. Senator Fannin.

Senator FANNIN. The Senator from Texas is certainly right in wanting to protect the independent. I feel that what we must look at, though, is the overall situation and I do not want to be repetitious. I noticed you quite thoroughly covered this important area of concern and I know how astute the Senator is in his expounding on these particular issues. He has a world of experience and a good background in this field. But I feel as the Senator from Tennessee that this is too complex an issue to deal with on the floor without hearings to substantiate our actions. We need to get the rebate checks in the mail to the people I am so concerned that we will get into a turmoil on the floor we will still be here a month from now working on this same problem.

I ask the Senator whether he thinks that it would not be wise to, as the Senator from Tennessee has suggested, consider this issue in an overall review of the laws pertaining to this area of oil.

Senator BENTSEN. Senator Fannin, I do think that insofar as the more complex part of the issue, these questions that Senator Brock and I have been discussing, I think you are going to see that a part of a major reform bill that, hopefully, we will have before us this summer with retroactive provisions to January, as was discussed by the chairman of the full committee. But I do believe that the question

of the independent and the depletion allowance is one that has been discussed for a long time in repeated hearings and again, we are doing that today.

Senator FANNIN. Well, I think the Senator will agree that it is probably the most misunderstood formula in existence today in so far as its actual operation and effect on the oil industry. The general public thinks that the repeal of the oil depletion allowance would be to its economic advantage. Whereas the Senator knows that this tax advantage is just as much involved in the final price of the product as any other factor.

Senator BENTSEN. There is no question but what it gets involved in the cost of the product. All taxes do in one way or another.

Senator FANNIN. Well, I would hope that if we do anything on depletion, we would do it when we have total consideration of the problem rather than just this one issue at hand. But I was not here to hear the Senator's testimony; so I do not want to delve into it and just be repeating some of the things he no doubt has mentioned.

Thank you.

Senator GRAVEL. Thank you very much, Senator Bentsen.

Senator BENTSEN. Thank you, Mr. Chairman.

Senator GRAVEL. I would like to commend to the members of the committee a memorandum prepared for me by the staff analyzing the data utilized by Senators Kennedy and Hollings in their testimony before the Finance Committee urging repeal of the oil depletion allowance. And also, I would like to ask that this memorandum be distributed to the press so that they could be privy to an analysis as to the data submitted to the committee.

[The memorandum referred to by Senator Gravel follows:]

MEMORANDUM

U.S. SENATE,
COMMITTEE ON FINANCE,
Washington, D.C., March 13, 1975.

To: Senator Mike Gravel.

Subject: Data utilized by Senators Kennedy and Hollings in their testimony before the Finance Committee urging repeal of the oil depletion allowance.

This memo has been prepared in response to your request for an analysis of the information presented by Senators Kennedy and Hollings in support of their argument for the elimination of the depletion allowance. In their testimony Senators Kennedy and Hollings set forth a number of arguments both procedural and substantive for repealing the provision at the present time. The substantive argument for repeal boils down to an assertion that the present high prices for oil and the healthy profits within the industry make the allowance especially inequitable and unnecessary as an incentive for production. The statements of Senators Kennedy and Hollings say that the average effective tax rate within the oil industry is only about 6 percent. More specifically, the Kennedy/Hollings statement says:

"For large corporations, the tax rate specified in the Internal Revenue Code is 48 percent. But as the following table indicates, the average effective tax rate for some of America's largest oil companies is only about 5 or 6 percent:

FEDERAL INCOME TAX RATE PAID BY LARGEST OIL COMPANIES 1974

(Source: U.S. Oil Week Computations Based on Company Annual Reports and SEC Reports)

	Percent		Percent
Exxon	6.5	Sun	13.2
Texaco	1.7	Union	6.4
Mobil	1.3	Cities Service	8.3
Socal	2.05	Getty	22.5
Standard Indiana	10.2	Marathon	22.5
Shell	21.6	Ashland	32.4
Gulf	1.2	Standard Ohio	12.8
Arco	3.7	Kerr-McGee	23.8
Phillips	12.9	Amerada Hess	7.5
Conoco	8.2	Average	5.99

In the current state of high profits and low taxes, it is only crocodile tears that can legitimately be shed by the oil companies when the percentage depletion allowance passes from the scene.

The staff attempted to obtain a copy of the publication of U.S. Oil Week which is cited as the source of information for the above table. The Library of Congress received its last issue of U.S. Oil Week in 1970. A 1968 copy of the publication revealed that it is a newsletter published by the Observer Publishing Company, now located in Arlington, Virginia. The publication appears to be directed to a readership composed mainly of "small businessmen in petroleum marketing." Reached in Arlington, a spokesman for U.S. Oil Week stated that the information relied upon by Senators Kennedy and Hollings was probably "taken from our June 1974 issue which is based mainly on 10K forms filed by major companies with the SEC." The staff is attempting to obtain a copy of the June 1974 issue. In any event, it is impossible that the June 1974 issue of Oil Week could contain the Federal Income Tax rate paid by oil companies for the entire year of 1974.

Whatever the reliability of the sources of information on the taxes paid by oil companies which was presented by Senators Kennedy and Hollings, the computations appear to be based upon a misleading and distorting technique of taking total world-wide income of major oil companies and comparing that figure with taxes paid only to the U.S. Federal Government. This would seem to be the only way to reach a conclusion that "the average effective tax rate for some of America's largest oil companies is only about 5 percent or 6 percent. This is a misleading comparison for two reasons: (1) It suggests that oil companies owe taxes to the U.S. on their world-wide income, no matter where it is earned or whether it has any reasonable connection with the country at all, and (2) this approach is misleading because it ignores taxes paid to State and local governments within the U.S. A much fairer way to measure the tax burden of oil companies is to compare total taxes (excluding excise taxes at the pump) against total income.

The staff of the Committee on Finance carried out a comprehensive study of oil companies' profits on domestic and foreign income which was published by the Committee in December 1974. Table 3 in the attached Committee print presents the overall effective taxes paid by 10 major companies to all governments, excluding consumer excise taxes paid at the pump.

In addition, the January issue of Forbes magazine containing information of profitability in U.S. industries places oil company profitability in its proper perspective by comparing oil company profits with those of other companies in other industries. For example, Texaco ranks 142nd and Exxon 155th when measured by their respective returns on equity. Exxon, whose five-year return on equity averages 16.3 percent, moved from 269th to 155th, while Texaco, whose five-year average return on equity is 16.6 percent, moved from 235th to 142nd.

Finally, it should be pointed out that Senators Kennedy and Hollings in their joint statement are arguing for repeal of the depletion allowance for oil and gas. While it is true that the price of new oil has increased during the last two years, it should be noted that the price of natural gas has not undergone a price increase anywhere near equivalent to that of new oil. It would be a disaster to take away depletion from gas when the average wellhead price is still about 30¢ in the interstate market.

Attachments.

TABLE 3.—EFFECTIVE TAX RATES PAID BY 10 MAJOR OIL COMPANIES, 1964 TO 1973—INCLUDES ALL TAXES, OTHER THAN EXCISE TAXES, PAID TO FEDERAL, STATE, LOCAL, AND FOREIGN GOVERNMENTS

	1973	1972	1971	1970	1969	1968	1967	1966	1965	1964
Total:										
Exxon	78.1	79.8	76.9	77.8	76.3	75.5	76.5	76.4	76.4	74.9
Gulf	67.2	70.2	63.7	55.5	50.2	45.3	47.5	46.4	45.0	43.2
Mobil	62.4	63.2	63.9	57.1	55.4	54.1	49.6	48.5	49.1	47.8
Phillips [1]	44.5	51.9	47.5	46.8	42.5	42.2	41.9	42.3	36.2	34.4
Shell	43.6	45.6	43.7	46.0	39.1	36.8	36.1	38.0	38.0	35.7
Standard of California	59.2	65.1	63.6	60.5	55.8	52.9	48.4	32.5	30.6	31.2
Standard of Indiana	46.6	43.0	40.9	41.1	39.7	42.0	40.9	39.8	44.5	39.1
Standard of Ohio	50.1	56.6	35.6	29.2	58.8	47.2	43.8	44.1	50.5	48.5
Sun	54.1	55.4	54.2	57.0	53.0	48.4	NA	NA	NA	NA
Texaco	74.3	75.3	70.5	66.8	66.6	63.0	61.9	NA	NA	NA
10-company average [2]	70.3			66.6			62.4			55.8
United States:										
Gulf	41.0	28.5	30.7	31.6	26.9	19.4	29.6	33.3	30.9	33.1
Mobil	41.5	38.9	45.9	44.1	38.9	34.7	39.7	39.4	42.7	43.3
Phillips [1]	50.0	48.6	52.8	50.5	45.3	45.8	45.1	43.1	38.7	39.9
Shell	44.0	45.7	44.0	46.1	38.3	36.2	35.8	36.9	36.5	34.5
Standard of California	49.2	44.8	45.6	44.6	34.9	36.3	36.5	37.5	34.6	36.8
Standard of Indiana	41.6	46.0	48.1	48.1	44.2	48.3	40.6	39.3	42.0	34.7
Standard of Ohio	48.5	56.2	31.0	26.6	59.4	46.7	43.0	43.0	50.4	47.8
Sun	50.5	47.7	47.5	48.3	42.0	37.7	NA	NA	NA	NA
Texaco	37.2	35.6	35.3	36.6	30.3	25.7	25.3	NA	NA	NA
Exxon	42.3	40.8	41.3	43.7	40.2	40.5	39.3	38.5	37.4	35.1
10-company average [2]	42.9			42.4			35.6			31.6
Foreign:										
Exxon	83.7	87.0	84.4	85.4	85.4	83.1	84.4	83.8	82.7	81.3
Gulf	72.1	88.0	79.1	73.2	69.6	67.0	67.9	63.8	63.4	56.8
Mobil	67.9	71.3	71.3	65.5	67.0	66.4	57.8	54.7	53.7	50.4
Phillips [3]										
Shell [4]										
Standard of California	61.4	71.2	69.3	67.4	66.0	61.7	55.6	26.2	25.2	23.5
Standard of Indiana [4]	61.3	22.1	10.1	4.8			57.7	95.7		
Standard of Ohio [4]										
Sun [3]	59.2	77.6	77.1	93.0			NA	NA	NA	NA
Texaco	80.5	84.6	80.5	79.3	79.4	81.6	80.4	NA	NA	NA
10-company average [2]	77.8			79.4			78.2			70.4

[1] The rates of profitably of taxes for Phillips were recalculated using the tax and income figures supplied by Phillips; however, Phillips points out that the income shown includes earnings of companies accounted for by the equity method, whereas the tax figures do not include taxes paid by such companies. Hence, the taxes are understated.

[2] This average includes total company income and total taxes paid by the companies; since Exxon accounts for almost half of the total taxes, the average tends to reflect Exxon's experience.

[3] These companies had losses on foreign operations in certain years not shown.

[4] Foreign operations of these companies are, or were, relatively insignificant, i.e., less than 5 percent of net assets.

Note: Data in this table were supplied by the 10 major oil companies in response to a questionnaire from the Senate Finance Committee asking for data from petroleum operations. 5 of the companies reported profits on petroleum operations as requested, 5 companies reported total corporate profit data. 4 of the 5 companies reporting total profit data, Mobil, Gulf, Shell, and Standard of California, all indicated that the nonpetroleum portion of their business was relatively insignificant and its inclusion should not therefore create any distortions in the data.

Source: Responses from the 10 major oil companies listed above to a questionnaire from the Senate Finance Committee asking for the rate of profitability to taxes, other than excise taxes. The responses to this question showed net income, taxes (other than excise taxes), and the ratio between net income after tax and the sum of net income after taxes and taxes (other than excises) paid to Federal, State and local governments and to foreign governments. The reciprocal of this ratio is the ratio between total taxes (other than excises), paid to Federal, State and local governments and to foreign governments, and the sum of such taxes and aftertax net income, i.e., the effective overall tax rate paid by the 10 companies to all governments. This reciprocal is shown above in the tables. Caution; This is not the effective tax rate paid to the U.S. Government.

Arguments against repeal of the depletion allowance in the absence of a comprehensive energy program can be made on substantive grounds, as well as simply refuting the misleading or inaccurate data that has been bandied about.

Senator Hollings made the following assertions which can be rebutted by the arguments which follow:

1. It (the depletion allowance) has not been effective as an incentive for exploratory drilling. In 1969, for example, the revenue loss from this deduction was $1.4 billion while only $150 million worth of oil reserves were discovered.

This argument is based on a 1968 CONSAD report which has been thoroughly discredited. The CONSAD study was, in fact, inappropriately conceived. Its basic mathematical model contained fundamental flaws. As described by an independent team of university economists in 1973, it was "a dry hole." The

quoted cost-benefit conclusions of the study are of no use—if for no other reason than that it assumed that oil production would remain constant regardless of the level of price. As a matter of fact, the CONSAD study was never intended to determine how exploration and the total level of reserves would respond to changes in price. It was designed to determine how the optimum amount of reserves held in the ground would vary with price assuming a constant level of production. That exercise is quite similar to determining how the optimum level of inventories in a retail store would change if price were to change assuming a constant level of sales.

It is not correct that "careful economic studies have indicated unambiguously that percentage depletion is very ineffective relative to its large cost in stimulating exploration." On the contrary, economic studies other than the misformulated CONSAD endeavor have shown quite the opposite. One such effort showed that crude oil imports in 1971 would have been double the actual level in the absence of percentage depletion because petroleum reserves would have been 22.5 percent lower. Another careful study in 1969 showed that, in the long run, a 33 percent reduction in price would mean a 55 percent reduction in discoveries. Since the effective percentage depletion rate in excess of cost depletion was something over 15 percent after 1969, that study implied at least a 25 percent decrease in the level of reserves if percentage depletion had been eliminated ((55/33) ×15= 25).

2. Further, since depletion only applies to successful, producing wells, there is greater incentive to drill multiple wells in known fields than it is to take the one in ten risk of exploratory well drilling.

What is "overdrilling"? With higher prices (or price plus depletion), it may be economical to produce a reservoir faster, but that does not mean that oil will be wasted in the sense of diminishing total recovery from the field. When there is a shortage, obtaining oil sooner is certainly not undesirable so long as the producing rates do not damage the reservoir by exceeding the maximum efficient rates for the wells in the reservoir. This does not happen because the maximum efficient rate of production for each well is normally determined by state or Federal regulatory agencies based on the physical characteristics of the reservoir. To the extent that wasteful over-drilling and over-production of reservoirs may have occurred in the past, the basic cause was the "Rule of Capture." The oil beneath an individual's land could be legally drained off by any neighbor who could produce it from wells located on adjacent properties. It was diverse ownership of mineral properties and lack of effective unitization and conservation laws rather than percentage depletion that caused such overdrilling as may have occurred in past years.

Insofar as preference for drilling in existing fields is concerned, the fact that the industry has spent billions of dollars in the past few years in the hostile environment of the United States Arctic and offshore areas in the quest for new reserves belies the assertion that oil companies "prefer to spend money drilling in existing oil fields."

3. Additionally, the Treasury Department has estimated that 42% of the allowance goes to non-operating interests, such as royalty owners.

In the first place, 42 percent is not "most." Furthermore, over half of what CONSAD included in the 42 percent was the nominal depletion allowance on foreign oil. This was done despite the wellknown fact that foreign depletion usually does not lead to a reduction in United States income taxes because the foreign tax rate is usually higher than the United States rate. Hence, the foreign tax credit offsets potential United States tax liability with or without depletion. (An important exception is in Canada, which also has a form of percentage depletion.) Anyone who has studied the question recognizes that virtually all of the benefit of the depletion allowance accrues to domestic optrations. Quoting from the Report of the Committee on Ways and Means on H.R. 11462, the Oil and Gas Energy Tax Act of 1974: ". . . your committee is aware that the limitation on the amount of creditable foreign taxes takes away most of the advantage of the deduction for foreign percentage depletion. . . ."

The royalty owners' share of the total amount of percentage depletion taken annually cannot be very great. The average royalty in the United States is about 15 percent of gross revenue. And perhaps 35 percent of that goes to governments

(Federal, state, and local) which, of course, take no depletion. Thus, it would appear that about 10 percent of the annual percentage depletion allowance goes to landowners.

It is also inaccurate to contend that royalty owners have "nothing to do" with the exploration process. They contribute significantly to the finding and developing of new reserves by making available for exploration the land under which the reserves are located. Moreover, the royalty owners' capital values are reduced as the oil is produced from their land; and they are entitled to an appropriate allowance in recognition of this fact. Also, it must not be thought that the landowners who retain their mineral rights simply "sit back and collect royalties" and "take no risks." They could sell their mineral rights before exploratory drilling, but they elect to share in the risks of exploration by contributing the pre-exploration capital value of their mineral rights to the exploratory process. Hence, they are entitled to share in the success—if any—of the operation.

It was also contended that percentage depletion is dissipated to landowners in the form of lease bonus payments: "Landowners get depletion on their royalty income, and they also get higher prices for leasing their land, because the availability of depletion encourages producers to bid the value up."

The essence of this argument is that if percentage depletion were eliminated, lease bonuses would decline accordingly. And the loss of percentage depletion would, in effect, have been shifted back to landowners—not forward to consumers via higher prices.

4. The recent and substantial increases in oil prices provide a generous return on investment for oil producers and more than offset any profit allegedly lost by depletion repeal. Industry profits have risen 52 percent over last year. In 1973, oil was selling at $3.50 per barrel and depletion was worth $.77 per barrel. Since oil is now selling at an average of $7.50 per barrel, producers have increased their per barrel profits by five times that depletion factor.

A misconception of the additive incentive effect of percentage depletion appeared continuously throughout the Senate debate. For example, one Senator cited Professor Otto Eckstein (of Harvard University), who contends that the depletion allowance is obsolete because the increased "market price of oil provides a far stronger incentive to the development of additional reserves than any tax incentive such as the depletion allowance could provide."

Arithmetically, it is quite true that a $7.50 increase in the price of new oil from $3.50 to $11 is a more powerful increase than deducting 77 cents (22 percent of the $3.50 price) from taxable income—$7.50 is always better than 77 cents. But, it is also true that eliminating percentage depletion on the $11 would have the same type of effect as reducing the higher price and hence reducing the effectiveness of the price increase. (The magnitude of the price increase required to offset loss of depletion is discussed in Section VIII below; for a taxpayer in a 48 percent marginal bracket, a $2.23 increase in the $11 price would be required to offset the loss of 22 percent depletion.) Moreover, a given price increase with percentage depletion is more effective than the same increase without depletion—since the company receives the percentage depletion allowance on the increase in price as well as on the base price. Conversely, it loses the depletion on the amount by which a price is reduced.

From the point of view of the producer, eliminating percentage depletion at any given level of price has the same type of effect as cutting the price. And that can only mean less petroleum exploration and development. As we have seen, more prospects become economically attractive with a higher price—especially those prospects in costly frontier areas such as the North Slope of Alaska, the deepwater offshore, and very deep geological horizons onshore. And fewer prospects are attractive with a lower price. Hence, a price plowback would mean less exploration (and less development). A reduction in percentage depletion would have the same sort of effect—unless there were a compensating price increase. Actually, a 22 percent reduction in price with depletion in effect would be somewhat more serious than the elimination of 22 percent depletion because the effect of the price reduction would be compounded by loss of part of the depletion formerly received.

In short, the incentive effect of percentage depletion is additive to the effect of price. At any given level of price, there will be more exploration with percentage depletion than without.

5. Former energy chief Simon recognized the unimportance of depletion to drilling incentives when he stated in a letter to the Senate Interior Committee that: "In the short run, changes in percentage depletion should have little effect on the rate of expenditure of discovery efforts . . . in the long run, a change in depletion should have no effect, per se, on the rate of production."

One of the numerous rhetorical questions raised during the debate observed that if depletion were such a fine exploration incentive, why did exploration and the number of independent operators decline so sharply after 1956 "if this depletion allowance was so beneficial we would not be dependent on foreign sources . . . the oil depletion allowance is not worth a lot because the oilmen have had it and they have gone out of business anyway."

This is said to be "the best argument for doing away with the oil depletion allowance." The fact is that without percentage depletion and import restrictions the domestic industry would have suffered substantially more than it did. And the impact of the recent Arab oil embargo would have been much worse.

We have seen that the sharpest decline in drilling was experienced when depletion was reduced in 1969. It is frequently overlooked that the political and policy climates affect investment. These climates must be ones in which all investors, large and small, have a reasonable degree of certainty that the ground rules regarding such basics as prices, taxation, and profits will not be altered drastically. The primary motivation for development of additional supplies for any commodity in free enterprise economies is the prospect of making reasonable profits on each new project. Without this prospect, there will be little or no competition because there will be little or no investment by firms of any size and little or no new entry into the industry.

Percentage depletion allowances have served the Nation well by encouraging widespread new investment and providing sources of funds for a large United States oil and gas industry made up of thousands of firms and individuals. However, starting with the 1950's the potential financial contribution of the depletion allowance has been partially offset through price controls. Prices and profits of oil were controlled indirectly to 1971 through jaw-boning and the controlled importation of low-priced oil. In addition, prices and profits of interstate natural gas sales have been controlled by the Federal Power Commission since 1954. In August 1971, the Federal Government started limiting prices and profits through direct controls have been removed from almost all other commodities, they still apply to oil and gas.

The value of depletion as an incentive was also questioned in view of the current decline in production in the face of higher prices and correspondingly higher amounts of percentage depletion "production in this country has actually dropped by 2 percent. One wonders, if higher prices automatically bring forth more production, where it is."

Rome wasn't built in a day. It will take several years for the effects of the current accelerating growth in exploration, development, and workover activity now under way to be reflected in production rates. Active rotary rigs in the first half of 1974 were up more than 25 percent over the number active in the first half of 1973. And, according to the Chase Bank, domestic petroleum capital expenditures by 30 companies in the first half of 1974 were up by 122 percent over the first half of 1973. Spending by these companies was at an annual rate of $13 billion, about the level of their worldwide profits.

Thus, the industry is clearly responding as quickly as it can to the prospect of improved after-tax profits through higher prices and continuation of the depletion allowance. Just as production in future years will reflect today's increased activity, production today reflects curtailed activity in the past. The recent sharp increase in activity should not mislead us however. It should be remembered that substantially greater levels of investment are necessary even if we are just to maintain the current ratio of domestic oil to imports. And we have seen that the industry's past investment rate must be increased several-fold to some $36 billion annually (in 1974 prices) to achieve a reasonable degree of energy independence.

6. Depletion allowance discourages production of cheaper, alternate energy sources. The tax benefits are based on the value of the minerals in the ground. Hence, a $7.00 barrel of crude oil gets the full benefit of the allowance, about $1.30, while a $7.50 barrel of oil made from coal only receives the benefit of the

original coal cost, about 10 cents, and a BTU equivalent of energy based on solar technology would receive no depletion benefit.

This argument proceeds from a correct premise to an incorrect conclusion. In shale oil extraction, for example, percentage depletion is computed on the value of the "kerogen," that is, the raw oil-type material after it has been separated from the shale. Then, it is necessary to upgrade the kerogen by a refining process to make it into a synthetic crude oil comparable to conventional crude oil from the well. Thus, percentage depletion applies to the full value of conventional crude but to only part of the value of the synthetic crude.

The easy way to solve this problem is to put the computation of allowable percentage depletion for shale at that point in the process where it becomes a synthetic crude oil comparable to conventional crude. In order to equate the incentives, it is not necessary to destroy the incentives on conventional crude oil—a move clearly counter to the national interest in achieving more domestic energy, conventional or otherwise.

Moreover, elimination of percentage depletion on conventional oil and gas would do nothing to improve the rate of return on alternative sources and, hence, to encourage accelerated development of those sources. Making one domestic energy source less attractive does not make another domestic source more attractive. It makes domestic sources, in total, less attractive relative to imports. Alternative sources have been slow to develop because their higher costs have required selling prices far in excess of the equivalent price of conventional crude oil or gas in order to generate an acceptable rate of return. That rate of return would not rise because the rate of return on conventional oil and gas would fall with higher taxes on conventional sources.

Who's Where in Profitability

In a way, the profitability rankings below are the most telltale Forbes Yardsticks of all. Growth is important, mind you. But if it doesn't result in a consistently healthy return on the stockholders' investment or the company's total capital, growth can be dangerous. How profitably management uses its money is what the capitalistic game is all about.

That word "consistently" is important. Forbes' rankings are based on profitability over a five-year period, to eliminate the one shot wonders. Even so, companies occasionally soar into the top ranks on the basis of an extraordinary one-year windfall or financial fluke that is large enough to bloat its five-year figures. Back in 1971, for example, Diversified Industries, a conglomerate, suddenly appeared in the Top Ten. But not for long. Today Diversified Industries ranks in 825th place.

Magnavox, another Top Ten outfit a few years ago, had to bail out via a merger last year. Its 621st-place ranking below will be its last appearance on the Forbes list.

Even strong companies can find the very top rank a slippery place. Heublein and Avnet both were in the Top Ten a few years ago. They still earn good returns, but now Heublein ranks only 78th and Avnet 143rd.

Among this year's Top Ten, those with the most staying power are Avon Products, American Home Products, G.D. Sarle, Aerada Hess and Merck. Yet Avon, in the upper rank since we first published this list, and Sarle were both trending downward during the latest 12 months. How long the homebuilding and mobilehome outfits will stay in the Top Ten remains to be seen. Another year of recession in their industry could bring their returns way down.

What about those shortage-plagued basic industries like oil, steel, chemicals and paper where reported profits soared last year? For most, that was enough to improve five-year standings significantly. Exxon moved from 269th to 155th, Texaco from 235th to 142nd, Inland Steel from 643rd to 581st, Monsanto from 527th to 280th and International Paper from 620th to 510th.

How long can they hold those largely shortage-inspired gains in the face of a worsening recession? We refer you to the industry stories that begin on page 119, and to the companies' other Yardsticks, which are brought together in the tables accompanying those stories.

Who's Where in Profitability

Company	RETURN ON EQUITY 5-Year* Average	Rank	Latest 12 Months	RETURN ON CAPITAL 5-Year* Average	Rank	Latest 12 Months
Skyline	37.4%	1	9.9%	37.3%	1	10.0%
Yellow Freight System	37.1	2	29.1	15.8	74	16.9
Avon Products	36.9	3	27.9	33.8	2	26.3
Champion Home	33.6	4	0.7	27.1	5	0.8
Fleetwood Enterprises	32.2	5	5.7	33.1	3	5.8
Coeur	30.8	6	14.2	31.8	200	-7.8
Amer Home Products	29.6	7	31.0	29.1	4	31.3
G D Searle	28.6	8	24.1	21.1	24	15.6
Amerada Hess	28.4	9	33.0	17.5	54	20.6
Merck	28.2	10	28.7	30.7	6	28.2
McDonald's	27.8	11	24.7	14.9	68	13.6
Schering-Plough	27.6	12	29.1	26.9	7	28.0
Roadway Express	27.5	13	27.7	25.5	9	25.8
Lowe's Companies	27.2	14	24.3	22.6	18	17.9
Coca-Cola	27.0	15	24.6	24.7	12	23.3
Clorox	26.7	16	16.5	20.6	27	12.8
Tesoro Petroleum	26.5	17	50.0	17.9	46	36.1
McLean Trucking	26.4	18	25.1	12.8	165	14.1
Longs Drug Stores	25.7	19	21.6	25.0	10	21.7
Gillette	25.6	20	23.8	19.3	35	17.3
Maytag	25.6	21	24.4	25.6	8	24.4
Charter Company	25.3	22	50.2	14.6	99	25.4
Cook Industries	24.9	23	45.9	18.1	66	31.3
Melville Shoe	24.8	24	17.5	20.6	26	14.9
Leaseway Transportn	24.8	25	25.2	8.2	442	8.0
Blount	24.7	26	14.8	12.2	183	7.1
Briggs & Stratton	24.7	26	21.0	24.7	11	21.1
Loews	24.7	28	15.9	7.8	551	6.6
Xerox	24.3	29	22.0	19.0	36	18.0
Jack Eckerd	24.3	30	19.6	20.0	29	18.9
Lucky Stores	24.0	31	21.3	15.8	79	14.8
Lubrizol	24.0	32	27.9	23.1	15	27.0
AMP	23.8	33	23.6	21.2	22	22.0
Eli Lilly	23.8	33	24.3	22.8	17	23.8
Govt Employees Ins	23.6	35	20.1	23.8	13	18.9
Louisiana-Pacific	23.3%	36	30.8%	14.1%	112	19.1%
Scott & Fetzer	23.1	37	20.8	22.0	16	20.0
SmithKline Corp	23.0	38	21.6	22.4	19	20.6
R J Reynolds Inds	22.9	39	24.3	14.8	94	14.8
W W Grainger	22.8	40	22.8	18.7	44	19.4
Kellogg	22.8	41	23.0	20.4	28	20.0
Dun & Bradstreet Cos	22.4	42	21.9	23.4	14	21.7
Philip Morris	22.3	43	20.8	13.0	127	13.7
Warner Communication	22.2	44	22.1	10.9	260	9.3
Winn-Dixie Stores	22.2	45	23.6	21.0	20	22.6
Fisher Foods	22.1	46	21.9	11.1	215	11.9
Sterling Drug	21.8	47	19.5	20.7	31	18.3
Champion Spark Plug	21.5	48	20.4	16.1	39	18.3
Sage Corp	21.5	49	15.2	11.1	80	12.2
Ohio Casualty	21.4	50	18.1	21.4	21	18.1
Square D	21.4	51	20.4	21.5	23	17.8
Combined Insurance	21.3	52	21.7	21.0	25	20.1
Northwest Industries	21.2	53	37.1	8.9	426	11.5
Dillon Companies	21.1	54	21.3	16.6	71	17.9
Pittston	20.9	55	39.2	13.7	123	25.2
Eastman Kodak	20.9	56	19.2	19.8	32	18.1
Levitz Furniture	20.8	57	8.3	17.9	47	7.3
Engelhard Min & Chem	20.7	58	34.5	14.8	102	23.0
Bristol-Myers	20.6	59	21.3	17.2	52	18.7
Chesebrough-Pond's	20.6	60	19.0	16.6	70	16.5
AMF	20.5	61	12.9	12.1	169	8.6
Dover Corp	20.4	62	22.7	17.3	53	17.3
Turner Construction	20.4	63	17.2	16.9	38	17.3
Minn Mining & Mfg	20.4	64	20.8	19.1	36	19.1
Tigor International	20.3	65	12.6	5.1	387	5.2
Fischbach & Moore	20.3	66	17.8	15.0	88	12.3
Kings Dept Stores	20.3	67	17.3	18.2	34	16.8
Purolator	20.2	68	19.2	15.1	78	13.8
Utah International	20.0	69	25.0	12.1	188	14.7
Weis Markets	19.8	70	19.5	19.1	30	19.6

*The average return may be less than a 5 year period as footnoted in individual Yardsticks.

Who's Where in Profitability

Company	RETURN ON EQUITY 5-Year* Average	Rank	RETURN ON EQUITY Latest 12 Months	RETURN ON CAPITAL 5-Year* Average	Rank	RETURN ON CAPITAL Latest 12 Months
RVF	19.9%	71	54.5%	13.0%	126	23.2%
American Intl Group	19.7	72	22.9	18.5	41	20.9
IBM	19.7	73	21.1	18.3	43	19.7
Winnebago Industries	19.7	74	def	19.4	33	def
Emerson Electric	19.6	75	19.1	17.0	55	17.5
Bruce B B	19.5	76	15.2	16.5	57	12.3
Petrolane	19.5	77	21.0	12.1	188	12.3
Nucoln	19.5	78	20.8	12.8	152	13.9
Whirlpool	19.4	79	14.3	14.8	95	12.2
Rite Aid	19.4	80	9.5	15.2	86	7.5
Upgrade Food Prods	19.3	81	19.3	12.7	158	14.1
Johnson & Johnson	19.2	82	19.5	18.5	40	18.5
Malone & Hyde	19.2	82	19.0	16.5	58	16.1
U S Home	19.1	84	6.1	13.7	124	5.2
Consol Freightways	19.0	85	26.2	11.2	230	18.2
PACCAR	19.0	86	16.6	17.4	51	15.6
Revlon	19.0	87	19.3	13.5	128	13.0
St Joe Minerals	18.8	88	34.6	16.7	61	30.1
Rapid-American	18.8	89	9.0	15.2	821	5.7
Procter & Gamble	18.8	90	18.1	18.1	67	15.2
Dow Chemical	18.7	91	34.1	11.2	203	19.9
National Svc Inds	18.7	91	16.3	15.8	75	13.7
Genuine Parts	18.6	93	19.4	18.3	42	19.1
Albertson's	18.6	94	21.9	13.9	121	14.9
American Petrofina	18.5	95	29.7	14.8	92	23.7
Clark Oil & Refining	18.5	96	24.9	13.3	132	18.5
Baker Oil Tools	18.5	97	21.2	14.6	97	14.9
CBS	18.5	97	20.3	14.0	117	16.2
Ralph M Parsons	18.5	99	19.2	17.7	49	14.1
Moore Corp	18.4	100	21.4	16.2	62	16.9
Northwestern Steel	18.4	101	22.2	17.5	50	21.5
Georgia-Pacific	18.4	102	23.3	9.0	387	11.2
Newmont Mining	18.3	103	26.4	14.3	105	17.7
Wellaroo	18.3	104	17.5	16.0	72	14.3
Black & Decker	18.3	105	17.7	15.5	81	15.7
S S Kresge	18.2	106	16.2	16.0	69	15.5
PepsiCo	18.2	107	17.2	13.2	135	12.2
Hoover Ball & Bearing	18.2	108	15.6	13.5	129	12.1
Weyerhaeuser	18.1	109	23.4	13.4	131	17.9
Delta Air Lines	18.0	110	24.2	8.7	414	11.8
Willamette Inds	18.0	111	24.5	13.0	148	16.6
Joe Schlitz Brewing	17.9	112	19.7	14.3	104	15.6
Commercial Metals	17.9	113	40.9	14.2	110	30.6
Pfizer	17.8	114	18.8	15.1	87	15.8
Chicago Bridge & Iron	17.8	115	13.8	16.2	65	11.6
Ethyl	17.8	116	23.5	9.8	323	12.8
Tecumseh Products	17.7	117	16.6	17.7	48	16.6
Synco	17.6	118	17.9	14.6	92	15.8
Upjohn	17.6	119	21.9	16.4	59	19.0
Digital Equipment	17.5	120	15.8	18.0	45	15.8
Denny's	17.5	121	21.0	9.3	362	12.1
Panhandle Eastern	17.5	122	17.2	7.4	505	7.6
Halliburton	17.4	123	18.0	14.5	101	16.2
REXALL Agfiesearch	17.4	124	20.7	14.0	113	17.9
Schlumberger	17.3	125	22.6	15.2	85	19.7
Super Valu Stores	17.3	125	17.7	12.7	161	11.5
International Nickel	17.3	127	25.1	12.2	185	16.8
Norris Industries	17.3	127	14.2	15.3	83	11.0
Caterpillar Tractor	17.2	129	15.8	14.0	115	13.2
General Electric	17.2	130	18.0	14.2	108	14.5
W Corp	17.2	131	19.1	15.0	89	16.1
Fingerhut	17.1	132	1.0	11.7	211	2.9
Daniel International	17.1	133	19.7	16.4	98	19.5
Intl Foodservice	17.1	134	6.3	12.3	177	4.7
So Natural Resources	17.0	135	18.0	9.2	367	9.1
Squibb	17.0%	135	17.1%	13.0%	148	12.5%
Oxford Industries	16.9	137	20.7	10.9	257	13.9
First Penna Corp	16.9	138	16.1	14.0	114	10.4
Anheuser-Busch	16.9	139	11.8	12.4	173	9.3
Houston Natural Gas	16.7	140	22.1	7.6	487	10.8
Beatrice Foods	16.6	141	16.3	14.6	97	13.4
Tenneco	16.6	142	23.6	12.8	156	17.4
Amnet	16.6	143	22.5	11.0	242	14.3
Beth Industries	16.6	144	9.0	12.1	190	7.1
INCNB	16.5	145	13.3	10.3	290	8.1
Williams Companies	16.5	145	17.8	8.9	398	10.8
Transco Companies	16.5	147	13.6	8.8	660	4.9
Iowa Beef Processors	16.5	148	26.0	10.3	289	16.6
Hoerner Waldorf	16.4	149	20.2	10.8	261	14.2
Fed Natl Mortgage	16.4	150	18.3	4.0	766	3.6
USLIFE	16.4	150	16.8	12.8	156	13.2
Warner-Lambert	16.4	152	16.8	14.7	96	14.5
Masonite	16.4	153	15.3	14.4	101	14.0
American Financial	16.3	154	15.5	7.4	506	5.1
Exxon	16.3	155	22.4	13.5	129	18.2
Cyprus Mines	16.3	156	20.6	16.2	64	20.1
First Intl Bnks	16.3	156	16.9	13.2	84	16.4
General Reinsurance	16.3	156	16.2	16.2	63	15.7
McDonough	16.3	159	14.9	11.1	238	11.1
Ingersoll-Rand	16.2	160	18.3	13.7	124	15.4
Carnation	16.2	161	16.9	13.8	143	13.5
Oscar Mayer	16.2	162	19.9	13.2	142	14.5
Lone Star Gas	16.1	163	19.5	8.9	403	9.7
J C Penney	16.1	164	13.7	13.9	119	12.0
Mercantile Stores	16.0	165	15.9	13.3	132	13.3
Coastal States Gas	15.9	166	13.2	8.0	459	6.3
Hewlett-Packard	15.9	167	21.4	15.8	73	20.9
Hobart	15.9	168	15.5	12.2	183	12.5
Seal Ind Foods	15.9	169	17.1	11.1	240	11.9
Texas Eastern Trans	15.9	170	14.9	8.9	552	6.9
Signode	15.8	171	16.5	12.5	166	12.9
Union Camp	15.8	172	24.6	9.8	325	14.6
Safeway Stores	15.8	173	17.3	13.9	119	14.4
Texas Instruments	15.8	174	20.1	13.3	134	17.4
Gardner-Denver	15.7	175	13.8	13.7	76	13.7
Clark Equipment	15.7	176	18.9	11.6	214	13.0
Ferro	15.7	177	16.0	12.5	167	13.4
Ralston Purina	15.6	178	16.8	11.2	232	11.7
Knight-Ridder News	15.6	179	13.1	11.3	228	9.3
Butler Manufacturing	15.6	180	27.1	12.8	153	22.7
Kemper Corp	15.5	181	11.2	15.3	82	11.0
Blue Bell	15.5	182	15.6	12.8	150	12.4
Beneficial Corp	15.5	183	12.6	6.0	645	5.3
Foremost-McKesson	15.5	184	17.8	7.9	464	8.7
Browning-Ferris Inds	15.5	185	13.7	11.2	231	8.8
Crown Cork & Seal	15.4	186	16.2	12.0	195	13.1
Textron	15.4	187	16.2	12.3	179	12.6
Ark Louisiana Gas	15.4	188	22.5	8.5	429	10.7
Reliance Electric	15.4	189	21.6	10.9	252	14.7
Tenneco	15.3	190	21.1	7.4	508	9.1
ARA Services	15.3	191	14.4	11.0	250	10.3
Amstar	15.3	192	28.4	9.1	376	15.8
Hoover	15.3	192	12.4	14.9	91	12.9
General Motors	15.3	194	7.8	14.2	110	7.4
Texasgulf	15.3	194	29.9	10.2	294	19.7
General Mills	15.2	196	17.6	10.1	301	12.1
Zenith Radio	15.2	196	8.7	14.9	90	8.4
Fleming	15.2	198	18.5	13.2	138	16.1
Murphy Oil	15.2	198	27.9	9.9	317	16.0
Edison Bros Stores	15.2	200	17.1	12.2	181	13.8

*The average return may be less than a 5 year period as footnoted in individual Yardsticks

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Who's Where in Profitability

Company	RETURN ON EQUITY 5-Year* Average	Rank	Latest 12 Months	RETURN ON CAPITAL 5-Year* Average	Rank	Latest 12 Months
Amer Re-Insurance	18.5%	201	4.7%	16.8%	56	4.7%
Dana	18.5	202	17.5	12.1	191	13.5
CFS Continental	18.5	203	15.6	10.9	255	10.9
Eaton	18.5	204	17.6	11.4	223	11.4
Gannett	18.5	205	16.3	11.8	208	13.3
Hercules	15.1	205	19.3	12.2	181	15.8
Republic of Texas	15.1	207	16.6	11.0	248	12.2
Standard Brands	15.0	208	15.4	10.6	267	10.3
Vulcan Materials	15.0	209	23.4	10.9	252	16.5
Big Bear Stores	15.0	210	15.0	13.2	136	13.4
Sperry & Hutchinson	14.9	211	7.3	11.9	118	7.0
Central Tel & Utils	14.8	212	16.1	8.7	580	6.8
Porter-Hoenifin	14.9	212	18.4	10.4	284	12.7
Times Mirror	14.9	212	17.0	13.1	144	14.4
BankAmerica Corp	14.9	215	15.9	13.2	137	11.6
E I du Pont	14.9	215	14.8	13.0	147	13.0
Scrivner	14.9	217	19.8	10.3	292	12.4
Washington Post	14.9	217	15.4	10.5	274	11.2
First Bank System	14.9	219	14.2	14.0	115	11.9
J P Morgan & Co	14.9	220	16.2	12.1	188	12.1
Norton Simon	14.8	221	13.3	9.3	358	9.1
Spencer Foods	14.8	222	13.0	7.8	490	18.3
American Express	14.8	223	16.1	12.6	162	13.5
Lone Bryant	14.8	224	12.8	12.8	155	10.7
Wilco Chemical	14.7	225	22.6	9.9	318	13.1
Colgate-Palmolive	14.7	226	16.5	14.5	100	14.5
Chromalloy American	14.7	227	16.6	9.0	385	8.9
Texas Utilities	14.7	227	14.1	7.5	503	7.1
Merrill Lynch & Co	14.7	229	7.9	14.3	106	7.6
Houston Ltg & Power	14.7	230	14.1	7.8	483	7.5
Central Soya	14.7	231	18.4	11.4	217	13.2
Dayco	14.7	231	17.0	6.5	596	6.8
TRW	14.7	231	15.5	12.7	264	11.5
Bank of New York	14.6	234	15.3	11.0	242	11.7
Eagle Picher Inds	14.6	235	17.7	10.5	273	12.2
Trans Union	14.6	235	15.2	8.5	685	5.3
Abbott Laboratories	14.5	237	16.1	11.4	217	12.7
CitiCorp	14.5	238	16.4	12.4	169	14.4
Greyhound	14.4	239	12.6	8.5	349	9.1
Transway Intl	14.4	239	19.4	12.3	176	16.5
American Brands	14.4	241	14.2	10.5	278	10.0
Woodville Industries	14.4	241	18.8	10.5	275	14.0
Baxter Laboratories	14.4	243	15.0	8.9	393	9.1
Wm Wrigley Jr	14.4	243	12.3	14.3	107	11.9
Central & South West	14.4	245	14.8	7.4	516	6.9
Becton, Dickinson	14.3	246	15.4	10.3	287	10.9
Avis	14.3	247	6.6	6.8	568	4.2
Insilco	14.3	248	19.5	8.2	442	10.0
Collin & Aikman	14.3	249	10.0	11.8	207	7.8
Mobil Oil	14.3	250	20.5	11.9	200	16.9
AMAX	14.3	251	19.9	8.6	345	11.9
Fred Meyer	14.3	252	13.8	10.4	283	9.1
Outboard Marine	14.3	252	8.0	11.6	212	6.9
Duquesne Light	14.2	254	12.9	6.0	643	5.5
Brunswick	14.2	255	16.2	10.4	282	11.2
Provident Life & Acc	14.2	256	16.0	14.2	108	16.0
Nabisco	14.2	257	10.5	11.1	241	7.1
Diamond Intl	14.2	258	16.3	12.3	180	13.9
Interco	14.2	258	14.6	11.9	201	12.9
CPC International	14.2	260	15.7	10.8	259	12.4
Campbell Taggart	14.1	261	15.2	12.0	194	12.1
Cessna Aircraft	14.1	262	17.5	10.1	298	13.2
Levi Strauss	14.1	262	11.5	12.6	164	9.5
Amer Broadcasting	14.1	264	17.5	9.8	321	13.7
Phelps Dodge	14.1	265	14.9	12.0	193	11.5
No Indiana Pub Svc	14.1	266	12.9	6.8	568	5.5
Public Service Ind	14.1%	266	14.3%	6.9%	401	6.8%
Quaker Oats	14.1	268	13.5	10.7	298	9.7
Flavorland Inds	14.1	269	1.3	9.9	310	2.4
Cleveland Elec Illum	14.0	270	15.4	7.4	511	7.4
FMC International	14.0	271	16.4	7.5	493	9.0
Ogden	14.0	271	25.5	7.0	542	10.3
Gen Amer Transports	14.0	273	16.0	7.0	545	7.6
Philadelphia Natl	14.0	273	13.8	11.3	229	9.9
Sears, Roebuck	14.0	273	12.4	12.4	189	10.8
United Telecommncts	13.9	276	14.9	6.0	640	6.3
Pac Gamble Robinson	13.9	277	20.4	12.4	168	18.3
Burroughs	13.9	278	13.3	10.3	291	10.8
Raytheon	13.9	278	15.2	11.7	210	13.0
Monsanto	13.7	280	27.0	10.3	292	19.3
Univar	13.8	281	31.6	9.1	377	17.9
Jim Walter	13.8	282	18.7	10.1	296	12.8
Deere	13.8	283	16.8	11.2	232	14.2
Nash Finch	13.8	283	18.1	13.1	143	17.1
Sun Oil	13.8	285	25.9	9.3	362	15.0
Seafirst	13.8	286	13.9	13.8	122	14.0
Studebaker Worthington	13.8	287	12.7	8.8	417	6.9
Ashland Oil	13.8	288	21.9	8.7	408	12.1
Texas Gas Transmn	13.8	288	17.4	7.5	497	8.7
Giant Food	13.7	290	13.9	10.1	301	9.3
Richardson-Merrell	13.7	291	14.8	13.1	146	14.2
Fed-Mart	13.7	292	19.0	7.1	540	9.3
Standard Oil Calif	13.7	292	20.0	12.0	192	17.2
Consolidated Foods	13.7	294	12.1	11.0	245	9.7
Investors Div Svcs	13.7	295	8.9	9.8	341	6.1
Hewlett	13.6	296	17.4	7.0	544	9.0
Kellwood	13.6	297	14.1	10.4	290	11.2
Colonial Stores	13.6	298	16.5	11.0	242	12.8
Marathon Oil	13.6	298	19.8	10.8	260	16.0
McDonnell-Douglas	13.6	300	11.2	9.7	330	8.5
Continental Oil	13.5	301	23.4	10.1	306	16.6
Campbell Soup	13.5	302	14.5	13.2	138	13.7
Tandy	13.5	302	12.5	9.4	351	9.2
Federated Dept Strs	13.5	304	13.1	12.3	174	12.0
Ryder System	13.5	305	7.2	6.6	588	4.3
Southland Corp	13.5	306	13.2	8.9	400	9.0
UV Industries	13.5	306	24.8	6.8	572	10.8
Thiokol	13.5	308	19.4	10.9	254	18.3
American Elec Power	13.5	309	12.0	8.9	650	5.3
Libbey-Owens-Ford	13.5	310	10.2	12.6	162	10.0
Wachovia Corp	13.5	310	12.2	8.5	427	6.7
Hiram Walker	13.4	312	13.6	13.1	145	12.8
American Cyanamid	13.4	313	16.8	11.4	220	13.4
Safeco	13.4	313	5.7	11.0	247	5.1
Coca-Cola Bottling NY	13.4	315	8.1	15.7	77	8.4
General Foods	13.4	315	14.0	11.0	248	10.4
Amer Smelting & Rfg	13.4	317	22.0	11.9	196	18.8
Howard Johnson	13.4	317	10.3	12.8	154	9.8
Marriott	13.4	317	11.8	7.1	537	6.4
Northwest Bancorp	13.4	320	13.5	11.4	220	9.9
Gerber Products	13.4	321	9.9	13.2	140	9.5
Kerr-McGee	13.4	321	19.8	9.9	316	15.9
Maremont	13.4	323	8.6	9.4	355	5.9
Braniff Intl	13.3	324	18.0	6.3	614	7.9
Peoples Gas	13.3	325	14.7	7.4	514	7.6
Cincinnati G & E	13.3	326	10.9	6.8	575	5.6
Combustion Engineerg	13.3	327	14.5	10.2	294	11.6
Motorola	13.3	328	16.8	11.4	219	13.4
Carter Hawley Hale	13.3	329	13.9	9.9	310	9.6
Eastern Gas & Fuel	13.3	329	21.2	7.1	533	8.8
Continental Tel	13.2	331	12.9	6.0	616	5.3
Ohio Edison	13.2	331	12.8	6.5	600	5.9

*The average return may be less than a 5 year period as footnoted in individual Yardsticks

Who's Where in Profitability

Company	Return on Equity: 5-Year* Average	Rank	Latest 12 Months	Return on Capital: 5-Year* Average	Rank	Latest 12 Months
Anchor Hocking	13.2%	333	11.7%	11.3%	227	10.2%
U S Industries	13.2	334	7.2	11.4	222	7.2
Standard Oil Ind	13.2	335	22.1	10.4	285	16.7
Stauffer Chemical	13.2	336	21.7	9.6	339	14.8
Gulf & Western Inds	13.2	337	18.2	6.2	619	7.5
Brown Group	13.1	338	19.4	11.8	202	10.6
Skaggs Companies	13.1	338	14.7	11.1	236	12.3
Continental Illinois	13.1	340	14.2	12.3	177	12.2
Bluebird	13.1	341	14.0	9.1	379	8.5
Alco Standard	13.1	342	16.9	10.6	271	11.4
Union Carbide	13.1	343	21.9	9.5	350	15.2
Cooper Industries	13.1	344	20.1	9.7	333	11.9
Gulf States Utils	13.0	345	11.8	5.7	665	5.3
Western Air Lines	13.0	345	23.2	6.1	626	10.4
Norsco	13.0	347	14.1	11.9	198	13.0
Jewel Companies	13.0	347	12.1	8.7	415	7.6
George A Hormel	13.0	349	16.6	12.8	150	16.6
Holiday Inns	13.0	350	8.7	7.8	472	6.0
Otis Elevator	13.0	350	15.1	10.8	263	12.0
CIT Financial	12.9	352	12.3	5.9	656	6.0
White Consolidated	12.9	353	19.7	6.7	581	9.8
Air Prods & Chems	12.9	354	18.8	7.4	511	10.8
Jonathan Logan	12.8	355	9.0	9.5	347	4.6
Mfrs Hanover Corp	12.8	356	15.4	11.9	198	13.7
Morton-Norwich	12.8	356	11.5	9.3	358	8.7
Servomation	12.8	356	11.2	9.8	322	8.9
Amer Beef Packers	12.7	359	20.4	9.1	377	11.8
Connecticut General	12.7	359	14.3	12.7	158	14.2
Johnson Service	12.7	359	5.9	10.8	262	5.4
Perkin-Elmer	12.7	362	12.2	11.9	197	12.4
General Signal	12.7	363	11.7	11.8	205	10.7
Fuqua Industries	12.7	364	8.3	7.4	514	5.0
Florida Power & Lt	12.7	365	10.7	6.8	585	5.5
MCA	12.7	365	21.7	9.8	320	15.9
Rohm & Haas	12.7	365	19.8	10.8	267	14.8
Dart Industries	12.6	368	16.1	9.4	355	11.0
New York Times	12.6	369	16.1	12.2	185	14.6
Kraftco	12.6	370	12.2	11.2	234	10.8
Amfac	12.6	371	17.4	8.7	411	10.5
El Paso Company	12.6	371	19.2	6.7	671	7.1
Florida Power	12.6	371	7.3	5.5	685	3.4
Genl Tire & Rubber	12.6	374	12.8	9.3	364	9.3
Reichhold Chemicals	12.6	374	31.7	8.8	406	20.2
Middle South Utils	12.6	376	13.6	5.7	665	5.3
No Illinois Gas	12.6	376	11.5	7.3	521	6.4
Pabst Brewing	12.5	378	7.6	11.6	213	6.8
Intl Minerals & Chem	12.5	379	32.6	7.7	481	17.7
Supermarkets General	12.5	379	11.0	7.3	517	6.3
Allegheny Power	12.5	381	10.2	6.1	625	5.4
Riviana Foods	12.5	381	14.1	9.0	383	9.5
Corning Glass Works	12.5	383	12.3	10.6	270	10.2
American Natural Gas	12.5	384	14.1	6.2	624	6.4
Dresser Industries	12.5	385	14.9	8.9	388	10.2
Marine Midland Banks	12.5	385	12.0	8.2	447	7.2
National Can	12.4	387	13.8	9.6	335	9.4
Archer Daniels Midland	12.4	388	18.7	9.4	351	12.8
Rockwell Intl	12.4	388	14.8	8.7	413	10.5
Household Finance	12.4	390	7.0	6.2	622	4.6
Chase Manhattan Corp	12.4	391	12.1	9.0	384	8.8
H F Ahmanson	12.4	392	9.7	12.7	160	9.8
First Natl Boston	12.3	393	13.1	10.7	265	9.0
No States Power	12.3	393	10.8	5.5	690	4.6
St Paul Companies	12.3	395	10.8	11.9	226	9.8
Western Bancorp	12.3	395	12.3	10.1	303	9.2
Bankers Trust N Y	12.3	397	13.1	9.6	344	9.8
Coca	12.3	398	13.5	9.3	389	10.0

Company	Return on Equity: 5-Year* Average	Rank	Latest 12 Months	Return on Capital: 5-Year* Average	Rank	Latest 12 Months
First Charter Fnl	12.3%	398	8.7%	12.3%	175	8.7%
Natl Detroit Corp	12.3	400	12.2	10.1	298	9.6
Brockway Glass	12.3	401	10.6	10.1	303	8.7
First Chicago Corp	12.3	402	14.6	10.4	285	10.9
Great Scott Supmkts	12.3	402	10.3	9.9	314	6.9
Intl Tel & Tel	12.3	404	12.3	9.7	328	9.0
Crane	12.2	405	28.0	6.9	564	14.0
Illinois Power	12.2	406	10.2	6.1	635	4.9
Rose's Stores	12.2	406	4.4	11.8	205	4.1
Scovill Mfg	12.2	406	11.8	8.7	415	8.1
Northern Natural Gas	12.2	409	21.2	6.4	602	9.5
McGraw-Hill	12.2	410	14.3	9.9	310	10.8
Cummins Engine	12.1	411	13.3	8.5	427	8.1
Ebsco	12.1	412	13.5	11.1	236	11.3
Flickinger	12.1	412	13.8	11.0	251	12.3
Goodyear	12.1	416	12.7	8.9	397	9.4
Harris Bankcorp	12.1	414	13.9	9.7	328	9.8
Martin Marietta	12.1	414	16.9	7.6	487	10.6
Rich's	12.1	416	10.4	9.8	325	8.4
Stanley Works	12.1	414	11.6	10.1	307	8.9
RR Donnelley & Sons	12.1	419	13.5	10.9	258	12.2
Long Island Lighting	12.1	420	11.4	6.1	626	6.9
Ford Motor	12.0	421	6.5	10.6	271	5.7
Union Oil California	12.0	422	20.9	8.2	444	12.7
Peavey	12.0	423	24.8	10.0	309	19.6
Columbia Gas System	12.0	424	11.5	6.6	589	6.1
Zapata	12.0	424	14.9	5.9	653	9.3
Wallace-Murray	11.9	426	12.7	7.8	549	7.3
Gamble-Skogmo	11.9	427	14.0	6.8	565	8.3
Occidental Petroleum	11.9	427	38.5	6.9	555	15.4
Cullum Companies	11.9	429	12.0	8.4	434	7.6
Gulf Oil	11.9	430	18.8	9.8	345	15.1
H K Robertson	11.9	430	15.0	10.3	288	13.0
Certain-teed Prods	11.9	432	5.2	8.9	389	4.1
Hershey Foods	11.9	432	12.1	9.7	334	9.4
Sybron	11.9	434	13.4	9.6	341	10.4
Associated Dry Goods	11.9	435	10.9	8.6	343	8.8
United States Shoe	11.9	435	11.0	9.3	360	8.7
Crocker Natl Corp	11.8	437	9.2	8.0	458	6.1
Commonwealth Oil Rfg	11.8	438	14.7	8.8	462	10.0
Diamond Shamrock	11.8	438	23.4	8.2	445	13.8
Miles Laboratories	11.8	440	13.6	7.8	483	8.7
Jefferson Pilot	11.8	441	13.0	11.8	204	13.0
Pillsbury	11.8	442	15.0	8.4	434	9.6
Garfinckel Brooks Br	11.8	443	11.4	8.9	340	8.7
Alcoa	11.7	444	14.7	8.5	432	10.2
General Tel & Elec	11.7	444	9.6	8.1	629	4.6
Dayton Power & Light	11.7	446	10.7	8.1	637	6.5
Baltimore Gas & Elec	11.7	447	10.0	8.1	626	5.2
Thrifty Drug Stores	11.7	448	5.1	8.9	393	4.5
Waldbaum	11.7	448	10.5	8.9	389	8.5
Hyster	11.7	450	11.2	9.5	348	8.9
I-T-E Imperial	11.7	450	12.1	9.3	380	8.9
Timken Company	11.6	452	11.4	11.6	216	11.1
Handy & Harman	11.6	453	20.0	8.9	400	13.4
Owens-Corning Fbrgls	11.6	454	11.4	8.9	400	8.9
General Cable	11.5	455	15.7	8.2	567	11.0
Firestone	11.5	456	13.8	8.8	467	10.4
Koppers	11.5	456	20.9	8.9	441	14.3
Fruehauf	11.5	458	14.2	7.7	476	9.2
Gray Drug Stores	11.5	459	10.7	9.1	335	8.5
Magic Chef	11.4	460	3.9	9.4	323	3.8
Time Inc	11.4	461	15.1	8.5	430	11.1
Universal Leaf	11.4	462	12.7	11.1	229	12.2
Walt Disney	11.3	463	9.6	8.8	313	8.3
Capital Holding	11.3	464	12.1	11.7	223	11.9

*The average return may be less than a 5 year period as footnoted in individual Yardsticks

Who's Where in Profitability

Company	RETURN ON EQUITY 5-Year* Average	Rank	Latest 12 Months	RETURN ON CAPITAL 5-Year* Average	Rank	Latest 12 Months
Cross & Trecker	[illegible]	465	9.2%	[illegible]	276	8.7%
Gould	[illegible]	465	14.1	[illegible]	380	10.2
Pacific G & E	[illegible]	467	12.0	[illegible]	650	8.1
Del E Webb	[illegible]	468	8.8	[illegible]	490	8.1
Northeast Utilities	[illegible]	469	10.2	[illegible]	684	5.0
Aetna Life & Cas	[illegible]	470	11.7	[illegible]	276	10.7
Zale	[illegible]	471	11.9	[illegible]	256	11.0
Kaufman & Broad	[illegible]	472	def	[illegible]	522	def
Shell Oil	[illegible]	472	17.5	[illegible]	421	12.9
Teledyne	[illegible]	474	13.7	[illegible]	440	8.5
Ideal Basic Inds	[illegible]	475	15.6	[illegible]	382	12.6
Phillips Petroleum	[illegible]	475	21.0	[illegible]	423	13.5
Southwestern Life	[illegible]	477	12.8	[illegible]	234	12.8
Pa Power & Light	[illegible]	478	11.0	[illegible]	672	5.6
Cutler-Hammer	[illegible]	479	14.4	[illegible]	418	11.4
Carrier	[illegible]	480	9.8	[illegible]	423	7.2
Sunbeam	[illegible]	480	11.9	[illegible]	369	10.0
Federal Paper Board	[illegible]	482	19.6	[illegible]	422	11.5
Foster Wheeler	[illegible]	482	13.6	[illegible]	327	12.7
Alexander & Baldwin	[illegible]	484	31.0	[illegible]	369	24.9
Commonwealth Edison	[illegible]	485	10.1	[illegible]	682	4.9
Del Monte	[illegible]	486	18.4	[illegible]	482	11.7
Liggett & Myers	[illegible]	487	10.7	[illegible]	453	7.4
Owens-Illinois	[illegible]	488	14.4	[illegible]	531	9.2
Kane-Miller	[illegible]	490	14.8	[illegible]	474	11.1
Security Pacific	[illegible]	490	10.4	[illegible]	246	10.5
Emhart	[illegible]	491	11.3	[illegible]	908	10.5
Champion Intl	[illegible]	492	16.9	[illegible]	599	8.5
R H Macy	[illegible]	493	10.1	[illegible]	579	6.7
Wells Fargo	[illegible]	493	11.8	[illegible]	455	7.0
Crown Zellerbach	[illegible]	495	17.3	[illegible]	471	12.1
Trane	[illegible]	495	4.7	[illegible]	372	4.1
Amer Hospital Supply	[illegible]	497	12.0	[illegible]	278	11.5
Marcor	[illegible]	497	16.4	[illegible]	650	9.2
Rexnord	[illegible]	497	13.2	[illegible]	408	9.4
Beech Aircraft	[illegible]	500	21.9	[illegible]	500	14.7
Kennecott Copper	[illegible]	500	15.1	[illegible]	375	12.9
Sperry Rand	[illegible]	502	12.2	[illegible]	420	9.3
Intl Multifoods	[illegible]	503	12.7	[illegible]	449	8.7
Gt Western Financial	[illegible]	504	10.5	[illegible]	187	10.1
Va Electric & Power	[illegible]	505	7.1	[illegible]	709	4.0
Chemical New York	[illegible]	506	11.6	[illegible]	411	8.9
Wisconsin Elec Power	[illegible]	507	11.4	[illegible]	658	6.5
Carolina Pwr & Lt	[illegible]	508	9.5	[illegible]	694	4.4
Zayre	[illegible]	508	6.9	[illegible]	582	5.3
International Paper	[illegible]	510	20.7	[illegible]	467	11.9
Marshall Field	[illegible]	511	10.8	[illegible]	366	9.6
H J Heinz	[illegible]	512	13.8	[illegible]	436	10.7
Jay Manufacturing	[illegible]	513	11.3	[illegible]	405	9.8
Johns-Manville	[illegible]	514	12.1	[illegible]	335	9.6
Ecolab	[illegible]	515	14.5	[illegible]	510	9.5
Armstrong Cork	[illegible]	516	13.4	[illegible]	364	11.1
Northrop	[illegible]	517	12.0	[illegible]	555	8.8
Pub Svc Elec & Gas	[illegible]	517	9.0	[illegible]	703	4.8
Carpenter Technology	[illegible]	519	17.2	[illegible]	369	14.7
Fluor	[illegible]	520	18.1	[illegible]	372	16.3
IPL Industries	[illegible]	521	17.3	[illegible]	483	11.1
Richmond Corp	[illegible]	521	11.0	[illegible]	223	11.1
Stop & Shop	[illegible]	521	13.7	[illegible]	632	7.3
Public Service Colo	[illegible]	524	8.6	[illegible]	704	4.5
Honeywell	[illegible]	525	9.7	[illegible]	526	7.1
Chubb	[illegible]	526	6.8	[illegible]	280	6.8
Consol	[illegible]	527	14.2	[illegible]	355	12.5
Inland Container	[illegible]	528	20.0	[illegible]	338	18.0
ACF Industries	[illegible]	529	12.0	[illegible]	616	6.8
N Y State Elec & Gas	[illegible]	530	10.7	[illegible]	689	5.8

Company	RETURN ON EQUITY 5-Year* Average	Rank	Latest 12 Months	RETURN ON CAPITAL 5-Year* Average	Rank	Latest 12 Months
Baker Electric	[illegible]	531	8.9%	[illegible]	683	5.9
Bell & Howell	[illegible]	532	10.4	[illegible]	385	8.1
Colt Industries	[illegible]	532	26.6	[illegible]	552	13.9
Great Western United	[illegible]	534	48.6	[illegible]	552	15.8
Seaboard Allied Milling	[illegible]	534	9.8	[illegible]	449	7.5
Gt Northern Nekoosa	[illegible]	536	19.9	[illegible]	529	11.6
Metromedia	[illegible]	537	7.2	[illegible]	559	5.3
Fieldcrest Mills	[illegible]	538	11.2	[illegible]	504	7.6
Conco	[illegible]	539	1.6	[illegible]	507	2.4
Lincoln Natl Corp	[illegible]	540	9.4	[illegible]	331	9.0
Charter New York	[illegible]	541	12.1	[illegible]	522	7.9
Lone Star Industries	[illegible]	541	10.5	[illegible]	494	7.2
J Ray McDermott	[illegible]	543	18.9	[illegible]	465	14.5
Perini	[illegible]	543	12.4	[illegible]	466	9.5
Walgreen	[illegible]	545	6.4	[illegible]	479	5.1
Southern Company	[illegible]	546	9.8	[illegible]	724	4.1
Reeves Brothers	[illegible]	547	12.7	[illegible]	478	10.5
Super Food Services	[illegible]	547	15.2	[illegible]	522	9.0
McGraw-Edison	[illegible]	549	8.9	[illegible]	314	8.2
Mellon National Corp	[illegible]	549	9.4	[illegible]	297	9.4
Stauffer-Chem	[illegible]	551	12.1	[illegible]	529	7.5
So Calif Edison	[illegible]	551	13.1	[illegible]	655	7.3
Polaroid	[illegible]	553	6.5	[illegible]	298	6.5
Westvaco	[illegible]	553	20.9	[illegible]	571	13.3
New England Electric	[illegible]	555	8.5	[illegible]	718	4.1
Allied Chemical	[illegible]	556	16.6	[illegible]	546	11.8
FMC	[illegible]	557	14.6	[illegible]	467	10.3
National Fuel Gas	[illegible]	558	10.3	[illegible]	604	6.6
Warnaco	[illegible]	559	13.1	[illegible]	534	8.5
Getty Oil	[illegible]	560	17.5	[illegible]	396	14.8
INA	[illegible]	560	9.5	[illegible]	305	8.4
American General	[illegible]	562	10.8	[illegible]	354	9.7
Pullman	[illegible]	563	17.0	[illegible]	456	12.9
Harris Corp	[illegible]	564	9.5	[illegible]	470	7.2
General Public Utils	[illegible]	565	10.6	[illegible]	734	5.0
Borden	[illegible]	566	10.8	[illegible]	501	8.3
Potomac Elec Power	[illegible]	567	10.9	[illegible]	655	6.5
May Dept Stores	[illegible]	568	10.2	[illegible]	535	7.1
Phila Electric	[illegible]	568	9.3	[illegible]	701	4.9
Pueblo International	[illegible]	568	7.8	[illegible]	542	6.0
Cabot	[illegible]	571	11.3	[illegible]	459	8.3
National Distillers	[illegible]	571	17.1	[illegible]	575	11.2
Carborundum	[illegible]	573	11.6	[illegible]	448	10.2
Hanna Mining	[illegible]	574	5.7	[illegible]	398	5.2
NLT	[illegible]	574	10.3	[illegible]	318	10.3
PPG Industries	[illegible]	574	12.3	[illegible]	490	9.4
Washington Natl Corp	[illegible]	577	9.1	[illegible]	353	8.2
Green Giant	[illegible]	578	11.5	[illegible]	567	7.4
Reserve Oil & Gas	[illegible]	579	19.0	**		16.1
Singer	[illegible]	579	3.6	3.2	445	3.9
Inland Steel	[illegible]	581	16.8	[illegible]	519	11.5
Rohr Industries	[illegible]	581	10.2	[illegible]	475	7.4
American Tel & Tel	[illegible]	583	10.7	[illegible]	596	8.2
Southwest Forest Ind	[illegible]	583	11.3	[illegible]	565	7.8
Boston Edison	[illegible]	585	7.7	[illegible]	731	4.0
U S Fidelity & Gty	[illegible]	585	8.4	[illegible]	332	8.4
Alcan Aluminium	[illegible]	587	16.5	[illegible]	611	10.1
United States Gypsum	[illegible]	587	11.0	[illegible]	439	9.3
Wickes	[illegible]	589	9.2	[illegible]	476	7.0
Roper Corp	[illegible]	590	10.9	[illegible]	418	8.3
Lear Siegler	[illegible]	591	13.0	[illegible]	453	9.0
Bendix	[illegible]	592	12.0	[illegible]	463	9.4
Travelers	[illegible]	593	11.9	[illegible]	374	11.1
Cities Service	[illegible]	594	13.8	[illegible]	483	10.6
Philips Industries	[illegible]	594	def	[illegible]	437	def
Simmons	[illegible]	594	9.4	[illegible]	431	7.7

*The average return may be less than a 5 year period as footnoted in individual Yardsticks. ** Not available; not ranked. def—Deficit

Who's Where in Profitability

Company	Return on Equity: 5-Year* Average	Rank	Return on Equity: Latest 12 Months	Return on Capital: 5-Year* Average	Rank	Return on Capital: Latest 12 Months
North Amer Philips	10.8%	587	13.6%	7.8%	468	11.5%
Talley Industries	8.5	598	10.9	7.3	519	7.1
Havatampa Cigar	8.5	599	9.2	8.9	403	8.2
Kroger	8.5	599	11.4	8.1	451	8.3
Castle & Cooke	8.5	601	12.9	7.1	532	9.2
F W Woolworth	8.5	602	8.2	7.6	495	6.4
DeSoto	8.4	603	9.6	8.3	438	8.6
National Airlines	8.4	604	16.6	5.0	721	7.7
So New England Tel	8.4	605	9.5	8.0	648	5.5
Niagara Mohawk Pwr	8.4	606	9.2	6.8	739	4.5
Borg-Warner	8.4	607	10.5	8.1	451	9.2
Westinghouse Elec	8.4	607	6.5	7.7	479	5.3
Saxon Industries	8.3	609	8.3	7.8	473	5.4
General Host	8.3	610	9.4	6.4	747	4.8
Fedders	8.3	611	del	6.9	562	del
Globe-Union	8.2	612	12.3	8.0	459	9.0
Potlatch	8.2	612	19.1	7.0	549	13.4
RCA	8.2	614	14.8	6.1	632	9.2
Duke Power	8.2	615	8.9	7.8	738	4.3
Amsted	8.1	616	11.8	8.7	410	11.3
Consol Natural Gas	8.1	617	8.2	8.2	619	5.5
Cook United	8.1	617	2.6	8.1	637	2.7
Scott Paper	8.1	617	12.9	7.2	528	9.7
Seagram	8.1	620	10.1	12.8	493	8.0
Atlantic Richfield	8.1	621	15.1	7.6	495	11.7
Magnavox	8.1	621	1.6	8.5	425	2.0
Kimberly-Clark	8.1	623	16.1	7.4	508	12.2
W R Grace	8.1	624	16.6	7.1	539	11.2
Burlington Inds	8.0	625	12.2	7.0	548	8.9
Continental Can	8.0	626	16.4	8.9	555	11.3
Evans Products	8.0	626	del	8.3	611	del
Continental Corp	8.0	628	8.1	8.4	433	7.7
Hilton Hotels	8.0	629	7.8	8.0	647	5.3
Federal-Mogul	8.0	630	11.3	8.0	456	9.1
City Investing	8.0	631	6.1	6.5	593	4.5
St Regis Paper	8.0	631	15.7	8.5	593	10.5
Fibreboard	8.0	633	13.6	9.7	665	8.4
Wheelabrator-Frye	8.0	634	12.1	7.1	536	9.4
Mead	8.0	635	21.1	6.4	606	11.6
National Steel	8.0	635	15.5	6.9	555	11.1
Fairmont Foods	8.0	637	10.3	7.1	537	7.6
Pacific Lighting	8.0	638	8.1	8.6	680	5.1
Southern Railway	8.0	639	11.6	5.4	695	6.5
Hart Schaff & Marx	8.7	640	8.8	7.4	513	7.5
Armco Steel	8.7	641	16.6	6.4	606	10.7
Mohasco	8.6	642	8.4	6.8	572	6.3
Allegheny Ludlum Ind	8.6	643	21.0	6.5	596	11.8
Pet	8.6	644	9.9	6.7	577	7.5
A-T-O	8.6	645	11.0	6.3	613	7.2
Arvin Industries	8.6	645	5.5	6.4	603	4.5
Interlake	8.5	647	16.6	7.1	540	13.2
Federal Co	8.5	648	12.9	7.5	501	11.4
Northwest Airlines	8.5	649	13.2	5.6	678	8.2
Sherwin-Williams	8.5	649	11.5	6.8	572	8.9
Detroit Edison	8.5	651	7.2	4.8	739	4.1
Fairchild Industries	8.4	652	6.2	6.0	640	4.7
Dravo	8.4	653	12.1	6.9	559	8.3
DeGiorgio	8.4	654	2.7	8.1	636	2.6
Nationwide Corp	8.4	654	10.2	8.9	395	10.5
Hanes	8.4	656	10.3	6.9	559	7.5
W T Grant	8.3	657	0.9	7.3	522	1.4
Bemis	8.3	658	16.0	6.6	585	10.7
Allied Stores	8.3	659	10.3	5.4	696	6.3
A E Staley Mfg	8.3	660	13.7	7.5	498	11.7
Dayton Hudson	8.3	660	8.3	6.1	632	5.8
National Gypsum	8.3	660	9.8	6.9	562	8.0
Alcoa	8.3%	663	12.3%	6.7%	676	7.9%
Ludlow Corp	8.3	663	9.6	8.6	587	7.1
Anderson Clayton	8.2	665	11.4	7.0	546	9.4
Siegel Textile	8.2	666	12.4	8.3	662	8.4
Consumers Power	8.2	667	4.9	6.7	744	3.3
Norton	8.2	667	11.3	7.3	517	11.4
Bethlehem Steel	8.0	669	12.1	6.6	589	9.4
Celanese	8.0	670	15.2	5.7	670	9.7
Amer Hoist & Derrick	8.0	671	12.9	6.5	691	7.0
G C Murphy	7.9	672	7.9	6.5	595	6.3
American Stores	7.9	673	12.4	6.8	568	10.2
Kayser Roth	7.8	674	5.2	5.7	674	4.4
Alexander's	7.7	675	3.0	4.9	725	2.9
GAF	7.7	676	11.7	5.4	698	7.6
Central Steel & Wire	7.7	677	9.1	7.3	526	8.7
Carson Pirie Scott	7.7	678	9.6	5.4	696	6.4
Hammermill Paper	7.7	678	17.7	6.3	704	10.9
American Natl Fins	7.6	680	9.5	5.6	687	9.5
Ex-Cell-O	7.6	680	10.7	6.3	614	9.0
General Cigar	7.6	682	6.4	6.4	604	6.0
J Weingarten	7.6	683	11.4	6.5	591	7.3
Allied Products	7.5	684	14.0	5.2	714	7.6
Flintkote	7.5	684	7.5	5.0	653	6.0
Vornado	7.5	684	5.8	5.4	692	4.3
Interpace	7.5	687	8.6	6.4	609	7.1
Seaboard Coast Line	7.5	688	10.2	6.4	699	6.3
Arthur G McKee	7.5	689	17.3	6.2	617	14.5
Consolidated Edison	7.5	690	7.9	5.1	747	4.4
Pennwalt	7.5	691	11.0	5.8	583	8.2
Cerro	7.4	692	11.1	6.7	577	10.0
Transamerica	7.4	692	7.2	5.0	721	5.1
Babcock & Wilcox	7.4	694	10.6	5.6	583	8.7
United March & Mfrs	7.4	695	10.2	5.8	659	7.3
Signal Companies	7.4	696	25.6	6.0	640	17.5
Uniroyal	7.4	696	8.1	6.1	715	5.7
United States Steel	7.4	698	10.7	5.8	661	11.1
Kaiser Steel	7.4	699	17.4	6.9	726	10.4
National City Lines	7.4	699	8.1	5.2	709	5.7
Stokely-Van Camp	7.3	701	9.7	6.4	606	7.8
Kaiser Alum & Chem	7.3	702	15.8	4.8	737	8.5
Cyclops	7.3	703	18.2	5.2	707	10.7
Walter Kidde	7.2	704	13.7	6.1	629	9.6
Tappan	7.1	705	del	5.6	680	del
United Aircraft	7.1	706	13.6	6.0	643	12.9
Reliance Group	7.0	707	1.4	5.2	711	4.5
Midland-Ross	7.0	708	13.6	5.7	673	9.9
Airco	6.9	709	10.3	4.5	745	6.3
Allegheny Airlines	6.9	710	17.3	4.7	742	7.2
General Dynamics	6.9	710	11.3	5.5	688	8.6
Armstrong Rubber	6.9	712	5.4	5.3	706	4.9
West Point-Pepperell	6.9	713	12.0	6.4	609	10.4
Standard Oil Ohio	6.9	714	9.6	6.1	637	7.8
Questor	6.8	715	del	6.2	618	del
A O Smith	6.8	716	4.5	5.9	649	4.1
Intl Harvester	6.8	716	8.9	5.8	662	7.2
M Lowenstein & Sons	6.7	718	7.8	5.7	676	5.5
Sav-A-Stop	6.6	719	del	6.5	591	del
Lykes-Youngstown	6.6	720	28.9	4.3	754	9.6
Cone Mills	6.6	721	10.5	6.2	622	9.2
Interstate Brands	6.6	722	5.8	5.2	707	4.7
Sundstrand	6.5	723	12.1	5.2	712	7.0
Phillips-Van Heusen	6.5	724	1.4	5.1	717	1.9
Reynolds Metals	6.5	724	18.7	4.0	770	8.3
American Can	6.4	726	13.9	4.9	729	9.4
Massey-Ferguson	6.4	727	12.8	5.4	700	9.1
Morrison-Knudsen	6.3	728	10.1	5.8	662	9.2

*The average return may be less than a 5 year period as footnoted in individual yardsticks del—Deficit

Who's Where in Profitability

Company	RETURN ON EQUITY: 5-Year* Average	Rank	Latest 12 Months	RETURN ON CAPITAL: 5-Year* Average	Rank	Latest 12 Months
Union Pacific	6.3%	729	9.2%	4.9%	731	6.7%
General Instrument	6.3	730	9.7	5.0	723	6.4
Chesh, Peabody	6.2	731	3.8	5.9	657	4.1
Chemetron	6.2	732	13.2	5.1	715	9.5
Cannon Mills	6.1	733	4.6	6.1	629	4.5
Southern Pacific	6.1	734	7.2	4.3	756	4.8
Grand Union	6.0	735	1.4	5.8	678	1.7
Fairchild Camera	6.0	736	23.2	5.7	644	17.8
Universal Oil Prods	6.0	737	20.4	4.2	759	12.7
Macmillan	5.9	738	7.2	5.2	713	6.3
Keehring	5.9	739	4.4	5.3	702	4.0
Pitney-Bowes	5.8	740	18.1	5.0	718	11.6
Wheeling-Pitts Steel	5.8	741	18.4	4.9	729	12.0
Republic Steel	5.8	742	12.8	4.9	731	10.0
Santa Fe Industries	5.7	743	9.1	4.3	752	6.5
Ill Central Inds	5.7	744	8.0	4.4	746	4.9
Peoples Drug Stores	5.6	745	4.3	4.8	741	3.8
M&M	5.6	746	16.9	4.3	755	8.7
B F Goodrich	5.5	747	7.9	5.0	718	6.5
Springs Mills	5.4	748	8.5	4.7	742	6.4
Continental Airlines	5.4	749	7.2	3.5	777	4.1
Monfort of Colorado	5.4	749	def	2.7	665	def
Norfolk & Western Ry	5.4	751	11.7	3.6	778	6.2
Chrysler	5.3	752	3.5	4.8	736	3.3
Keystone Consolidated	5.3	753	13.4	4.4	750	9.5
Kaiser Industries	5.2	754	11.9	4.9	728	10.2
National Kinney	5.2	755	2.1	0.9	381	2.0
USM	5.1	756	9.6	4.4	749	7.1
Shop Rite Foods	5.0	757	7.5	5.5	687	6.4
Bunker-Ramo	5.0	758	3.1	3.4	692	4.1
Dayton	5.0	759	def	4.2	758	def
Control Data	4.9	760	3.8	4.1	762	3.5
St Louis-San Fran Ry	4.8	761	6.3	3.3	781	3.9
Food Fair Stores	4.8	762	6.7	4.2	757	5.2
Manhattan Industries	4.8	763	def	4.8	734	1.1
Amer Chain & Cable	4.8	764	10.2	4.2	761	9.4
J P Stevens	4.6	765	11.1	3.9	772	8.6
Boeing	4.5	766	7.5	4.0	769	7.0
Cincinnati Milacron	4.5	766	8.3	4.1	764	6.9
Victor Comptometer	4.3	768	5.3	4.3	751	5.1
SCM	4.3	769	13.5	3.9	773	9.2
Goldblatt Brothers	4.2	770	2.5	3.8	775	2.7
NCR	4.2	771	13.2	4.3	753	8.9
Budd	4.1	772	6.5	4.2	760	5.5
Chessie System	4.1	773	9.2	3.1	787	5.5
Rath Packing	4.1	774	1.6	2.0	808	1.5
Dillingham	4.0	775	10.1	3.4	779	6.1
Penn-Dixie Inds	3.8	776	7.6	4.0	771	6.2
Adgraph Multigraph	3.8	777	def	3.9	773	def
Inmont	3.7	778	11.2	4.0	766	9.1
Allis-Chalmers	3.5	779	5.4	3.2	783	4.6
Olin Corp	3.2	780	11.2	2.9	794	8.0
Bon River	3.1	781	8.3	3.1	788	6.1
Arcata National	3.1	782	13.0	4.1	764	8.6
Western Union	3.1	783	def	3.0	789	def
UAL	3.0	784	13.2	2.7	800	6.5
H R Porter	2.9	785	12.3	3.3	780	10.3
Revere Copper	2.9	786	12.3	2.8	797	8.2
SCOA Industries	2.8	787	9.6	3.2	785	6.5
Varian Associates	2.7	788	6.1	2.7	798	5.7
Litton Industries	2.7	788	def	3.2	786	def
American Motors	2.6	790	7.4	1.8	812	7.2
McLouth Steel	2.6	791	13.8	2.8	796	9.7
Thriftmart	2.6	792	7.3	2.7	799	6.7
Curtiss-Wright	2.3	793	5.8	3.0	791	5.8
Burlington Northern	2.3	794	5.9	2.2	804	4.3
National Industries	2.3%	794	18.0%	3.6%	776	11.5%
ConAgra	2.3	796	def	4.9	727	def
Pneumo Corp	2.2	797	15.1	3.3	782	10.2
White Motor	2.0	798	13.1	2.3	803	9.0
Great All & Pac Tea	1.7	799	4.6	1.8	813	4.6
Avco	1.7	800	1.7	4.1	762	4.1
Marathon Mfg	1.7	801	def	3.0	793	def
F & M Schaefer	1.6	802	1.1	3.0	791	2.7
Bergen Brunswig	1.4	803	2.9	4.8	765	4.6
Foodarama Supermkts	1.4	804	19.6	1.8	811	11.4
Whittaker	0.6	805	2.8	2.1	807	3.0
Trans World Airlines	0.6	806	def	2.1	805	def
Boise Cascade	0.5	807	14.9	1.4	817	9.4
Libby, McNeill	0.3	808	8.9	1.9	822	7.2
Grolier	0.1	809	def	2.5	801	def
Anaconda	def	810	10.9	0.4	825	8.7
American Standard	def	811	12.7	2.8	795	8.4
Grumman	def	812	20.2	def	836	10.8
Chicago Milwaukee	def	813	2.8	0.7	823	2.4
Bangor Punta	def	814	def	1.8	810	def
Genesco	def	815	5.8	1.7	815	4.5
National Homes	def	816	def	2.3	802	def
City Stores	def	817	def	0.4	827	def
Lockheed Aircraft	def	818	8.0	1.8	816	4.5
United Brands	def	819	def	1.3	820	def
Bormac's	def	820	1.4	def	829	2.1
Eastern Air Lines	def	821	def	1.4	818	def
CNA Financial	def	822	def	1.7	814	def
Intl Basic Economy	def	823	def	3.0	790	def
American Airlines	def	824	2.6	0.4	826	2.4
Diversified Inds	def	825	2.7	def	828	3.5
Automation Inds	def	826	def	def	833	def
American Bakeries	def	827	def	def	830	def
Penn Fruit	def	828	def	def	838	def
Wean United	def	829	3.6	1.1	821	4.2
Arlen Realty & Dvpt	def	830	def	2.1	806	def
E T Barwick Inds	def	830	def	def	831	def
Twentieth Century-Fox	def	832	2.5	def	835	1.8
Allied Supermarkets	def	833	def	0.8	824	def
Chicago Rock Island	def	833	def	def	841	def
First Natl Stores	def	835	def	def	842	def
Ampex	def	836	22.8	def	839	8.3
Pan Am World Airways	def	837	def	def	832	def
Hartfield-Zodys	def	838	def	def	834	def
Rodman Industries	def	839	def	1.3	819	def
Marlin	def	840	8.7	def	843	5.4
Sam's	def	841	def	def	837	def
Seatrain Lines	def	842	def	1.9	809	def
National Tea	def	843	def	def	847	def
Ward Foods	def	844	def	def	840	def
Columbia Pictures	def	845	def	def	844	def
Arden-Mayfair	def	846	def	def	845	def
Bohack	def	847	def	def	848	def
American Export Inds	def	848	def	def	846	4.7
LTV	def	849	25.3	3.2	783	8.7
Penn Central	def	850	def	def	849	def
Franklin Life Ins	**		**	**		**
Mfe Wild Foods	**		29.2	**		21.7
MAPCO	**		21.3	**		15.3
Miss River Corp	**		35.2	**		7.6
Northeast Petroleum	**		27.2	**		15.4
Pennzoil	**		27.6	**		12.0
Republic Natl Life	**		**	**		**
Union Bancorp	**		13.5	**		10.5
United Gas Pipe Line	**		16.8	**		7.4

*The average return may be less than a 5 year period as footnoted in individual yardsticks ** Not available, not ranked def – Deficit

Who's Where In Growth

Keep in mind double-digit inflation as you read over this year's sales and earnings growth rankings. In sheer numbers, the growth looks impressive, but many of the gains were a product of inflation and of temporary shortages, not of true growth.

Remember, for example, that while the economy's overall inflation rate ran about 12 percent last year, price increases for many industries and individual companies ran much higher. That's why you will find so many food processors, meat-packers and oil companies at the top of the growth rankings. And why some of the 1974 growth rates, compared with a 1971-73 base period, look so high.

Bear this in mind also: Long term, profits have not been keeping up with sales. Among the 859 companies on this list, the median five-year annual earnings growth was only 5.8 percent, compared with sales growth of 11 percent. What's more, seven of every eight companies on the list had an annual earnings growth rate that was lower than last year's inflation rate.

So much, then, for the huge profit gains by U.S. industry. Individual companies were keeping ahead of inflation, but most were not.

The most volatile figures on the list are those showing 1974 growth trends *vs.* a three-year 1971-73 base period. A good many companies showed up very well in trend, thanks to the stepped-up inflation; but don't expect those gains to repeat in 1975. Look what happened last year to companies like Levitz Furniture, Champion Homes and Bath Industries. They were growth leaders over the longer period, but fell badly from grace in the 1974 trend figures. In these cases, the trend tells the truer tale.

The growth figures alone can be misleading in many cases. They make massive Allis-Chalmers (ranked 33rd) and conglomerate City Investing (45th) look pretty good. But in the profitability ranking ("Who's Where In Profitability," p. 51) both ranked low, 770th and 631st, respectively. That's because Allis-Chalmers is growing from a low, low profit base, and because City Investing's growth has come from tacking on acquisitions.

So don't read these numbers in a vacuum. To properly use this issue of Forbes as a tool for investment or business management, one must look at the whole picture on any given company: its growth, its profitability, its relative ranking in its own industry—and the editors' comments in the various industy articles.

Who's Where in Growth

	Earnings Per Share			Sales†		
Company	5-Year* Average	Rank	1974† vs 1971-73	5-Year* Average	Rank	1974† vs 1971-73
Idle Wild Foods	70.2%	1	121.8%	30.2%	35	36.0%
Peavey	65.7	2	174.6	13.5	267	71.2
Gt Western Financial	57.4	3	-1.9	11.6	371	26.8
Northeast Petroleum	57.2	4	42.8	35.5	21	146.5
Charter Company	56.8	5	308.7	45.2	6	132.6
Cook Industries	51.4	6	282.3	28.1	42	124.7
NVF	48.7	7	369.1	12.8	307	48.2
Tesoro Petroleum	47.5	8	290.8	52.8	4	139.5
Blount	45.4	9	-8.7	19.0	127	34.9
Reserve Oil & Gas	45.2	10	163.0	37.4	16	142.0
Fairchild Industries	42.9	11	-2.6	1.6	836	6.6
Esmark	39.4	12	70.7	4.1	809	32.4
Fleetwood Enterprises	39.1	13	-61.5	41.7	11	16.6
Pennzoil	37.4	14	198.4	27.0	51	82.3
Comsat	37.2	15	56.8	28.0	48	24.5
Louisiana-Pacific	37.1	16	65.5	24.6	66	59.8
Levitz Furniture	36.5	17	-36.3	52.7	5	25.8
Centex	35.1	18	-5.6	25.2	62	6.7
MGPXL	34.7	19	78.2	20.9	106	26.4
McDonald's	34.4	20	64.3	31.8	29	65.2
Champion Home	33.6	21	-97.1	34.0	25	-0.7
Bath Industries	30.8	22	-44.4	16.0	196	23.0
Fedl Natl Mortgage	30.7	23	18.4	36.1	19	31.5
Digital Equipment	30.4	24	145.2	39.9	13	126.1
Archer-Danls-Midland	30.4	25	106.1	18.2	139	40.6
Jack Eckerd	30.0	26	53.8	35.9	20	80.0
Daniel International	29.6	27	41.8	22.2	93	73.2
Skyline	29.5	28	-55.3	24.1	72	-10.8
Connecticut General	28.3	29	17.5	19.3	473	17.9
Rite Aid	27.9	30	-21.5	36.9	18	43.8
Murphy Oil	27.7	31	165.4	17.1	168	96.2
American Financial	27.4	32	36.4	65.5	2	232.1
Allis-Chalmers	27.0	33	106.7	5.0	784	22.0
U S Home	26.5	34	-52.5	65.0	3	19.0
Kane-Miller	26.2	35	77.2	30.5	34	45.9
Loews	26.2%	36	0.4%	29.2%	41	1.3%
MGM	25.7	37	193.5	-2.7	843	27.5
Roadway Express	25.5	38	41.3	18.4	137	33.9
Schering-Plough	25.0	39	46.4	14.9	229	31.1
American Intl Group	25.0	40	45.9	16.9	173	37.7
Lowe's Companies	24.1	41	50.9	23.4	77	47.6
Travelers	24.1	42	27.9	9.8	516	16.4
Fisher Foods	23.8	43	41.8	24.6	67	56.9
Seaboard Allied Mill	23.3	44	13.7	12.2	335	113.1
City Investing	22.9	45	33.8	43.2	[illegible]	19.3
General Reinsurance	22.8	46	17.3	14.3	[illegible]	13.0
USLIFE	22.6	47	28.3	[illegible]	[illegible]	13.4
Yellow Freight System	22.5	48	47.7	18.6	135	47.2
Pittston	22.5	49	224.3	13.6	263	64.0
Winnebago Industries	22.4	50	P-D	42.1	8	-[illegible]
Tandy	22.4	51	50.7	36.9	17	39.2
Govt Employees Ins	22.2	52	7.6	18.2	141	19.0
Tiger International	22.0	53	-5.2	24.6	68	29.7
Northwest Industries	22.0	54	97.2	3.9	811	55.9
Intl Minerals & Chem	22.0	55	341.1	13.1	49[illegible]	92.5
S S Kresge	21.8	56	25.0	21.8	[illegible]	38.4
Seaboard Coast Line	21.7	57	42.2	20.3	112	29.4
Maremont	21.5	58	-32.0	5.5	762	-9.1
DEKALB AgResearch	20.9	59	62.5	18.2	142	93.9
Browning-Ferris Inds	20.5	60	31.8	28.6	44	59.0
American Express	20.3	61	28.0	12.2	[illegible]	[illegible]
Ohio Casualty	20.3	62	0.4	12.6	[illegible]	[illegible]
Masonite	20.1	63	12.2	17.9	14[illegible]	41.2
Philip Morris	19.9	64	29.6	19.5	122	34.4
Utah International	19.9	65	84.1	18.9	1[illegible]	103.9
Pac Gamble Robinson	19.7	66	86.6	8.2	624	37.7
Intl Foodservice	19.5	67	-54.0	90.5	1	41.1
American Natl Finl	19.4	68	33.5	3.8	813	10.0
INA	19.3	69	-6.3	15.7	178	[illegible]
Continental Corp	19.3	70	-9.0	8.0	742	9.5

*The growth rate may be for less than 5 years as footnoted in individual Yardsticks †Latest 12 months P-D Profit to deficit

Senator GRAVEL. Our next witness is Mr. John S. Chalsty, president of Donaldson, Lufkin & Jenrette, Securities Corp., New York, N.Y.

Mr. Chalsty, and anyone you want to have join you, feel free to have them join you at the table.

STATEMENT OF JOHN S. CHALSTY, PRESIDENT, DONALDSON, LUFKIN & JENRETTE

Mr. CHALSTY. Mr. Chairman, I am John S. Chalsty, president of Donaldson, Lufkin & Jenrette Securities, a member firm of the New York Stock Exchange.

The energy subcommittee and the Senate Finance Committee itself will undoubtedly hear testimony from many experts in the areas of energy taxation and related legislation, a number of whom will probably be from the petroleum industry itself or from the academic community.

I should start out by making clear to you that I lay claim to neither of these qualifications. I do believe, however, that I can bring to you here and share with you a substantial knowledge of the petroleum business with which I was involved for 12 years prior to 1969.

Senator GRAVEL. Would you pull the mircophone a little closer to you, please?

Mr. CHALSTY. For the last 5 of those years I was particularly involved with the development of oil and gas in the North Sea and in Europe. In addition, I have as an analyst, an often critical analyst, continued to study the industry and its problems since 1969. I would like to make it clear that I am in no way a representative of nor an apologist for the petroleum industry. If I may claim to represent anyone here, maybe it would be the American investor, but I really hope that I might appear before you as a concerned and, hopefully, knowledgeable citizen, and it is on that basis that I welcome the opportunity to appear before the subcommittee today.

The petroleum industry, as you gentlemen well know, is replete with statistics. Rather than offering you here yet another quantitative analysis of these statistics, I thought I might, with your indulgence, have this statement refer to only three broad areas, supported by only a limited amount of rather straightforward quantitative data: one, the need for exploration and development spending on oil and gas in the United States; two, a broad consideration of depletion; and, as I think germane to the points I heard being addressed to Senator Bentsen just a few moments ago, the need, in our view, for a total coordinated integrated approach towards oil and gas tax and price policy changes; and, finally, some comments on specific proposals on depletion that have been put forward.

A rather simple straightforward calculation, in my view, will put into quite meaningful perspective the gap between the need for spending on petroleum exploration and development in the United States and the actual level of such spending.

If one translates into equivalent barrels of oil the annual U.S. consumption of petroleum products, oil, natural gas, natural gas liquids, the result is almost exactly 10 billion barrels. In other words, we as a Nation consume anually some 10 billion barrels of petroleum or petroleum products.

Now, I believe there would be no disagreement that it is in the vital interest of the United States that we move as a Nation towards a greater degree of energy independence. To approach this goal I think we would also agree that we should at least replace each year, in terms of oil and natural gas discovered and developed, the amount we consume, in other words, that same 10 billion barrels.

Now, the cost of such replacement, exploration and development, may be very conservatively estimated at some $2 a barrel. Recent experience in the Louisiana offshore, I might add, would indicate that a number perhaps twice that level might be appropriate, but even assuming $2 a barrel, that really means that we as a Nation should be devoting at least $20 billion a year to the exploration for and development of new domestic oil and gas reserves.

In fact, of course, we fall very short of that goal. Our numbers indicate that after a number of years at an even lower level such expenditures, influenced by higher prices for oil and gas in 1974, grew to some $8 billion in 1974. That means that even with the increase in exploration and development that took place as a result of the higher prices prevailing last year, we were still, if you will, two and a half fold below the kind of level of spending which might lead toward development of reserves to replace those consumed. I think this calculation, this concept, if you will, really pervades much of what I have to say. If we as a Nation should be spending $20 billion a year—and I think that is a number easily demonstrated—and we are only spending some tiny fraction of that, then, of course, one needs to be concerned about any proposals which would draw cash flow from the industry.

Senator GRAVEL. Excuse me, sir. Do you have the backup data anywhere in your testimony or enclosure, up to $20 billion a year?

Mr. CHALSTY. Senator, it is in the testimony, yes. Very simply expressed, it is in terms of the actual energy consumed in the United States, oil and gas, some 10 billion barrels a year times an average cost to explore and develop of some $2 a barrel.

As I mentioned in your absence, that number may be considered very conservative in the light of the most recent experience we have had in the Louisiana offshore where, for example, in the 1970 lease sale, the only one in which we have thus far good up to date data, the cost of such exploration and development looks to be closer to $4 a barrel. But even using the $2 per barrel figure, we are talking of $20 billion of needed spending.

Senator GRAVEL. When you say the cost of exploration and development, then what is the total cost of oil, then, in the marketplace today, if $4 is the cost of exploration and development here of refining, transportation, and marketing?

Mr. CHALSTY. Indeed, I am referring only here to the actual cost of, if you will, replacing the oil and gas that we as a Nation consume over a year. This, Senator, was in the context of a belief that if we are to move toward energy independence, we should, at the very least, be replacing each year that energy that we consume, and I was referring in addressing myself only to the specific costs of that replacement of energy in the ground. That does not include, for example, the per barrel cost of the production of that energy, the transportation, the refining, and all of the other costs associated with it. This is a

capital cost specifically associated with the finding and developing of oil in the ground.

Senator GRAVEL. Well, that is a new cost to me, and I am fairly familiar with the figures, and I am really surprised. So, for exploration and development it is $4. You would still have to add the rest of that on for the marketplace.

Mr. CHALSTY. Absolutely. Again, if I may specify, what I was addressing myself to here was the required need of exploration and development spending. We have had here many proposals which would address themselves directly to the incentives for and the cash flow in the spending on exploration and development, and the thrust of what I was saying here was that if you look only at the money spent domestically in the United States on exploration and on development and not further than that, in the generation of reserves which we might call, therefore, additions to proven reserves, the point here was that if we consume 10 billion barrels a year and if we wish to replace that 10 billion barrels a year in terms of our proven supplies, then the exploration and development industry, be it major or minor, needs to spend some $20 billion a year simply to reach an equilibrium level where we are no longer drawing down our reserves.

Senator GRAVEL. I will come back to that question after you have finished with your statement.

Mr. CHALSTY. May I then, turn to the second of these points, which was a discussion of depletion, if you will, in context with other proposals, in that either adding to or lowering the actual cash flow of the industry? The House of Representatives, of course, on February 27 voted to eliminate percentage depletion retroactive to January 1 with only a modest and temporary exemption for natural gas.

This subcommittee is considering a number of variants, of course, on the same theme. At the same time, there is discussion here and elsewhere of other energy-related proposals, windfall profits taxes with or without plowback, changes in pricing and/or deregulation of oil and gas, et cetera.

I will, in further testimony, comment on these proposals and on the specific proposals involved in the depletion allowance, but I think, in general, I would like to urge a great deal of cautious deliberation on your part before you take action which will serve to draw funds away from this industry. Certainly few, if any, institutions are not subject to improvement, and I am sure that the total package of incentives available to the petroleum industry, price tax treatment, et cetera, can be improved upon, both in structure and in effect.

I can assure you, however, that a hasty and/or, worst of all, a piecemeal approach to reform this structure will be disastrous. It has been calculated that the House depletion allowance measure would cost the petroleum industry some $2½ to $3 billion a year, and other proposals, such as the administration's original windfall profits tax without plowback might draw out another $2 or $3 billion. Reductions of this magnitude, with no offsetting price and/or other tax changes, will have a direct immediate impact on investment spending, since all available funds in the industry are currently being put to work.

Thus, by our calculations, for example, production cash flow for the petroleum industry—essentially net income plus depletion, depreciation, and amortization—was just under $10 billion in 1973 and rose to $16 billion in 1974 under the influence, again, of higher oil and gas prices. However, it is notable that exploration and development investment plus lease acquisition payments, including, for example, over $5 billion lease bonuses paid directly to the Treasury, grew precisely in line with this cash flow increase as the industry again continued to spend its available funds.

We can assume that a reduction in cash flow will be translated into a reduction of petroleum, which seems to me is precisely the opposite impact the Congress should be wanting to achieve now. Not only do many of these proposals curtail internally generated funds, but their impact on reported profits will be such as to reduce the attractiveness of this industry for investors, and thus to aggravate further the outside capital problem.

Many of these items of proposed legislation are regarded by investors as punitive in nature and are serving to scare off those investors, both large and small, who have historically provided the petroleum industry with the funds necessary to fill the very large and continuing gap between it capital needs and its internally generated funds.

The depletion allowance has served to provide exploration companies with an invaluable source of cash flow and the economic incentive to put that cash flow to work. With the rapid escalation in oil price over the last 18 months it has been argued that the industry no longer needs depletion. Based on the industry cash flow discussion in this report, I do not believe this to be the case, although it is obviously fair to say that decontrol of prices for old oil and new natural gas would certainly diminish the relative importance of the depletion allowance for these products. If the depletion allowance were eliminated, prices would have to increase simply to maintain the same incentive, and it would be the consumer who would therefore make up the difference. Although petroleum is only one of the over 100 products enjoying a depletion allowance, it is petroleum alone that appears to have been subject to intense political pressure for elimination of its depletion allowance.

If it is the eventual, considered decision of Congress that the oil depletion allowance should be so singled out, I would urge that the depletion allowance at least be maintained permanently for natural gas and for some floor level of oil production. The natural gas exemption is a logical imperative since gas is generally committed under long term contracts which assume the continuation of the depletion allowance, and while natural gas itself is still a vastly undervalued commodity. An exemption for a floor level of production for all producers, as Senator Bentsen has said, would at least provide partial help to the independent producers for whom depletion is a critical element of cash flow, while not simply discriminating arbitrarily against others on the basis of size.

In any case, I would urge that modification of the depletion allowance only be considered in concert with other items, most specifically, for example, as Senator Brock has pointed out, price deregulation.

The case for natural gas deregulation has been made so often and so persuasively that I can really add little further. Suffice it to say that ill-considered regulation of gas is one of the important reasons for our current energy crisis. At today's average price of some 30 cents per thousand cubic feet, equivalent to less than $2 per barrel of oil, and regulated new gas prices of 50 cents per thousand cubic feet, or $3 per barrel of oil, this commodity, intrinsically, and by its location the most valuable energy source in the world, is being sold at a price approximately one-sixth that of imported OPEC oil.

Now, we find that rather than learning from the Federal Power Commission's dismal experience with price control, the Federal Energy Agency has recently regulated natural gas liquids almost as restrictively as that of the FPC regulation of natural gas. Deregulation of natural gas liquids and new natural gas is an essential part of a total energy package and an essential part of our search for energy independence. We would urge deregulation of both.

The case for deregulation of old oil is less persuasive that that for natural gas. Once again, however, one must marvel at the anomaly of a domestic product whose production we wish to encourage but which we regulate at a price less than half that of its imported competitor. We would urge stepwise deregulation of old oil over an appropriate period of time, with appropriate protection against what have been called windfall profits.

There is logic to the statement that the deregulation of old oil would produce windfall profits to the extent that the price generating these profits is the result of arbitrary and excessive world oil pricing. In our view a windfall, or to give it its correct name, an excise tax on prices above a long-range equilibrium value, possibly $8 to $9 a barrel, is appropriate, but only if accompanied by a plowback provision which, to quote from the Energy Tax and Individual Relief Act of 1974 before the Committee on Ways and Means, would "allow the companies to plow back their windfall profits in the form of certain types of oil and gas or energy-related investments to take a credit for these investments against the windfall profits tax otherwise payable." Through such a provision companies would be encouraged to pursue aggressive programs of exploration with both the incentive for this exploration and the cash flow to finance it being achieved simultaneously.

In our view, the windfall profits tax with plowback is an example of the kind of responsible fiscal innovation that Congress might develop to help resolve the current energy crisis.

A tax and energy package based on these considerations above, but based in total on these considerations above, but not a piecemeal consideration of any one of them, would, in my view, equitably and fairly encourage investment by the U.S. petroleum industry. By moving us toward independence of high and arbitrarily priced imported oil, it would eventually confer great benefits on the U.S. consumer.

Mr. Chairman, it was over the weekend that I received from your office a specific request for comments on the depletion proposals here, and I would like to make just a few comments on those. They have been attached to the written material submitted to you, and those comments will all be brief and summary in nature.

The specific proposals addressed are that in H.R. 2166, the so-called Green amendment proposed in the House; the Hollings-Kennedy-

Magnuson amendment to H.R. 2166; and finally, the Energy Revenue and Development Act of 1975, title VII, section 701 of Mr. Gravel.

I might add, as I go by, a brief comment or two on what I heard Senator Bentsen saying this morning. Each of these proposals, if enacted into law, would reduce total income tax deductions available from percentage depletion and, thus, reduce the domestic petroleum industry's cash flow. As I have indicated before, I believe such reduction would have an immediate negative impact on investment spending, an unfortunate result at this time of critical energy need. If, therefore, the depletion allowance must be amended, such amendment should be affected only in the context of overall energy legislation whose total effect is to increase, not reduce, the cash flow and investment incentive available to this industry. Of the three proposals, only that of Senator Gravel meets this critical criterion.

It follows from the above, that my overriding objection to the Green and Hollings-Kennedy-Magnuson proposals, and as I have heard it described here today, Senator Bentsen's proposal, is that they separate out this single emotional issue of the depletion allowance for piecemeal and, certainly in the case of the first two proposals, for misguided treatment.

The proposals would depress exploration and development spending by reducing available cash flow. The first two proposals do suggest that loss of the depletion allowance for natural gas be offset by price increases, but ignore the fact that regulated gas prices are currently too low to provide aggressive exploration incentives, even with the depletion allowance.

I would suggest, as I heard Senator Bentsen's proposal this morning, that an additional feature of that proposal which may address itself to this question of price would be that in the case of natural gas, were his proposal eventually to be adopted, in part of an overall energy package, there should indeed be a retention of depletion on regulated natural gas and natural gas on a long-term contract.

By not providing for permanent retention of the depletion allowance for some floor level of production, the first two proposals work a particular hardship on independent producers to whom depletion is an important and critical element of cash flow, and on small royalty owners to whom it represents an element of their livelihood. These proposals would do significant harm to U.S. exploration expenditures and, hence, in our view, to the Nation's efforts toward energy independence.

Mr. Chairman, the depletion proposal bearing your name is, of course, much more constructive. In effect, it would retain depletion unchanged for 100 percent domestic exploration-production companies.

A weakness, in my view is its perhaps excessive penalty for foreign energy spending; not only is foreign depletion eliminated, but foreign energy expenditures serve to reduce allowable domestic depletion allowance. This may not always be in the United States' best interest.

Thus, for example, increased Canadian producibility, despite some recent United States-Canadian differences, directly improves the average degree of security of U.S. imports, particularly if Canada were able to become a significant net exporter of oil and gas.

The United States, I would submit, also benefits, albeit less directly, from increased exploration and development in non-OPEC countries,

to the extent that such activities serve to generate additional non-OPEC supplies, and thus put pressure on world oil prices.

It seems to me that we should at least not discourage and, hopefully, encourage increased production in or contiguous to major energy consumption areas, for example, the North Sea Continental Europe, Australasia, Canada, and Japan.

The proposal—and I have said this so many times that I would rather not say it again—the proposal, in my view, has a great advantage that it is advanced in concert with an integrated energy program.

In conclusion, in my view, the United States today faces an energy problem whose potential consequences, if not unique in our history, are at least unusually grave. In the attempted resolution of this problem Congress must act with responsbility and dispassion. I urge you to avoid precipitive piecemeal change.

Thank you, Mr. Chairman.

Senator GRAVEL. Thank you very much, Mr. Chalsty.

I will impose a 5-minute rule. We will put a bell on it, including myself, because we do have other witnesses we want to hear.

I think you have given us very fine testimony. I fould just like to go to page 3 of your testimony where you talk of windfall profits tax. When we talk of these windfalls, are we not talking about inventory profits, that is where the price goes up and a company may own a certain quantity of oil. Of course, since the price went up after the oil was discovered. Is it called a windfall?

Now, if the Government were to tax that on a windfall basis, or if the company pays accelerated tax because it has accelerated income because of this extra value that it has received, that is a windfall, that here, but if the company is going to be in business the next year, does not that company have to go out and buy oil at that new market-price, so that, in point of fact, there is no windfall to the company in question; it has to replenish the oil that it has lost at a higher level? And so my question to you is, are we really talking about windfall profits, or are we talking about a paper transaction, the results of which mean the companies have to pay more taxes, but, in point of fact, they do not acquire any more wealth. Once they have pumped out this cheap oil they have to buy expensive oil to replace the cheap oil, and so there is really no gain other than a mathematical computation, is that a correct assumption?

Mr. CHALSTY. Mr. Chairman, I think it is very close to being entirely a correct assumption. I suppose that one might argue that the use of inventory analogies here is different only in that companies develop their inventory of resources over an extended period of time and do not replace in any given year what they consumed the year before.

Nevertheless, the generation of increased supplies to replace those consumed is an ongoing process, if you will, of adding to inventory. And if I might make just a general statement, it seems to me that a windfall profits tax, as I have understood the definition used in the Congress, no longer becomes a windfall profits tax, or no longer has a windfall nature if those profits are used in the generation of new reserves. And I think that again is analogous to the point you have made.

If the moneys are reinvested in increased exploration and development such that both the company and the Nation will develop more——

Senator GRAVEL. Mr. Chalsty, they do not even have that option, because if the money that they get, as a windfall, has to be used to buy new supplies of oil, then they cannot take this paper profit and build refineries and go look for new oil. They have just got to replenish the inventory at this new cost.

Mr. CHALSTY. Indeed, sir.

Senator GRAVEL. So even inside of this company these paper profits are not used for anything other than replenishment of lost supplies.

Mr. CHALSTY. I am postulating that only the replenishment of those lost supplies for an exploration and development company takes place over a continuing number of years, with that replenishment taking place via investment rather than purchasing on the market. So only to that extent would I say that the inventory analogy is extended rather than compressed.

Senator GRAVEL. I will forgo any further questions that I have.

Senator Hansen?

Senator HANSEN. I would be happy to yield to the chairman.

Senator GRAVEL. We will violate the early bird rule because of the chairman.

The CHAIRMAN. I would not ask such special exception.

Senator GRAVEL. We are giving it to you.

The CHAIRMAN. Well, I stepped out of the room to read your statement, Mr. Chalsty, because I wanted to read it from the beginning. I think that you have in your statement one of the simplest approaches, and I believe perhaps the most correct approach to this problem that I have seen, that is if you view this as a critical matter, energy-independence, and a matter of urgent national priority, we should start out by seeking to determine how much do you need to put into drilling and geophysical search—that is, seismographic, things of that sort, for new energy in this country, because that is the energy that we can rely upon. We cannot rely upon what you have in Saudi Arabia or what somebody has in Venezuela or even Canada. If worse comes to worse, in times of emergency, you cannot rely upon anybody's energy except your own, and so we have to think in terms of how much we are going to need to drill here in this country, and what we are going to need for other activities, such as opening coal mines and developing other sources of energy, atomic, solar, or what have you.

And then on whatever basis you want to do it, you then need to think in terms of what is it going to take to do enough drilling and enough development of atomic energy and various other sources to have some hope of restoring energy independence, and that is what we should be shooting for.

Now, some show up with the idea of a Fogco, Federal Oil and Gas Corporation, or an Energy Production Board which I notice would have the power to actually invest in drilling itself, rather than to make loans the way the Government did in World War II to help private enterprise do the job.

Now, this seems to me, like that old situation in the French Revolution where they would make a man carry the basket to the guillotine with him, to require businessmen to pay taxes for the purpose of put-

ting themselves out of business. The fair way, it would seem to me, would be to first give private enterprise a chance to do this job and some hope of attracting enough capital to do it before the Government gets into it.

If it cannot do it that way, then the Government perhaps might want to get into it. If the Government does, I think it ought to start out by lending money to private enterprise to do something before it puts the Government in the business of displacing private enterprise.

In the last analysis, taxpayers support the Government. The Government does not support the Government, and it would seem to me that we ought to arrive at some figure, some estimate of the amount of capital that is needed to do the job, and I notice that you start out here by estimating it would take $20 billion a year just to do the exploration and development of new sources of domestic energy and gas reserves.

Now, that is somewhat alarming to me because you indicate that we are only spending about $8 billion a year in that endeavor, and you also say that you think that $20 billion figure is on the low side. Now, if that is the case, how do you think we ought to go about attracting enough capital to do that job?

Mr. CHALSTY. Senator, we had some discussion about this $20 billion number, and I explained to the chairman how that number had been arrived at. It was, as you correctly expressed, simply an estimate of the cost of replacement of energy consumed in a given year—oil and gas energy consumed in a given year in the United States.

Clearly, if I may start with the negative answer to your question, we do not go about attracting that kind of energy by removing incentives and cash flow from the industry. A major objection that I and others have had to the proposals we have heard from Congress are that they seem to be directed toward the reduction of cash flow.

There has been description of profits as being not justified—I have heard worse adjectives than that—in the petroleum industry, and the intention seems to have been—or the pressure seems to have been—toward the removal of profits on cash flow and hence incentive.

I would argue that the first thing to do, Senator, in answer to your question is to make sure that that does not take place. If we do take away the depletion allowance from the industry, it clearly needs to be replaced by something of at least as great, and I would argue greater incentive and a greater provision for cash flow.

Now, the industry has traditionally been dependent on outside sources of financing. The profits that the petroleum industry has made in the United States have traditionally been somewhere between 50 and 60 percent of its total spending. In other words, it has been outside capital that has come into the industry to provide it with the additional financing needed to proceed with its investments up until now. Again, it would seem to me that if we are calling upon the industry—and I think correctly—to spend more money, again from the point of view of the outside investor, that has to be an attractive investment.

The CHAIRMAN. Thank you, Mr. Chairman. Thank you, Mr. Chalsty.

Senator HANSEN. Mr. Chalsty, I am very impressed with your testimony, and I think Senator Long has touched upon a major concern I have. With tax laws as they are presently, we are not anywhere near

approaching the effort we need to make to achieve the goal that we have set for ourselves. I gather you are saying that with the present incentives there is not any way to generate the necessary capital, and anything that we do which might further restrict that capital would only add to our problem.

I notice in the Oil and Gas Journal for March 10, 1975, in a story entitled "Hopes Wane for Big New Reserves in the Eastern Gulf." it is pointed out that 10 unsuccessful wildcats have badly wounded hopes for finding major reserves of oil and gas under the first crop of leases in the vast Northeastern Gulf of Mexico. I think the industry paid out $1,490 million for 87 tracts in bonus bids for that area down there, and I understand this area where the 10 wildcats—unsuccessful, each one of them—has been drilled represents an investment of $850 million.

I know that the depletion allowance is critically important to independents—but my question is, is it not also important to these majors? Does that not help them generate the necessary cash to make further exploratory drillings on the Outer Continental Shelf?

Mr. CHALSTY. Senator Hansen, it certainly does, and again while I am in sympathy with what Senator Bentsen said this morning about the need to provide incentives, or at least to maintain incentives for the independents, there is no question about the validity of these statements.

It does seem to me that it is not necessarily mutually exclusive, that the need to provide continuing incentive and cash flow for the larger companies is equally as pressing. I do not accept the fact that simply because a company is large means that it has easier financing. On the contrary that is absolutely not the case, and these huge bonuses you described are an example—if you recall, I mentioned that some $5 billion last year was paid in lease bonuses directly into the Treasury for which the industry in effect got no direct benefit. Not a penny of those funds were spent on anything other than into the coffers of the Treasury, to give the companies the opportunity to go out and make the kind of exploration expenditures which you have just described and which in the case—I am sure that article refers to the expending of the Mexican dome—where many of us hoped that a major new discovery would result. It has not.

Senator, if I may refer to the first part of your question, I think it is—once again in terms of the incentive to the industry—I think it is important to recognize that the $8 billion number which we quoted for spending in 1974 is a very substantial increase over the level of 1972 and 1973, and that increase did come as a result of much higher prices for oil and gas. To answer both the questions of Senator Long and yourself, sir, in terms of incentive—clearly the incentive of price was working. We did start developing momentum in 1974 for major new spending.

The thing that I feel most concerned about is that we may be in the process of impeding that momentum, of slowing it down again.

Senator HANSEN. You say in your statement, Mr. Chalsty, on page 8:

It has been calculated that the House depletion measure would cost the petroleum industry some $2½ to $3 billion a year. The Administration's original proposal for windwall profits, without plowback, would draw out another $2

to $3 billion. Reductions of this magnitude will have the direct and immediate impact on investment spending, since all available funds are currently being put to work.

Before that statement you say,

I can assure you, however, that a hasty and/or worst of all a piecemeal approach to reform of this structure of incentive will be disastrous.

I want to compliment you for that observation because it just seems to me that the worst possible way we could undertake legislation in this area at this particular time is to do it with a time limitation imposed on us. We are trying to get the bill reported out by early enough this week in order to permit the House-Senate conferees to get together to iron out differences, and to refer the bill back to each body for final approval and finally to send it on down to the White House. I am frightened to death—as I suspect you are from your statement—that we are in a situation where we could make some very bad mistakes.

I think that we need to take the time to know what we are doing. The northeast a few years ago inveighed against the mandatory oil imports program, and wanted to buy cheap foreign oil. I do not hear many of them now wanting to buy that cheap foreign oil because there is no cheap foreign oil.

Mr. CHALSTY. And there never will be again.

Senator HANSEN. Thank you, Mr. Chairman.

Senator GRAVEL. Senator Brock.

Senator BROCK. Mr. Chalsty, you make a case persuasive to those of us who already agree with you to begin with. I am not sure that we will change many approaches in this particular hearing.

But I would like to ask you one question. If we did not have the two-tiered price system on oil or natural gas—if the marketplace were allowed to determine the price of any particular source of energy, then would your argument for depletion, in effect, for a special tax incentive for investment and new exploration and development technology and so forth—would it be as persuasive?

Mr. CHALSTY. Not nearly, and in fact one might well argue that there would indeed be no need for a depletion allowance in the context of a totally free marketplace. What I said, you will recall, Senator, is that if depletion were to be eliminated, that elimination would have to be offset by an increase in price. You really are dealing with a number of issues here, all of which are so closely integrated one into the other, that one needs to discuss them all together in such an integrated fashion.

And so, to answer your specific question, I am sure that a structure of price tax incentive can be improved upon in the industry, and possibly one of those improvements may well be that depletion in the total context may no longer be necessary. It is indeed necessary as long as we have mandated, regulated prices for oil and for natural gas.

Senator BROCK. Well, the essence of what I am saying is that perhaps our unwillingness to deal with inflation in real terms by allowing the market response coupled with our unwillingness to deal with depletion led us to a situation where we were politically required to impose price controls, so one control begets another. One incentive begets more Federal incursion into the marketplace.

Perhaps we would be better off if in exchange for a removal of these particular tax advantages we could exchange a return to a marketplace

system which would allow any particular source of energy, be it natural gas or oil, to compete openly in the marketplace if it were able to compete, to require the resources for that industry then to continue their own development program, but it does bother me that we continue to lay one control after another on an industry, simply because we do not like the profits that they have had in prior years or the profits they may have in 1974.

I think that is true, and you may want to verify this. At least the indications are to me that profits would be substantially lower in 1975 than they were in 1974. Is that a fair statement?

Mr. CHALSTY. I think that is a fair statement.

Senator BROCK. Even if we do not deal with depletion?

Mr. CHALSTY. Yes, sir.

Senator BROCK. So we have all of the ingredients of a much, much larger problem in the next 3 or 4 years than we have had in the last 2 or 3.

Mr. CHALSTY. Yes; we do.

Senator BROCK. I appreciate your testimony, and I share your concern. Thank you very much.

Senator GRAVEL. Senator Fannin.

Senator FANNIN. Thank you, Mr. Chairman.

Mr. Chalsty, I commend you for your statement. You have brought out some very forceful data regarding what has happened and what you project will happen in the future. If we would just look back to the year after the depletion allowance was brought down from 27½ percent to 22 percent, I think we could take my own State as an illustration and see the disaster that came about. We dropped in drillings by more than 25 percent.

Was this fairly true around the country?

Mr. CHALSTY. Yes.

Senator FANNIN. And here we are talking about doing away with the incentive that made it possible for us to go forward with exploration. Do you think it would do any good if we changed the name of the depletion allowance to "Consumer Product Supply Insurance?"

Mr. CHALSTY. I am sure it would to some people, sir.

Senator FANNIN. The total retained earnings of corporations in 1965 was approximately $20 billion. In 1973 that had dropped to $7 billion, and now in 1974 I have heard figures all the way from a minus $10 billion to a minus $16 billion. We are in serious trouble as far as depending upon retained earnings for any part of that $20 billion which you indicated are needed to continue development. Didn't foreign earnings account for about $8 billion of the amount spent on domestic exploration?

Mr. CHALSTY. We tried in our analysis to separate out the total, if you will, foreign cash flow from the domestic. It is a very difficult calculation to make, and I hold no brief for its complete accuracy, but it was an attempt to separate out domestic and foreign, and it did in fact turn out that in 1974 and in 1973 the cash flow was very similar. The cash flow, which is earnings plus depletion, depreciation and amortization, was very close to total spending on exploration and development.

In other words, the industry used all of its funds, and as those funds increased in 1974, so did the level of spending increase in 1974.

Senator FANNIN. We are talking here about the earnings prior to nationalization and the dollar devaluation must be taken into consideration also. So many factors were involved of one kind or another in these matters.

But then we are talking about $20 billion, which is just one portion of our total energy investment requirements that is for exploration and development of petroleum. We must also talk about coal gassification, coal liquifaction, and the development of our shale oil industry.

Are we dependent upon the oil industry for dollars that will be going into those developments?

Mr. CHALSTY. Yes, sir. The oil industry, if it is allowed to do so, will clearly be spending money in other areas as well. Again, for the purpose of this hearing, we tried to separate out precisely those flows which had been attributed to and might be attributable to oil and gas spending itself, but you are quite right. There is a great deal more to the total energy picture than simply oil and gas.

Senator FANNIN. And as I understand it, the oil companies are the ones that have been involved so far in the bids for shale oil production, which is one of the sources that we talked about as having a significant potential. Although at this point price is such a great factor that we are not in a position to know just what can be done in that regard.

Do you feel that the availability of the $20 billion you referred to would allow us to better meet the goal that the President has for independence by 1980 or 1985?

Mr. CHALSTY. Senator, certainly it will better enable us to meet that goal. There are many of us who are concerned about our ability to meet that goal in any case.

I guess I am answering your question in a negative sense by saying that unless we spend those kinds of funds, we greatly impede our ability to come even close to that goal. What we need to do is to be able to replace every year what we consume. Otherwise, we will have no chance of meeting that goal.

It seems to us it takes at least those kinds of funds—and many would argue more—but at least those kinds of funds to meet that objective.

Senator FANNIN. You remember the figures that Chase used, $1.3 trillion? Now, do you recall whether that was until 1985?

Mr. CHALSTY. I am sorry. We have those data, but I do not have them here.

Senator FANNIN. Well, I feel when we talk about the $20 billion we are probably not below the figure that others have indicated will be needed. If we are talking about one rig in deep waters such as we have in the North Seat, or if we have some coastal areas in the North American Continent, what are we talking in money? Do you have any idea?

Mr. CHALSTY. Let me give an example closer to home, sir, if I might. In the 1970 lease sale, the industry has spent $2½ billion in bonuses and exploration and development of that sale up until now. Working on our best indications of what that sale has produced in terms of new reserves, we find a cost of those new reserves of, as I mentioned earlier, almost twice the $2 per barrel number that I used in reply to Senator Gravel's question.

So it has cost the industry some $2½ million in that 1970 sale to develop reserves in an area which most of us would feel is one of the

more prolific for new resources, and yet the number there, the cost in terms of dollar per barrel for replacement, was significantly higher than the number I have used in this calculation.

Senator FANNIN. Thank you, Mr. Chalsty. I appreciate very much your testimony.

Senator GRAVEL. I would just like to close up with one question about colloquial wisdom. Is it possible for oil companies to hide profits? I think you have heard as much as I the charge—oh, they are making terrible profits, but they are hiding them. You are an analyst of companies in our free enterprise system. Can any company hide profits?

Mr. CHALSTY. Senator, I am sure there is temptation in companies in all industries at times to hide profits and to a lesser or greater degree some kind of success might be achieved in doing that.

In my view the oil industry does not hide profits. We spend a great deal of effort in my firm and many, many others trying to find precisely whether that is the case. I think we bring to bear—I say not I alone, but we in our industry—bring to bear a great deal of expertise and effort and time to try to find whether that may have occurred. It is our conclusion that that is not the case.

And let me say only that that is not a conclusion arrived at simply by looking at balance sheets or 10 K's. That is a conclusion based on a fundamental knowledge and understanding of the cost of exploration, refining, marketing, transportation, so that one may build up from the bottom, as it were, a company, and we do not find major discrepancies between that fundamental analysis, starting with the volume data, as compared to those numbers that are reported, so I think I can answer with all sincerity that, no, there is not hiding of profits in this industry.

Senator GRAVEL. As you know, this is an emotional issue, and the Congress many times makes emotional decisions—evidence the House of Representatives wiping out depletion by over 100 votes—can the marketplace correct an error like this made by Congress? In other words, if we were to deregulate gas and oil, and wipe out the allocations program, is the marketplace sufficiently sound in your mind that the incentive would be there to generate sufficient capital through market mechanisms alone?

Mr. CHALSTY. Mr. Chairman, my answer to that is yes, it would happen. It would not happen overnight. When one gets into a system of regulation, as we have been required to have in the United States, various imperfections in the marketplace and in, for example, accounting treatment of profits, become ingrained in the system, and it is a fact, for example, that the elimination of depletion—a further complexity that I will go into if you wish—that the elimination of depletion has a disproportionate effect on the report earnings of companies because of a requirement for establishing a deferred tax.

Again, I would be happy to go into that in detail if you wish. Suffice it to say that that is almost an artificial constraint, an artificial constraint which I think over a period of time would disappear with the workings of a free marketplace, so although I answer yes to your question, I fundamentally believe that a free marketplace would work out these problems.

It will not happen overnight, and there will be dislocations in the capital markets while that is taking place.

Senator GRAVEL. Have you had occasion to analyze the excessive profits tax proposal in my bill, S. 1112?

Mr. CHALSTY. I have. I would confess not in the detail I would like to, and I would like to come back to you on that, if I might.

Senator GRAVEL. All right, I will forgo any question on that.

I was going to ask what effect it would have in a free market situation, if it would be a debilitating effect on capital acquisition, but I will forgo that. Very good.

Does anybody else have any questions?

The CHAIRMAN. I would like to ask just one other thing. I am very much concerned about this need of the independent producers to find funds to drill the many wells that they drill in this country. How do you think investors in money markets, such as the biggest one, the New York money market, would look upon proposals to invest money with independents in their drilling operations, the drilling syndicates, or whatever you might call them, where someone has some leases and he wants to go out and drill them in the hope of finding wildcat wells or developing a field.

If the depletion allowance is repealed, do you think that there would be sufficient attraction to attract investment money in competition with the other potential investments that people could make?

Mr. CHALSTY. Senator, it goes without saying that there would be an immediate change in the relative attractiveness of these various proposals, and the change for this industry would be negative.

I think it also goes without saying that, if I may step up a stage to some of those companies whose shares are publicly traded in the New York Stock Exchange, the behavior of the shares of these companies over the last few months would indicate a great investor concern over the intent in Congress—or what investors perceive as intent in Congress—to penalize the industry.

I think one can draw from that conclusion also the fact that a reduction in the incentives available, whether it be at the individual drilling fund level or in the securities for publicly traded corporations, would have a negative impact on the investor's willingness to put funds in the industry.

The CHAIRMAN. I was talking to a man who recently has more or less specialized in investment ventures to drill for new oil and to drill offsets, and what he told me was that he felt that if depletion was repealed, he would not be able to convince anybody in New York that they ought to invest anything in any further drilling ventures. Does that make sense to you?

Mr. CHALSTY. Well, Senator, I have not been involved in this particular venture that the gentleman is describing, or these particular ventures. I can again only refer to the fact that you will certainly have a deterioration in the incentive, and that deterioration, Senator, in my view, will show itself directly in a drying up of funds going into the industry from the outside, from outside capital funds.

The CHAIRMAN. Thank you.

Senator GRAVEL. Thank you very much, Mr. Chalsty.

I might add that since you are acquainted with Senator Kennedy and played rugby with him, maybe you could stop by his office and talk to him about the capital problems you find in the industry. It might help us tomorrow.

And you could stop by Senator Hollings' office when you are done with Senator Kennedy, even though you have not played rugby with him.

Our next witness was due to be John Miller, president of the IPA, but apparently Gerard Brannon, chairman of the economics department at Georgetown University must leave by 12:30, and I would like to recess the hearings at 12 and come back at 1:30 if we could—thereabouts 1:30 or 2.

Mr. Miller, can you make it this afternoon also?

Mr. MILLER. Yes, sir.

Senator GRAVEL. All right, let us hear Mr. Brannon. Thank you, Mr. Miller, for accommodating us on that.

Professor, the floor is yours. Proceed as you wish.

STATEMENT OF GERARD M. BRANNON, CHAIRMAN, ECONOMICS DEPARTMENT, GEORGETOWN UNIVERSITY

Mr. BRANNON. Thank you, Mr. Chairman. I would like to submit this statement for the record and try to summarize it briefly.

Senator GRAVEL. Thank you. We will accept it for the record.

Mr. BRANNON. One can no longer rely on the private market economy. Businessmen will not serve the national interest by pursuing their own profit in the marketplace. Business needs to be told by the Congress how to make a buck.

Now, that paragraph summarizes the case in favor of retaining percentage depletion. As I see it, the supporters of depletion are advocating a Socialist-type government intervention in favor of one kind of investment over others. Supporters of repealing percentage depletion are asserting that the time-tested conservative position of relying on the marketplace will work here. So the issue is, do we need a Socialist type of government intervention in favor of the oil and gas industry.

Now, prior to 1970, there was some reason for depletion. It served part of a program of protecting a high-cost U.S. industry from lower cost foreign imports. I think, and it is developed in my paper, that that program was largely unsuccessful. We did not have a reserve capacity when the foreign embargo hit us. But it is still possible that the change in the situation in the 1970's would make depletion appropriate, even though it did not work well in the past.

On the whole, I think there is nothing that has changed so as to make depletion a more appropriate energy policy. In the first place, percentage depletion says that for any particular end product, the more that end product comes from using up valuable resources, the lower will be the tax. You can imagine in the extreme, if some scientist were able to invent a way of producing energy out of a valueless resource, common dirt, and by expending a lot of money on manufacturing and processing the valueless resource, all of the income earned from that process would be taxed at regular corporation rates, and all of the capital that would be necessary to build up those manufacturing facilities would have to come out of income after tax.

What we say in depletion is that if you use up something valuable, if you reduce the available resources for the future of the United States, we will charge you less tax. Now, this has to be a poor environ-

mental policy, or a poor policy from the long-run standpoint of the United States. If you look quite specifically at this in energy terms, it turns out that we have an incentive that works very heavily for using oil. The tax benefit for oil is about four times that given to coal. It would be almost eight times the tax benefit that would be given to oil that was obtained by liquifying or gasifying coal. There is no benefit for energy from solar sources.

Now, another reason why percentage depletion is wrong is that it is structured to provide the greatest benefit for the oil production least in need of incentives. Basically, this oil depletion allowance says that the more you get for the oil, the more the tax benefit. It is particularly appropriate to a point that came up during the discussion today about tertiary processes. The depletion is structured such that the more the income from the property, the greater is the benefit. With tertiary recovery, where it was economically sound, it expected relatively low income from the property and relatively low or almost zero percentage depletion. You would expect the percentage depletion in those cases to be less than the cost depletion.

Finally, I would make the point just with regard to this efficiency of percentage depletion, that it is a poor way of dealing with risk. Basically—and several people have pointed out this connection between depletion and the price—in the long run righer percentage depletion means a lower price, so that the loss prospect for a marginal operator is increased at the same time the after-tax rate of return for the highly successful operator is increased; so that, you increase the spread between success and failure. Basically, this provision increases risk in the industry.

If you really were serious about being concerned over the riskiness of this investment, you would do something about investors who lose money, and you would look to narrow that return between success and failure which would be a way of reducing risk.

I would say specifically on this that there has been too much talk about the profit of oil companies. An oil company does a lot of things—it refines oil, it ships oil, it runs circuses and owns dry goods stores and real estate developments. The total profit of an oil company reflects all of these things.

Now, there has been nothing to change the market situation in any particular way in refining or marketing, except that these firms have had a little less raw material to work on lately. The windfall profit has been exclusively a matter of the production of crude oil, and it is the price of crude oil which reflects the development of windfall profits.

In an aggregate company, it may well be that these crude oil gains have been offset by losses on their real estate business or on their circus or on their refining operations. But it is that price of crude oil that is the peculiar development in the U.S. market which is associated with the OPEC controls that you ought to keep your mind on. Very clearly this price has gone up approximately 300 percent for new oil over the price that it was about a year or two ago.

This is more than enough of a price incentive to bring about an increase in resources devoted to drilling and expansion of productive capacity. Much of the statement that you have heard this morning has been in the direction of saying that it is not enough of a price increase with ordinary taxes to permit existing oil companies to pay for the

expansion. Now, this is particularly where I draw your attention to my opening paragraph. I believe in a free market economy. Ordinarily in a market economy when we need more of a particular product, the price of that product rises. Various resources that were not previously in that business find that this is a profitable business to go into, and it will expand. Repeatedly you have been subject to this argument that the ones who are already in this business would like to do all of the expansion, so give them the money so that they can expand. Tax them less than other people so that they can stay in the business and keep control of it.

Now, turning to these two specific amendments that your telegram referred to, I would say that there is no justification for a permanent exemption for the so-called independent producers. Again, look at this total oil business. In a sense, the independent producers are the richest kids on the block. That is where the windfall profits have occurred. In the whole oil business there are independent refiners and there are independent marketers. To pick out in effect the most successful small businesses in the country, to say that they should get percentage depletion on a million barrels a year, or $8 million to $10 million of income a year, really makes no sense. If you were concerned about concentration in the oil industry, you would design some kind of relief for these independents that were not getting these fantastic windfalls; namely the independent refiners and the independent marketers.

Furthermore, small producers are not necessarily people with small incomes. Notice the peculiarity of this percentage depletion deduction that you have. It is an incentive that is more valuable the richer is the investor. It is most valuable for the 70 percent investor. It is worthless for the fellow at the poverty level of income. For this reason the market has developed a whole set of tax shelter arrangements so as to attract rich investors into this business where they could treat it better than other people. If you persist in having a permanent exemption for something like 1,000, 2,000, or 3,000 barrels a day, which is respectively one-third, or two-thirds or a million barrels a year, what you will do is aggravate these tax shelter arrangements whereby this limited amount of depletion is so to speak farmed out to the richest investors who can take it against 70 percent bracket rates. Increasingly you will find that oil financing arrangements involve shifting off the production to separate companies so that they can be worked into tax shelters and get the attraction of rich investors.

I think if it is necessary to make some concession for small investors, it would be far more sensible to do this on a basis that phases out in a short number of years, as is provided in the Kennedy-Hollings amendment, because this gives a minimum time for rearrangement of ownership patterns and a minium time for setting up tax shelter arrangements. On a permanent basis this would just be meat for sharp tax lawyers who know how to construct tax shelters. I have done a lot of work with tax shelters. I think I know what would happen there.

In a sense, what has been going on in this drilling thing is that it has been a rich man's club. We have constructed this arrangement of providing incentives through peculiar treatment of intangible drilling expenses on success for wells and percentage depletion, so that rich investors get a lot more out of it than other people.

We have constructed a lot of arrangements already where wells are structured to be financed by rich investors. You get a lot of testimony to the effect that wells will not be financed next year the way they were last year if you take away percentage depletion. My answer to that is "Yes"; I have sufficient confidence in the American market economy to believe that we do not have to go along running this as a rich man's club.

With regard to your particular amendment to make the percentage depletion allowable to the extent of a taxpayer's domestic energy expenses over his worldwide energy expenses, I would suggest that this would turn out in practice to be incredibly complex. You have an extremely difficult attribution role in this case in which you require that firms with any sort of common ownership be looked at collectively, and that the expenses undertaken by a firm be attributed down to the individual owner of the firm. All of this attribution is left to Treasury regulations, so that as I said, an enormous amount of complexity would be involved in following these exemptions. Attribution rules are one of the toughest areas of the Internal Revenue Code. The result of all of this is a very peculiar set of rewards and penalties. In a sense you do not penalize foreign operations. What you penalize is foreign operations and domestic operations occurring in the same company. So long as they occur in different companies, there is no penalty. The repeal of percentage depletion for foreign operations is completely meaningless because of the rate of foreign taxes and the foreign tax credit that percentage depletion has no effect on foreign operations anyway.

So, in a sense, you have a penalty on corporate structure, not on either foreign or domestic operations. In effect, so long as they are handled in the appropriate corporate structures, you leave the law exactly as it is. For the reasons I have developed before, I think this would leave us with a very unwise provision with regard to percentage depletion.

Thank you, Mr. Chairman.

Senator GRAVEL. Thank you very much, doctor.

You made the statement that you believe in a free economy. Of course, at present we do not have a free economy, because if you take away depletion from natural gas, gas is regulated so that the market will not adjust unless you deregulate natural gas. The same, of course, is the case with old oil, and then of course with the whole allocations programs where we do not allocate oil on the basis of efficiency or demand or what have you. It is purely a bureaucratic decision.

Can I interpret your statement to mean when you say that you are for a free economy that you would agree with me to wipe out depletion but also deregulate natural gas and deregulate oil and wipe out the allocations? Woud that be your position?

Mr. BRANNON. I have testified more extensively on this particular combination before the House Ways and Means Committee, and I have written on this. I certainly favor the deregulation of natural gas on new properties. On oil I favor getting out of the present structure of regulated prices as quickly as we can. It does seem to me that there is an enormous windfall involved in an $11 or a $12 market price for oil that is being pumped out of wells that were developed and really designed for a market to sell at $3.50; so that in addition I would like to

see some sort of a windfall tax with regard to old oil. But basically, I would like to see a free market; yes.

Senator GRAVEL. Well, I have in addition to that proposal an excessive profits tax on profits in excess of 15 percent return on capital invested. There would be a plowback, but excessive profits not plowed back would be taxed at a confiscatory rate of 80 percent.

Will that meet your criteria?

Mr. BRANNON. I would thoroughly disapprove of a plowback. In effect, a plowback is saying that we are going to provide an incentive for investment in the energy industry but the only people eligible for this incentive are people who are already in the energy industry. If you want to subsidize new investment in energy, do it, but do not do it in a way that limits it to the club.

Senator GRAVEL. OK, well, let us say you are in agreement and it was Mr. Nader's office that brought your testimony to our attention. I wonder if you could secure—this would be very valuable tomorrow on the floor—if we could get a letter from Mr. Nader, if he has a like view as you that in the process of doing away with depletion that we would reestablish a free market economy, and that would be to deregulate gas and oil, and of course, the old allocation program.

Mr. BRANNON. I can only speak for myself.

Senator GRAVEL. But that would be your position except for the windfall aspect of it.

Mr. BRANNON. Yes; I would say that there would be a very substantial windfall with regard to old oil.

Senator GRAVEL. But leaving the windfall problem here, that would be your position.

Mr. BRANNON. Yes, sir.

Senator GRAVEL. Which is in agreement with mine. Now let us address ourselves to the windfall situation. You say in your statement here that windfall profits are indicated by crude oil prices, not by profits. I do not have that depth of knowledge of economics, but would there not have to be, if you are defining windfall profits, would there not have to be some consideration of cost, which is what is related to profits?

I mean, supposing, as you stated and as is the conventional wisdom today, and I might just respectfully correct—I do not know of any oil selling in the United States for $12 a barrel. The average between old and new is about $7.25, new going for around $10.25, and the other $5.25.

But regardless of that, if—and I do not know if you were in the audience when I pointed it out—that if you own a quantity of oil and all of a sudden the price changes, you have that inventory of oil. It is now more valuable. Supposing it costs you $2 a barrel to put that into your inventory and now you can sell that for $8 a barrel. Obviously, you have what you would define under your proposal here, a windfall profits tax, and that would be so for that year, and the company would pay more normal corporate taxes on that sum. But since the company is going to be in business next year, it has to go buy oil to replace what it has already sold and it has to buy it at the new price.

So in point of fact, is there a windfall profits tax or do they now have to go buy oil at this higher price? And do they not have in essence what you call a paper profit for that year and they are taxed on that paper profit so they pay more taxes?

Now I wonder if you could address yourself to that thesis.

Mr. BRANNON. All right. I would recall basically the way Senator Bentsen responded to that question, which was to say that when you talk about inventories in the oil industry, you are talking about oil in the ground and you are talking about the productive capacity of this well over 20 years, which is a rather typical well life. Now in that context your description of the situation was that since the oil has become so very much more expensive, you need more wells. Do not tax the windfall for this fellow and help him drill a new well.

Now this is, again, this mentality of helping out the good boys in the club, I believe in a market economy with a rising price of oil, we will attract new investment in oil. The last witness spoke specifically about the process of bids in offshore drilling, and essentially what that bidding process means is that a particular driller expects to make so much money from the opportunity to explore this point in the Gulf of Mexico that he is willing to pay enormous amounts of money to the Federal Government simply for the opportunity to make a buck on that. And this is how attractive that prospect is. In a market economy other people will find this attractive, and it is not necessary to say that we will refrain from taxing windfall profits in order that the people already in the oil industry can outbid other people for the opportunity to exploit these developments.

But you see, basically lease bonuses are not money spent on developing oil. They are transfers to the landowner for the opportunity to get one's hands on this juicy business opportunity.

Senator GRAVEL. Thank you very much.

Senator Hansen.

Senator HANSEN. Dr. Brannon, do you believe that there is any logical reason for giving any industry which produces a finite resource a depletion allowance?

Mr. BRANNON. A cost depletion allowance; yes.

Senator HANSEN. Pardon me?

Mr. BRANNON. Cost depletion, the answer is, "yes."

Senator HANSEN. What do you mean by the cost depletion?

Mr. BRANNON. What the tax law says is cost depletion, the initial cost of developing this well spread over the estimated recovery, producing a certain amount of recovery costs per unit extracted similar to depreciation on a business investment.

Senator HANSEN. Well, my question would be broader than that. What about the development of any other finite resources where oil is not involved? Would the same basic statement apply?

Mr. BRANNON. It should be only cost depletion, yes, sir.

Senator HANSEN. Were you concerned about the growing dependency that we have observed on the part of the United States toward foreign producers over the last several years?

Mr. BRANNON. Well, you are talking specifically about the period since the mid-1950's, yes, and what I said in my statement that our response to this, which was to adopt a policy of drain America first,

was irrational. The sensible response to this would have been to accumulate a reserve of readily available petroleum, either as current inventory in storage tanks and salt domes, or in abandoned mines and for the long run reserve in shut-in wells, and at the same time for our current needs use all of the foreign oil we could get.

Among other things that approach would have given the United States the flexibility to increase its purchase from any foreign country that raised price or decrease its purchases from any foreign country that raised prices. We could increase from price cutters and cut off price raisers. When we had a quota in effect we were announcing to the world that there is no use cutting your price to the United States because you cannot increase your sales that way. We encouraged OPEC to develop a cartel. We told them that they could not make anything by the standard business practice of price cuts.

So I would say the policy that we had was a complete failure.

Senator HANSEN. Have you done any figuring on the cost of proposal you envisage and the cost to the country to develop standby wells and reserves and storage tanks and so forth?

Mr. BRANNON. Something like 75 cents a barrel a year.

Senator HANSEN. Could you submit that material for the record if you have not already done so?

Mr. BRANNON. I would be glad to submit references to this.

[The following material was subsequently supplied by Professor Brannon:]

Walter Mead and Philip Sorenson "A National Defense Petroleum Reserve Alternative to Oil Import Quotas." Land Economics, vol. 47, p. 211, August 1971. Also Walter Mead "The Cost of Storing Oil", testimony before the Committee on Interior and Insular Affairs, U.S. Senate, May 30, 1973.

Senator HANSEN. Do I understand you to mean that for 75 cents a barrel per year cost we could have sufficient standby reserves so that if we were dependent almost exclusively on foreign sources, we could pickup and utilize these domestic resources almost overnight to fill the breach?

Mr. BRANNON. Yes, sir.

Senator HANSEN. I have no further questions.

Senator GRAVEL. Thank you very much, Doctor. We appreciate your coming.

[The prepared statement of Professor Brannon follows:]

PREPARED STATEMENT OF GERARD M. BRANNON, PROFESSOR OF ECONOMICS, GEORGETOWN UNIVERSITY

SUMMARY

1. Percentage depletion is a tax-subsidy that served the U.S. badly in the 1960's when foreign oil was cheap.

2. Now, with foreign oil expensive, percentage depletion for oil and gas is an inappropriate energy policy because:

it irrationally rewards using up valuable resources and penalizes substitution of cheaper resources;

it provides the biggest advantage to the case of least need; and,

it aggravates risk.

3. The increase in crude oil prices and the increases in natural gas prices provide an appropriate time for outright repeal. Windfall profits are indicated by crude oil prices not by company profits.

4. There is no justification for retaining percentage depletion for a limited amount of oil per taxpayer. A permanent provision like this would spawn endless tax shelter arrangements.

5. Reduction of percentage depletion in the relation of domestic energy expenses to worldwide energy expenses is an irrational combination of rewards and penalties. Outright repeal is far better.

STATEMENTS

Mr. Chairman and Senators:

"One can no longer rely on the market economy. Businessmen are too dumb to serve the national interest by pursuing their own profit in the marketplace. Business needs to be told by the Congress how to make a buck."

That paragraph is the core of the case in favor of retaining percentage depletion. Supporters of percentage depletion are advocating a socialist type of government intervention to favor one kind of investment over others. Supporters of repealing percentage depletion are asserting that the time tested conservative position of relying on the marketplace, will work here. The issue is "Do we need a socialist type of government intervention in favor of the oil and gas industry?"

Prior to the 1970's there was some, but not much reason for answering this question in the affrmative. Foreign oil was more efficiently produced than U.S. oil and security considerations suggested government intervention to protect the high cost U.S. industry. This took the form of tax relief for profitable wells plus import quotas to drive up the U.S. price.

This prior policy must be regarded as a failure. A rational response would have been to use cheap foreign oil and simultaneously maintain a readily available reserve both as inventory and shut-in wells. The quota encouraged the formation of OPEC since it announced to foreign producers that selling oil to the United States at a lower price could not increase the market. A program of purchasing oil for a reserve inventory would have given us the flexibility to buy more from price cutters and less from price raisers.

The policy that we followed produced no reserve capacity with which to meet the foreign supply developments of the last year. In the past 18 months the U.S. output has been falling. This outcome could have been expected from a policy that was best described as Drain America First.

Even if percentage depletion and import quotas were bad policy in the 1960's, is it possible that the new situation of the 1970's just happens to call for this system of percentage depletion? The answer is no for a number of reasons.

Percentage depletion says that for any end product, the more of the value added that comes from using up valuable resources that are scarce in nature, the lower is the tax. An incentive for using up scarce natural resources has to be completely backwards. From a national interest standpoint we should cheer when a process is developed to apply manufacturing to a cheaper, more plentiful resource to obtain a competitive substitute. Under the percentage depletion system this substitution causes the tax to go up!

This feature of percentage depletion in making the pay-off depend on using more scarce resources is particularly inappropriate from the standpoint of an energy crisis. Percentage depletion is zero for solar energy and about four times higher for oil sold to an electric utility than for coal. Energy from liquified or gassified coal or from oil from shale would get even less percentage depletion because of the large component of value added by manufacturing in those fuels. To impose a competitive penalty on competitive fuels is madness.

This discriminatory effect of percentage depletion cannot be avoided by extending the system more generously to coal and shale because the theory is wrong. From the standpoint of the energy crisis there is as much value in investing in machines that use less energy as there is in finding new sources. Subsidizing energy resources simply reduces energy prices in the long run and reduces the pay-off from introducing energy economy.

Another reason why percentage depletion is wrong is that it is structured to provide the greatest benefit for the oil production least in need of incentives. In an energy crisis what we want is production from marginal wells. Percentage depletion is a maximum for properties that would be operated anyway, properties with expenses below 56% of the gross income. Producing more oil calls for working less productive fields, or for incurring heavy secondary recovery expenses, but in these cases expenses on the property would be high relative to

gross income and percentage depletion is cut down. The lowest incentive goes to the property with the most need for an incentive!

Another reason why percentage depletion is inappropriate is that it is a subsidy that varies with the income of the taxpayer. Along with the deduction of intangible drilling expenses, it particularly lends itself to tax shelter operations which are more concerned with maximizing tax savings than with achieving greater efficiency in energy production.

My final comment on the efficiency of percentage depletion refers to the argument sometimes made that this provision is needed because of the higher risk in oil production. This argument holds neither water nor oil because percentage depletion, if it affects output at all, increases risk. If it increases supply it will reduce price in the long run and increase losses for sub-marginal wells. At the same time percentage depletion increases the after tax return for successful wells. This increase in the range between success and failure is an increase in risk. If you were serious about reducing risk, you would have to subsidize losses not gains.

Percentage depletion on oil and gas is an inefficient waste of $3 billion of federal revenue that would be better applied to general tax rate reduction. Still, is this the time to repeal it? The answer to this question is yes, because oil operators are enjoying fantastic increases in oil prices. The price of new oil is 300% of the oil price of two years ago; the price of old oil is better than 150% of that base price. Even the Treasury Department is proposing windfall profits taxes on crude oil.

In looking at these windfalls, do not be distracted by company profit figures. An oil company does lots of things besides producing crude oil in the U.S. Some produce and refine oil abroad; some refine and market oil in the U.S. as well as manufacture petrochemicals; some own circuses, dry goods stores and real estate developments. The energy windwall problem is specifically a matter of the price of domestic natural resources for energy.

A particular oil company may have had losses or only modest profits on its refining or its real estate developments. Its profits on foreign operations are being squeezed by the OPEC landlords. These things should be of no interest to this Committee. That the Mafia loses money on some legitimate business does not cleanse its windfall profits from illegal gambling. You need to keep your eyes on the windwall problem by itself and this is a matter of crude oil prices, not the total income.

Nearly all properties now in operation were planned and developed for an oil market with a price below $3.25 and they are now getting an average return of nearly $8. The percentage depletion deduction on a price of $3.25 would be at most $0.72 and more typically $0.52. The unexpected price rise is far more than enough to offset this. Most of the costs on these wells have already been incurred so the price rise goes mostly into profit. Where this high price brings into operation some marginal properties with much higher costs, they would not benefit significantly from percentage depletion anyway.

I have discussed these issues of the efficiency of percentage depletion more extensively in my book, *Energy Taxes and Subsidies*, Cambridge, Ballinger 1974.

In the current debates about the repeal of percentage depletion, several alternatives have received much discussion. One is a proposal to retain percentage depletion for "independent" producers such as by allowing percentage depletion for the first million barrels a year.

This is fantastic as a small business provision. There are small refiners and small marketers in the petroleum business as well as small producers. The small producers are the richest kids on the block. Unlike the integrated companies, they don't have the indifferent profits on refining and marketing to water down their crude oil windfalls. If you were seriously concerned about concentration in the oil industry, you would do something for independent refiners or independent marketers.

Furthermore, small refiners are not necessarily people with small incomes. The presumption is the other way because percentage depletion is more valuable the richer the investor. For an investor in the 70% bracket, percentage depletion at 22% on $1 of income produces a tax saving of $0.154 which is as good as a 51% increase in price. For a middle income person in the 30% bracket, this depletion saves $0.066 which is as good as a 9% increase in price.

Compared with the standard market procedure of competing for resources by paying before tax money, the shift to percentage depletion is 5 times as generous

for rich investors as for middle income people. This is an unconscionable rip-off on the public.

Preserving percentage depletion on the first $8–10 million of oil income is an invitation to tax shelter arrangements, to find ways to direct the limited percentage depletion to the richest investors. These deals will be complicated by efforts to break up existing holdings so we would be inviting the shoddiest kind of tax planning. If some political blackmail must be paid, it should be in the form of a limited percentage depletion allowance that phases out completely in a few years. There will be a very limited payoff to investment manipulation on a provision that phases out shortly. A permanent exemption for even $2-5 million a year (300 bbls a day) does provide this incentive for manipulation.

I have no sympathy for the argument that since in the past the financing of oil wells has been a rich man's club, it must stay that way. A lot of marginal exploratory drilling, with relatively scientific input of geological and geophysical analysis has been financed by rich investors simply because the tax system favored rich investors, to a scandalous extent. To say that the business of oil well investment cannot proceed in a normal way, responding to the price of oil, is simply an assertion that capitalism doesn't work. I don't believe it.

Nor am I impressed by the argument that without percentage depletion independents will simply sell their wells. This involves a considerable anticipation of income and paying tax now on income that would otherwise be earned in the future involves a considerable loss of interest. If you are concerned about this possibility, a more sensible solution is a re-capture provision similar to that applied to real estate sales. Gain, to the extent of ordinary income deductions already taken on the property as intangibles, should be treated as ordinary income on sale.

Another alternative that has been proposed is to allow percentage depletion to the extent of the ratio of the taxpayer's domestic-energy expenses to the taxpayer's world-wide energy expense (S. 1112 Sen. Gravel). This would be incredibly complex since it would require the application of very complex attribution rules. More importantly, this kind of formula is conceptually wrong because it mixes penalties and rewards for very different things.

If you want to penalize foreign energy operations, you should penalize *them*. This provision imposes a penalty only if the taxpayer has both foreign and domestic energy operations. With only foreign operations there is no penalty. (Denial of foreign depletion is meaningless.) If a firm is already heavily invested abroad, it would find the efforts to shift gradually into the domestic energy business would be penalized. The only thing this provision penalizes is putting foreign and domestic energy operations into the same company. So long as foreign and domestic operations were handled by separate companies, the provision has no effect. We are certainly concerned with more fundamental issues than the corporate structure of energy companies.

I strongly endorse the repeal of percentage depletion for oil and gas that was provided by the House bill.

Senator GRAVEL. Next will be Dr. MacAvoy, and understand that you have to leave also at 12:30, so we will hear you and then we will adjourn until 2.

It is nice to have you up here again.

STATEMENT OF PAUL W. MacAVOY, PROFESSOR, MASSACHUSETTS INSTITUTE OF TECHNOLOGY

Mr. MACAVOY. A year has passed since we have discussed these matters. I had the opportunity to sit before you and Senator Hansen this time last year with reference to natural gas price, investment tax, and other incentives. Another year has passed. The circumstances are not favorable compared to those that we discussed last year. I would like to spend the time available to me in concentrating on the situation of natural gas at the present time because Senate consideration of oil and gas depletion allowances requires a review of the conditions of production, demand, and pricing in these industries.

Senator GRAVEL. Doctor, could I interrupt you for one moment? Is this essentially the same kind of testimony you just gave to the Commerce Committee?

Mr. MACAVOY. In kind, yes. I departed significantly from my prepared statement there. I am just about to revolt against my prepared statement here and make it even stronger, given the testimony that was given by others before the House Commerce Committee in the last 2 hours. The consideration, as you put it just a few minutes ago, is whether depletion allowances should be changed significantly now on the presumption that we have free markets in energy and that elimination of the allowances would move us to a long-term equilibrium condition that more efficiently uses resources. This consideration seems to me to be hardly appropriate because, as you noted quite clearly, there is not a free market in natural gas at this time and the present regulated market in natural gas is significantly disrupted by conditions of shortage which are permanent—not permanent, but which are systematic and very large in scale.

I would like to discuss these conditions of shortage. I would like to discuss from there the possibility that these could be changed so that a consideration of oil and gas depletion allowances would be relevant.

It appears from a wide variety of sources that there have been persistent and growing shortages of natural gas now for 5 years. The shortages have affected most parts of the country in that period. They appeared first in 1971 when interstate distributors were 3.7 percent short of meeting consumption demands of communities and industries. Curtailments alone will probably exceed 10 percent of demands in the 1974–75 home heating season. The shortage of natural gas is greater than 10 percent of demands because many retail utilities have long since disallowed the introduction of service to new cutomers so that their excess demands are no longer being registered.

Also, under full employment growth, the curtailments at the present time are not indicative of long-term circumstances in the economy. There probably would have been demands under normal conditions for at least 3 trillion cubic feet more than the 23 trillion cubic feet consumed this year. This would have been more than 12 percent of demand.

There is little prospect for reduction of shortages in the next 5 years unless there are large, unexpected discoveries perhaps in Senator Long's Louisiana, or unless FPC regulation changes in some unforeseen way, and excess demand will grow to more than one-quarter of total demands by 1980. This is not only the prediction of the Economic Research Group at MIT, but also that of the American Gas Association's econometric model, which is called TERA, and that of the FPC staff in the gas division. Indeed, the FPC staff forecasts that assuming continuation of present day regulatory conditions, the shortages will be larger than 30 percent of demands by the end of the decade.

We have used the MIT econometric model to forecast where the shortages will occur. Not all regions of the country will experience the same amount of shortage. By the late 1970's, shortages in the north-central region of the country are expected to be so great that all industrial and commercial consumption will have to be eliminated. This

assumes that the FPC continues to curtail industrial and commercial consumption before residential consumption. With shortages equal to the size of industrial demand, these demands will have to be met by other sources of energy or by reductions of employment or income. This means that we will forecast that the gas used in drying crops, in the manufacture of agricultural equipment, in space heating, in the automobile industry, in processing of glass and furniture, that Michigan, Indiana, Illinois, Wisconsin, will effectively be eliminated from natural gas markets. The use of other fuels will be limited by the higher price to be paid for fuel oil and propane. The use of other fuels will be curtailed by the environmental protection regulations on the quality of emissions from stacks.

Under these circumstances, without being overly precise, we have forecast that there will be a significant reduction in employment in the northern half of the country, particularly the north-central region as a result of a continuation of the natural gas shortage. The MIT forecast group dealing with gas and oil problems is considered across the country to be wildly optimistic. We have forecasts that are much better than those of other sources. The AGA TERA model forecasts that shortages will be 5 to 10 percentage points higher than ours.

Senator GRAVEL. Doctor, which page are you on right now?

Mr. MACAVOY. I am departing significantly from the top of page 3.

Senator GRAVEL. OK. The reason I ask, the data you talk about, unemployment and so forth, that is not mentioned here. Do you have any other papers involving unemployment that you could provide us?

Mr. MACAVOY. One of the reasons why I depart from my statement is that I branch out into the frontier of our work very hesitantly. We have done considerable work on forecasting sizes of shortage by reason the shortages will be greatest in the Northcentral, the Northeast, and surprisingly, in the Southeast, Georgia, Alabama, Florida, and South Carolina. These regions will experience significant curtailments of consumption of gas energy in industry. Translating that reduction in consumption either into an increase in demand for fuel oil and propane or into more unemployment and reductions in output is very difficult. We do not have the forecast capability to make a quantitative estimated at this time.

At the end of my testimony I am going to get into some first attempts to do this that will be carried on at Harvard and MIT in the next year. Again, I tread perilously on the edge of economic forecasting. The three of you are aware of how perilous it is in the middle of economic forecasting. The quality of predictions in the use of economic models, econometric models, leaves something to be desired. Getting way over on the edge leaves even more to be desired.

So although I am very eager to provide you with more information as it comes, I have not been able to go further than my amendment of a minute ago.

The demand forecasts of the MIT group appear to be somewhat higher than those of alternative agencies in the business of forecasting the natural gas shortage. There are reason to believe that the FPC and AGA forecasts are biased in a downward direction. A series of studies have been carried out in the Federal Energy Administration and at MIT comparing forecasts and looking for sources of error

These lead us to believe that the FPC and AGA forecasts are unreliably low when they are estimating the demands for gas using the MIT demand forecast. But using the more cautious supply forecasts of the AGA or the Federal Power Commission leads us to predict with this combination of models that the shortage could be as large as 40 percent by the late 1970's. Not the early 1980's, but the late 1970's.

This pessimistic view says that industrial consumers will not get almost all of the gas they demand in the Northcentral, the Northeast, and the Southeast. There will be no more industrial use of gas for process methane or for space heating or for boiler use. It means that there may be some curtailment of consumption in households as well.

I cannot myself predict the political process by which households in the northern half of Massachusetts, including my own, will be required to reduce gas consumption in weather like we had last week.

The conditions that we are predicting then come to a shortage somewhere between 20 and 40 percent. Virtual elimination of industrial uses of gas and demands in the North, and some possibility of household curtailment as well, these are the product of the Federal Power Commission determination in the 1960's to "hold the line against increases in natural gas prices," as they stated themselves in their 1964 annual report. The FPC succeeded in keeping new contract prices approximately the same for the period 1961 to 1969, while prices for distillate fuel oil at wholesale increased by 15 percent and coal increased by more than 25 percent. This made natural gas a desirable fuel for industrial use in the States in which price controls did not apply and it dampened incentives for new exploration and development of gas by fuel producers.

Reversals in regulatory policy in 1971 and thereafter have not been sufficiently strong and rapid to reverse the long lags in discovery and production. The FPC has stopped short of deregulating new contract prices at the wellhead, and as long as it continues to do so, the shortage will persist.

Are there polices which are in the offing for the Senate which may ameliorate this shortage in the next few years? Going through all of the large forecast vehicles, the econometric models, and the industry's own forecast, there seems to be general agreement that very little will occur within a year or two. The lag process from exploration to development to commitment of reserves to building of gathering lines to production and delivering to the North is sufficiently long that nothing can be done perhaps to reduce the shortages in the period 1975, 1977, or 1978. The Congress is now faced with literally thousands of bills to deal with natural gas price controls. I have not even been able to conjure up a round number for the number of bills. I foresee Congress doing nothing else for the next 2 years besides reading those bills. If they were to attempt to do so, the physical shortage of energy in Senate and House members and staff would be acute.

However, we can divide these bills down into type and we have attempted to use the MIT model, the most optimistic of the models, to forecast the effects of changing the price controls according to one type of proposed legislation or the other. One category of bills might be called a continuation of regulation type proposal. This may be of the

form of either a mandate to the Federal Power Commission to follow very specific roles in allowing price increases. A number of bills proposed that.

Another more subtle form of contamination of FPC regulation is the bill of the Senate Commerce Committee which proposes that the Senate become the Federal Power Commission and set price limits for the next 5 years. This warms my heart because, again, it indicates that we do not learn from history. If one reads the history of the Granger laws in the Midwest in the 1870's and 1880's, one finds that State legislatures did this. They set limits in nominal dollars, current dollars, on the prices that could be charged for transporting grain over the railroads. The price limit, roughly speaking, may have been 2 cents per ton-mile. The changes in the economy at that time made that price either four times greater in 3 years than when the bill was passed, or one-fourth the amount when the bill was passed.

In one period in Wisconsin inflation was so extensive that with the piece of legislation and nominal prices effectively being held constant, the railroads in the State just refused to stop anymore in that State. The charges were uneconomical for unloading railroad cars.

History has not been learned for the Senate Commerce Committee. Under these circumstances a continuation of nominal price regulation by having the staff of the Commerce Committee decide what the correct price is for the next 5 years in an economy subject again to very strong inflationary tendencies is likely to lead to more disaster than even that perpetrated by the Federal Power Commission.

I offer these bills as a package. They do not seem to me to be very different from each other.

The forecasts also have been made for an alternative, and I would like to spend an extra minute or two explaining this alternative because it lies behind a number of bills and is not very well revealed.

The administration and others have at times proposed something called phased deregulation. Essentially, the goal of phased deregulation, as I understand it, would be to direct some agency, the Federal power Commission, the Federal Energy Administration, some operating branch of the Executive Office, to try to remove the shortage to eliminate the shortage by the early 1980's. The target would be to put the Federal Power Commission out of the business of curtailment proceedings by 1980, 1981, 1982. This is the challenge. Can we find a price series, increase prices on new contracts, perhaps on old contracts as well, which would generate the income necesary to bring forth the supply to meet demands in the early 1980's.

We have attempted at MIT to use the model, the econometric model, to forecast what these prices would be. We now forecast that under conditions in which prices of alternative fuels are slightly lower than at the present and under conditions in which interest rates, cost of capital, are about the same as at present, that the target prices would have to slightly exceed $1 a thousand cubic feet in 1980 or 1981.

This is equivalent to wellhead prices of $6 a barrel for gas with delivery charges for natural gas to the north-central and Northeast going down slightly, and final distribution charges remaining the same. This comes out to roughly $2 a barrel equivalent natural gas in that period. The reason why we forecast delivery charges should go down

is because they have been going up. In the face of curtailment of production, the pipelines have had the opportunity under Federal Power Commission regulation to increase their delivery charges with reduced delivery and fixed overhead costs in the last year or two. With increased delivery, these transportation charges per thousand feet could go back down.

The combination of rolling in a $1 wellhead price with old contract prices at their present level and a reduction in delivery charges ought to be sufficient to curtail demands and increase supplies to a level close to 28–29 trillion cubic feet.

These are optimistic forecasts. They depend critically on ability of the United States to purchase more than 2 trillion cubic feet from the Canadians. They depend upon an expanded and well-directed offshore leasing program. They depend as well on a leveling of the import and domestic prices of oil. These three sets of assumptions together lead to a forecast that a dollar will be enough. Because the econometrics is very inexact and because, as we know, these three assumptions are terribly perilous, one can hold them for short periods of time but not with any certainty.

Then I would argue there is a range, an error band, around that target forecast price as large as 30 cents to 40 cents per thousand cubic feet. That is, if the Canadians embargo also natural gas to the level of a trillion cubic feet a year, if the offshore leasing program moves slowly, if the prices of oil were to go to the level of $12, $13, $14 a barrel so that resources that would go into exploration for gas are diverted to oil exploration, then I would expect that the required price to achieve energy equilibrium in natural gas would be higher.

The reason for stressing this error band is because it seems to me to be impossible with these conditions for the Senate itself to decide the exact just price, say to one-tenth of a cent per thousand cubic feet. Perhaps this is the most uncertain of forecasts, and given the strengths and weaknesses of the legislative branch of the Government, perhaps this is the one case where the setting of price should not be left to legislative directive, and therefore, annual amendment or quarterly amendment to make sure that it gets to be right in a year or two or three.

The American Gas Association itself, and industry analysts, predict that the MIT forecasts are a bit low on price and a bit high on production; perhaps low on price by 20 cents a thousand cubic feet, perhaps high on production by 2 trillion cubic feet.

I feel it is necessary to stress this in my testimony because industry analysts themselves, those closer to the data than university forecasters, are less optimistic than we. Under these conditions, it may well be that one should be setting a target in the FEA or the FPC of prices in the range of $1 to $1.50 for new contracts in 1980.

We have attempted to ask whether these target prices are inflationary. This is, of course, a concern to Congress. Each bill is now of critical interest to the Senate Finance Committee in terms of the effects on general price levels, on production and employment throughout the economy. Would raising the price of natural gas have a tendency to increase, for example, the GNP deflator, the wholesale price index, or the retail price index? Would increasing the price of natural

gas add to unemployment in industry? This question is the most difficult to answer in terms of the capacity and experience of economic forecasters. This is a classic example of a problem in forecasting that cannot be worked out on the back of an envelope and then checked with a thousand equation econometric model. It is impossible to work this out very clearly because the relationships between the price of gas, the demands for fuel oil, and the relationship between the energy and the production sectors of the economy are quite complex, and quantitative estimates have to be made as to the direction and the extent of these relationships.

I have never made an argument, particularly before this committee, that is a hard sell for an econometric model. However, in this case I am going to come close to that, because it is necessary to combine the large-scale economywide models with the gas and oil forecast models that I have been using in order to obtain some indication of the direction of the effects of gas deregulations, phased deregulation for general prices in the economy.

We have attempted to do that at Harvard and MIT through the coupling of the Harvard Hudson-Jorgenson economywide model with the MIT gas and oil model. The Harvard model was built for the purpose of evaluating the Ford Foundation energy policy projects proposals for solving the energy crisis in the 1980's. As you will recall, the Ford energy project volume entitled "A Time To Choose," provided a series of alternative forecasts of the economy under various public policies. Those forecasts were worked out using the Hudson-Jorgenson model because that model shows input/output relationships between energy and production of goods and services.

We have pasted with Scotch tape the MIT gas and oil model to the Harvard economy wide model, and have found that the result of gas price increases is to reduce the GNP deflator and increase general GNP output. The reasons for this forecast are fairly clear once one works the system backward. With a fixed stock of imports of oil from abroad, the introduction into the American economy of increased amounts of gas has a tendency to replace consumption of high priced foreign oil and very high priced domestic propane with lower priced gas. This has a tendency to substitute fuels for capital and labor, and increase output throughout the economy. The change in output is fairly modest, on the range of 2 percent or 3 percent throughout the period 1976 to 1983–84. The change in price is also modest; that is, the GNP deflator is not reduced very much.

However, the sum total of these effects is important because it moves us in the right direction; that is, toward an efficient use of gas resources to replace higher priced imports, and to add to the production of the economy as a whole.

I would summarize this work as follows. The continuation of present national policy with respect to gas regulation will lead to significant shortages which will lead to reductions in employment output and increased cost for industry in the North and Eastern parts of the country. A consideration of depletion allowance legislation is not appropriate under these conditions. Until we move to a concerted 5-year policy of increasing gas prices so as to eliminate the shortages in that area, we cannot achieve efficient use of resources in the energy sector,

and the issue as to whether depletion allowances add or subtract from the efficiency of use of resources is essentially irrelevant.

I would hope that the Senate would stop and look around or look backward as it moves toward a change in depletion allowance regulations at the gas shortage before it proceeds.

Thank you very much, gentlemen.

The CHAIRMAN [presiding]. Dr. MacAvoy, you have made a fine statement. I do not believe I have had the privilege to hear you testify on this subject before, but I have read some of your statements. I am pleased to hear you testify today because I think you have done very fine work and have made a very good contribution to the solution of the problem.

It has occurred to me that there might be one way that we could resolve this problem and get on with the business of developing the gas reserves in our country. That would be, at least insofar as these leases in the Atlantic are concerned, to let those leases on a basis of royalty bids rather than on the basis of cash bids. If we did that, my guess is that major utilities very much in need of energy for their customers would probably bid on the basis of 100 percent royalty. That is, they would be willing to pay 100 percent of whatever the Government set the price to be. Now, if we then proceed to amend the law to make it somewhat similar to what it is for the interior States such that the State off whose shores that gas is located would receive 37½ percent as it would with Federal lands located inside a State, and put the other 62½ percent in the revenue sharing fund to be spread among all of the States and communities throughout the entire Nation. This would then reverse the political pressure on holding the price down. At that point only the people who are getting that gas directly served to them would be in favor of holding down the price.

The rest would want to get for it what it is worth on a competitive basis with other fuels. That being the case, it would seem to me that you would then be able to go forward and do all of the drilling and all of the developing that might need to be done in this area.

In other words, with the exception of the States that are having the gas delivered to them, every other State would insist that the gas sold for what it was worth in competition with coal, oil, atomic power or any other kind of available energy. On that basis, then, we would not be talking about trying to deliver something for a customer for far below what it is worth. As long as we continue to project this image that energy will be available for a lot less than it is worth on a competitive basis, we will run into all of these impossible frustrations of trying to make somebody sell something for a lot less than it is worth.

I keep being reminded of the story that I have heard many times before, and I have repeated it several times, about the lady who went to the store to buy some vegetables, and she asked the grocer how much are those tomatoes. He said they are 40 cents a pound. She says "that's an outrage," and she says "Shore's sells the tomatoes for 20 cents a pound;" he says, "Why don't you buy them from Shores?" She said he doesn't have any, and he said "well lady, if I didn't have any tomatoes, you could buy mine for 10 cents."

Now that is about the kind of economics that we are in for nowadays, where someone is holding out the image to somebody that he is going

to be able to buy gas for a mere fraction of what it is worth. It is illusory. All he is going to get is a shortage of gas, where there is no gas available to him.

Now, I know what price can do. When I built the swimming pool in my little home in Louisiana, I was told some years ago that you could have 50 percent more days of swimming if you would put a heater on that pool and warm the water during the early spring, and then during the spring and the fall. This seemed to be a very good idea. That was sort of par for the course for people who were building a pool, considering what it cost to build a pool. It was a good investment to put the heater in. But since the price of energy went up, I do not know of anybody who is heating the water in his pool. I know I am not and nobody else is doing it because it just costs too much money. So, we economize on that.

I had a little cabin where I would try to get away from the pressures from time to time, and I had some butane and some electric facilities. I also had a chimney where I could burn firewood, so come what may, if I wanted to go up there in the wintertime we might have some chance of warming the cabin up. Now, when the price of butane goes up sky high, I might buy one delivery of butane, but that is all. It is too cheap to go up there and pick wood off the ground and burn it in the fireplace. Those type of economies occur when the cost goes up. But if I could still buy the butane for what I was buying it for to begin with, I would not bother picking up firewood around the place.

Now, does that not pretty well indicate that people will waste a great deal and also will produce a lot less when you try to hold the price far below the market?

Mr. MacAvoy. It does, Senator. I would add two footnotes—I would add three footnotes.

First, personally I hope you have not given up swimming. I hope you swim in the cold pool because it is good for you.

Second, the 20 to 40 cent example for the price of potatoes should be carried one step further. There is in legislation now before Congress an implied set of policy proposals that involve averaging of those proposals. They would require that the two grocers get together and both charge 30 cents; one charging 20 cents for the potatoes he does not have, and the other now being brought down from 40 to 30 cents because it is fair that old and new potatoes all sell at the same price.

There are two pernicious effects in these proposals. One is the proposals to bring the intrastate prices down to the interstate level. This will have an extremely strong effect over the next 5 years because in the last year or two with the significant increases in the home State prices, we have begun to experience for the first time the laboratory experiments of how much would be forthcoming if prices were to rise. The exploratory companies have been looking for gas on the basis of the higher home State prices. The increase in the number of wells drilled has been expansive. It has been very significant. The increase in the number of successful wells has been expansive. The percentage of total wells that are successful has held up. The size of finds has gone down. I would expect this because this is the result of going after many more smaller deposits that would ot have been economic at the low

price, putting them into the market in new contract dedications where they would have been left alone entirely otherwise.

To now put a lid on the home State price is to put us back to where we were in interstate regulaton in the early 1960's. It is almost as if when a new Broadway play opens and there is a line outside the theatre because it is the best play in town, that the city rather than somehow or other reducing the size of the line decides to shoot the scalper because he is clearing the market. The home State prices have had a strong effect on the supply side and will continue to do so; requiring that they be averaged into the interstate prices will put us back.

Second, we have averaging in the North as well. The Federal Power Commission follows procedures requiring the new contract higher prices for those who want potatoes at 40 cents or who would rather have gas at 50 cents or 75 cents or even a dollar to have it rather than do without. These new contract prices are being averaged in with the old prices in a roll-in procedure whereby everything is averaged. That means that the intensive consumer seeking new gas is not going to be allowed to obtain as much as he wants. It means that the old consumer who bought contract gas many years ago is experiencing a price increase he does not want. So the average affects both of them adversely.

The use of the 40 cent price, or in your discussion more generally, the going to procedures within the Power Commission, within the Department of Interior, whereby we auction the gas off to those, or the properties to those who are willing to pay is a far more direct procedure. I have not gone through and evaluated it in the detail that I wish, but I would forecast that it would speed up the process of eliminating the shortage significantly over what was in my testimony.

The CHAIRMAN. Thank you very much.

Senator Hansen?

Senator HANSEN. Dr. MacAvoy, it is always a pleasure and a thrill to hear you testify. I am concerned and disturbed because, I think, what you know and elucidate so clearly needs to be heard by many others who are likely not to get the benefit of your observations before we get into some pretty deep waters changing a lot of laws around.

As Senator Gravel left here he asked me to express his appreciation to you for your appearance and to extend also his apologies. He had an appointment and he regretted very much not being able to say to you what I am trying to say for him.

I gather, just as you completed your statement, that you were saying that on top of everything else the fact that we have not, because of continuing regulation of natural gas by the Federal Power Commission, gotten ourselves into a situation where we ought to be compounding that problem by changing the rate of depletion now? Was that the thrust of your statement?

Mr. MACAVOY. Yes, sir.

Senator HANSEN. I could not agree more, and on that note let me thank you for your appearance here today.

Mr. MACAVOY. Thank you.

The CHAIRMAN. Thank you very much, doctor.

[The prepared statement of Mr. MacAvoy follows:]

PREPARED STATEMENT OF PAUL W. MACAVOY, HENRY R. LUCE PROFESSOR OF PUBLIC POLICY, MASSACHUSETTS INSTITUTE OF TECHNOLOGY

Senate consideration of the oil and gas depletion allowance requires a complete review of the conditions of production, demand and pricing in these industries. This cannot be done in the time available today. But a summary description of present conditions in natural gas is attempted here, because these conditions are responsible in major part for the U.S. domestic energy problems at this time. Any move to change depletion must be made based on whether doing so would make the gas problem better or worse.

Energy problems most disruptive of the U.S. economy at the present time are in natural gas production and distribution. Shortages in the last few years in petroleum, electricity, and coal have caused unemployment and production delays for periods of time. But these periods were very short, and the causes for the shortages have been ameliorated by capacity expansion, changes in import controls, or other policy changes put before the Congress. It is not going to be that easy to reduce the natural gas shortage.

There have been persistent and growing shortages of natural gas for five years now. These shortages affected most parts of the country first in 1971, when interstate distributors were 3.7 percent short of meeting consumption demands of communities and industries. The curtailments above will probably exceed 10 percent of demands in the 1974–1975 winter heating season. The size of the shortage is greater than that, since many retail utilities have long since disallowed the introduction of service to new customers so that their excess demands are not registered. Also, under full employment growth the curtailment would have been greater these last two years. There probably would have been demands under normal conditions for at least 3 trillion cubic feet more than the 23 trillion cubic feet consumed; this would have been more than 12 percent of demands.

There is small prospect for reduction of shortages in the next five years. Unless there are large, unexpected discoveries, or unless FPC regulation changes in some unforeseen way, excess demand will grow to more than one-quarter of total demands by 1980. It is not only the MIT prediction, but also that of the AGA TERA model and that of the FPC staff in the gas division. Indeed, the FPC staff forecasts that, assuming continuation of present-day regulatory conditions, the shortage will be larger than 30 percent of demands by the end of the decade.[1]

Not all regions of the country will experience the same amount of shortage. Consumers in the North Central, the Northeast, and the Southeast—in that order—will incur most of the shortage, as they have in the last few years. New residential buyers, and new as well as old industrial buyers, will be eliminated from most distribution systems in those regions. By the late 1970's, shortages in the North Central region are expected to be so great that all industrial and commercial consumption will have to be eliminated. This will have to be done so that there will be enough gas to meet the demands of old households on the system. In the Northeast and Southeast parts of the country, only one-third to two-thirds of industrial demands will have to be curtailed, according to the present MIT econometric forecasts.

This is an optimistic outlook, however. Industry forecasts, as exemplified by the American Gas Association TERA model forecasts, show shortages as large as 25 percent as early as 1977 out of demands of only 30 trillion cubic feet, which is more shortage out of less demand than indicated by the MIT econometric model. The demand forecasts of the FPC and AGA are low, for a number of reasons; using the MIT model demand forecasts, but with supply forecasts of AGA and FPC, produces forecasts of shortages as large as 40 percent by the late 1970's. This more pessimistic view says that industrial consumers will not get almost all of the gas they demand and that there may have to be some curtailment of consumption in households as well.

The conditions are the product of the Federal Power Commission's determination to "hold the line against increases in natural gas prices" as they stated in their 1964 *Annual Report*. The FPC in fact succeeded in keeping new contract prices approximately the same from 1961 to 1969, while prices for distillate

[1] FEA *Blueprint* forecasts show little-to-no shortage at all, because of the absence of any growth of demand; this is a defect in the model caused by the inappropriate fitting of regression equations to data from early in the 1960's. Ignoring the FEA—*Blueprint* forecasts, there would seem to be general agreement on the size of the shortage, if not on the size of demands.

fuel oil at wholesale increased by 15 percent, and coal increased by more than 25 percent. This made natural gas a desirable fuel for industrial boiler use in the states in which price controls did not apply, and it dampened incentives for new exploration and development of gas by field producers. Reversals in regulatory policy in 1971 and thereafter have not been sufficiently strong and rapid to reverse the long lags in discovery and production. The FPC has stopped short of deregulating new contract prices at the wellhead and, as long as it does, the shortage will persist.

Are there policies which, if put into effect, could ameliorate the shortage in the next few years? The Congress could pass legislation that allowed new contract prices to seek market-clearing levels over a reasonable period of time—for example, by *phased deregulation* in which prices are increased gradually, but with the expressed purpose of arriving at market-clearing prices in 1980 or 1981. This is one of many of the proposed new pricing policies—some want higher freezes or lower freezes, others want immediate and complete control—but it is in the middle of the range in terms of price and production effects so that we will consider these effects here.

The MIT model forecasts that phased deregulation could be achieved by taking new contract prices from the present control levels of 50¢ per thousand cubic feet to 65¢ right away, and then allow 5¢ per annum increases until a level of 80¢ were reached in the early 1980's. Under the assumption that oil prices will be approximately $7.00 a barrel, and that the economy operates at full employment, with growth of 3 percent per annum, this should balance supplies of gas from new exploration with demands for gas at approximately 35 trillion cubic feet. There would have to be 2½ trillion cubic feet of imports, and the volume of undiscovered reserves would have to be close to that posited by the Potential Gas Committee at the University of Denver (less reserves require higher prices). If so, phased deregulation would prevent sharp price increases on new contracts—to the level of $2.00 or more per Mcf—while achieving the longer term goals of eliminating the shortage and distributing gas to those who need it the most.

Other forecasts indicate that the MIT model may be producing optimistic projections. The AGA TERA model predicts equilibrium, but only at levels close to 25 trillion cubic feet at prices on new contracts 50¢ per Mcf higher than shown in the MIT model forecasts. The Federal Power Commission staff forecasts, built on the assumption that supplies and demands are not responsive to price, surprisingly find that supplies and demands are not responsive to price and therefore there is no way of eliminating the shortage through changes in pricing policies. Deleting this last forecast, on grounds that it comes from an agency seeking to increase its authority over the gas industry, then it can be said that phased deregulation will produce two-to-five trillion cubic feet of production, and reduce demands by similar amounts over the next five years. The phases could require more price increase than predicted by the MIT model; in fact, the price forecast could center on $1.25 to $1.50 for new contracts for gas in 1980. Most of the shortage will have been eliminated.

Other policies will not work as well. Excise taxes on gas taxes would have the effect of reducing demand, but not adding to exploration and development of new reserves to increase production supply. It is forecast with the MIT model that excise taxes would have to be as large as new contract price in order to clear markets by 1980. This implies that, if the Federal Power Commission were to allow prices on new contracts to rise 70¢ per Mcf by 1980, excise taxes would have to be 70 to 80 cents per Mcf on new contracts as well. The consumer would end up paying 50¢ more per Mcf for as much as 5 trillion cubic feet less gas than would follow from phased deregulation.

Similar prices would follow from a combination of deregulation and windfall profits taxes. As now designed, windfall profits taxes would take the form of "taxes on excess prices" and would have similar effects on demands and supplies as would excise taxes. If the windfall were to apply on prices above the present level—as indicated in most proposed bills—then it is very likely that prices would have to rise to $1.50 to $2.00 per Mcf, with excise taxes accounting for half the increase, in order for demands to be dampened to the appropriate level of supplies. Of course if excess profits taxes were to apply on previous years' net incomes, rather than on prices, the effect might not be as substantial. But in the present circumstances it is likely that excess profits taxes would raise prices to consumers the most, while reducing total production of natural gas, while increasing the receipts to the Federal Treasury. This would not seem to be appropriate in a time of inflation and unemployment.

Phased deregulation *without taxes* would appear to be deflationary. This occurs because the gas shortage requires consumers to go without gas delivered at the equivalent of $6.00 to $9.00 per barrel of oil, and to replace this short gas with $12.00 per barrel oil. If prices of gas are increased, so as to add to supplies, cheaper gas replaces more expensive oil. Combining the MIT econometric gas model with the Hudson-Jorgenson inter-industry energy model shows these effects. Gas deregulation in 1975 is forecast to reduce the GNP deflator in 1980 and to increase total consumption and production of energy and energy-related products. The solution to shortages and inflation would seem to be along the lines of phased deregulation of gas field prices.

The CHAIRMAN. The committee will recess and meet again at 2 p.m.

[Whereupon, at 12:52 p.m., the subcommittee recessed, to reconvene at 2 p.m. the same day.]

AFTERNOON SESSION

Senator GRAVEL [presiding]. The hearings will come back to order.

Our next witness is C. John Miller, president, Independent Petroleum Association of America.

Mr. Miller, the floor is yours and you may proceed as you wish.

STATEMENT OF C. JOHN MILLER, PRESIDENT, INDEPENDENT PETROLEUM ASSOCIATION OF AMERICA

Mr. MILLER. Thank you, Senator, we appreciate the opportunity of being heard here today dealing on the very important matter of percentage depletion. We have a prepared text which I would ask be put in the record, and if that can be done, why, I would like, then, just to make some brief coments.

Senator GRAVEL. Very good. It will be included in the record as if you read it, and if you want to generalize on the points, please go ahead.

Mr. MILLER. Thank you.

I think probably the primary concern that is on my mind today is that there does not seem to be any lack of understanding or agreement within the Congress or the general public or within the industry that this country has a grave problem facing it insofar as developing its own energy self-sufficiency. There seems to also be recognition that the resources are contained in sufficient amount within the United States to achieve a level of relative self-sufficiency, and there seems to be a united desire expressed to have the domestic oil and gas industry expand its work in order that these goals can be achieved and we can have the energy necessary to build plants, to furnish jobs, to combat the unemployment, and to reduce our horrendous balance-of-payments deficit. And yet in face of those particular seeming agreements, all that the industry is hearing at the present time from the Congress are proposals to take dollars away from the domestic oil and gas industry and thereby prevent us from going ahead and doing the very job that we are supposedly to be encouraged to do.

This complete contradiction in the message that the industry is receiving is preventing us from going ahead and developing the energy that is so vital to the continuation of this Nation as we have known it to be and appreciated it to be. I am greatly concerned that we are not seeing forthcoming from the Congress a policy that will allow us to go ahead and make plans and achieve our goals.

As I have stated previously, all that we are seeing are plans, basically, that are directed at taking away some of the very dollars that we need so badly. I think the position of the independent in the oil and gas industry has been stated before this committee a number of times before, and I trust that there is recognition that the independents are a vital part of the development of our domestic resources.

We have introduced into the record on numerous occasions that the independents are responsible for drilling some 88 percent of all exploratory wells. We have stated that they were successful—I should say that they completed about 80 percent of all of the development wells, that they found approximately 50 plus percent of the new oil and gas reserves during this past year, that the industry in toto responded to a better price mechanism, and we had a very substantial increase in all phases of activity last year. And even in spite of this response, again we are being told, in a sense, we are going to put you out of business.

Some suggest doing it on a graduated basis, and some suggest doing it immediately, and, I suppose, at this point I should state that I do not expect that there ought to be a great concern about whether or not I stay in business or whether or not a number of other people of my size and type stay in business, except for the fact that we are the people that have been answering the needs of developing this domestic resource. During the past 20 years, when we have been subjected to price controls of oil and gas, about 10,000 independents went out of business, and as they went out of business, our drilling rates declined, and our finding rate of oil and gas declined, and this country found itself in an intolerable position of some 40-percent dependency on high cost insecure foreign oil.

The independents are important. I think that the facts demonstrate that the 10,000 independents do play a vital role in supplying the needs of oil and natural gas consumers. It should be clear that independents could not continue to perform at their present level of activity, much less at the expanded level that is required, if percentage depletion is repealed outright.

I believe that it would be a disservice to the Nation to repeal percentage depletion for domestic petroleum production. If Congress does decide to make this punitive attack on the oil and gas industry—and I think it can be demonstrated without question that it is a single attack on a particular industry, because, as you well know, over 100 other extractive minerals have a depletion allowance; some 42 minerals have this same 22 percent—no comments have been particularly addressed to those other minerals.

If this punitive action is going to be taken only against the petroleum industry, I think it is imperative that provision be made for exemption of the independent producer whose profit center primarily is the sale at the wellhead of crude oil and/or natural gas. I think it can be stated without fear of contradiction that we are facing a situation here where we are either going to see a vote for maximizing our domestic oil and gas exploration effort or a contrary vote will be a vote for greater dependency on high priced insecure foreign oil. I do not believe we can escape that inevitability.

Thank you.

Senator GRAVEL. Well, Mr. Miller, if that eventuality were to occur, that is that the Senate would wipe out depletion as has the House, it would not be the first time that the Congress of the United States has made a mistake in public policy, and, of course, that is the unfortunate part about it, is that we do, as a Congress, make mistakes.

Certainly, speaking for myself, and I note for my colleague, Senator Hansen, we share your views in that regard. But if we do not have sufficient numbers, as happens frequently on issues, and a decision is made to do that, then I think it is a very tragic error, as you point out. And I hope that some of us can try and persuade, to the best of our abilities, a contrary action. But it may well happen.

In the light of that, let me pose this question. Is there sufficient resilience in the market—let us say, if we were able to at least have a free market, which does not now exist, both in gas and in oil, how would the independents fare in that regard? Supposing there is no depletion and you have a total free market situation for gas and oil, how would the independents be able to attract capital in that regard, or would they be able to attract capital?

Mr. MILLER. They would be restricted in their opportunity to elicit investment capital into a hazardous risky business, such as the oil and gas business, in the absence of the depletion allowance.

And, in addition, there is another impact that does occur, and that is that the price mechanism in and of itself does not give equity between the unincorporated entity and the corporate sructure, and our studies indicate that it would take something in the magnitude of $2.63 a barrel to replace the cash flow for the corporate entity, and it would take something in the magnitude of $6.14 a barrel to replace that loss which would be sustained by the individual entity.

Senator GRAVEL. Could you explain that a little further?

Mr. MILLER. The difference in the tax bracket is, of course, a factor that we are dealing with here. If you assume that you have $11 crude oil and you apply the 48 percent corporate tax loss that would be sustained—that is to the depletion that would be available there—and take the, let us say, 70 percent tax bracket that many of the investors in high risk businesses are in, and as you go through this and remove their depletion and then give back to them sufficient amount of money to restore that loss, that is where the inequity would occur, and there is no way, then, that the price could compensate for that.

Senator GRAVEL. Well, if that were to be the case, we would be talking in terms of not giving an incentive or anything unusual to the independents. We might be able to correct that deficiency in the tax law itself.

Do you think it is correctable within the tax laws?

Mr. MILLER. I think that the mechanism that we have now has proven itself to be the most effective one.

Senator GRAVEL. No question, Mr. Miller. I agree. The problem is we have got to find other ways to skin the cat. If we lose this outright, then taking the position that is the only way to do it is fine,but that is not going to solve your problem. And what we are trying to do is, in the eventuality that these irrational forces would prevail in the Congress, what then could we do to help solve the problem for the independents?

Mr. MILLER. I do not know, Senator, how that could be structured

within the tax code, not being an expert in that field at all, and I would not be able to comment on it.

Senator GRAVEL. Would you or your organization be able to prepare a paper for the committee on the consequences of this tax inequity so that we could address ourselves to that in the eventuality that depletion is done away with, and that is a very reasonable eventuality. The vote in the House was over 100 votes difference. That is not what you would call a close issue. And so not to recognize that that tidal wave is coming is just not to recognize the facts of life, as unfortunate as they may be.

So, if there are other ways for us to get at the inequities between the independents and the nonindependents through a change in the tax law, I think we might have a greater receptive, logical ear on doing that than, of course, on trying to stem the tide on what we consider an irrational——

Mr. MILLER. You are couching your question in the context that all depletion would be removed rather than that which I stated?

Senator GRAVEL. If next Monday you read in the newspapers that the Congress has removed depletion, then I would hope that you would be preparing as fast as possible, as broad as possible, this document I am asking for. If the Congress has not done that, then you can take your time with the document.

I think you will find your own enlightened self-interest pushing you one way or the other.

I think you have answered my question.

One is the ability of the market to correct, and the response to that is the fact that there is an inequity that exists in the nature of the enterprises, the structure of the enterprises, being a corporation as opposed to being an individual.

Mr. MILLER. And, of course, as I pointed out also, the loss of the investor capital that is so important for the independent to have.

Senator GRAVEL. But if you had this tax correction, would you still be able to attract this investment capital from, let us say, dentists, doctors, and people like that?

Mr. MILLER. Perhaps.

Senator GRAVEL. That is a $64,000 question.

Thank you.

Senator Hansen?

Senator HANSEN. Thank you, Mr. Chairman.

Thank you, Mr. Miller, for your excellent lucid presentation. I cannot help wondering when I read about how much windfall the depletion allowance there is why it is that everybody in the country is not in the oil business. Are there people who have been in the oil business that you know that have not become millionaires?

Mr. MILLER. Substantial numbers. Some I know rather closely, yes. Present company, that is.

Senator HANSEN. I often read about these lottery tickets for sale in Maryland. Every so often you see a headline in the paper, and a picture of a couple or of an individual who has won maybe half a million dollars on a ticket that I suppose may have cost a half dollar, a dollar or maybe $2. I do not know what they cost. I have not bought any lately. But, I would imagine, in order to have that type of State financing working as well as it does, it is necessary to give great publicity to a winner, since the fact is most people are not winners. The

fact is that in order for the program to mean anything to the State of Maryland, they have got to take in more money than they pay out, is that not true?

Mr. MILLER. I would assume so.

Senator HANSEN. I should think it is probably equally true that one of the reasons that you are able to interest people in this risky business, this increasingly costly business of drilling for oil, is that there are quite a few dry holes found every year, is that not right?

Mr. MILLER. That is correct.

Senator HANSEN. If it were not for the fact that someone could hope that by putting some capital in and by making the investment, his number might turn up on the roulette wheel, and he might luckily profit very well, you would not get too much interest in the oil business. Is this reasonable to assume, would you conclude?

Mr. MILLER. Yes, sir, as you are probably very much aware, that roughly eight out of nine of the wells drilled are dry holes, and there have been some studies put together, of the relationship between total dollars invested in the search for oil and gas, and total dollars recovered.

Senator HANSEN. A number of years ago, it may have been in the very early fifties, there was a little leasing activity in my part of Wyoming, I did not know anything at that time about the business. I did know a young geologist who thought that the action in that particular area looked rather promising. Though he did not assure me that I would get rich by taking out some leases there, it was his natural reluctance to try to influence someone else. So I applied for some leases. Initially, the land office was about 2 years behind schedule. You could make your application, which got you in there, and then maybe the land office would get around to processing a lease application a couple of years later. In the meantime you would not have to pay any rental fee, and what you paid down was refundable if you decided not to go forward with the lease. But being smarter than most people, I went ahead with my lease and paid, I think, around $4,000 or $5,000. Then I thought surely someone will come around and want to buy this acreage I have leased because anyone would know that it has very good prospects on it.

The fact was that no one made any inquiry of me, so I started making some inquiry of other people. When the second payment became due, it was not too long before I was writing to people. That is and was my first and last experience in the oil business. I did have some advantage from it. I was able to write off half of my loss. Half of the amount I had paid out for lease fee, I was able to charge off against my cattle operation. I wish that were reversed today, because I am still in the cow business.

I could not help thinking that it is too bad that more Americans have not had the experience I have had. Not that I am all that worldly wise, but at least for speaking for one person, I know that everybody who thinks he is going to make a fortune in the oil business does not make it in the oil business. I cannot help thinking that it would be awfully interesting if we had any way of knowing the number of people who make bad investments. I suspect most people do not want to reveal their ignorance or their cupidity by disclosing that they have made a bad investment, though I see that the press in recent times has

picked up a few names of people in politics who believe they are going to get wealthy in the oil import business or wealthy in the wine business, or something or other.

The fact is it is a risky business. What was the experience last year nationwide on the continental United States of the number of wells drilled that resulted in a successful return? One, I mean, that would pay back the cost of the drilling?

Mr. MILLER. One out of nine in the exploratory.

Senator HANSEN. One out of nine found oil and found oil in sufficient quantities to pay back the investment in that well, is that what you are saying?

Mr. MILLER. I think that is the connotation there, and 1 out of 50 insofar as the calculation of major discovery.

Senator HANSEN. Those are not very good odds, are they?

Mr. MILLER. They are not very good odds, particularly in the light of the extreme increased costs that we are experiencing, and then to have another wrap put on the industry on top of that is going to bring this industry to a standstill.

Senator HANSEN. I have listened closely to the testimony here this morning and at previous times from those who say a free economy will work. I am one who has great confidence in a free economy and in the laws of supply and demand. Congress should keep its cotton picking hands out of it and not think it can repeal the laws of supply and demand through legislation. I cannot, however, avoid the conclusion that there are a number of other factors that we have to consider.

One conclusion is that if the world is at peace and if every country wants to trade with every other nation, these laws will work pretty well. We have certainly discovered, if we did not know before, though it was predicted by many, including a number of people in the oil business, that we were going to get into more trouble as we increased our dependency upon foreign sources of supply. I am sure one of the basic convictions that resulted in the passage of the mandatory oil import program a number of years ago, was the fear that as we became more energy intensive in this country and as our dependency upon foreign sources of supply grew, our vulnerability to the whims and dictates of foreign governments could be damaging to us.

So we took some action to try to obviate that possibility. One action was that only a certain amount of oil could come in the country. Actually we did not let the mandatory oil import program work, or at least I do not think we did. We started building in a bunch of exceptions. First we took one tack and then another to build exceptions into that program.

And one of the reasons we did not let the program work, was that the Northeast was able to buy residual oil, even before we abandoned mandatory oil import programs. Because there were no quotas on its importation, the Northeast was aware that it could buy foreign oil more cheaply than it could buy domestic oil. It was damning the mandatory oil import program, stripper wells, proration and everything else.

And then came the 6-day war in 1967.

Senator HANSEN. Things changed pretty quickly. We found that fortunately there was some extra capacity that could be drawn upon, and we were able not only to supply our own needs but to help our

friends throughout the world get by in fairly good shape for a short period of time.

I guess that was when we, for all practical purposes and intents, just about dropped market demand proration. Since that time there has not really been too much of the balance changed as I understand it. The capacity of this country was taxed at full MER rate to try to supply as much of our domestic needs as was possible. Our dependency upon foreign sources increased at the same time. Then, when the foreign policy of this country did not suit some of the oil exporting countries, they chose to put an embargo on the United States and cut back the shipments of oil to this country and to other countries whose actions they believed were unfriendly to their specific cause. We found a very significant shift in sentiment in this country.

The Northeast then started clamoring for our lower priced domestically produced oil. Is that not the way it happened here?

Mr. MILLER. Yes, sir.

Senator HANSEN. Now, those in the Northeast are talking about wanting to go into the intrastate gas market, and see that they get their fair share of the supply going into interstate gas lines. So I am not too much persuaded by the concerns of the Northeast. It seems to me they are, like most of us, selfish. They want to get by as cheaply as they can, and have as much as they can for themselves. If the situation changes, they are very flexible. They can change their position overnight, and they have sure done that with respect to the oil business. Now they see great merit in more production here. Unfortunately, among other things, in the meantime, I think they have become pretty well convinced that the oil business is bad, and that we have got a real tax loophole in this depletion allowance. I notice in your testimony, you say:

> If depletion is repealed, you can kiss energy self-sufficiency goodbye. We would sell our chance for $2½ to $3 billion more in taxes.

That is assuming that our domestic production and the present values were to be maintained. Is that the basis for that $2½ to $3 billion figure?

Mr. MILLER. Well, the $2½ to $3 billion would be that loss which would be sustained if depletion would be repealed.

Senator HANSEN. Of course, a little bit of it would be in foreign countries, but I suppose most of it would be here.

Mr. MILLER. The repeal of the domestic percentage depletion.

Senator HANSEN. The question that occurs to me is, would it be reasonable to assume there would be a continuation of drilling activity and the production of oil without depletion, so as to keep viable and accurate this figure? I am wondering if, absent some other incentive or some other inducement, such as Senator Gravel has suggested, if it is not reasonable to assume that there would be a dropping off again, as occurred a number of years ago.

Mr. MILER. In the 1969 Tax Reform Act, depletion was reduced 5½ percent. The following year we had the greatest drop in exploratory drilling in the history of the industry.

Senator HANSEN. Is there any reason to think that would not happen again?

Mr. MILLER. Absolutely none.

Senator HANSEN. Is there any reason to believe that this 22-percent dividend is a real inducement to this person who actually buys a lottery ticket. When he tells you, here is $10,000 or $100,000 of mine that I have saved up from another line of business that I want you to put into that hole you are going to punch in the Powder River Basin, is there any reason to believe that, if you remove that depletion allowance, that his interest in joint venturing with you would not diminish at about the same rate as that previous drop indicates?

Mr. MILLER. I think the most mobile thing in America today is the investment-dollar, and if those incentives are diminished, those dollars are going to go where there is a better reward. They will not continue to flow into the oil and gas exploration effort.

Senator HANSEN. Everybody knows that this country needs energy. We certainly all agree that we do not want to become too dependent, and thereby have to be too subservient to any foreign power or group of powers. So that it is in the public interest to find and produce more oil and gas in this country. Are the oil men different from most other businessmen? Do you think they would continue in this effort simply because it is their patriotic duty to see that the Nation has enough energy? Or, are they like most of the rest of us? You know them pretty well.

Mr. MILLER. They may be a little slower than the average person. But generally speaking, I think they would get the message that they had been told to get out.

Senator HANSEN. One last question. I certainly do feel that if we get down to the bottom line, and someone says, the train is about to leave the station, and if we think that the people who want to do to this industry which is what their actions seem to me to imply they would do—if we get to that position, I am going to do everything I can to try to save as much and I would hope all of the depletion allowance for the domestic oil industry; I make no bones about that. On the other hand, legislating as I am fearful we would be doing, with the constraint of time on us, causes me to worry about what might happen in that time frame, and under that pressing demand to get out of here. The image the oil industry has and which you can thank the media for, is that you are all bad guys. There is no doubt about that. Anybody who does not know you are just has not read the papers or listened to the TV or radio lately. So I am worried about what might happen if we start getting into this area.

I have in mind that what we do on the Senate floor is not as bad as what could happen when we get into conference between the House and the Senate.

My feeling is that there is a perfectly good reason to pass this bill as it was intended when first worked upon by the Ways and Means in the House. The first bill addresses the serious and critical problem of recession, and takes all such steps as the Congress in its wisdom deems appropriate to put some purchasing power back into the hands of people, in order that that will stimulate jobs and get people back to work. Thus, getting the economy moving again.

I think those are pretty compelling reasons, and I would have every reason to support a clean bill that would just move that way. I am fearful, as I say, that if we try to go beyond that, we could get into a lot

of mischief. It is not too long before the major parties will be nominating their candidates for the Presidency, and every one of us wants to get in on the act. Someone said, "How many people are there interested in running for the Presidency in the Senate?" One man said, "Well, 17." The newsman said, "You mean 17 who want to get in?" The man said "No; only 17 who do not want to get in. The other 83 all think they ought to be candidates."

With that sort of situation, I am worried about what could happen if each of us gets out there and runs. I would say this as far as the bill that has been suggested by Senator Gravel, and I have been working with him on that one: it seems to me to have a lot more merit than many of them. I would rather, if I had my druthers, keep the bill just clean, and pass quickly a bill that would put some extra purchasing power in the hands of people, and try to turn the economy around. Then, in a little calmer atmosphere, undertake, following an opportunity that would be afforded by hearings, for us to hear from knowledgeable people, we might decide what we ought to do by way of an overall tax reform bill. I am concerned that we are just picking up fragments here and there of the things that seem to be most in the public eye, and we are likely to legislate on those. It will not be necessarily what may have the intended economic effect, but rather what has the greatest appeal to the rank and file of our constituency. We all like to do things that are popular with our folks back home, and I am afraid that the oil industry, being as badly misunderstood as I believe it is today, is not in very good shape to be subjected to the kind of treatment that we politicians could give it, if we were concerned primarily with doing those things we thought might sell well back home.

Do you have any fear or concern about that?

Senator GRAVEL. Before he answers, would you yield for 1 moment?

Senator HANSEN. Yes; I would be happy to.

Senator GRAVEL. If I had got your druthers, too, I would rather do that. If we had the same druthers, I would rather have a clean bill.

Mr. MILLER. I do not feel really competent to express a view as to the timing on this, except to say that I would hope that it would be in the best atmosphere possible, with the deliberative process insofar as possible, rather than the committee of a whole. As you know, we have indicated our willingness to appear and state our position on all matters having to do with depletion and all other factors in the energy problem at any time we were able to be here; and I would stand ready to continue to do that, if those hearings are held and there is an opportunity to do so. As you know, we have an extreme concern about the action or reaction situation that we are in right now, and we think it is tremendously important for the Congress to realize that the independent sector of the domestic oil and gas business cannot operate without percentage depletion. That is the primary message that I would hope to be able to transmit to you, and on to your colleagues—that we are in a different operating sphere. We have different requirements. We do use large amounts of investor capital, and we are the ones that have been doing the vast amount of the drilling, and have been finding the bulk of the production. And to levy some punitive measure against this industry, against the independent sector, would just forgo any possibility of this country becoming energy self-suffi-

cient in the near term. And it seems as though it would not be unreasonable to have some of the proponents of this attack on the oil and gas industry have to come to the bottom line and prove that they are going to do something for the consuming public, because I see exactly the opposite.

I see in my own State gas being made from Canadian oil that costs over $3 a thousand at the tailgate of that plant. This is not something you want to offer the Michigan consumer for an alternate to our existing gas price. We are paying over $2 a barrel more for that crude oil than we are paying for domestic crude, and we are already told we are not going to continue to get it.

This is not an alternative to offer to the consumer. Someplace, we would hope to have someone have to address themselves to the alternate, because the alternate—we are either going to have domestic fuel, or we are going to have some foreign oil at whatever price we have to pay, whenever they feel good and ready to let us have it. That is not a viable alternative, and I am deeply concerned about that posture. It seems to be that some are saying, "How far can we cut the industry and hopefully still limp on through and stay alive?" No one is addressing themselves to something that says, let us maximize this thing. And we would like to see a very ongoing, positive program that says, let us get it all done, and let us see everything we can do domestically—and excuse me for saying no one.

Senator Gravel, I have not had an opportunity to review your entire bill. I think I have spoken to you about this previously, and I want to say that I applaud your desire for the price decontrol. And we have looked quickly at your proposal on depletion. I think there may have been some language changes made since the material that I have been given. What I have read and what I am looking at appears to be better than anything else by far, and I have not had an opportunity to look at all the titles. Insofar as your bill is concerned, I hope that you understand the comment I have made.

Senator GRAVEL. Very much so, and I appreciate your recognition of it. It is an effort at a totality. Unfortunately, the Congress does not legislate totalities. It legislates whatever is popular at the moment, and right now, what is popular at the moment is the issue of depletion—and I might just add one point. You were suggesting that the people who are pro doing away with depletion, prove it to the public. What they are responding to really is conventional wisdom in the public. If you took a poll today in the United States, and asked the average American whether or not he thought depletion was good or bad, I am sure most of the respondents would say that it is bad. It is a loophole, and that is how it has been characterized by these Senators that are pushing for it. In fact, they sat right there where you are sitting, and were talking to the TV cameras and to the press, and they were talking about this as the No. 1 tax loophole. And that is the misconception that exists in the American people, and those who vote that way. The Congress is the mirror of the people, and so if the people think it is a big tax loophole, then obviously the Congress will be heroes, and will be doing the bidding of the people by wiping it out. The fact that it is irrational, the fact that it is wrong with respect to an energy policy, the fact that it is regressive in our self-sufficiency program, is tragically incidental to the decisionmaking process—tragically so.

Mr. MILLER. Perhaps—I guess we are dealing, then, with the possibility of statesmanship, as opposed to response to a constituent. I was feeling more the idea of the leadership of a person saying to his constituency, this is what is going to happen. You may have the phrases "loophole" and "depletion," but you are not really addressing—and I am not speaking to you—I am saying that that Senator is saying to his constituency, you have to recognize the idea of the inception of the depletion allowance; it is not just for oil and gas, it is for these others. It is a recognition of not taxing capital, et cetera, and then build that bridge and say, without that, we will be in this position, and then take the poll. Unfortunately, I guess, that cannot be achieved.

Senator GRAVEL. Well, I have found, in my short tenure in Congress, that ignorance and sincerity many times go together. And so, the fact that these people may be sincere in what they think they are doing really has got nothing to do with the facts of the issue; and I have seen many times the Congress legislate in that fashion. And so, that will not be the first time it has done it, and it certainly will not be the last time.

Senator HANSEN. I note that you point out and you give the hypothetical situation of an independent producer who is in the 70-percent tax bracket. Now, I am sure, right off of first base, that the average person would say, anyone who is in that tax bracket, I am not going to be too worried about, anyway. But the fact is, is it not a fact that the people that you are going to be able to get to commit capital into this very risky venture of drilling for oil have to be people who have a little bit left over? You are not going to get some person who is just able to make it, to put any dough into the drilling operation. Is that not a fact?

Mr. MILLER. Yes, sir, Senator; and we do have in our statement in terms of the investor situation what that investor would have to hope to achieve in the marketplace to come back the same position as with the depletion provision.

Senator HANSEN. Sure. On that basis, then, if I read your figures correctly, despite the charge, the allegation often times made that this is not a competitive business, if I get the thrust of your statement, an independent producer in the 70-percent tax bracket, were he to be compensated adequately and fully for the loss of the 22-percent depletion, would require a price increase of $6.14 per barrel; whereas the necessary raise in prices to offset the tax loss that would be visited upon a corporation in a 48-percent tax bracket would be only $2.63 a barrel.

Mr. MILLER. That is right.

Senator HANSEN. I think that is a very significant figure, and one that I hope we can keep in mind and call to the attention of our colleagues on the floor when they start cutting and slashing, as I am certain they intend to do.

Mr. Miller, I think you have made a very fine contribution. I just hope that Senators will take the time to read your testimony; and even more importantly, to talk with members of that large fraternity of which you are a part, who come onto the Hill from time to time, and learn a little bit more about the facts and the economics of the business than I suspect some of them now know. Thus, we will not make some bad decisions, because I think the stage is set for us to make some very bad guesses. As Chairman Long once said, politicians never admit that they are wrong, though we often times are. We always have some

excuse. We can always give you reasons why it did not turn out the way that we thought it should have turned out. I foresee that if we do what I am certain some intend to do to this industry, we are going to be pretty hard-pressed trying to explain to the American people why there is a heck of a lot less oil and gas to go around than we have now. We are going to have to explain, also, as you know, that the depletion allowance has not been the boon to individuals exclusively in the oil industry that some would have us believe that it is; but actually overall, as a number of economists have pointed out, it has made it possible for the average American to buy these products at a far lower price than he otherwise would have been able to buy them for. Is that not a fact?

Mr. MILLER. Yes, sir, it certainly is.

Senator HANSEN. Thank you very much for your testimony.

Senator GRAVEL. Thank you very much, Mr. Miller, and these hearings are adjourned; and the committee will accept testimony from people in writing for presentation to the Senate.

[The prepared statement of Mr. Miller follows:]

PREPARED STATEMENT OF C. JOHN MILLER, PRESIDENT, INDEPENDENT PETROLEUM ASSOCIATION OF AMERICA

My name is C. John Miller. I am a partner in Miller Brothers at Allegan, Michigan, an independent oil and gas exploration and producing company. I appear here today as president of the Independent Petroleum Association of America (IPAA), a national organization of some 4,000 independent petroleum producers in every producing area of the onshore lower 48 states.

Mr. Chairman, I welcome and appreciate the opportunity to participate in this vitally important hearing. Last year, there was a tremendous resurgence in the efforts of the petroleum industry to increase domestic oil and natural gas supplies. In response to improved prices, the industry in 1974 accomplished the largest increase in exploratory and development drilling in its history.

This renewed activity is moving the country in the direction of a goal that has great public and bipartisan political support: the freeing of the United States from OPEC embargoes and OPEC prices.

Despite wide agreement on this goal, we continue to be faced with proposals to eliminate percentage depletion for domestic oil and gas production, and to impose so-called "windfall profits" taxes.

What is being said about our energy goals and what is being proposed as tax policy are in direct conflict. The Congress cannot remove billions of dollars from the domestic industry and expect it to continue to expand its expenditures and to increase domestic petroleum supplies.

In a time of an energy supply crisis, the industry is faced with a proposal that will discourage investment and increased activity whereas the realities plainly call for doing just the opposite.

In representing independent producers, I can assure this committee that the army of 10,000 independent producers will be severely restricted if these proposals are adopted. Domestic energy scarcity would be aggravated. Declining supplies will imperil our entire economy. Worsening shortages would bring into doubt, plant and industrial construction and development, causing widespread unemployment. It is becoming all too apparent that we must deal forcefully with our energy problems, because permanent energy shortages will mean permanent economic recession. Beyond the domestic problems created by energy shortages, we would be increasingly subject to embargoes, OPEC prices, intolerable balance of payments costs and pressures to compromise our country in its international affairs. Independents in the domestic industry drill more than 80 percent of all wells and find more than one-half of the oil and gas. Independents are indispensable in achieving relative energy self-sufficiency during the short term of the next decade or so, before meaningful supplies of alternative sources come on stream.

If depletion is repealed we cannot hope to attain energy self-sufficiency in the short term. We would sell our chance for independence for $2.5 to $3 billion more in taxes. This is what we are talking about today.

Percentage depletion is absolutely essential to the 10,000 independents in the domestic industry for the following reasons:

1. *Depletion repeal would impair exploratory capital formation.* Petroleum exploration is a high-risk enterprise for which independent producers historically have depended on venture capital from outside investors. This is a principal source of capital for them. The American Association of Petroleum Geologists (AAPG) recently released a study showing that of 25,562 exploratory wells drilled in the years 1969–73, when only one well in 9 produced anything, only *one in 50* was a significant discovery of as much as one million barrels.

Percentage depletion has been an essential factor in attracting risk capital into exploratory drilling ventures. Such investors are in high-income brackets, and would not find high-risk exploratory ventures as attractive as other types of investment in the absence of percentage depletion. *Independent producers* depend heavily on these investors for exploratory capital, and *independents* would be adversely affected by the drying up of risk dollars that would result from repeal of percentage depletion.

2. *Depletion repeal would cost independents more than "majors."* Most independent producers and their investors do not pay the 48 percent corporate tax rate, but are in higher individual tax brackets. In the case of a producer in the 70 percent bracket selling $11 crude oil, for example, the loss of depletion at an effective 22 percent rate would mean an increased tax of $1.69 per barrel, compared with $1.21 for corporate producers. To offset this loss independent producers would require a price increase of $6.14 a barrel, whereas the higher tax could be offset with a higher price of only $2.63 for corporate producers. Independent producers could not hope to recoup through the price mechanism, therefore, because the prices of independents are determined by crude oil purchasers who are the major companies. Independents therefore would just drill less.

3. *Depletion repeal would inhibit competition.* Repeal of depletion would have an additional negative impact on the financial stability of independent producers, immediately reducing their cash flow to an extent that would impair the ability of many producers to meet debt obligations, and other commitments. Thousands of independents have debt incurred under an assumed continuance of percentage depletion, and repeal of depletion would make it impossible to retire such obligations. The only option facing many producers simply would be to sell out and get out of the industry. The result would be accelerated concentration of the industry, and a loss of the great multiplicity of oil and gas exploratory effort by the 10,000 independents who drilled 88 percent of domestic "wildcat" wells directed at finding new oil and gas supplies in 1974.

4. *Depletion repeal would sharply cut drilling by independents.* In the period 1969 through 1973, independent producers in the United States drilled 9 out of 10 exploratory (wildcat) wells, found 54 percent of the oil and gas discovered, and accounted for 75 percent of the "significant" petroleum discoveries as defined by the American Association of Petroleum Geologists, (AAPG).

In 1974 independents drilled 80 percent of total wells in the United States, spending approximately $3 billion for exploration and development. Repeal of percentage depletion would cost independent producers approximately $1 billion per year. To close our oil and gas supply gap, U.S. drilling needs to be doubled, at least. Repeal of depletion would unavoidably mean less drilling, and would foreclose all chance of expanding petroleum exploration since it would hit hardest the independent producers who account for the great bulk of domestic oil and gas exploration, and more than half of the reserves found.

In the almost two decades that the domestic oil and gas producing industry was in a state of decline, some 10,000 independent explorers quit exploring. The membership of IPAA dropped by more than half. So what? Why would anybody care about a bunch of oilmen going out of business? Nobody did care, Mr. Chairman, but the result is the deteriorating energy supply position in which this country finds itself today.

So I cannot help but wonder if many did not care only because they did not understand what was happening?

Mr. Chairman, 10,000 independent oil and gas producers were forced out of business by unhealthy economic conditions and as a result we have a dependency on foreign oil that is equivalent to 40 percent of our requirements and is growing. We are in the seventh year of natural gas shortages that are worsening with each passing day. It is evident from these facts that we are still in a desperate situation and that any tax action which would result in less exploration will only compound our oil and gas shortages. Even with maximum conservation, there is

no way we can solve our energy problems without greatly expanding the search for, development and production of domestic oil and natural gas.

To do what can and must be done to reverse our declining production and restore relative self-sufficiency in the next decade, explorers are going to have to double our present rate of drilling. To double drilling will require more than a doubling of the average expenditures for exploration and development, because costs are rising at a phenomenal pace. In many areas, our members are reporting the cost of drilling and equipping wells today at 70 to 100 percent of the cost a year ago. Yet if we do not double drilling, energy self-sufficiency will not be attained.

Most of the thousands of independents in domestic oil exploration and development have a commitment to and a pride in their role as energy suppliers. They have a justified conviction, particularly at this juncture in our history, that they are engaged in efforts that are of extreme importance to the country and to the future availability of energy to the consuming public. Independents feel an obligation to maximize their efforts to find and make available increased petroleum supplies, but they are perplexed and discouraged by the unceasing political proposals which would prevent them from making a maximum contribution.

In considering the tax treatment of domestic petroleum exploration and development, the decisions of Congress will have a tremendous and I believe controlling effect on whether this country will, in fact, maximize petroleum exploration and development in the next few years when the adequacy of petroleum supplies will be so crucial to the country in bridging the way toward development of alternative energy sources.

The facts demonstrate that the 10,000 independents play a vital role in supplying the needs of oil and natural gas consumers. It should be clear that independents could not continue to perform at their present levels of activity, much less at the expanded level that is required, if percentage depletion is repealed outright. I believe, Mr. Chairman, that it would be a disservice to the nation to repeal percentage depletion for domestic petroleum production. Should Congress eliminate the depletion provision in a punitive action directed only at the petroleum industry, it is imperative that provision be made for exemption of independent producers whose profit center primarily is in the sale at the wellhead of crude oil and/or natural gas.

I hope this committee will unemotionally weigh what is really in the best interest of the nation and the consuming public: more oil and gas or more tax dollars? If increased energy supplies are important, percentage depletion is more vital than ever.

As of this moment, Congress is confronted with a critical choice. If it does not take actions to maintain maximum incentives and efforts to increase domestic petroleum supplies, it will be in the posture of voting for increased dependence on foreign oil with all its attendant uncertainties and adverse economic impacts.

[Whereupon, at 2:48 p.m., the subcommittee adjourned, subject to the call of the Chair.]

Appendix

Communications Received by the Committee Expressing an Interest in this Subject

Statement of Travis E. Reed, Executive Vice President, Geothermal Resources International, Inc.

This statement is submitted in accordance with the Committee's announcement inviting the public to testify concerning H.R. 2166. The statement recommends that Title IV of the bill be amended to provide more clearly and comprehensively for continuation of the present 22 pct. rate of depletion applicable to geothermal wells. Such amendment would aid in implementing the stated policy of the Congress to (1) support the development of geothermal energy as a substitute for imported oil; and (2) encourage private industry in fostering such development.

Geothermal Resources International (GRI) is an independent holder and developer of geothermal resources which are situated on lands held in fee and lands leased from private owners and the Federal Government.

As the Committee knows, geothermal deposits as at The Geysers, in California, have been held by the courts to be depleting assets, contained in a closed reservoir in finite amounts, with no significant liquid influx; *Reich* v. *Commissioner of Internal Revenue*, 454 F.2d 1157, 9th Cir. 1972. Under the Court's interpretation of the term "gas wells" in the Code, production from The Geysers is subject to depletion allowance at the 22 pct. rate. There is no sound reason, and none was advanced during the House consideration of H.R. 2166, to believe that geothermal deposits which may be discovered and developed elsewhere in various forms should not be accorded percentage depletion at the same rate.

The present language of Title IV concerning geothermal deposits is vague and inconclusive. Congressman Green did not explain the language and no questions were asked in debate. It appears that the language, at Sec. 102 of Title IV, is technically inadequate because it fails to provide a workable definition of the term "any geothermal deposit which is determined to be a gas well within the meaning of section 613(b)(1)(A)." The time has long since come to free geothermal energy from its present tenuous dependence upon the term "gas wells". This is a good time to provide positively for the tax treatment of geothermal energy.

"Steam" or "dry-steam" fields, to which the *Reich* case may more directly apply, are considered geologically to be filled mainly with steam itself, under pressure and at high temperatures. "Wet-steam" field are considered as filled with hot water from which some of the steam may flash on the way up the well.

"Hot-water" fields may require pumping from the reservoir, and little or none of the water may convert into steam. The water's heat may pass to a heat exchanger from which a liquid expands to drive the turbine. According to some estimates, this may be the most common kind of source, and it is the one in which Geothermal Resources International is mainly interested.

The vast geopressured deposits underlying the Gulf and the bordering States may be more in the form of "hot water" than "steam".

Other kinds of geothermal fields include those containing hot brines, and hot rocks. All of these forms of geothermal deposits have the common characteristic that the natural heat source, and the wells by which they are tapped, will tend to deplete themselves from use over a period of time. Accordingly, all of the forms deserve equivalent tax treatment.

Depletion of a wasting natural resources is a hard and irrefutable fact which must be dealt wth in tax policy. Sales made from a depleting asset resemble long-term capital liquidation more than they do current income. Some kind of reward should remain for finding and establishing newly discovered sources of geothermal energy. The depletion allowance for geothermal deposits, if clearly and comprehensively stated, will serve these various functions.

The Tax Code originally recognized the importance of natural resource discoveries by allowing for "discovery depletion". Such depletion was usually based upon the fair market value of the discovered deposit as determined within 30 days after discovery.

Percentage depletion was first introduced by a 1926 amendment, limited at the time to oil and gas wells. The innovation was intended as a substitute for "discovery depletion", which was causing legal and practical problems of administration.

The Executive Branch tried for several decades (1933 to 1951) to eliminate or reduce percentage depletion but the legislative response, at least until recent years, was steadily to the opposite.

If, by chance a movement should gain momentum to eliminate percentage depletion across-the-board, then a strong case could be made to restore "discovery depletion" so as to recognize the value added by discovery of natural resources and to help in providing the wherewithal to replace discovered assets which are depleting or have depleted.

Meanwhile, at least for the time present, a proper depletion allowance—one that is clearly and affirmatively stated—should be provided for geothermal deposits of all kinds. The present language of H.R. 2166 does not meet this requirement.

In 1974, when the Senate was about to consider the Ribicoff-Magnuson-Jackson depletion amendment, Geothermal Resources International became very much concerned because the text of the amendment would have eliminated percentage depletion not only for oil and gas but also for geothermal deposits. Our contacts with Senators who supported the amendment showed clearly that this result had not been intended. In fact several Senators have assured us that, when the matter comes up again, they will see to it that geothermal energy is not adversely affected by any measure designed to eliminate or reduce the depletion allowance for oil or natural gas. We believe that Congressman Green and his colleagues may have had the same thought in mind. However the language he has provided is unsatisfactory for that purpose and does not affirmatively and clearly establish a comprehensive policy.

Geothermal energy can and must provide a significant contribution toward meeting the Nation's energy requirements during the present decade and beyond. The research and development program which is getting under way through ERDA will aid in the longer run. But an immediate need exists to provide Federal support for the development of geothermal resources based upon known technology or technology that will become available to private industry within a reasonable period of time.

Geothermal Resources International suggests that Title IV of H.R. 2166, if it is to be included in the tax reduction legislation, be amended as follows to meet the objectives recommended in this statement:

1. Amend Sec. 101(a) to read as follows:

"(a) Section 613(b)(1)(A) of the Internal Revenue Code is amended by striking out the words "oil and gas wells" and by substituting therefor the words "certain gas wells as defined in subsection (e) and any geothermal deposits coming within the meaning of the term "geothermal steam and associated resources" as found in the Geothermal Steam Act of 1970, 84 Stat. 1566." "

2. Strike out all of Sec. 102(e)(1)(C).

3. Amend Sec. 103 to read as follows:

"The amendments made by sections 101 and 102 of this Act shall apply to oil, gas, and geothermal deposits produced on or after January 1, 1975."

In the first of these three grouped amendments, reference is made to the definition of geothermal energy which was provided by the Congress in the 1970 Geothermal Steam Act. That definition reads as follows:

"(i) all products of geothermal processes, embracing indigenous steam, hot water and hot brines; (ii) steam and other gases, hot water and hot brines resulting from water, gas, or other fluids artificially introduced into geothermal formations; (iii) heat or other associated energy found in geothermal formations; and (iv) any byproducts derived from them."

This definition has operated satisfactorily for purposes of Federal geothermal leasing. It was incorporated by reference into the Geothermal Research, Development, and Demonstration Act of 1974. If the Congress should now elect to incorporate the same definition into the depletion allowance provisions of the Tax Code, all apparent requirements of accuracy and comprehensiveness would be met and the objective of uniformity in the U.S. Code of Laws would be furthered.

In adopting the 1974 Geothermal Act, the Congress found it to be a fact that national energy prbolems can be solved only if there is a commitment to develop geothermal resources. This commitment can be strengthened if the members of this Committee and other Senators will favorably consider these proposed amendments to Title IV of H.R. 2166.

There has now appeared in the records of the Senate another approach to amending H.R. 2166, in the form of Amendment No. 72, the Hollings-Kennedy-Magnuson Amendment. If Amendment No. 72 should receive active Floor consideration, it should be amended as follows so as to provide clearly and comprehensively for a depletion allowance at the current rate for geothermal deposits of depleting nature:

Amend Sec. 613A(b)(1)(C) as it would be provided for in Amendment No. 72 so as to read as follows: "(C) any geothermal deposit coming within the meaning of the term "geothermal steam and associated resources" as found in the Geothermal Steam Act of 1970, 84 Stat. 1566."

If, as part of H.R. 2166, the depletion allowance for oil and gas wells is to be eliminated or curtailed, and if at the same time a clear and comprehensive provision is not made for a depletion allowance for geothermal deposits which are depleting in nature, then the result would be the discriminatory treatment of geothermal energy production, inasmuch as percentage depletion would be continued in effect for the other competing forms of energy such as coal, oil shale and uranium. Such discrimination would be unfair and would be incompatible with the stated policy of the Congress to aid and assist private industry to develop geothermal energy.

At an appropriate time, the Congress should also consider extending to geothermal energy in a comprehensive manner the provisions of the Tax Code allowing deduction from current income of intangible drilling costs associated with exploration for geothermal deposits.

Because of the imminence of Senate Floor action on H.R. 2166 and in view of the critical nature of the present domestic energy situation, these recommendations deserve the immediate attention of the members of the Committee on Finance and of other Senators.

We appreciate the opportunity which was afforded by the Committee to submit our recommendations.

FEDERAL ENERGY ADMINISTRATION,
Washington, D.C., March 11, 1975.

MR. KARL S. LANDSTROM,
Attorney at Law,
Arlington, Va.

DEAR MR. LANDSTROM: This is in reply to your letter of February 12, 1975, on the tax treatment of geothermal energy.

The Federal Energy Administration is aware of the unequal tax treatment that is currently being given to geothermal resources. We believe that, at least, the disparity should be eliminated, and also that it should be considered whether geothermal resources should have special treatment, sui generis. We hope that a policy decision will be made in the near future.

Thank you for writing.

Sincerely,

DUKE R. LIGON,
Assistant Administrator,
Energy Resource Development.

AMERICAN GAS ASSOCIATION,
Arlington, Va., March 14, 1975.

HON. MIKE GRAVEL,
Chairman, Subcommittee on Energy, Senate Finance Committee, U.S. Senate, Washington, D.C.

DEAR SENATOR GRAVEL: The American Gas Association appreciates this opportunity to present these brief views on S. 1112, hearings on which we understand will be held on Monday, March 17.

We have not had sufficient opportunity to review and establish a position on certain provisions of your most comprehensive approach to solving our energy problems; however, we would take this occasion to express strong support for the principals you espouse in three basic areas, namely, (1) removing field price controls on new natural gas, (2) adjusting the domestic percentage depletion formula for oil and natural gas to encourage exploration and drilling in the U.S., and (3) establishing an Energy Trust Fund.

The current critical energy situation should convince Congress and the American public that the United States is in a deepening energy crisis with serious effects on our Nation's welfare. However, we are concerned that there remains a tremendous undertaking to make the United States self-sufficient in adequate

energy supplies. Until this is achieved, we will be increasingly dependent upon foreign supplies with increasingly perilous uncertainties. Our problem, therefore, is a both present and long-term one that is certain to escalate with critical impact on our economy.

We in the gas industry feel that we have an additional, special problem in that the importance of natural gas to our overall national welfare is seldom recognized. Six points in support of the fact that natural gas is indeed *the key* to our Nation's domestic energy self-sufficiency are set forth in the attached one-page memorandum. We appreciate the fact that three provisions of your bill go directly to the point of improving our domestic natural gas supplies. S. 1112 proposes to aggressively attack the natural gas supply as well as the overall energy problem and we applaud this goal. Our comments on three principal points noted above are as follows:

1. A.G.A. strongly supports the deregulation of the field price of new natural gas only. It is in the area of providing clear incentives for new exploration and drilling that legislation should focus its priorities. While A.G.A. does not agree with removing old gas from FPC jurisdiction, we would encourage Commission policies which would permit realistic price levels for old gas which would assure optimum development of presently committed acreage and which would prevent premature abandonment of production.

2. A.G.A. wholeheartedly supports the provisions of Title VIII, Variable Depletion Allowance. We believe this is a particularly vital and timely incentive for expansion of natural gas exploration at this time, and one which would help improve the interstate natural gas supply situation. The Title, which eliminates foreign depletion and establishes a new formula for domestic depletion, would encourage more of the producer profits to be devoted to the exploration and development of oil and gas prone areas within the continental United States. Further, the percentage depletion incentive is of particular importance to the smaller independent producer, expansion of whose activities we would all welcome. The decline in the number and activity of independent producers in recent years has been a particularly discouraging statistic for the domestic energy outlook. The retention of the depletion allowance for domestic oil and gas production in proportion to an operator's domestic energy expenditures, provides an incentive by which we can move rapidly toward U.S. self-sufficiency and enhance the competitive position of the small independent, producer. This provision coupled with the deregulation of new natural gas would result in dramatic strides toward alleviating our present critical natural gas supply problem.

3. A.G.A. applauds your recognition that the funding of energy R&D is of utmost importance, as set forth in Title II. While ERDA will directly administer a program of research and development, massive efforts will only arise if the monetary support can be provided. The Energy Research and Development Administration must be funded on a sustained basis—a trust fund which would provide ample resources. This is essential so that needed funds can be utilized without time lag, and that long-range commitments can be readily made and implemented with continuity. The usual year-to-year authorization and appropriations procedure could severely retard proper progress of the program. The provisions of Title II of S. 1112 to establish an Energy Trust Fund financed by a tax on energy sources meet this criteria.

We would appreciate your including these views in the hearing record of March 17. If we can provide additional information or there are points which you or your staff would like to discuss further, please call on us.

Very truly yours,

GEORGE H. LAWRENCE.

NATURAL GAS AND U.S. ENERGY SELF-SUFFICIENCY

During these times of concern about energy and the environment, it is important that the role of natural gas be understood. Following are six specific reasons why the development of U.S. natural gas supplies should be the focal point of the drive toward domestic energy self-sufficiency:

Natural gas is our dominant domestic energy source. It provides ⅓ of our nation's total energy requirements. However, when we eliminate oil imports and focus on U.S. energy production, natural gas is our principal source of energy. Natural gas and natural gas liquids which are produced from gas wells account for 41.1% of total U.S. energy production, compared with 30.6% for crude oil, 22.1% for coal, and 6.2% for hydropower and nuclear.

Natural gas is the key to our economy. It provides over 50% of the energy used by U.S. industry, more than 3 times that supplied by any other fuel. If our nation's economy is to be stimulated and unemployment reduced, natural gas supplies must be increased.

There is a huge resource base of potential natural gas supplies in the U.S. In addition to the proved reserves of 250 trillion cubic feet at the end of 1973, estimates of potential domestic supplies range from a low of 1,450 trillion cubic feet to nearly 3,000 trillion cubic feet. This compares with 1973 U.S. consumption of 23 trillion cubic feet. Long before these sources are exhausted, supplemental gas supplies will be making a substantial contribution. However, while this is an impressive resource base of natural gas, it is at this point still a projected potential which must yet be found, developed and delivered to consumers.

Natural gas is our cleanest fuel. It is virtually free of sulphur and particulates. It does not pollute land or water and offers the best hope for alleviating air pollution, especially in urban areas. Every other fuel, including uranium, requires expensive emission control devices to protect land, water or air environment. As we take the needed steps toward domestic energy self-sufficiency, the contribution which natural gas can make toward our national environmental goals cannot be ignored.

Natural gas is our most efficient fuel. Delivered through a million mile underground pipeline network, 93% of the gas produced at the wellhead is utilized directly by the consumer. This high efficiency is achieved because there is no need for downstream energy conversion as in the refining of crude oil and in transforming the primary energy of coal or oil into electricity. In addition to the energy losses in these conversion processes, each has its own environmental, capital and time-lag problems. Again, if we are to move toward domestic energy self-sufficiency as soon as possible, natural gas can make a very special and timely contribution.

Natural gas is the least inflationary fuel. The higher prices necessary as an incentive for developing new natural gas supplies will have a gradual application to consumers. This is because essentially all of the proved reserves are under long-term contracts, usually 20 years, at historically low price levels which result in the average field price for natural gas of less than 25 cents per Mcf, or per million Btu. This is the energy equivalent price of less than $1.50 per barrel of crude oil. When the higher prices for new supplies are rolled in with the lower prices of existing supplies under long-term contracts, the impact on the consumer is reduced. Other energy sources do not have this backlog of long-term contracts. Inflation is a serious national problem; however, natural gas not only can make the greatest contribution to domestic energy self-sufficiency, it can do it with the least inflationary impact.

AMERICAN COUNCIL ON EDUCATION,
Washington, D.C.

MEMORANDUM

From: Charles B. Saunders, Jr., Director, Office of Governmental Relations.
Subject: Impact of the President's energy proposals on colleges and other nonprofit institutions.

To identify the potential impact of the President's energy proposals on the higher education community, the American Council on Education and the National Association of College and University Business Officers requested John F. Embersits, Director of Operations at Yale University, to conduct the study which is attached.

Colleges and universities throughout the country must do their share to contribute to the national effort to reduce energy consumption and strengthen the economy. However, the Embersits study makes clear that the President's proposals would impose particularly heavy fuel costs on institutions of higher education, as well as private schools, hospitals, museums, and other nonprofit institutions. This cost burden is unique because the President's proposals to date make no provisions for nonprofit institutions. This omission has been called to the attention of top officials in the Federal Energy Administration and other agencies of the Executive branch, who are currently studying possible amendments to their initial proposals.

In the meantime, the proposals now under review by the Congress pose the following problems for colleges and universities:

1. There is no provision for the exemption from excise taxes and import fees traditionally accorded nonprofit educational institutions.

2. Nonprofit institutions are not included in the proposals for revenue redistribution through tax refunds for individuals, corporations, utilities, and agencies of State and local government. Thus nonprofit institutions alone bear the full brunt of the proposed tariff and taxes on foreign and domestic petroleum products.

3. The tariff and tax proposals accordingly would result in staggering increases in fuel costs for colleges and universities, many of which are already in precarious financial condition and unable to pass their increased costs along to their "consumers," the students and their families.

4. The proposals are unlikely to effect significant reductions in the fuel consumption of many colleges and universities, which have already made substantial efforts to reduce their energy consumption.

The attached report also outlines a series of positive recommendations to relieve nonprofit institutions from undue financial burdens of higher energy costs, and to stimulate the search for new economies in energy consumption.

Impact of Administration's Economic and Energy Proposals of January 15, 1975 on Nonprofit Educational Institutions

(By John F. Embersits, Director of University Operations, Yale University, and David I. Newton, Project Analyst, University Operations, Yale University)

On January 15, 1975, in his State of the Union message, President Ford outlined programs designed to strengthen the economy and to reduce national energy consumption. Colleges and universities will be subjected to hardships unintended by those who have authorized these programs: hardships which will place an excessive financial burden on non-profit institutions without stimulating further conservation activities. It is the purpose of this brief memorandum to outline the major areas of financial and energy discrimination which impact educational institutions and to suggest actions which can aid colleges and universities in working toward the President's national goal of energy independence. The serious nature of the financial pressures plaguing colleges and universities cannot be exaggerated, nor aggravated by otherwise constructive attempts to saabilize the nation's economic and energy posture.

This document will illustrate the magnitude and scope of the cost impact of the $3.00 crude oil import fee upon educational institutions, emphasizing the absence of revenue redistribution afforded other sectors of the economy in the President's program and the lack of exemptions traditionally given to non-profit educational institutions. The failure of the current program to stimulate further energy economies in educational institutions will be highlighted as a major shortcoming. The petroleum product pricing policies as developed by the Federal Energy Administration (F.E.A.) and executed by the major oil companies have resulted in a pattern of discrimination against residual oil consumers, a major energy source for non-profit institutions. Finally, the report makes recommendations for relief to colleges and universities in ways which will reduce consumption while avoiding the financial burdens which are explicit in the current Administration proposals.

An accurate composite of the financial impact for all educational institutions is impossible to assemble in a short time. For that reason, the energy costs experienced by Yale University are highlighted as an attempt to represent those with which other institutions must contend. Yale is a complex private educational institution, with resident graduate and undergraduate degree programs, a full range of federally-sponsored research, and a medical center engaged in the delivery of health care at the research, teaching and clinical levels. As such, it represents, in microcosm, the problems facing educational institutions involved in one or more of the above-mentioned activities.

I. FINANCIAL IMPACT OF THE $3 IMPORT FEE

A new $3.00 per barrel import fee passed on to residual oil will have a significant impact on many non-profit educational institutions. Brown University estimates an increase of $420,000 should the cost of residual oil increase by $3, while Princeton predicts an increase of $600,000. Similarly, the University of California at Berkeley is burning fuel oil which costs $15.05 per barrel, thus any increase

would pose serious financial problems. Even a relatively smaller secondary institution such as the Lawrenceville School estimates an energy cost increase of over $60,000 as a result of the import fee proposals. In Yale's case, this increase would cause energy bills to rise by an additional $1,700,000—$900,000 for fuel oil and $800,000 for electricity. None of these increased energy expenditures result in improvement to an institution's educational or research output.

Prior to the proposed $3 import fee, Yale's annual energy bill had risen $6,300,000—from $2,400,000 in 1969/70 to $8,700,000 in 1974/75. While a rebate system for imported refined products is proposed to offset the full impact of the import fee, it is unclear that such a system will provide relief for many institutions—especially those burning domestically refined residual oil.

Many non-profit institutions rely either solely or heavily upon residual fuel oil as a primary fuel for the generation of steam and electricity, and many sectors of the country will be increasingly dependent on residual fuel oil as an energy source due to the trend of curtailments in natural gas. Dramatic cost increases may be expected as a result of the switch from gas to oil; some institutions' energy budgets will nearly double. Those institutions fortunate enough to still receive natural gas service will be severely impacted by the imposition of the 37 cents per Mcf excise tax on this commodity.

II. FEDERAL PRICING POLICY DISCRIMINATION—RESIDUAL OIL

Government pricing regulations explicitly discriminate against institutional users of residual oil. This discrimination is manifest in two distinct policy positions expressed in the FEA pricing regulations:

1. Gasoline, 2-D diesel fuel and #2 heating oil are artifically subsidized. FEA pricing formulae prohibit the passing of full cost increases to these "special products."

2. Major oil companies have the flexibility to allocate to residual oils all increased costs which cannot be absorbed by the "special products." As a consequence, residual fuel oil prices have grown nearly 200 percent under FEA pricing regulations, or at twice the rate of the "special products" which have been protected from full cost absorption.

The new proposed Federal Energy Administration regulations (*Federal Register*, Vol. 40, No. 15) do not eliminate the discriminatory policy of the past year by "limiting the proportion of increased product costs that can be passed through and reflected in prices charged for the group of products, taken in the aggregate, consisting of all covered products other than #2 oils, gasoline and crude oil." However, the proposed regulations do not address the problem of past discriminatory pricing policy, and they still allow a refiner a great deal of discretion within the category of general refinery products:

"In apportioning the total amount of increased product costs allocable to general refinery products (i.e., all products other than gasoline, #2 fuel oils and 2-D diesel fuel), a refiner may apportion amounts of increased production costs to a particular general refinery product in whatever amounts it deems appropriate."

In sum, residual fuel oil will continue to absorb a disproportionate share of refinery costs which otherwise would have been absorbed by such general refinery products as lubricants, kerosene, naptha, and aviation fuel; a situation which aggravates the discriminatory cost absorption to which this product has been exposed during the past year.

III. CONSUMPTION REDUCTION

A fundamental test of the proposed energy program's effectiveness in its ability to stimulate conservation activity. Increasing the price of residual fuel oil will not measurably reduce its consumption nor the amount of crude oil which the nation requires. Residual fuel oil represents less than 7 percent of refinery output nationally. The non-discretionary demand for this product by utilities, non-profit institutions and geographic sections of our nation impedes efforts for significant short term consumption reductions.

This is particularly true for educational institutions which rely on residual fuel oil as the basic source for lighting, space heating, research activity, health care delivery and food processing. As such, the consumption of residual fuel oil is not discretionary; it is a usage which sustains the express purposes for which educational institutions have been chartered.

Most non-profit institutions have implemented energy conservation programs which have reduced fuel consumption to optimum levels. An increase in the price of energy will not stimulate such institutions to reduce further; it merely increases cost.

For example, Yale University will consume less residual fuel oil in 1974/75 than that used in 1965/66 and less electricity than that used 1968/69, in spite of new building additions during this period totalling 1,000,000 square feet and a loss in combustion efficiency of 9 percent due to the use of low sulfur oil as required by the State of Connecticut. It is unlikely that similar consumption reduction performance can be projected for the future, regardless of the increased price of fuel. Further consumption reduction will be effected by withdrawal of basic services to the institutions.

IV. EXCLUSION OF NONPROFIT EDUCATIONAL INSTITUTIONS FROM REVENUE REDISTRIBUTION

The President's program calls for a redistribution of energy fees and tax revenues to various sectors of the economy through a complex mechanism of tax refunds, investment credits, reduced corporate business taxes and incentives for directed utility expansion. The exclusion of educational institutions from sharing in this redistribution of energy surcharges and investment incentives is highlighted by the following factors:

1. No portion of the $30 billion revenue from higher energy surcharges will be refunded to non-profit institutions, even though they must pay the inflated energy costs.
2. An investment tax credit program and a reduction in the corporate tax rate from 48 percent to 42 percent will have no effect on non-profit institutions.
3. Capital support or other financial incnetives designed to encourage energy conservation are not offered to non-profit institutions either for past projects or future plans.
4. Federal appropriations for sponsored research have been leveled. Increased energy costs and the consequent rise in indirect expenses will continue to reduce funds available for the conduct of scientific research, thereby further diluting the output of the scientific community throughout the nation. This human resource is one which the contry can ill afford to waste.

V. POSITIVE PROGRAM FOR ENERGY REDUCTION WITH MINIMUM FINANCIAL HARDSHIP

Traditionally, non-profit educational organizations which are exempt from income tax under section 301(a) of the Internal Revenue Code, have also been exempt from excise taxes imposed by Congress and from import tariffs and fees imposed pursuant to Executive Orders. The special problems which the President's energy proposals will create for non-profit educational institutions would be eliminated if this traditional tax exempt status were to be applied to excise taxes on domestic crude oil and import fees on imported crude oil and refined products.

Should the Congress and the President elect not to exempt non-profit educational institutions from the import fee, they should recognize that these institutions will be severly penalized. Most non-profit institutions, unlike utilities and many business firms, cannot pass on their energy price increases directly to customers. In the case of educational institutions, "customers" are students who already suffer heavy financial pressures due to rising tuition, and research activities with limited funds which are unable to absorb increased costs of energy.

In the absence of tax exempt status and with a recognition of the precarious financial condition of many non-profit educational institutions, a series of recommendations is offered to relieve such institutions of increased financial burdens due to high energy costs and to stimulate the search for new energy economies:

1. Residual fuel oil, as an essential non-discretionary source of energy, should be afforded the same pricing treatment as #2 home heating oil and 2-D diesel fuel.
2. An institutional import fee and excise tax waiver for demonstrable energy economies utilizing a specific time designation, perhaps two years, as a measuring period.
3. An increase to existing federally sponsored research grants and contracts to cover the rising costs of energy to those institutions which have demonstrated consistent annual energy efficiencies.
4. Special relief to those federally sponsored grants and contracts for projects which incur direct energy costs as a result of energy intensive research.

5. New research programs and incentives for capital investments which reduce energy consumption or which afford conversion to more desirable energy forms.

6. A mechanism to recognize in financial terms the efficiency of the centralized production of energy for heat, electricity and food processing typical within colleges and universities.

7. Design and construction support for the development of new buildings with innovative energy support systems which otherwise might be built with conventional but less efficient energy systems.

8. Relief for those institutions which, under local and state environmental regulations, have expended capital to convert central steam, electrical and chilled water plants to "cleaner" fuels. Many previous conversions will have to be reversed in order to return to energy sources more compatible with emerging national energy policy.

9. The establishment of a joint federal/non-profit institutional panel for the review and approval of institutional energy conservation programs and performance.

10. The formation of a joint federal and non-profit institutional committee to aid smaller institutions which lack technical expertise in energy conservation and to disseminate and co-ordinate energy conservation activities.

STATEMENT OF PROF. JEFF A. SCHNEPPER, STATE UNIVERSITY OF NEW YORK, COLLEGE OF ARTS AND SCIENCE, DEPARTMENT OF ECONOMICS AND MANAGEMENT SCIENCE

When Congress creates, increases, or decreases a tax deduction, it is in effect giving or taking money out of the pockets of the American Taxpayer. Special deductions, in effect, are hidden grants of money to special interest groups. When President Ford projected a governmental budget outlay of $349 billion, it did not count the money "spent" on these grants. When our international oil companies are allowed a 22% depletion tax write off, this reduction of their taxes must be made up. It comes out of the pockets of all non-oil company taxpayers.

This deduction equals grant analysis is known as the tax expenditure concept. Hidden away from our regular budget, the value of these secret congressional gifts has risen yearly since their identification in 1967 by Stanley Surrey of the Harvard Law School. The cost of grants given by non-collected tax revenue has been calculated as follows:

1967	$36.6	1972	$59.8
1968	44.1	1973	(1)
1969	46.6	1974	74.8
1970	43.9	1975	81.0
1971	51.7	1976	91.0

[1] Not available.

This tripling of tax benefits over the last ten years includes such non-loophole items as deductions for charitable contributions (as opposed to having the government collect the money and then redistribute it) and deductions for state and local taxes paid. It also includes, though, such true loophole benefits as allowing petroleum producers to deduct from taxable income 22% of their gross income from oil and gas properties, up to half their net income.

This depletion allowance will cost the American taxpayer *$3 billion* in fiscal 1976, a 50% increase over the past two years—a time when oil profits climbed to unprecedented highs! Why are these deductions allowed to continue?

The answer, from the oil companies, is cost. Continental Oil Company has valued its depletion allowance at $60 million directly and $30 million in lost borrowing capability. In Pittsburgh, Gulf Oil Corporation said elimination of the depletion allowance would force it to cut its 1975 spending for domestic exploration by 20%. Gulf estimated that it would gain up to $110 million this year from the depletion allowance. If the tax credit were to be scrapped, they would not have that money to invest in searching for new oil and gas. With decreasing supply availability, the energy cost to the American consumer would be forced up.

But let's take a closer look at exactly how the depletion allowance works. Remember we are dealing with integrated oil companies, corporations who not only drill, but "sell" their crude to themselves as refiners.

Let us assume a corporate tax rate of 50% rather than 48%, and that the company produces 100 barrels of gasoline at its refinery and sells them for $1.50

each. Total income is therefore $150. The cost to recover the crude oil at the wellhead is $.30 a barrel (total $30.00) and to refine it $.40 a barrel (total $40.00). The normal consequences are:

Crude oil level

Cost to recover crude oil	$30.00
Gross income from sale of crude oil to refinery	60.00
Net income	30.00

Refinery level

Cost of crude oil (from above)	60.00
Cost of refining	40.00
Total cost	100.00
Sales at $1.50 a barrel	150.00
Less total cost of goods sold	100.00
Income before taxes	50.00

Tax liability

Oil depletion allowance (22 percent×$60=22 percent of gross income at wellhead)	13.20
Taxable income ($30 wellhead+$50 refinery—$13.20 allowance)	66.80
Tax at 50 percent	33.40
Net profit after tax	33.40
Real net profit $33.40+$13.20	46.60

If this was not bad enough, hire a good accountant and see what you get.

Crude oil level

Cost to recover crude oil	$30.00
Gross income from sale of crude oil at higher prices	110.00
Net income	80.00

Refinery level

Cost of crude oil	110.00
Cost of refinery	40.00
Total cost	150.00
Sales at $1.50 a barrel	150.00
Less cost of goods sold	150.00
Income	------

Tax liability

Oil depletion allowance (22 percent×$110=22 percent of gross income at wellhead)	24.20
Taxable income ($80—$24.20)	55.80
Tax at 50 percent	27.90
Net profit after tax	27.90
Real net profit ($27.90+$24.20)	52.10

	Comparison	
	1	2
Net income after tax	$33.40	$27.90
Oil depletion allowance	13.20	24.20
Real net income	46.60	51.10
Net income if oil depletion allowance were to be repealed (50 percent of $80)	40.00	40.00
Value of oil depletion allowance	6.60	11.10

As the price of the barrel at the wellhead increases, the percentage of total income that is tax-free is increased. With an oil company that supplies oil to its own refinery, total income can be increased artifically by raising crude oil prices. Any wonder why oil prices have jumped so over the last 2 years.

The American taxpayer gets hit twice. First, by the increasing cost for his oil products and secondly, by the increased tax he must pay to compensate for the increased oil depletion allowances caused by increased prices. It's a beautiful cycle, unless of course you're not an oil company.

Our present Administration is seeking to make the U.S. self sufficient in terms of energy resources. It proposes to do this by stimulating domestic oil production. Maintenance of the oil depletion allowance for *domestic* production would aid in this goal.

Oil though, is a limited resource. By stimulating domestic production today we are in effect burning our bridges for tomorrow. I would though, support domestic stimulation in the name of energy independence and in the hope of developing alternative energy resources.

As for international production, no such rational exists for the continuation of the oil depletion allowance. If our objective is to stimulate domestic production, the last thing we should do is grant fiscal incentives to drill overseas.

I therefore propose the following resolutions for committee consideration:

(1) the 22% oil depletion allowance be discontinued immediately for all overseas production.

(2) the 22% depletion allowance be retained for domestic production, but only for 2 years. At the end of 2 years the allowance shall expire automatically unless reinstated by Congress.

In this way, the American taxpayer shall no longer be forced to pay for increased international oil company profits. Production resources would then be diverted to domestic production with energy independence a hopeful result. The automatic expiration at the end of two years would necessitate an active reinstitution of the allowance by Congress. Its decision would then be determined by the dominant circumstances at that time.

I would like to thank the Chairman for the chance to be heard and for his constant efforts in behalf of the American taxpayer.

WOODS PETROLEUM CORP.,
Oklahoma City, Okla., March 4, 1975.

Mr. MICHAEL STERN,
Staff Director, Committee on Finance,
U.S. Senate,
Washington, D.C.

DEAR MR. STERN: We, as an independent oil company and as a small business exploring for and producing oil and gas, are extremely concerned that the legislation now pending in Congress will directly or indirectly run our Company and other small independents like us out of business. Our Company is and has been one of the most active small independents in the Mid-Continent Area. Our Company drilled 111 wells in 1974 including both exploratory "wildcats" and development wells, and we were successful in finding new oil and gas reserve. Our exploration effort is funded almost equally from corporate earnings and outside investors. Elimination of depletion on oil and gas will necessarily eliminate the incentive for the small investor to participate in programs like ours and certainly will curtail "risk" expenditures on the part of the small company, itself.

Of course, depletion and pricing are interrelated and properly should be considered hand-in-hand. When and if we eliminate depletion, we must either find relief elsewhere in the form of an investment tax credit or in the form of oil and gas prices or drill fewer high risk prospects with the ultimate result of losing out to the major oil concerns.

It is the small independent who is suffering the most with elimination of depletion and imposition of price controls at the well-head. Punitive legislation against the entire oil industry without regard to the anatomy of the oil industry will destroy the small independent, place even more power in the hands of the major, and utlimately will be a disservice to the public.

There are a number of pertinent questions that need to be asked and those questions answered from knowledgeable and honest sources before we respond to the energy matter as it relates to oil and gas:

1. Who is doing the most drilling and finding the most oil and gas domestically—the independent or the major?

2. If the independent is doing the most toward finding new oil and gas, how is he structured financially to get the job done without the benefit of refining, pipe lines, or marketing?

3. Who is making the so-called "windfall profits", and how are the profits being reinvested to find more oil and gas?

4. Where are most of the so-called "windfall profits" derived—from foreign or domestic crude?

5. What are the "risks" and present day costs for drilling?

6. What have we learned from 21 years of gas regulation by the Federal Power Commission?

The answer to the last question is, of course, that we have an "energy crisis". The government has interfered with the "supply and demand" concept to the extent that we have had no incentive to develop other sources of energy over the years, that we have not had the economical means or incentive to find new natural gas reservoirs fast enough, and energy that is available to the public is being used wastefully and irresponsibly. Finally, this period of control has contributed further to the economic instability our Nation is now experiencing.

We urge you to eliminate the depletion aspect of the tax bill that is presently before the Senate and more properly deal with depletion as a part of a more comprehensive "energy" package. If we cannot do the above, we urge you to consider leaving depletion on natural gas and exempting those persons or companies who do not have refineries, pipe lines, or marketing and have production of 5,000 barrels per day or less of oil.

As a part of total "energy" package, we would recommend the following:

1. Reduce or eliminate foreign tax credits against United States income tax as it applies to production of foreign oil and gas.

2. Eliminate depletion on foreign oil.

3. Maintain present percentage depletion on domestic production of oil and gas.

4. Allow "old" oil to rise to the level of "new" but impose an excise tax on "old" oil and allow a plowback provision for drilling exploratory wells on a portion of the tax.

5. Leave "new" oil priced as it is presently to provide for the increased costs experienced over the last year and an incentive to continue drilling for "new" oil.

6. Exempt from "old" oil control oil produced from bona fide pressure maintenance and secondary or tertiary recovery projects where extraneous fluids are being injected to improve recovery.

7. Impose a weight-horse power product tax on new automobiles commencing in 1977 phasing in the tax over a three-year period (i.e., 100 hp x 3000#—no tax and 250 hp x 6000#—a $2,500 tax).

8. Impose a moderate gasoline tax to curb usage.

9. Impose quotas on foreign oil with such quotas to be set and adjusted by a Committee or Panel of knowledgeable government-industry representatives.

10. Encourage utilities and industry to convert from natural gas or fuel oil to coal and nuclear power.

11. Maintain present regulation of "old" gas with periodic price adjustments where necessary and deregulate "new" natural gas.

12. Stimulate research on the part of both government and private industry for development of coal, nuclear power, and solar energy.

The above recommendations represent a multi-point plan that will preserve our Nation's industries, will minimize government control and manipulation of economic forces, and be of the greatest benefit to the public.

Once again, we urge you to deal with "energy" matters in an "energy" bill and not as an irresponsible rider on an unrelated tax measure such as the one you are presently considering.

Yours very truly,

LEE POWELL,
Executive Vice President.

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