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NONNEUTRAL FEATURES OF ENERGY TAXATION†

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This paper identifies U.S. taxes and tax features at the federal, state, and local levels which affect the production and distribution of energy differently from other industries. In addition, the study compares the general structure of energy taxes at the various levels of government with taxes on nonenergy industries, comments on the compatibility of various energy taxes given national energy objectives, and identifies taxes and tax features which appear to involve tax discrimination or which lack adequate justification.

Nonneutral or discriminatory features of energy taxation are of particular importance because of the energy crisis. It is clear that taxes impose burdens or costs on households and businesses. Taxes also raise revenue and encourage mineral exploration. However, unintended interference with the market mechanism such as distortion of choices made by households and businesses may result in excess burdens and should be avoided. Beyond the intended effects, taxation should be as neutral as possible.

The energy industry includes the following: the exploration, development, and extraction of coal, oil and gas, uranium, oil-bearing shale, as well as solar, hydro, and geothermal energy; the transportation of primary energy sources; conversion of primary sources; and transportation and distribution of energy to final use. This paper is concerned with taxes and tax features at each level of the production-distribution process, from extraction to final delivery of energy and energy conservation.

† A version of this paper was prepared for the Steering Committee on the Impact of Taxation on Energy Markets of the National Research Council. However, the views expressed are those of the authors and should not be interpreted to represent the views of the Committee, the National Research Council, or the National Academy of Sciences. A copy of the original version, which is more detailed, may be obtained from the authors. The appendices to the original version are included in NATIONAL RESEARCH COUNCIL, NATIONAL ACADEMY OF SCIENCES, A TAXONOMY OF ENERGY TAXES (1979). The authors gratefully acknowledge the comments of the Steering Committee on the original paper. The members are Milton Russel (Chairman), Gerard Brannon, Ronald Brunner, John Carver, Jr., Robert Crow, Edward Erickson, Malcom Gillis, Arthus Wright, and William Morgan. Robert Shelton was the Committee Study Director. The authors also acknowledge the comments of Peter Maxfield and the research assistance of Karen Collins.

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Taxes are defined broadly for purposes of this discussion. Some energy policies which are not normally considered as tax policies are included. Taxes and tax features identified include: taxes where there is a clear record of legislative intent to have an impact on energy; tax features which appear neutral or nondiscriminating based on tax law, but have differential or nonneutral effects on the energy industry. For example, general regulations regarding foreign tax credits do not appear to affect the energy industry differently from other industries but do because of treatment on tax royalties paid to governments which are landowners. Also included are royalties and other industries but do because of treatment of tax royalties paid to quotas; environmental regulations, reclamation taxes and effluent charges; interrelations between tax and regulatory rules (e.g., the issue of normalization or flow through); and potential or unused taxes (e.g., the windfall profits tax). The energy tax and tax features identified are current as of spring 1979.

An analysis of the economic effects of energy taxes is beyond the scope of this paper. A general discussion of the allocation, distribution, and stabilization effects of energy taxation is included in the more detailed study identified in the footnotes.

The following section of this paper provides an overview of U.S. energy taxes. The third section describes energy tax features of the federal government. The fourth section provides comparable information for state and local taxes. Some energy policies not normally identified as taxes have important economic effects and frequently have tax equivalents and would yield the same effects. Major tax-like policies are summarized in the concluding section of this paper. A general summary of federal, state, and local energy taxes and tax features is provided in Tables I and II. The primary sources of tax information are as follows: The Internal Revenue Code; State Tax Guide; and Statute Summaries, By Taxes, By States, published by Commerce Clearing House, Inc.

AN OVERVIEW OF U.S. ENERGY TAXATION¹

It is recognized that governmental units have multiple objectives including allocative efficiency, economic growth, price stability, and income redistribution. Conflicts occur among objectives within a governmental unit and among governmental units. Energy taxation can be used to promote a variety of objectives including national energy

1. The general conclusions set forth in this section are based on the authors' interpretation of tax provisions noted elsewhere in this paper. References to specific tax provisions are cited.

TABLE I
SUMMARY OF U.S. ENERGY TAXES—FEDERAL

<i>Federal</i>	<i>Primary Energy Sources</i>	<i>Energy Transportation, Conversion, and Distribution</i>	<i>Energy Use/Conservation</i>
Production	<p>The federal coal excise tax is imposed at the rate of 25 cents per ton on surface mined coal and 50 cents per ton on coal from underground mines.</p> <p>There is a reclamation tax of 15 cents per ton on underground coal, 35 cents per ton on surface mined coal, and 10 cents per ton on lignite.</p>		
Income	<p>Percentage depletion allowance is 10% for coal and natural gas from geopressed brine, 15% for oil shale and geothermal deposits, and 22% for uranium. 22% allowance for oil and natural gas is available to independent producers (who may only claim the deduction on the first 1,200 barrels of oil or 7.2 million cubic feet of gas produced per day) and for regulated natural gas. Energy producing firms eligible for percentage depletion may choose either cost or percentage depletion. Other energy firms may use cost depletion.</p> <p>Intangible-exploration costs may be written off immediately or recaptured by cost depletion.</p> <p>Gains from the sale of depreciable assets, attributable to the use of accelerated depreciation, excess percentage depletion or deduction of intangibles, or from deduction of exploration costs are taxed as ordinary income instead of as capital gains.</p> <p>Unlike other multinational firms, oil and gas producers may not consolidate their income with income from other foreign business enterprises for the purposes of the foreign tax credit. Also, they are limited on the amount of excess taxes that can be carried back or over to 2% of taxable income in excess of the 46% foreign tax limitation.</p> <p>Energy industries are subject to 15% minimum tax on items receiving preferential tax treatment.</p>	<p>Non-investor owned utilities are exempt from income taxes and some of them are able to use tax exempt municipal bond financing. Tax exempt industrial development bonds are available to provide facilities for furnishing local electricity.</p>	<p>An income tax credit of up to \$300 is available for installing residential energy saving equipment. There is another tax credit of up to \$2,200 for installing solar, wind, or geothermal equipment in the home.</p> <p>Some business expenditures for energy conservation are eligible for the regular investment tax credit. A special 10% investment tax credit is available for investment in "Energy Property" which is equipment using alternative energy sources or is designed to reduce energy consumption.</p>
Excise & Related			<p>The excise tax on petroleum products is four cents per gallon on aviation fuel, gasoline, special motor fuel, and fuel used in waterway transportation; six cents per gallon on lubricating oil.</p> <p>The manufacturer's excise tax on motor vehicles is 10% for bodies and chassis and 8% on parts and accessories.</p> <p>A tax of ten cents per pound is imposed on innertubes and the sale of new laminated tires for highway use. The tax is 5% per pound on nonlaminated tires and one cent per pound on tires made from recycled rubber. A tax of \$3.00 per 1,000 pounds of gross weight applies to highway vehicles in excess of 26,000 pounds.</p> <p>Civilian aircraft are taxed at the rate of \$25 annually plus two cents per pound for non-turbine and 3½ cents per pound for turbine engine craft in excess of 2,500 pounds of maximum certified weight.</p> <p>A tax of 8% is imposed on fares for domestic commercial air transportation, 5% on air freight, and \$3 per head on international air travel.</p> <p>Beginning in 1980, the gas guzzler tax will be placed on the sale of low mileage new cars.</p>

TABLE II
SUMMARY OF U.S. ENERGY TAXES—STATE & LOCAL

<i>State and Local</i>	<i>Primary Energy Sources</i>	<i>Energy Transportation, Conversion, and Distribution</i>	<i>Energy Use/Conservation</i>
Production	<p>Coal—15 states (specific—two cents per ton to 85 cents per ton; <i>ad valorem</i>—4.5% of gross value to 30% of FOB mine price. Also several states impose production taxes at the local level based on value (net or gross) times local mill levy.</p> <p>Oil and gas—25 states levy taxes on oil and/or gas (specific—oil, .5 of one cent per barrel to 45 cents plus surtax per barrel; gas, .5 of one cent/50,000 cu. ft. to seven cents/1000 cu. ft.; <i>ad valorem</i>—oil, .5 of 1% gross value to 12.5% of gross value; gas, 2% gross value to 10%).</p> <p>Uranium—5 states (1-5.5% gross value, maximum of \$3.24 plus surtax per pound).</p> <p>Oil shale—4 states (2-6% of gross value).</p>		
Excise	<p>Coal—6 states levy excise tax at specific %, 2.5%-4.75% of gross receipts; coal used as intermediate good in-state is exempt in 2 states.</p>	<p>34 states levy taxes on both non-investor owned and private utilities based on % of gross operating revenue: .25 of .1 of 1% to 6%. 4 states levy gross receipts on pipeline companies: 1-6% of gross receipts.</p>	<p>Most states (and in some states also local governments, local option) impose excise taxes on electric and gas utility sales.</p> <p>6 states levy taxes on sale of electrical energy/KWH. Rates range from \$.0001 to \$.004.</p> <p>All states impose an excise tax on motor fuel at rates of six cents to 13.5 cents per gallon. Rates on diesel fuel are different than gasoline in 13 states.</p> <p>Some states impose excise taxes on a variety of petroleum products such as aviation fuels, kerosene, LPG, tractor fuels, and lubricating oils.</p>
Property	<p>Coal—levied in 2 states at local level based on % of present value of minerals in ground times local mill levy. One state imposes a tax on unmined coal at rate of .1 of one cent per \$100 valuation.</p>	<p>State and local property taxes on utilities are generally higher than those on other types of enterprise because utility property is entered on tax rolls at a higher fraction of market value than other types of enterprise in many states.</p>	<p>Property tax benefits are available in 19 states on equipment associated with the use of alternative energy sources. The benefits take the form of preferential assessment, tax exemption of the equipment, special valuation of realty using solar equipment, and tax reimbursements on property taxes on buildings using solar equipment.</p>
Income	<p>States which base income tax on federal tax laws permit, <i>de facto</i>, depletion and current expensing benefits allowed at federal level. Some states allow depletion or current expensing.</p>	<p>Non-investor owned utilities are exempt from state income taxes.</p>	<p>9 states provide state income tax benefits for installation of equipment using alternative sources of energy. The benefits take the form of tax credits, accelerated depreciation and tax deduction.</p>
Misc. Taxes	<p>Various nominal taxes to finance conservation and regulating activities, e.g., drilling permits and inspection fees.</p>		<p>14 states impose fuel inspection fees. The rates for gasoline and diesel fuel range from .5 of one cent per 50 gallons to 1.5 cents per gallon.</p>

objectives and income redistribution. Whatever the final details of the federal energy program that ultimately is adopted, the major thrust will be greater reliance on domestic sources of energy including hard minerals such as coal and uranium, increased oil and gas production, conservation of conventional energy sources, and increased utilization of alternative energy sources such as solar, geothermal, and wind.

The major features and issues of energy taxation discussed in this section are: differential treatment of the energy industry at the federal level as compared to state-local levels; tax compatibility between the federal and state-local levels; tax treatment of earnings from capi-

tal investment made in the U.S. and abroad and the implications for national energy objectives; tax treatment of capital gains between energy and other types of enterprises; and differential percentage depletion rates among the primary energy resources.

A. Differential Tax Treatment

There is considerable disparity in the tax treatment of the energy industry relative to nonenergy industries at the federal level as compared to state-local levels. Some of the nonneutral features are favorable to the energy industry; others are not. This comparison of the differential effects of taxation of the energy industry relative to other types of enterprise is difficult without quantitative estimates of the revenue and welfare effects of the various taxes and tax features of each governmental level. The analysis is also clouded by various governmental regulations which have tax-like effects. The legislative intent of federal tax policy would appear to stimulate development of the U.S. energy industry (both conventional and nonconventional) through a more favorable tax treatment than to other types of enterprise. Major federal benefits occur at the energy extraction stage in the form of percentage or cost depletion for certain primary energy resources, expensing of intangible drilling costs for oil and gas wells and special provisions which permit hard mineral exploration and development costs to be written off currently. Although the federal government imposes two separate excise taxes on coal production, the revenues are used to mitigate negative externalities such as land reclamation and mining health problems.² Further, the federal government imposes excise taxes on a variety of products used in transportation (e.g., gasoline, tires). Most of the revenue from the excise taxes is used to finance highways. As such, the taxes serve the function of a user charge or required payment, rather than a tax. Finally, the federal government provides income tax incentives to businesses and homeowners for installation of equipment using alternative or nonconventional energy sources.

On the other hand, the intent at state-local levels appears to be differentially higher taxation of the energy industry relative to other types of enterprise. State-local energy tax policy reflects a combination of revenue objectives, including tax exportation, and environmental concerns.

An important state tax imposed on extraction of primary energy

2. It is important to note that stripmined coal as well as underground mined coal are federally taxed. See I.R.C. § 4121 (Supp. II 1978). The tax on stripmined coal is one-half the rate of underground mined coal (25 cents as compared to 50 cents per ton), although the majority of the coal-related health problems are associated with underground coal mining.

sources and some other nonrenewable resources is the production tax. Most of the energy producing states, and also local governments in some states, levy production type taxes (specific or *ad valorem*). Some states employ significant excise taxes on the sale of certain minerals (which are intermediate goods) and several states or their local governments levy significant property taxes on unmined minerals. One favorable feature available to the extractive energy industry in some states is depletion and current expensing of intangible capital costs.

At the intermediate stages of the production-distribution process, state and local property taxes on utilities appear to be higher than taxes on other types of enterprise. The higher taxation occurs because utility property is entered on tax rolls at a higher fraction of market value.

Thirty-four states levy a special franchise tax on utilities based on percent of gross receipts. In addition, most states (and in some cases local governments) impose utility taxes on the sale of electricity and natural gas. For the nation as a whole, utility sales appear to be taxed at higher rates than commodities which are taxed under general state-local sales taxes.

All states levy excise taxes on the sale of gasoline and all but two states tax diesel fuel. State gasoline taxes are normally allocated to a state highway user tax fund used to match federal money for highway construction. Finally, many states provide income or property tax incentives for installation of equipment using alternative sources of energy.

B. Tax Compatibility

It is clear that all three levels of government use taxes as instruments to achieve different objectives. The conflict between federal energy objectives and those of the energy producing states has become more acute in recent years in the case of conventional energy resources. The steady increase in production taxes on hard minerals, such as coal and uranium, by state and local governments for revenue purposes is inconsistent with the national energy objective of increasing reliance on these types of minerals instead of oil and gas (as envisioned by the 1977 National Energy Plan).³ Moreover, high pro-

3. EXECUTIVE OFFICE OF THE PRESIDENT, ENERGY POLICY AND PLANNING, THE NATIONAL ENERGY PLAN (1977). For a discussion of coal and uranium tax policy, see Gillis, *A Tale of Two Minerals*, 10 GROWTH AND CHANGE 55 (1979) and Shelton & Morgan, *Resource Taxation, Tax Exportation and Regional Energy Policies*, 17 NAT. RES. J. 261 (1977).

duction taxes on oil and natural gas are inconsistent with the national objective of increasing domestic production.

The constitution reserves to the states powers not granted to the federal government.⁴ Traditionally, taxing and expenditure decisions of the states have not been rationalized on a state-to-state basis or between states and the federal government. Recently, however, some state taxes have been attacked on federalism or constitutional grounds.⁵ For example, Louisiana's "first-use tax" of seven cents per MCF on natural gas destined for interstate commerce has been challenged by the Federal Energy Regulatory Commission on constitutional grounds.⁶ Montana's tax on severance of coal of up to 30 percent of value also is under attack in federal courts.⁷ The Supreme Court of the United States has invalidated a New Mexico tax on energy because its effect on generation of electric power for export to other states was contrary to the tax format of 1976.⁸

Federal and state-local tax policies regarding nonconventional energy sources are compatible. Income and/or property tax benefits are available in twenty-five states for installation of equipment using alternative sources of energy, as well as at the federal level in the form of income tax credits.

A conflict exists within the federal government between the objective of reducing gasoline consumption and the financing of highways through motor fuel tax revenues. The large majority of federal motor fuel tax revenues are earmarked for the Federal Highway Trust Fund and are the source of federal highway assistance to the states. Although higher gasoline taxes have a tendency to reduce highway use, more and better highways (financed from gasoline taxes) have a tendency to increase highway use. Unlike European countries, gasoline is not a source of net revenue (general revenue) in the United States.⁹

C. Tax Treatment of Income Earned in the United States and Abroad

U.S. tax policy is neutral in relation to capital investment decisions of U.S. firms here or abroad. The United States reduces its in-

4. U.S. CONST. amend. X.

5. A major constitutional limitation on state taxation is imposed by the Commerce Clause of the U.S. Constitution, Article I, Sec. 8 which prevents states from interfering with commerce among states.

6. *Maryland v. Louisiana*, No. 83, Orig. (United States Supreme Court, filed June 18, 1979). The basis of the challenge is that the tax is a burden on interstate commerce.

7. *Commonwealth Edison Co. v. Montana*, No. 42657 (D. Mont., filed July 27, 1979).

8. *Arizona Public Service v. Snead*, 441 U.S. 141 (1979). The tax was invalidated on the ground that Congress, in passing the Tax Reform Act of 1976, had expressly forbidden the tax in question.

9. A discussion of gasoline taxation in the U.S. and comparisons with European countries is included in G. BRANNON, *STUDIES IN ENERGY TAX POLICY* 3-40 (1975).

come tax liability on earnings of foreign branches of U.S. firms and on repatriated earnings of foreign subsidiaries of U.S. corporations by the amount of taxes paid on that income abroad, up to 100 percent of the U.S. tax. Current U.S. tax policy regarding the location of energy investments (United States or abroad) is inconsistent with a federal energy policy which mandates reliance on domestic energy.

D. Treatment of Capital Gains

Under U.S. tax law, treatment of capital gains is intended to be neutral among all types of enterprise. Historically, however, the treatment of depletion and expensing provisions has provided capital gains benefits to the energy industry not generally available to other enterprises. Following amendments to the tax laws which occurred between 1962 and 1976, deductions in excess of straight line depreciation for both energy and non-energy industries were treated as ordinary income for purposes of capital gains taxation.

A notable exception to taxation neutrality of capital gains is the treatment of coal and iron ore. Mined coal held by the owner of the mineral rights for at least one year is considered a capital gain subject to preferential capital gains tax rates.¹⁰ The policy encourages leasing rather than sale of property to coal producers. This tax provision was enacted in 1951 to encourage coal production¹¹ when coal was facing strong competition from other energy sources. Today, there is no obvious justification for preferential tax treatment of the coal industry.

E. Differential Depletion Rates

Similarly, there is no adequate rationale for differential percentage depletion rates among the primary energy resources which range from zero for oil and natural gas (except for independent oil and gas producers, regulated natural gas, and gas sold under fixed contract) to 22 percent for uranium.¹² Percentage depletion, along with expensing of certain capital costs, can be expressed as the equivalent of an investment credit. This credit varies among minerals depending on relative value added between extraction (including crude proces-

10. I.R.C. § 613(c) (Supp. II 1978).

11. For a discussion of the purpose of this law, see H.R. Rep. No. 586, 82nd Cong., 1st Sess. 31 (1951).

12. A separate issue, and subject of intense policy debate, is the differentially favorable treatment of the extractive energy industries relative to other types of industry because of depletion and expensing provisions available to the extractive industries. See Wright, *Federal Tax Policy and the Extractive Industries: Are We Getting Our Money's Worth?* in HOUSE COMM. ON WAYS AND MEANS, TAX REFORM, 1969 at 3393 (1969).

sing) and refining; the rate of profit in extraction; relative importance of several kinds of capital investment in the extraction process (mine or well); the statutory rate of depletion; the set of limitations on percentage depletion applied to oil producers; and the manner in which profits from extraction are divided between mineral property rights and producers. The provisions of present law vary erratically between different primary energy resources and cannot be justified in terms of national energy objectives.

FEDERAL ENERGY TAXES AND TAX FEATURES

Both federal and state-local energy tax policies are described by following the normal production to distribution sequence, beginning with the extraction of primary energy resources and ending with the final delivery of energy. This organizational structure is useful for comparing federal taxes and subsidies with those of state and local governments at each stage in the production/distribution process.

A. Extractive Industries

The federal government imposes two production taxes which apply only to the coal industry. Based on the Surface Mining Control and Reclamation Act, excise taxes are imposed on surface and underground coal production at rates of 35 cents and 15 cents per ton, respectively.¹³ The tax on lignite is ten cents per ton. The revenue is used to finance reclamation of land strip-mined and abandoned by the coal industry. Under the Black Lung Benefits Revenue Act, surface and underground coal production (excluding lignite) is taxed at rates of 25 cents and 50 cents per ton, respectively, for the purpose of compensating miners afflicted with mine related health problems.¹⁴

Although extractive energy industries are subject to the federal income tax, they enjoy several special benefits not available to other industries. As mentioned earlier, the major benefits are percentage or cost depletion for all primary energy resources, expensing of intangible drilling expenses for oil and gas wells, and special provisions which permit hard mineral exploration and development costs to be written off currently. The combination of depletion and benefits associated with expensing of certain capital costs has a tendency to increase exploration and development of new deposits and to increase the rate and level of production from existing mines and reservoirs.

13. 30 U.S.C. § 1201-1328 (Supp. II 1978).

14. I.R.C. § 4121 (Supp. II 1978).

Percentage depletion provides a major tax benefit to the extractive industries because it allows an acceleration of capital cost recovery plus allowances for tax free recovery of dollar amounts which can be greater than the original investment in the depletable property. Moreover, since percentage depletion enables firms to deduct initial costs at an accelerated rate relative to non-extractive industries, it provides a double benefit: deductions in excess of initial costs and deductions of initial costs that are usually accelerated as compared to non-extractive industries.¹⁵

Percentage depletion allows the deduction of a given percentage of gross value at the minemouth or wellhead, depending on the mineral, not to exceed 50 percent of net income (or 65 percent of gross income for independent oil and gas producers), which is roughly gross value minus lifting costs, royalties, and taxes.¹⁶ Certain gas sold under fixed contract is not subject to the 65 percent income limitation.¹⁷

The percentage depletion allowances for coal, uranium, and oil shale are ten percent, 22 percent, and 15 percent, respectively, of the gross income from mining, excluding royalties.¹⁸ In 1969, the percentage depletion allowance for oil and gas was reduced from 27.5 percent to 22 percent and in 1975, the 22 percent depletion allowance was terminated except for independent oil and gas producers, regulated natural gas, and gas sold under a fixed contract.¹⁹

For independent producers, production which qualifies for percentage depletion is limited to 1200 barrels of oil per day and 7.2 million cubic feet of gas per day.²⁰ This limitation is not imposed on regulated natural gas or gas sold under a fixed contract.

All firms in the extractive industries may take cost depletion, which is an important benefit to the energy industry. Those firms which are eligible for percentage depletion are permitted to deduct the larger of cost or percentage depletion.²¹ Cost depletion is based on capitalized cost or purchase price and the annual cost depletion is calculated from the ratio of the quantity of mineral extracted to the estimated recoverable reserve of the property.

15. R. Spann, *Percentage Depletion and the Price and Output of Domestic Crude Oil* in HOUSE COMM. ON WAYS AND MEANS, GENERAL TAX REFORM 1310 (1973).

16. I.R.C. § § 613 (1976 & Supp. II 1978) and 613A (1976, Supp. I 1977, & Supp. II 1978).

17. I.R.C. § 613A (1976 & Supp. II 1978).

18. I.R.C. § 613(b).

19. The present provisions for percentage depletion for oil and gas are set forth in I.R.C. § 613A (1976, Supp. I 1977 & Supp. II 1978).

20. I.R.C. § 613A(c).

21. I.R.C. § 611-613A (1976, Supp. I 1977, & Supp. II 1978).

The intangible drilling and exploration-development provisions of federal taxation are benefits because they allow the immediate tax-free recovery of capital investment in certain cases. For most other industries, recovery of capital corresponds more closely to actual physical depreciation over its useful life. An owner operated firm in the oil and gas industry may deduct from gross income in the year the costs are incurred all intangible drilling costs. These include all drilling costs except for depreciation of drilling equipment, irrespective of whether the hole is producing or dry.²² Alternatively, intangible drilling expenses may be capitalized as part of the cost of the property and recovered through cost depletion. However, non-owner operated firms must recover these costs through cost depletion or ordinary loss, in the case of non-producing wells.²³ Lease rentals may be deducted immediately or, like general exploration costs, they may be added to the cost of the property and recovered through cost depletion.²⁴ For hard energy minerals (coal, uranium, and oil shale) the intangible costs of developing a mine can be deducted in the year the cost is incurred or capitalized into the cost of the mine.²⁵ The exploration costs of determining the existence, size, and location of hard mineral deposits may be charged off as incurred, but in the case of producing mines, the deducted exploration costs are added back into the capitalized value of the mine and recaptured through cost or percentage depletion.²⁶

There are several other features of federal income tax law which differentially affect the energy industries. Based on the minimum tax law of 1969 and subsequent amendments, all firms, including those with no regular federal income tax liability, are subject to a minimum tax of 15 percent on a base of items receiving preferential tax treatment.²⁷ The minimum tax base is the sum of the value of several tax deductions, which include percentage depletion and intangible drilling costs.

Extractive energy firms have been given considerable latitude in splitting mineral holdings into several property units or in aggregating separate mineral interests into larger property units.²⁸ This option can be significant for tax purposes since depletion, intangible drilling expenses, exploration and development expenditures, and certain

22. I.R.C. § 263(c) (Supp. II 1978) and U.S. Treas. Reg. § 1.612-4 (1970).

23. U.S. Treas. Reg. § 1.612-4 (1970).

24. I.R.C. § 617.

25. I.R.C. §§ 616, 1016(a)(9).

26. I.R.C. § 617.

27. I.R.C. §§ 55 (Supp. II 1978), 56 (1976 & Supp. II 1978) and 57 (1976, Supp. I 1977, & Supp. II 1978).

28. I.R.C. § 614 (1976 & Supp. II 1978).

preference items for the minimum tax are calculated separately for each property unit.

Another aspect of federal taxation on the energy industry involves treatment of dividends paid. When determining the taxable liability on corporate distributions of property or on dividends paid, the amount allowable as depletion is that which would have been calculated using cost depletion.²⁹ As a result, energy corporations benefitting from percentage depletion and expensing of intangibles can lose some benefits when proceeds are paid out as dividends.

Changes in federal capital gains tax laws from 1962 to 1976 appear to have promoted neutrality between the energy and non-energy industries. Upon the sale of energy property, the amount by which the sales price exceeds the adjustable basis of the property for tax purposes is taxed as ordinary income rather than as a capital gain.³⁰ This tax provision is based on the premise that the firm would have had to pay income tax on this income if straight line depreciation and cost depletion were used. Thus, capital gains taxation appears to be neutral regarding selling decisions on energy property, with one notable exception. Coal or iron ore mined in the U.S. and held for at least a year before its disposal under a contract in which the owner retains an economic interest, qualifies as the sale of property.³¹ This sale may, therefore, be taxed as a capital gain if the coal or iron ore owner uses cost depletion instead of percentage depletion. This tax provision was enacted in 1951 "to encourage leasing, and therefore production, at a time when the coal industry was facing strong competition from other sources of energy."³² This tax feature which distorts selling and leasing decisions may have been desirable in 1951, but it is no longer justifiable if neutrality is an important tax consideration.

U.S. tax policy is designed to treat domestic and foreign investment comparably. Thus, income taxes paid to foreign governments may be used as a credit against a taxpayer's U.S. income tax liability.³³ The provisions of the foreign tax credit do not, however, always treat the energy and non-energy industries the same.

It has been claimed that the petroleum industry and several non-energy mineral industries have used the foreign tax credit for so-called taxes which are actually paid in lieu of landowner's royalties.³⁴ How-

29. I.R.C. §§ 312, 316 (1976 & Supp. II 1978).

30. I.R.C. §§ 1245, 1254 (1976 & Supp. II 1978), 1255 (Supp. II 1978).

31. I.R.C. § 631(c).

32. See H.R. Rep. No. 586, *supra* note 11.

33. I.R.C. § 901 (1976 & Supp. II 1978).

34. See Wright, *supra* note 12.

ever, recent revisions in federal tax regulations make it more difficult for U.S. firms to claim the foreign tax credit on payments to foreign governments.³⁵ Also, percentage depletion is denied to foreign oil and gas operations and, for the most part, all types of energy firms are limited to the use of cost depletion.³⁶

Unlike other integrated multinational firms, the oil and gas industry is not permitted to consolidate foreign income generated from oil and gas enterprise with income generated from other types of enterprise for U.S. tax purposes. Income generated from oil and gas must be treated separately from non-oil and gas income.³⁷ The benefit to non-oil and gas enterprises (including hard mineral industries such as uranium and coal as well as non-energy industries) occurs because of the firm's ability to use foreign tax credit offsets. The firm can use, on its U.S. income tax, credits from all types of business generated from foreign countries with income taxes which are higher than the U.S. rate (i.e., above 46 percent) against unused credits generated from foreign countries with income tax rates lower than those of the United States. An example illustrates the benefit of integration. Assume an integrated firm operating in two foreign countries generates \$100 of income from coal operations in country A which has a tax rate of 80 percent. The firm pays \$80 in taxes in country A, and has \$34 in excess credits against the U.S. income tax. The firm also generates \$100 of income from chemical operations in country B which has a tax rate of ten percent. The firm pays \$10 in country B and would have a U.S. tax liability of \$36 on repatriated earnings if the firm were engaged in oil and gas operations in one country and some other type of enterprise in the other country. However, since the firm is not engaged in oil and gas operations, it can use the excess tax credits generated in country A to offset \$34 of the U.S. tax liability generated in country B. The firm's U.S. tax liability therefore amounts to \$2, rather than \$36, on repatriated earnings.

There is another feature of U.S. income tax regulations which has differential effects on the international operations of the U.S. oil and gas industry as compared to other types of U.S. enterprise operating abroad. If foreign income taxes on oil and gas operations exceed 46 percent, which is the U.S. tax rate, only a portion of excess taxes, not exceeding two percent of total foreign income in any given year,

35. I.R.C. § 613A (1976, Supp. I 1977, & Supp. II 1978).

36. See Tax Reduction Act of 1975, Pub. L. No. 94-12, 89 Stat. 26 (codified in scattered sections of 26 U.S.C.); Tax Reform Act of 1976, Pub. L. No. 94-455, 90 Stat. 1520 (codified in scattered sections of 26 U.S.C.); Revenue Act of 1978, Pub. L. No. 95-600, 92 Stat. 2763 (to be codified in 26 U.S.C.).

37. I.R.C. § 907 (1976 & Supp. II 1978).

can be carried forward and/or backward to other tax years.³⁸ There is no such limitation on other types of enterprises.

B. Energy Transportation, Conversion, and Distribution

Most of the unique features of U.S. tax laws concerning the transportation, conversion, and distribution of energy are associated with utilities. The utilities, which may be publicly (non-investor) or privately (investor) owned, generate and distribute electricity and transport and distribute natural gas.

Non-investor owned utilities, like most other public firms, are exempt from federal income taxation; some of these utilities benefit from tax-exempt municipal bond financing³⁹ as well. The federal tax exemption on municipal bonds reduces interest rates for financing capital expenditures.

Investor owned utilities are regulated by commissions which set prices and establish fair after-tax rates of return. These utilities are eligible for accelerated depreciation as well as the ten percent tax credit on new investment which is available to most types of business.⁴⁰

C. Energy Use and Conservation

The federal government imposes excise taxes on petroleum products and commodities associated with energy use.⁴¹ These taxes are summarized in Table I. The portion of taxes on gasoline, diesel fuel, and special motor fuel attributable to highway users is earmarked for the Highway Trust Fund.⁴² This revenue is used to finance interstate highways and to provide federal funds for state roads.

The gas guzzler tax will be imposed on the sale of new cars, beginning with the 1980 model year, according to a graduated schedule with the highest tax rates imposed on cars giving lowest energy efficiency.⁴³ Initially, the tax will affect cars with E.P.A. ratings of less than 15 miles per gallon. By the 1986 model year the gas guzzler tax will be imposed on cars with E.P.A. ratings of less than 22.5 miles

38. I.R.C. § 907(f).

39. I.R.C. §§ 75, 115.

40. I.R.C. §§ 46, 47 (1976 & Supp. II 1978) list the provisions of the investment credit. I.R.C. §§ 46(a)(7) (1976 & Supp. II 1978), 46(b)(3), and 47(a)(2) apply specifically to public utilities.

41. These taxes are imposed by I.R.C. §§ 4041 (1976 & Supp. II 1978), 4042 (Supp. II 1978), 4061-4063 (1976 & Supp. II 1978), 4064 (Supp. II 1978), 4071 (1976 & Supp. II 1978), 4072-4073, 4081 (1976, Supp. II 1978, & P.L. 96-223), 4082, 4091, 4092 (1976 & Supp. II 1978), and 4491-4093.

42. 23 U.S.C. § 120 (1976).

43. I.R.C. § 4064 (Supp. II 1978).

per gallon. A federal regulation related to the gas guzzler tax is the Energy Policy and Conservation Act of 1975.⁴⁴ This act sets minimum standards for average gas mileage for U.S. automobile manufacturers. Each company's total production of all model cars must have an E.P.A. rated average of at least 19 miles per gallon (m.p.g.) in 1979, 20 m.p.g. in 1980, and 27.5 m.p.g. in 1985.

The federal government provides tax incentives to homeowners and renters to reduce consumption of conventional energy. First, there is an income tax credit of 15 percent of the cost of installing energy saving equipment in the home up to a maximum credit of \$300.⁴⁵ The credit applies to insulation, new furnace burners, storm doors and windows, and weather stripping. This credit is not available for new construction. Another credit, up to \$2,200, is available for the installation of solar, wind, or geothermal equipment⁴⁶ on new construction as well as existing facilities. Both of these tax credits apply only to a person's primary residence and are not available for second or vacation homes.

An investment tax credit of ten percent is available to all businesses investing in certain depreciable personal property and buildings.⁴⁷ These provisions specifically state that property used in the extraction, transportation, and distribution of electricity and gas and property used to store liquids and gases is eligible.⁴⁸

Businesses which invest in energy alternative equipment are eligible for a ten percent tax credit in lieu of the regular tax credit.⁴⁹ Unlike the regular investment tax credit, the special tax credit available for installation of energy conservation equipment is not subject to maximum dollar limitations.

STATE AND LOCAL GOVERNMENT ENERGY TAXES

This section discusses the general structure of state and local taxes which are specific to the energy industry rather than energy tax laws in individual states.

A. *Extractive Industries*

Many state governments and selected local governments impose production taxes on the extraction of primary energy sources. These types of taxes are levied at the wellhead or minemouth on the physi-

44. 42 U.S.C.A. § 6201-6422 (1976).

45. I.R.C. § 44C(b)(1) (Supp. II 1978).

46. I.R.C. § 44C(b)(2) (Supp. II 1978).

47. I.R.C. §§ 46-48 (1976 & Supp. II 1978).

48. I.R.C. § 48(a)(1) (1976 & Supp. II 1978).

49. I.R.C. § 48(l) (Supp. II 1978).

cal amount (specific production tax) or value, usually gross value, (*ad valorem* production tax) of the mineral extracted. In several states the tax base is established after deducting certain production costs. Production taxes are frequently identified in the tax laws as severance taxes.

Fifteen states impose production taxes on coal.⁵⁰ In 1978, coal production taxes amounted to approximately \$192 million or about eight percent of all revenues generated from severance taxes.⁵¹ Specific taxes range from two cents per ton (Arkansas) to 85 cents per ton (North Dakota), and *ad valorem* taxes range from 4.5 percent of gross value (Kentucky) to a maximum of 30 percent of FOB mine price (Montana).⁵² Among the nine major producing states (Kentucky, West Virginia, Pennsylvania, Illinois, Ohio, Wyoming, Virginia, Montana, and Indiana) which accounted for over 80 percent of U.S. coal production in 1977, only Kentucky, Ohio, Montana, and Wyoming impose production taxes.⁵³ The rates are considerably lower in the two eastern states (Kentucky 4.5 percent, Ohio four cents per ton) relative to the western states (Montana up to 30 percent of FOB mine price, plus local production taxes, and Wyoming 10.5 percent, plus local production taxes).⁵⁴ In New Mexico and Arizona significant local production taxes are imposed on coal mining.⁵⁵

Six states impose excise taxes on the initial sale of primary energy sources with rates ranging from 2.5 percent to 4.75 percent of gross receipts.⁵⁶ These taxes have allocational effects similar to production taxes.

Twenty-five states impose production taxes on oil and natural gas. In 1978, these taxes accounted for over 80 percent of those identified as severance taxes on all natural resources, both renewable and nonrenewable (over \$2 billion of \$2.5 billion).⁵⁷ Specific production

50. General statements regarding state and local taxes are based on the authors' examination of COMMERCE CLEARING HOUSE, STATE TAX GUIDE BY TAXES BY STATE (1979) [hereinafter cited as C-C-H].

51. U.S. BUREAU OF THE CENSUS, STATE GOVERNMENT TAX COLLECTIONS IN 1978 (1979).

52. ARK. STAT. ANN. § 84-2102 (1947); N.D. CENT. CODE § 57-61-01 (1979 Repl.); KY. REV. STAT. § 143.020 (1979 Repl.); MONT. REV. CODES ANN. § 15-35-103 (1979).

53. Production data are from U.S. DEPT. OF ENERGY, ENERGY DATA REPRINTS (1979).

54. OHIO REV. CODE ANN. § 5749.02 (1979 Repl.); WYO. STAT. §§ 39-6-302 to 39-6-303 (1977); KY. REV. STAT. § 143.020 (1979 Repl.); MONT. REV. CODES ANN. § 15-35-103 (1979).

55. These taxes are called property taxes in the state statutes, but they are really production taxes. See N.M. STAT. ANN. § 7-36-23 (1978) and ARIZ. REV. STAT. ANN. §§ 42-124 to 42-126 (1956) and § 42-136 (1979 Supp.)

56. C-C-H, *supra* note 50, at § 60.

57. U.S. BUREAU OF THE CENSUS, *supra* note 51.

taxes on oil range from one-half to one cent per barrel (Idaho) to 45 cents per barrel plus surtax (New Mexico) and *ad valorem* taxes on oil vary from one-half of one percent (Kentucky) to 12.5 percent (Louisiana).⁵⁸ The seven major oil producing states (Texas, Louisiana, California, Oklahoma, Alaska, Wyoming, and New Mexico), which accounted for over 86 percent of U.S. production in 1977, all levy production taxes.⁵⁹ For natural gas, specific taxes range from one-half of one cent per 50,000 cubic feet (Idaho) to seven cents per 1,000 cubic feet (Louisiana), and *ad valorem* taxes vary between two percent of gross value (Utah, Michigan, and Nebraska) to ten percent (Alaska).⁶⁰ The major producing states (Texas, Louisiana, Oklahoma, New Mexico, and Kansas) which accounted for 90 percent of U.S. natural gas production in 1976, all levy production taxes.⁶¹

Both of the major uranium producing states, New Mexico and Wyoming, which account for approximately 80 percent of production, levy taxes on uranium extraction.⁶² The rate for New Mexico, which is based on value of uranium concentrate, is a maximum of \$3.24 per pound, plus surtax. For Wyoming the rate is 5.5 percent of gross value of ore plus local production taxes.⁶³ Oklahoma levies a tax at five percent of gross value, Arizona 2.5 percent, and Utah one percent.⁶⁴ Production taxes on oil shale are six percent of gross value in Alabama, four percent in Colorado, two percent in Nebraska, and two percent of gross value in excess of \$50,000 in Utah.⁶⁵

Significant property taxes are imposed on the value of unmined coal in Arizona and Kentucky.⁶⁶ In some states a local production

58. IDAHO CODE § 47-330 (1977). The maximum New Mexico tax during 1979, including surtax, was 51.5 cents per barrel. See N.M. STAT. ANN. § § 7-29-4, 7-26-9 (1978); KY. REV. STAT. § 137.120 (1971); LA. REV. STAT. ANN. 47:633 (1979 Repl.).

59. Production data are from AMERICAN PETROLEUM INSTITUTE, BASIC PETROLEUM DATA BOOK (1978).

60. IDAHO CODE § 47-330 (1977); LA REV. STAT. ANN. § 47-633 (1979 Repl.); UTAH CODE ANN. § 59-5-67 (1953); MICH. COMP. LAWS ANN. § 205.303 (1978 Repl.); NEB. REV. STAT. § 57-703 (1978); ALASKA STAT. § 43.55.016 (1977).

61. See AMERICAN PETROLEUM INSTITUTE, *supra* note 59.

62. U.S. DEPT. OF ENERGY, STATISTICAL DATA OF THE URANIUM INDUSTRY (1978).

63. In 1979, the maximum tax plus surtax on uranium produced in New Mexico was \$3.711 per pound. See N.M. STAT. ANN. § § 7-26-7 (1978) and 7-26-9 (1979 Supp.); see also WYO. STAT. ANN. § 39-6-302 (1977).

64. OKLA. STAT. ANN. tit. 68, § 1020 (1966); UTAH CODE ANN. § 59-5-67 (1953). The Arizona tax is not a true severance tax and applies to many non-energy businesses. It is a combination of a Transactions Privilege Tax, an Educational Excise Tax, and a Special Excise Tax for Education. See ARIZ. REV. STAT. ANN. § § 42-1310, 42-1361, and 42-1371 (1979 Supp.).

65. ALA. CODE § 40-20-2 (1979 Supp.), COLO. REV. STAT. § 39-29-107 (1979 Supp.); NEB. REV. STAT. § § 57-701 to 57-703 (1978); UTAH CODE ANN. § 59-5-67 (1953).

66. ARIZ. REV. STAT. ANN. § 42-124 (1979 Supp.), KY. REV. STAT. § 132.020 (1978 Supp.).

tax is used in lieu of property taxes (e.g., Colorado on coal and oil and gas, New Mexico on uranium and oil and gas, and Kentucky on oil); in other states a local production tax is imposed in addition to conventional property taxes on mining surface improvements (e.g., Wyoming coal).⁶⁷ Finally, some states tax only surface improvements.

In some states, extractive energy industries benefit from the same types of income tax features provided by federal laws. The states and the type of benefits are as follows: Alaska—royalties can be deducted for oil and gas, current expensing for unsuccessful exploration for oil and gas, ten percent depletion allowance for coal; Arizona—some expensing of exploration costs for natural resources; Kansas—accelerated deduction of oil production costs (24 months); and Oklahoma—22 percent depletion allowance for oil and gas.⁶⁸ In addition, states which base their income on the federal tax, *de facto*, provide the depletion and current expensing benefits available under U.S. income tax regulations.

Finally, it should be noted that many states levy a variety of nominal rate taxes to finance conservation or regulatory activities, including drilling permits and licenses and inspection fees. The summary table omits reference to these types of taxes.

B. Energy Transportation, Conversion, and Distribution

Non-investor owned utilities are exempt from income taxes at the state as well as at the federal level.⁶⁹ Privately owned utilities are normally subject to state income taxation in states which impose corporate income taxes. All utilities pay property taxes (or taxes in lieu of property taxes) and one study has estimated that the effective property tax rate is about two-thirds higher for utilities than for other types of businesses.⁷⁰ The disparity results from utility property being entered on tax rolls at a higher fraction of market value than other business property.

67. See COLO. REV. STAT. § 39-6-106 (1973) for coal and § 39-7-102 (1973) for oil and gas. N.M. STAT. ANN. § 7-32-4 (1978) applies to oil and gas and § 7-36-25 (1978) to uranium. KY. REV. STAT. ANN. § 137.120 (1970) imposes a tax on oil. WYO. STAT. ANN. § 39-2-202 (1977 & 1979 Supp.) imposes a local production tax on coal and § 32-2-101 (1977) provides a basis for taxing surface improvements.

68. ALASKA STAT. § 43.21.020 (1979 Supp.) relates to oil and gas and § 43.65.010 (1977) pertains to coal. See also ARIZ. REV. STAT. § 43-123 (1956); KANS. STAT. ANN. § 79-32, 161 (1977); and OKLA. STAT. ANN. § 68-2353 (1979 Supp.).

69. Based on examination of state tax laws summarized in C-C-H, *supra* note 50, and I.R.C. § 115.

70. Manvel, *A Survey of the Extent of Unneutrality Toward Energy* in STUDIES IN ENERGY TAX POLICY, *supra* note 9, at 41-51.

One special energy tax is the public utility gross receipts tax, frequently called the gross operating revenue tax, which is based on a percentage of gross receipts. The tax is levied in thirty-four states and amounted to \$2.06 billion in tax revenue in 1976 from all types of public utilities.⁷¹ Tax rates range from 1/40 of one percent to six percent.⁷² The tax is imposed on all utilities and can be considered a form of franchise tax, or a charge for the privilege of conducting business. From the standpoint of tax structure and probably economic effects, Due noted that the gross receipts tax is essentially identical to a sales tax.⁷³ However, it is not a substitute for a sales tax. Most of the 45 states which levy a general sales tax either include sales of electric power and gas in the tax base or impose a separate excise tax on the sale of energy.⁷⁴ Thus, utilities are subject to both a gross receipts tax and a sales or excise tax. A franchise tax is also imposed on pipeline companies in some states. These companies are usually subject to property taxes based on the value of property per mile of pipeline.⁷⁵

Ohio levied an unusual type of coal excise tax. The tax was imposed on coal users, primarily electrical utilities at rates of 15 cents to 40 cents per ton depending on sulphur content (the higher the sulphur content the lower the tax).⁷⁶ The purpose of the tax was to encourage the state's utilities to purchase Ohio coal. In March 1979, a federal court in Cleveland ruled that the tax is discriminatory and interferes with interstate commerce in violation of Article I, Section 8 of the U.S. Constitution.⁷⁷

C. Energy Use and Conservation

States levy two major taxes on energy use: one on electric and gas utility sales and the other on sales of motor and diesel fuel.⁷⁸ The extent of nonneutrality between the excise taxes on utility sales and the general combined state and local sales taxes depends on the degree of difference in the effective tax rates. Manvel found that ten states have lower taxes on utility sales than on general sales; 25 states have utility excise tax rates which are identical to sales tax rates; and

71. TAX FOUNDATION, FACTS AND FIGURES ON GOVERNMENT FINANCE 213 (1977).

72. C-C-H, *supra* note 50, at § 80.

73. J. DUE, SALES TAXATION 4 (1937).

74. C-C-H, *supra* note 50, at § 80.

75. *Id.*

76. OHIO REV. CODE § 5751.02 (1979 Repl.).

77. *Mapco, Inc. v. Grunder*, 470 F. Supp. 401 (N.D. Ohio 1979). See also *Dayton Power and Light Co. v. Lindley*, 58 Ohio St. 2d 465, 391 N.E.2d 716 (1979).

78. C-C-H, *supra* note 50, at §§ 40, 80.

15 states have higher taxes on utility sales. He concludes that allowing for local as well as state taxes on electrical and gas sales, utility tax rates are "definitely higher" than rates applying to most commodities.⁷⁹ Brannon estimates that the differential rate of net burden from state-local excise taxation of utility sales is approximately one and one-half percent.⁸⁰

Six states impose taxes on the sale of electricity per kilowatt hour.⁸¹ New Mexico allowed a tax credit on electricity consumed in-state.⁸² However, in April 1979, the U.S. Supreme Court found this tax invalid because it discriminates against electricity sold outside New Mexico.⁸³

All 50 states levy excise taxes on gasoline at rates of six to 13.5 cents per gallon.⁸⁴ Excise taxes on diesel fuel are different from those on gasoline in thirteen states, including the two states which do not tax diesel fuel. State gasoline taxes are normally allocated to a state highway user tax fund and are used to match federal money for highway construction.

Some states also impose excise taxes on a variety of petroleum products, such as aviation fuels, kerosene, LPG, tractor fuels, and lubricating oils.⁸⁵ Finally, fuel inspection fees are levied in 14 states, with rates ranging from one-half of one cent per 50 gallons to 1½ cents per gallon.⁸⁶

Twenty-five states provide tax incentives for installation of energy saving devices and equipment which use alternative sources of energy.⁸⁷ These incentives include state income tax credits or deductions for installation of solar and geothermal systems and property tax deductions and exemptions for solar and alternative energy equipment.

MAJOR ENERGY POLICIES WHICH ACT AS TAXES

The energy industry in the United States is subject to substantial government regulation, particularly at the federal level.⁸⁸ There is

79. Manvel, *supra* note 70, at 42.

80. G. BRANNON, *supra* note 9, at 30-31.

81. C-C-H, *supra* note 50, at § 80.

82. The tax on electricity was imposed by N.M. STAT. ANN. § 7-18-3 (1978), and the credit for in-state consumption was allowed by N.M. STAT. ANN. § 7-9-80 (1978).

83. *Arizona Public Service Co. v. Snead*, 441 U.S. 149 (1979).

84. C-C-H, *supra* note 50, at § 40.

85. *Id.*

86. *Id.*

87. C-C-H, *supra* note 50, at §§ 10, 15.

88. A discussion of some of the major forms of regulation at the federal level is included in Wright, *Energy Policy and Deregulation*, 10 GROWTH AND CHANGE 1 (1979).

considerable overlap, in terms of policy choices, between taxes and government regulation. Some of the more important tax-like policies are summarized below.

A. Petroleum Price Regulation

The petroleum industry has been subject to considerable regulation in the United States. The Mandatory Oil Import Program, which was in effect between 1959 and 1973, limited oil imports and encouraged domestic production.⁸⁹ The multi-tiered structure of controls on crude oil prices which has evolved since 1973 imposed relatively low ceiling prices on domestic oil production up to a given historical level (on old or lower tier oil) which created excess demand for regulated domestic oil relative to new or upper tier oil and imported oil.⁹⁰ The entitlement's program allocates rights to low-priced regulated oil. President Carter has announced that crude oil price controls will be gradually phased out and eliminated by October 1, 1981.⁹¹ As part of the new energy plan, the President proposed the imposition of a "windfall profits tax" which would result in recovery of a portion of the additional revenue that oil firms are expected to receive as the price of domestic crude oil rises to the world level.⁹² It is important to note that the corporate income tax alone would have recovered 46 percent. The proceeds of the tax would be allocated to the Energy Security Fund which would finance research and development of alternative energy sources, help low income families pay for the rising cost of energy, provide tax credits for energy conservation and assistance for development of energy efficient mass transit systems. A major purpose of the decontrol program is to provide incentives for accelerated oil production from existing wells and increased exploration and development of petroleum resources.

B. Natural Gas Price Regulation

Natural gas price regulation has acted to provide consumers with artificially low prices relative to market clearing prices. In 1976, however, price ceilings were increased nearly threefold and the Nat-

89. For a discussion of U.S. policies on oil imports see D. BOHI, *LIMITING OIL IMPORTS* (1978).

90. A history of petroleum price controls is given in Erickson, Peters, Spann, & Tese, *The Political Economy of Crude Oil Price Controls*, 18 NAT. RES. J. 787 (1978).

91. This announcement is part of the Carter administration's National Energy Plan. See EXECUTIVE OFFICE OF THE PRESIDENT, *supra* note 3.

92. A windfall profits tax proposal has been introduced in the U.S. House of Representatives as H.R. 3919 (1979).

ural Gas Policy Act of 1978 provides for further price increases.⁹³ This Act also transferred the authority to set natural gas prices from the Federal Energy Regulatory Commission to Congress.

C. Regulated Utilities

Regulation of utilities also has allocational and distributional effects. Tax benefits such as accelerated depreciation and investment tax credits may have differential effects because some states permit and others reject the practice of normalizing the utility's taxes for ratemaking purposes.⁹⁴ Normalization tends to increase current rates, giving utility owners the benefits of tax liability deferral to later years. To the extent that regulation precludes normalization in favor of current benefits flowing through to the ratepayers, the companies have a disincentive to take advantage of the tax benefits tendered in the tax laws. Also, to the extent that rates are set for various customer classes at levels other than cost of service, one set of customers will subsidize another.

D. Federal Ownership of Mineral Deposits

Federal leasing policies are important because a substantial portion of the land containing mineral resources in western states is owned by the federal government. Royalty charges are based on the value of the mineral mined on public lands. One study concludes that rates charged under the Federal Coal Leasing Program are considerably lower than charges imposed by private landowners.⁹⁵ A recent study of federal oil and gas leases covering the period 1954-1962 suggests that competition under the cash bonus bidding system has driven down the internal rate of return earned by lessees to less than a competitive norm, indicating that on an *ex post* basis the government has received more than fair market value for its leases.⁹⁶ It has been argued that federal leasing policy provides inadequate incentives to develop reserves.⁹⁷ However, government policy is being revised to encourage production of energy on federal lands. Finally, legislation such as 43 U.S.C. § 1747 (Supp. II 1978) and 31 U.S.C. § 1602 (1976)

93. 15 U.S.C. § 3301-3432 (Supp. II 1978).

94. The regulatory process that involves using tax incentives to provide short-run benefits to utility companies is called "normalization." The alternative technique, called "flow-through," gives the short-run benefits to consumers in the form of lower prices.

95. Plummer, *The Federal Role in Rocky Mountain Energy Development*, 17 NAT. RES. J. 241 (1977).

96. Jones, Mead, & Sorensen, *Free Entry Into Crude Oil and Gas Production and Competition in the U.S. Oil Industry*, 18 NAT. RES. J. 859 (1978).

97. Moyer, *The Role of Coal: Problems and Policies*, 18 NAT. RES. J. 761 (1978).

differentially favor mineral producing states. The former authorizes low percent loans to states and political subdivisions against anticipated mineral revenue shares of the states; the latter authorizes revenues for mineral dispositions in payments in lieu of taxes of up to 75 cents per acre of federal forests, parklands, and public lands located in state taxing jurisdictions.

E. Environmental Regulations and Effluent Charges

Governmental units impose a wide variety of environmental regulations which attempt to reduce social costs. Although the regulations apply to all types of enterprise, they have important effects on the energy industry.

The national primary and secondary ambient standards regarding air quality were established by the Clean Air Act of 1970, as amended.⁹⁸ The Clean Air Act Amendments of 1977 are of particular importance.⁹⁹ The regulations require uniform percentage reductions of SO_x emissions rather than setting an absolute maximum allowable level. This policy is advantageous to eastern and midwestern coal regions, which produce high-sulfur coal and is disadvantageous to western coal regions which produce low-sulfur coal. The Prevention of Significant Deterioration (PSD) regulations of the 1977 Amendments are important because their purpose is to prevent significant deterioration of air already cleaner than the ambient standards.¹⁰⁰ Other influential regulations are the Toxic Substances Control Act of 1976,¹⁰¹ the Federal Water Pollution Control Act Amendments of 1972,¹⁰² the Energy Supply and Environmental Coordination Act of 1974,¹⁰³ the Federal Coal Mine Health Safety Act of 1969,¹⁰⁴ and the Occupational Safety and Health Act of 1970.¹⁰⁵

It is important to note that although effluent charges are an alternative to environmental regulations, they remain virtually unused. The Navajo Nation has attempted to impose effluent charges on sulfur emissions. This proposed tax is being tested in the courts.¹⁰⁶ In

98. Pub. L. No. 94-469, 84 Stat. 1676 (codified in scattered sections of 42 U.S.C.).

99. Pub. L. No. 95-95, 91 Stat. 685 (codified in scattered sections of 42 U.S.C.).

100. *Id.*

101. 15 U.S.C. §§ 2601-2629 (1976).

102. Pub. L. No. 92-500, 86 Stat. 816 (codified in scattered sections of 33 U.S.C.).

103. Pub. L. No. 93-319, 88 Stat. 246 (codified at 15 U.S.C. §§ 791-798 (1976) and 42 U.S.C. § 1857).

104. Pub. L. No. 91-173, 83 Stat. 742 (codified in scattered sections of 15, 30 U.S.C.).

105. Pub. L. No. 91-596, 84 Stat. 1590 (codified in scattered sections of 5, 15, 18, 29, 42, 49 U.S.C.).

106. *Salt River Project Agricultural Improvements and Power District v. Navajo Tribe of Indians*, No. 77-686 (D. Ariz., filed August 31, 1977).

Oklahoma City, and in a small number of other situations, the U.S. Environmental Protection Agency has employed an offset policy which involves the use of pollution permits.¹⁰⁷

107. For a discussion of the offset policy see F. ANDERSON, ENVIRONMENTAL IMPROVEMENT THROUGH ECONOMIC INCENTIVES 48, 54-56 (1977).