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MARGARET A. WALLS*

Federalism and Offshore Oil Leasing Resources

ABSTRACT

This paper explores the relationship between federalism and the oil and gas resources of the Outer Continental Shelf (OCS). Under the current system, the federal government has jurisdiction and control over leasing and the coastal states share in almost none of the lease revenues. State involvement in the OCS process takes place primarily through the consistency provisions of the Coastal Zone Management Act (CZMA). These provisions state that all activities that affect a state's coastal zone must be consistent with the state's coastal zone management plan. The paper argues that the current system leads to an inefficient amount of OCS development and that efficiency would be enhanced if coastal states had control over the OCS. The paper finds that the two arguments for retaining federal control—(1) national energy security benefits from OCS development, or (2) national environmental benefits from OCS preservation—are flawed.

The paper also considers three other proposals: (1) retaining federal control with revenues shared with coastal states, (2) giving coastal states control with revenues shared with inland states, and (3) modifying the leasing system such that states and others could bid in competition with oil companies for the right to delay leasing. Each of these alternatives, with the possible exception of (2), is found to be inferior to state control.

INTRODUCTION

The federalist system of government in the United States has the potential to achieve greater efficiency in the provision of public goods than a unitary system. Local and state governments can make decisions that are in their citizens' best interests without imposing significant costs on the country as a whole. Moreover, society can benefit from having a diversity

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of types and amounts of public goods. Because individuals have different preferences—for public as well as private good—they will choose the mix of goods that is right for them. They can do this by moving to the community that provides the right mix.¹ A federalist system also has the flexibility to allow some things to be left to the national government—provision of national defense, for example, or any public good where the benefits accrue to multiple jurisdictions.

On the other hand, federalism can sometimes create conflicts among jurisdictions. For example, a state could have a policy at odds with the objectives of the national government or another state. In theory, solutions to such problems exist, but in practice there can be impediments to their use.

This paper explores the relationship between federalism and natural resources in the United States, in particular the oil and gas resources of the Outer Continental Shelf. The Outer Continental Shelf (OCS) is the land under the oceans from state water boundaries (3 miles offshore, in most cases) to 200 miles offshore. The federal government has jurisdiction and control over the OCS and leases portions of it to private corporations for the purpose of exploring for, developing, and producing oil and gas. The OCS Lands Act Amendments (OCSLAA) of 1978 state that federal government policies and procedures should “expedite exploration and development on the OCS in order to achieve national economic and energy goals, assure national security, reduce dependence on foreign sources, and maintain a favorable balance of payments in world trade.”²

This “energy security” goal is clearly the main one pursued by the federal government, but the OCSLAA also state that policies should “balance orderly energy resource development with protection of the human, marine, and coastal environments.”³

The state and local governments have a voice in OCS activities primarily through the Coastal Zone Management Act (CZMA). The “consistency provision” of the CZMA requires that all federal activities, including OCS licensing and permitting, that affect a state’s coastal zone be “consistent with” the state’s coastal zone management plan. In recent years, and especially during the accelerated leasing program of the 1980s, the states—in particular, California—have called on the consistency provision a great deal. As a result, they have managed to delay lease sales, impose restrictions on activities on leases, and delay exploration plans, development activity, and production. Two to three years usually pass between the

1. See C. Tiebout, *A Pure Theory of Local Government Expenditures*, 89 J. Pol. Econ. 152 (1956).

2. Minerals Management Service, U.S. Dep’t of Interior, *Managing Oil and Gas Operations on the Outer Continental Shelf* 6 (1986) [hereinafter MMS].

3. *Id.*

time a lease sale is proposed by the federal government and the time it is actually held. The time between sale and actual production of oil and gas from a tract can also amount to several years. Expenditures on OCS-related litigation are substantial.⁴

This paper analyzes the OCS in a public good framework and assesses the economic efficiency aspects of federal versus state jurisdiction. The paper argues that state jurisdiction would be more efficient than federal, particularly the current system of federal jurisdiction with state involvement through the CZMA.

State governments have an incentive to take only the costs and benefits of their own citizens into account. Therefore, in order for the level of OCS resource development under state control to be efficient, there must be no external costs or benefits—i.e., no costs or benefits that accrue to citizens outside the coastal state. If such external costs or benefits exist, there may be a role for the federal government. The paper identifies two possible externalities: energy security benefits from OCS development and environmental benefits from not developing.⁵

This paper finds that the argument that energy security is enhanced by developing OCS oil and gas is flawed. It also concludes that any external environmental benefits from not developing the OCS can be incorporated into coastal states' decisionmaking through federal government grants similar to those provided by the CZMA. These findings suggest that coastal state control over the OCS should be preferred to federal control.

The paper also considers other OCS proposals that have been suggested: (1) leaving control in federal hands but sharing revenues with coastal states⁶—currently, almost all lease bonus revenues, royalties, and rents go to the federal government; (2) turning the OCS over to the states but having them share revenues with inland states;⁷ and (3) leaving the

4. Fitzgerald cites a 1982 Department of Interior report as finding that the federal government was spending \$280 million annually on litigation, with the amount expected to rise to \$1 billion. E. Fitzgerald, *Outer Continental Shelf Revenue Sharing: A Proposal to End the Seaweed Rebellion*, 5 J. Envtl. L. 1 (1985). The U.S. General Accounting Office (hereinafter GAO) found that 5 out of the first 10 areawide lease sales generated litigation (areawide sales, in which very large blocks of land are offered for sale, were begun during the Reagan era under Secretary of Interior James Watt; in prior sales, industry had nominated specific tracts). GAO, *Early Assessment of Interior's Area-wide Program for Leasing Offshore Lands*, GAO/RCED-85-66 (1985).

5. With energy security impacts borne nationally and coastal state control over the OCS, underdevelopment would take place. With environmental benefits of preservation accruing nationally and coastal state control, overdevelopment occurs.

6. This recommendation has been made by Fitzgerald, *supra* note 5 and by M. Shapiro and R. Shapiro, *Opportunities for a State-Federal Partnership in an Expanded Territorial Sea*, 11 *Coastal Zone Mgmt.* J. 335 (1984).

7. This recommendation has been made by R. Littleton, *Coastal States, Inland States, and a 12-Mile Territorial Sea*, 17 J. Mar. L. & Com. 539 (1986).

OCS under federal control but altering the leasing arrangement so that states (and others) can bid for tracts in competition with oil companies.⁸ Each of these proposals is found to be inferior to state ownership.⁹

The following section discusses the history of legislation pertaining to the OCS, particularly legislation that addresses state involvement in the OCS leasing process. An outline of a typical leasing and development scenario is also presented. Section III then discusses efficient OCS development, using a basic model of the OCS as a pure public good. State ownership is evaluated vis a vis federal ownership. Section IV evaluates the revenue sharing and state bidding alternatives, and finally, section V summarizes the results of the paper and the possibilities for change in the current system of OCS resource management.

OCS LEGISLATION, FEDERAL-STATE RELATIONS, AND THE DEVELOPMENT PROCESS

A. Legislation

Until the 1970s, the coastal states had no say in the management of OCS resources. The period from 1953 to 1972 was one of geographic dual federalism¹⁰—the coastal states managed the resources of the territorial sea (the three-mile zone contiguous to the coast) and the federal government managed the OCS and neither had a say in the other's affairs.¹¹

8. This recommendation has been made by S. Farrow, *Lease Delay Rights, Resources Pol'y*, June 1987, at 113 [hereinafter Farrow, 1987] and S. Farrow, *Managing the Outer Continental Shelf Lands: Oceans of Controversy* (1990) [hereinafter Farrow, 1990].

9. State ownership with inland state revenue sharing can be equivalent to state ownership with federal grants to cover external—i.e., inland state—benefits of OCS preservation.

10. The general term "dual federalism" is used by many legal scholars to describe certain periods in American history when the federal government and the states had very little interaction. See H. Scheiber, *Federalism and Legal Process: Historical and Contemporary Analysis of the American System*, 14 L. & Soc. Rev. 663 (1980).

11. Prior to 1945, the coastal states had been the assumed owners of the resources of the territorial sea. In that year, President Truman proclaimed the lands the domain of the U.S. government. Two years later, the Supreme Court concurred in *United States v. California*, 332 U.S. 19 (1947). Congress responded by passing the Submerged Lands Act in 1953, which gave control of the territorial sea back to the states and control of the OCS to the federal government. In addition, the law gave the federal government the authority it had previously lacked to issue leases to private companies. It also excluded the states from sharing in lease revenues. See G. Koester, *State-Federal Jurisdictional Conflicts in the U.S. 12-Mile Territorial Sea: An Opportunity to End the Seaweed Rebellion*, 18 Coastal Mgmt. 195 (1990); B. Cicin-Sain and R. Knecht, *Federalism Under Stress: The Case of Offshore Oil and California*, in *Perspectives on Federalism* (H. Scheiber ed., 1987) for a discussion of the history of and debate over ownership.

Dual federalism ended with passage of the 1972 Coastal Zone Management Act.¹² The CZMA encourages coastal states to adopt comprehensive land use planning and management programs to guide coastal zone development. Participation in the program is voluntary but states are induced to participate by two provisions in the Act. First, they are given grants to help pay for the programs. And second, once a state's plan is approved by the Secretary of Commerce, the state can then require that federal actions affecting its coastal zone be consistent with its plan. It is this second provision that is important for states with OCS activities off their coasts. All federal licenses and permits that are required for OCS exploration, development, and production activities—and there are a number of them—must be consistent with coastal states' approved coastal zone management plans.¹³

The OCS Lands Act Amendments of 1978, though less important than the CZMA, provided for more state input into OCS activities. The Amendments require the Secretary of the Interior to propose a five-year leasing plan and submit the plan to the governors of the affected states for review and comment. Any comments that request modification require a written response from the Secretary. If the governors' recommendations are found to provide a reasonable balance between national interest and the well-being of the affected states, those recommendations are used to revise the plan.

The Amendments also require lessees to submit exploration plans and development and production plans to the Secretary of the Interior prior to such activities. These plans must be approved by the governors and coastal zone management agencies of the affected states. If the plans are found to be inconsistent with coastal zone management plans, then the lessee can either modify the plan and resubmit it or appeal to the Secretary of Commerce.

12. Although in principle the National Environmental Protection Act (NEPA) of 1969 gave state and local governments some say in federal activities, in practice the impact of this requirement has been minimal. NEPA requires the federal government to complete environmental impact statements prior to leasing and give citizens and government officials the opportunity to comment on these statements. Cicin-Sain & Knecht, *supra* note 12, at 164, suggest that the process gives the "appearance of wide public involvement" but actually has little real effect. See J. Archer & R. Knecht, *The U.S. National Coastal Zone Management Program — Problems and Opportunities in the Next Phase*, 15 Coastal Mgmt. 103 (1987), for a description of the CZMA and the history of its use.

13. The Supreme Court, in *Secretary of the Interior v. California*, 52 U.S.L.W. 4063 (1984), determined that the consistency provision does not apply to lease sales. In response, Congress amended the CZMA in 1990, requiring that lease sales be consistent. See G. Razo, *The Seaweed Rebellion Revisited: Continuing Federal-State Conflict in OCS Oil and Gas Leasing*, 20 Willamette L. Rev. 83 (1984), for a discussion of the Supreme Court decision and other prior decisions on the role of the states in federal leasing.

The final provision of the OCSLAA that further considered states' interests was the establishment of the Offshore Oil Pollution Compensation Fund. This fund was created to provide for cleanup of and compensation for damages from oil spills and was funded by a 3 cent per barrel fee on oil produced on the OCS.¹⁴

The OCS Lands Act Amendments of 1985 also slightly improved the position of coastal states. The Amendments require that 27 percent of receipts from OCS lands within a three-mile zone adjacent to state lands be shared with the coastal states. This sharing is designed to account for drainage of common pools—i.e., oil and gas reservoirs that cover both federal and state lands. The Amendments also provided for distribution to states of funds from this zone that had been collected and held in an escrow account over the September 1978 to October 1, 1985 period.¹⁵

B. The Development Process

Typically, the current OCS development process follows the following sequence of events. The Secretary of Interior releases the five-year leasing plan. State governors, local officials, and the general public, as well as other federal agencies and Congress, comment on the plan. Once the plan is adopted, MMS publishes in the *Federal Register* a call for information and a notice of intent to prepare an environmental impact statement (EIS). A draft EIS is prepared and released to the public for comments to be received within 60 days. Public hearings are also held within this 60-day period. A final EIS is then prepared and a proposed notice of sale is announced by MMS. This proposed notice is sent to the governors of affected states, who then have 60 days to submit comments on the size, timing, and location of the proposed sale. A final notice of sale is then prepared, taking the governors' concerns into account. The sale is held no less than 30 days after the final notice of sale. The length of the process from adoption of the five-year plan to the actual sale can take two to three years.

After a tract has been leased, all exploration, development, and production plans must be submitted to MMS, other federal agencies, the governor of the affected state, the state agency responsible for management of the coastal zone, and any other relevant state and local agencies. The

14. This Fund and the 3 cent fee have subsequently been replaced by a fund created by the Oil Pollution Act (hereinafter OPA) of 1990. The OPA provides for spill compensation and establishes a 5 cent per barrel tax on all domestically produced and imported oil.

15. Section 8(g) of the 1978 OCSLAA mandated sharing of revenues in the three to six mile zone, but how that sharing was to take place was a matter of much dispute. The 1985 Amendments finally resolved the issue by deciding on the somewhat arbitrary 27 percent. R. Hildreth, *Federal- State Revenue Sharing and Resource Management Under Outer Continental Shelf Lands Act Section 8(g)*, 17 Coastal Mgmt. 195 (1989).

state agencies have a maximum of six months to determine if the plan is consistent with the state's coastal zone management program. If the plan is deemed inconsistent, the lessee must submit a new plan or appeal to the Secretary of Commerce. All OCS activities, such as drilling and construction of platforms or pipelines, require MMS permits. Any of these activities that affect a state's coastal zone must meet with state approval.

The requirements embodied in the CZMA and the OCSLAA, the two main pieces of legislation that affect the OCS leasing and development process, have led to a much greater role for state and local governments. They have also led to increased costs for OCS activities and added many months and, in some cases, years of delays to the development process. The main problem with the Acts is that they have not addressed the issue that is really at the heart of the OCS debate: the coastal states bear most of the costs of OCS development and get very few of the benefits.

Coastal states live with the risk of oil spills, air pollution from offshore activities, and the perceived unsightliness of platforms, rigs, and other facilities. These impacts lead to costs in the form of decreased property values, reduced recreation and tourism, health and visibility impacts, and aesthetic losses. Several studies have attempted to identify, and in some cases quantify, these costs. Oil spills clearly cause losses by damaging beaches and killing wildlife and vegetation; some studies have attempted to estimate the magnitude of these losses.¹⁶

Fewer studies have looked at the non-spill related impacts of OCS development—i.e., property value, recreation and tourism, and aesthetic impacts that result simply from the ongoing operation of platforms, drilling rigs and ships, and supporting onshore facilities. The Dornbusch and Company study, sponsored by the Minerals Management Service, undertook such an effort, estimating the impacts on recreation in Ventura and Santa Barbara counties in California from operation of platforms and onshore processing facilities there. The study found that consumer surplus was reduced by four percent in Ventura county as a result of three existing platforms and an onshore facility and would be lowered by three percent in Santa Barbara county if two proposed platforms and an onshore facility

16. F. Bonnieux & P. Rainelli, *Oil Spills and Tourism: Case Study of the Amoco Cadiz in, The Cost of Oil Spills* 150 (1982); G. Brown, *Estimating Non-Market Economic Losses from Oil Spills, in The Cost of Oil Spills* 191 (1982), estimate the welfare loss from the reduced recreation and tourism in Brittany that resulted from the Amoco Cadiz oil spill. E. Wilman, *External Costs of Coastal Beach Pollution: An Hedonic Approach* (1984), estimates the loss in value of beach recreation on Cape Cod and Martha's Vineyard in Massachusetts as a result of a hypothetical oil spill near there. David M. Dornbusch and Co., *Impacts of Outer Continental Shelf (OCS) Development on Recreation and Tourism* (1987), estimate the loss in recreation and tourism in Orange and Humboldt counties in California from hypothetical oil spills off those coasts.

in the north county area (a less-populated region of the county) were built.¹⁷ These costs were due purely to the visual impact of the platforms and processing facilities and were not related to the possibility of spills.¹⁸

Other studies have also identified aesthetic impacts from OCS activities. Mead and Sorenson (1970) surveyed Santa Barbara residents and found that 75 percent disliked platforms because they interfered with views; 30 percent stated that they were willing to pay \$10 or more per year to put the platforms under water if it were possible. Baker et al. (1980) conducted a study of the recreation and aesthetic impacts of hypothetical offshore nuclear power plants using questionnaires and an artist's conception of what the plants would look like. They found that five percent of visitors would be unwilling to visit a beach because of the unsightliness of the offshore plant.

States cannot assess property or severance taxes on OCS assets to try to compensate for these costs, and all OCS revenue—lease bonus payments, rents, and royalties—go to the federal government. States with unitary corporate income tax structures can tax that part of OCS sales that falls within the state's jurisdiction, but this is not a large amount relative to total OCS revenues. The 27 percent of federal revenues from the three to six mile zone shared with the states is designed to compensate for drainage of common pools, not for any other costs. And the one piece of legislation that did provide the states some compensation, the Coastal Energy Impact Program (CEIP) set up in the 1976 Amendments to the CZMA, was phased out in the early 1980s. The OPA provides for state compensation in the event of an oil spill, but the states get nothing unless a spill occurs and then the payments simply make up for the damages created by the spill. As the studies cited above suggest, there are costs that the states incur even in the absence of a spill.

Of course, the divergence in costs and benefits varies across states. Californians place a high value on the amenities of their ocean and coastline and thus may incur higher costs from OCS development than some other states. Moreover, their economy is a highly diversified one, less dependent on oil and gas than states like Louisiana and Texas. In fact, offshore oil workers and service and supply companies operating in California are often based in Louisiana or Texas—one other way in which the benefits are exported while the costs are borne locally. Out of approximately 153,000 jobs in Santa Barbara County, California, for example, only 1200 are in the

17. The platforms are approximately 4, 9, and 11 miles off the Ventura County coast and 9 miles off the northern Santa Barbara County coast. Consumer surplus is the amount that a person is willing to pay for a good or service over and above what she has to pay. It is often used by economists as a measure of consumer well-being.

18. The study also measured the losses that occur during construction of the onshore facilities and pipelines.

oil and gas industry. Of the top 25 employers in the area, none are affiliated with oil and gas. By contrast, federal leases off Santa Barbara County generated, at the peak in 1984, \$165 million in royalties alone (excluding bonus payments and rents).¹⁹

The next section discusses the efficiency aspects of OCS development and compares state ownership to the current system of federal ownership with state involvement through the CZMA. In the subsequent section, three other possible arrangements are analyzed: continued federal control with revenues shared with coastal states; coastal state control with revenues shared with inland states; and federal control with states allowed to bid for "lease delay rights".

Efficient OCS Development

We can view the OCS as a pure public good. An undeveloped or pristine OCS confers benefits to coastal citizens (and perhaps others) in the form of clean beaches, undeveloped shorelines, preserved wetlands, clean air, and unobstructed (by drilling rigs or platforms) views. These benefits can be enjoyed by all citizens—i.e., one person's "consumption" does not reduce the amount left for everyone else to enjoy. In addition, it is difficult or costly to come up with a mechanism to exclude people from consuming.²⁰

Efficiency in the provision of a public good requires that the sum, over all citizens who consume it, of the marginal rates of substitution between the public good and a private good must be equal to the marginal rate of transformation between the two goods.²¹ This is the familiar Samuelson condition.²²

In partial equilibrium terms, the sum of the marginal benefits provided by the public good should just equal its marginal costs. The marginal benefits of an undeveloped OCS are, as stated above, the clean beaches, unobstructed views, and so forth; the marginal costs are the

19. Forecast '88/89: The Santa Barbara Economic Outlook (U.C. Santa Barbara Economics Dep't Annual Publ. ed., 1988).

20. This is a simplified view of the world where population is fixed. One could think of a model where the OCS is a public good—as a community grows, citizens experience some reduction in utility due to crowding. In this case, the government would need to figure the optimal community size as well as the optimal amount of the public good. J. Buchanan, *An Economic Theory of Clubs*, 33 *Economica* 1 (1965); M. Wooders, *Equilibria, the Core, and Jurisdiction Structures in Economies with a Local Public Good*, 18 *J. Econ. Theory* 328 (1978).

21. The marginal rate of substitution measures the amount of one good that a consumer is willing to give up to get one unit of another good and remain indifferent to the two combinations of goods; the marginal rate of transformation measures the amount of one good that must be given up to produce one more unit of another good with the available resources.

22. P. Samuelson, *The Pure Theory of Public Expenditure*, 36 *Rev. Econ. & Stat.* 387 (1954).

revenues foregone from not leasing the lands for oil and gas production. Figure 1 shows the situation graphically. A downward-sloping sum of marginal benefits (MB) curve implies that the benefits of OCS preservation increase as more acreage is preserved but do so at a decreasing rate.²³ An upward-sloping marginal cost curve means that marginal lease revenues fall as available acreage increases.²⁴ G^* is the optimal OCS acreage to preserve; $G - G^*$ is developed acreage.

Either the coastal state or the federal government could provide G^* as long as it acts in a social welfare maximizing manner and takes all of the benefits and costs of the OCS into account. One problem with federal government control of public goods in general is the "distance of the government from the governed" that makes it difficult, or costly, to estimate the benefits of the public good in each state. As a result, there is a tendency toward uniformity in provision of the public good across different areas. This leads to too much of the good in some states and too little in others.

In addition, there is another problem with federal control of the OCS that pertains to the nature of current state involvement. Since the states get no compensation for allowing OCS development, in many cases they use the consistency provisions of the CZMA to try to fight it. In so doing, they lower the federal government's marginal cost of OCS preservation to MC' in Figure 1—i.e., by preserving an additional acre, the federal government now gives up the revenues that could have been earned on that acre less the costs of fighting the state over development. These costs take the form of delays, administrative expenses, and litigation. In addition, because oil companies realize that they themselves will incur costs as a result of state actions—i.e., it is often more difficult or more costly to get certain permits approved—they bid lower amounts for tracts than they otherwise would. As a result of the lower marginal cost curve, the amount of preserved OCS acreage is pushed beyond the optimum—i.e., $G' > G^*$ in Figure 1.

These factors—i.e., the federal government's general tendency toward uniformity and the states' actions pushing the federal government to provide greater preservation than is optimal—suggest that state control might be more efficient than federal. However, a state will only consider the costs and benefits that accrue to its own citizens, thus if spillovers of

23. This is a typical assumption for any good and means that the individual utility functions are strictly increasing, quasi-concave, continuous, and twice-differentiable. The assumption may not be exactly correct for the OCS: marginal benefits could be zero up to some threshold level of preserved acreage and then decline or they could rise and then fall. For G^* to be optimal, the MB curve must intersect the MC curve from above.

24. Empirical evidence of such a phenomenon is documented by C. Moody, Jr. & W. Kravant, *OCS Leasing Policy and Lease Prices*, 66 Land Econ. 30 (1990).

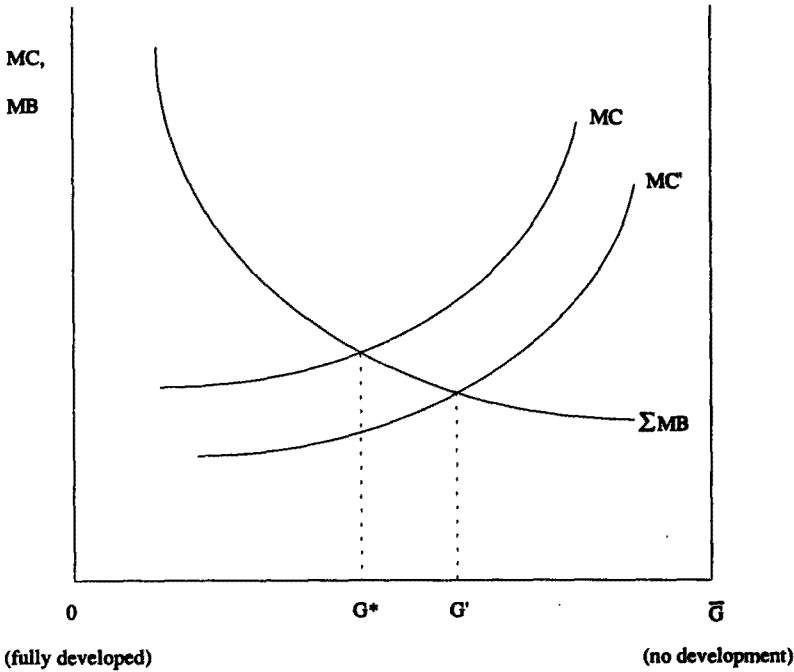


Figure 1. An Undeveloped OCS as a Pure Public Good

ΣMB = sum of marginal benefits of not developing the OCS	\bar{G} = total amount of OCS acreage available
MC = marginal cost of not developing (foregone lease revenues)	G^* = socially optimal amount of undeveloped acreage
MC' = marginal cost of not developing when federal government incurs delay costs, administrative expenses, and litigation due to CZMA provisions	$\bar{G} - G^*$ = socially optimal amount of developed acreage
	G' = amount of undeveloped acreage when federal government incurs CZMA costs

benefits or costs to other states exist, there can be a role for the federal government. In particular, if there are cost spillovers, the coastal state will provide too much G —i.e., under develop the OCS; if there are benefit spillovers, the state will provide too little G —i.e., overdevelop.

The argument used most against state control is the cost spillover argument. In addition to the foregone revenues from not leasing, the argument goes, there are also foregone benefits in the form of energy security. This raises the marginal cost curve in Figure 1 and leads to a new optimum less than G^* (more development). Because energy security benefits accrue to the country as a whole, an individual state would have very little incentive to take them into account. This argument is alluded to

in nearly every discussion about federal-state relations on the OCS.²⁵ In addition, the energy security rationale for OCS development is explicit in the language of the OCSLAA (see page 2 above). Unfortunately, the argument is based on a faulty notion of energy security.

An energy security externality exists because there is a wedge between the marginal private and marginal social costs of imported oil. This wedge consists of two components: the "demand component" and the "disruption component".²⁶ The demand component exists when the United States demand for imported oil is large enough to affect the world oil price. Suppose, for example, that the United States imports three million barrels of oil per day for which it pays \$15 per barrel. Suppose further that demand increases by one million barrels per day and that, as a result, the world price increases by \$1 per barrel. The price of oil—i.e., its marginal private cost—is \$16 but the marginal social cost is \$19 (\$164 - \$153). In this case, individual consumers in the United States do not take into account the impact that their own consumption has on the world price. A restriction on imports could be beneficial because the reduction in payments to foreign producers is more than offset by the value of oil to United States consumers. Figure 2 shows this graphically. The private market would

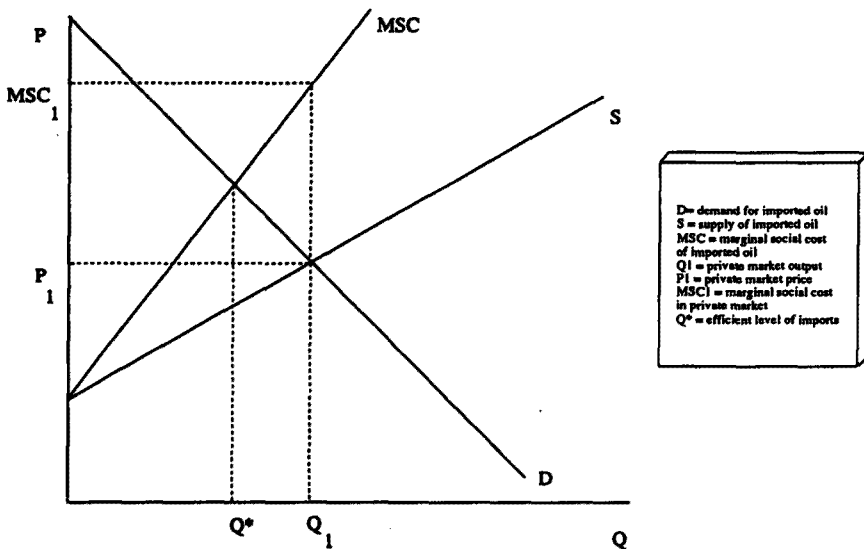


Figure 2. Market for Imported Oil When Importer Has Market Power

25. See, for example, E. Cook, *Federalism at Sea? State-Federal Relations in an Extended Territorial Sea*, 5 J.L. & Pol. 429 (1989).

26. D. Bohi & W. Montgomery, *Oil Prices, Energy Security, and Import Policy* (1982), the best source for a rigorous analysis of the energy security issue, uses these terms.

import Q_1 barrels of oil at a price of P_1 , but the socially optimal amount of imports—i.e., the amount where the price consumers are willing to pay for an additional barrel just equals the marginal social cost of that barrel—is Q^* .

Empirical evidence suggests that the size of the demand component is very small.²⁷ In other words, changes in United States consumption appear to have very little effect on the world price. Referring to Figure 2, rather than being upward-sloping, the supply of imported oil is nearly perfectly elastic at the world price. This means that policies to reduce imports, such as a tariff, or policies to increase domestic oil supplies, such as greater OCS leasing, have little impact on world oil prices. Instead of providing an efficiency gain to the United States economy, they lead to efficiency losses. Moreover, many economists question the wisdom of such "beggar-thy-neighbor" policies under any circumstances. Often such policies lead to retaliation and reduce overall welfare.²⁸

The disruption component of the energy security wedge exists when there is some probability of a disruption in world oil supplies which could significantly raise the price of oil. This future price increase will cause a transfer of wealth to foreign oil producers from United States consumers, just as described for the demand component above. In addition, the sudden price spike can cause dislocations to the macro economy. These come about when non-oil prices and wages cannot adjust immediately to rises in oil prices causing various sectors of the economy to experience disequilibria.

Most of the focus in United States energy security policy has been on this component of the energy security externality. If private markets are not able to fully adjust to oil price shocks, then there can be a role for government to aid in the adjustment process. But these adjustment costs depend on the level of total oil demand and the elasticity of demand, not on the level of oil imports. Policies to reduce imports and increase domestic supplies—such as increased OCS leasing—have no benefit. In fact, the United States could be self-sufficient in oil but the economy could still feel sharp repercussions from a rise in the world oil price as long as the demand for oil were large and price-inelastic.²⁹ These repercussions would be felt because the oil market is a global one—if prices rise in one part of the world, they rise virtually everywhere.³⁰

27. M. Walls, *Welfare Cost of an Oil Import Fee*, 8 *Contemp. Pol'y Issues* 176 (1990).

28. D. Bohi & M. Toman, *An Assessment of Energy Security Externalities* 7, Resources for the Future Discussion Paper ENR92-05 (1991).

29. D. Bohi, *Energy Price Shocks and Macroeconomic Performance* (1989), highlights the differences in Japan and the United Kingdom in response to the 1979-1980 price shock: Japan imports all of its oil and the U.K. none, yet Japan experienced very little disruption to its economy during this period while the U.K. suffered badly. Bohi attributes the difference to monetary policies in the two countries.

30. Bohi & Toman, *supra* note 29, conclude that energy security policies, to the extent that

Finally, even if there are energy security benefits from OCS development, there are ways to internalize them under state control. A matching grant from the federal government to the coastal state equal to the external energy security benefits—i.e., equal to the difference between the state's marginal cost of not developing and the social marginal cost of not developing—should lead to the optimal amount of leasing.³¹

Matching grants can also be used to internalize any possible spillover benefits, such as environmental benefits, from preserving the OCS. If citizens of inland states get some benefits from clean beaches and unobstructed ocean views and coastal states do not account for those benefits in determining the amount of OCS development, the federal government could provide a grant to the coastal state equal to the amount of spillover benefit. Once again, the existence of a spillover alone is not justification for federal control.

With respect to the OCS, such a policy is, in fact, already in place. As described in section II above, the CZMA provides grants to coastal states that have an approved comprehensive coastal zone management plan. The plan must meet nine performance standards which deal with protection and management of natural resources, public beach access, facilities siting, and other goals. The quid pro quo for allowing states flexibility in designing their programs is that states must address "national concerns" and must interact with relevant federal agencies. The Secretary of Commerce may deny program approval if he or she finds that the state failed to take national concerns into account. Since 1988, the federal government has provided grants in a one-to-one ratio with a state's contribution to its program. With perhaps some additional language on the OCS and/or larger grants, the CZMA appears to be capable of addressing the OCS benefit spillover problem.³²

In conclusion, it appears that state control over the OCS may be more efficient than federal control. States would account for all of the costs

we need them, should take the form of government-sponsored research and development into alternative energy and energy conservation. It is well-known that because of information externalities, private markets may not generate socially optimal levels of investment in R&D. R. Cornes & T. Sandler, *The Theory of Externalities, Public Goods, and Club Goods* (1986). Combining this problem with that of the disruption externality in energy markets presents an argument for government subsidization of energy R&D.

31. See W. Oates, *Fiscal Federalism* ch. 3 (1972), for a general discussion of intergovernmental grants. D. Bradford & W. Oates, *The Economics of Political Decentralization*, 61 *Am. Econ. Rev. Papers & Proc.* 440 (1971) show that it is not necessary to assume some kind of community preference function for matching grants to be efficient. As long as there is majority voting (with single-peaked preferences) and fixed and known tax shares, grants to state or local governments are equivalent to grants made directly to individuals.

32. Congress authorized \$69 million for grants in 1991. *Coastal Zone Management*, 21 *Env't Rep.* (BNA) 1372 (1990).

of OCS preservation, which consist only of the foregone lease revenues and not any energy security impacts, and could be made to account for all of the benefits, even those that spill over to other jurisdictions. In contrast, the federal government tends toward uniformity in OCS preservation. Moreover, because of the current inequity in the distribution of benefits and costs along with the states' capabilities of fighting development through the CZMA, federal control is probably leading to less than optimal development. Unfortunately, changes in the status quo may be unlikely, especially federal relinquishment of the OCS in an era of budget deficits.³³ How then do other proposals measure up?

REVENUE SHARING AND "LEASE DELAY RIGHTS"

A. Federal Control with Revenue sharing

In terms of revenue distribution, offshore and onshore federal lands are treated quite differently. Under the Mineral Leasing Act, states get 50 percent of federal mineral leasing receipts from onshore lands. The Taylor Grazing Act provides states with 12.5 percent of all grazing and stock raising receipts from federal leases. States can assess severance taxes on oil and gas produced from onshore but not offshore federal lands. And the National Forest Revenue Act allocates 25 percent of national forest timber harvesting revenues to state and local governments. States cannot assess property taxes on federal property but the Payment in Lieu of Taxes Act of 1976 allows the federal government to compensate states based on federal acreage within their borders. The Act does not apply to the OCS.

Numerous OCS revenue-sharing bills have been introduced in Congress over the years. In recent years, most of the bills specify that five to ten percent of either all revenues received after some date (in most cases, the date of the bill itself) or the additional revenues received over some base year revenues be allocated to coastal states.³⁴ Most of the bills include ceilings on the total amount that can be turned over. All of the bills include complicated allocation formulas based on percentage of actual and/or potential leasing off a state's coast, volumes of oil and gas landed, miles of shoreline, population, number of energy facilities, and whether or not the state has an approved CZM plan. Most of the bills specify in some way how the money should be spent by the states. For example, in some of the bills,

33. The OCS generated \$3.3 billion in revenue in 1990 and has generated more than \$90 billion over the last 20 years. *Panel to Address OCS Revenues, Energy & Env'tl. Study Inst. Weekly Bull.* B7, Sept. 23, 1991.

34. In 1991, the MMS recommended that 26 percent of revenues be shared with the states. *Interior Urges Senate Subcommittee to Lift Outer Continental Shelf Ban*, 22 *Env't Rep.* (BNA) 607 (1991).

money is to go to the National Sea Grant program and the programs covered under the Commercial Fisheries and Research and Development Act. Some of the bills specify that the money go toward operation of the state's CZM program. Most include more general language about "enhancement and management" of living marine resources and natural resources. No revenue-sharing bill has ever managed to pass both Houses of Congress.

While revenue sharing is probably better than the status quo, it is not as efficient as state ownership. If the proportion of revenues going to the states is the same across all areas, states will continue to resist development in some areas. Referring again to Figure 1, a state may no longer want a no-development policy, G , because it no longer sees the marginal cost of preservation as zero. But since it only gets some revenues and not all, it still views its marginal cost curve as lying below MC and thus still wants a level of preservation greater than G' . Whether it prefers G' to G depends on whether the lease revenues it gets are large enough to offset the loss in preservation benefits.

B. State Ownership with Revenue Sharing

Some observers have proposed that with the expansion of the territorial sea to 12 miles, states should acquire ownership of the oil and gas resources in that zone. In addition, some believe that lease revenues in that zone should then be shared with inland states.³⁵ This revenue sharing is designed to encourage inland state approval of the plan.

If coastal states have to share revenues with inland states, their marginal cost of preservation is reduced and too much acreage is preserved. Since coastal states do not forego as much revenue by not leasing, they choose to lease less. In Figure 1, the state sees a marginal cost curve such as MC' and ends up preserving G' acres (and developing $G - G'$ acres). If, however, there are significant external benefits of OCS preservation, then sharing revenues with inland states may improve efficiency. In other words, if G' is not obtained because coastal states do not see the full marginal benefits of preservation, then forcing them to share their revenues is one way of inducing them to do so. In effect, this policy is an alternative to the grants that coastal states get through the CZMA. If both the CZMA and inland state revenue sharing are in place, however, too little OCS development will take place.

35. Littleton, *supra* note 8. The territorial sea was expanded by Presidential proclamation in 1988. However, the proclamation addressed only foreign policy and not federal-state relations.

C. "Lease delay rights"

Farrow proposes that state governments and environmental interest groups be allowed to bid for OCS leases in competition with oil companies.³⁶ According to Farrow, these groups are effectively prohibited from competing under the current system because of the federal government's diligence requirements.³⁷ These requirements state that a tract must be drilled within five years of the lease date (10 years, in ultra-deepwater locations) or it reverts to the federal government. This means that a state government, or any bidder who wants the tract to stay undrilled, will only be able to hold the property rights for five years. That bidder will only win, then, when its "no development" value is several times the value of development. According to Farrow, this is an unlikely outcome.³⁸

Farrow proposes that the bid acceptance rules be modified so that a state or interest group wins a tract if its bid is larger than the difference between the revenues the government earns if the lease is granted to an oil company today and the expected revenues if it is granted five years from now. In other words, the state is bidding for the right to delay leasing for five years.

In making decisions about bidding, states are assumed to act to maximize a utility function that depends on "delay", where delay is produced through "market" mechanisms—i.e., bidding—and through "nonmarket" mechanisms—i.e., invoking the consistency provisions and resorting to litigation. The utility function is maximized subject to a budget constraint with known "prices" for each of the mechanisms. States then undertake bidding and litigation such that the values of the marginal products of each activity are equal.³⁹

Farrow's proposal could be an improvement over the current arrangement, but it requires some possibly heroic assumptions about information available to the states and about state government optimizing behavior. For example, it is unclear exactly what the "prices" of market and nonmarket activities are and whether assuming states know them with certainty is reasonable. In addition, it seems feasible that a single state

36. Farrow, 1987 and 1990, *supra* note 9.

37. They are not explicitly prohibited.

38. Farrow implicitly assumes that preservation values depend on development values, presumably because some things, such as oil spill risks, are linked to the amount of oil expected to be produced. Many locations may have a high preservation value, however, and low expected development values. The Georges Bank area off the coast of Massachusetts, the Florida keys, and the North Carolina coast near the Outer Banks may be examples of such areas.

39. This holds as long as there is an interior solution to the maximization problem. Farrow admits that a corner solution with all litigation and no bidding may be optimal in some cases.

could have an impact on these prices through its delay activities. It is not clear what implications this kind of market power might have. Also, assuming that states act as individuals would, choosing market and nonmarket activities so as to maximize utility subject to a fixed budget constraint, could be unreasonable. It is conceivable, for example, that states would bid to delay lease sales and if they do not win, would then try to delay through "nonmarket" mechanisms. As long as the CZMA consistency provision is in place, states still have the means to do so. Moreover, states could view bidding as more risky than other means of delay. And bidding allows them to delay for only five years what could possibly be delayed indefinitely through the CZMA.

Another troublesome feature of the proposal is that, in evaluating delay bids relative to development bids, the federal government needs to calculate what its revenues will be five years in the future. The Department of Interior calculates the expected values in many locations but not all, and there is no guarantee that the calculations that they do make will be close to the actual values. Farrow suggests that the government use a simpler approach: assume future revenues are proportional to today's revenues with the proportionality factor the expected percentage change in oil prices. Of course, there remains the problem of forecasting oil prices.

SUMMARY

The current system of ownership and management of the Outer Continental Shelf appears to be leading to an inefficient amount of OCS development. Because coastal states bear all of the costs and reap very few benefits, they have strong incentives to fight development. The consistency provisions of the Coastal Zone Management Act give them a means to do so.

This article suggests that efficiency would be enhanced if states owned the OCS lands off their coasts. They would then take into account all of the benefits and costs of leasing and, as long as they acted to maximize the welfare of their citizens, would lease the efficient amount of land. There are no "energy security" benefits from increasing OCS oil and gas production, so there are no national benefits from development that the states would not consider. In addition, any national benefits from not developing can be internalized through the conditional grants of the CZMA or a similar program.

Revenue-sharing and allowing states and environmental groups to bid for leases are both inferior to state-ownership but better than the status quo. Both might be more feasible in the short run given the amount of revenues that OCS leases bring the federal Treasury and the persistent federal budget deficit. Nonetheless, a "grandfathering" plan that leaves existing, producing leases in the hands of the federal government and gives

responsibility for new leases to the states does not appear to be out of the realm of possibility. Historically, it has been acts of Congress that have determined ownership of the submerged lands, not the Constitution.⁴⁰ Moreover, some areas may currently be drains on the federal government more than revenue-raisers. For example, many oil companies are losing interest in California despite the great oil and gas potential there. In addition, in July 1990, President Bush placed several OCS areas under a leasing moratorium. The MMS estimates that the lost revenues from the first year of the moratorium amounted to \$2 billion.⁴¹ In addition, because of drilling moratoria, the government is discussing buying back some existing leases. The MMS estimates the cost of buying back 73 leases off the Florida coast south of Naples at between \$270 and \$497 million.⁴² Policymakers should seriously consider state-ownership as a viable alternative to the present system.

40. See *supra* note 3.

41. *Supra* note 35.

42. Panel to Examine Offshore Drilling, Energy & Env'tl. Study Inst. Weekly Bull. B2, July 15, 1991.