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AN INTRODUCTORY ANALYSIS OF ENERGY LAW AND POLICY

Kenneth A. Manaster*

I. A NEW FIELD

As happens every so often in American law, a new field has appeared. It has been labelled "energy law," and there is increasing evidence of its existence. Law schools offer courses in it, continuing legal education programs offer seminars in it, legal periodicals claim it as their subject, and—perhaps most persuasively—some lawyers claim to be practicing it.

This article presents an introduction to energy law and an analytic framework for organizing and understanding it. A coherent sense of the content and contours of energy law will help in the evaluation of specific energy policies and in the resolution of conflicts arising from them.

II. TOWARD A FUNCTIONAL DEFINITION

Because energy law is relatively new, it is possible to understand it in part by identifying the various older fields of law from which it has emerged.1 This kind of analysis has been offered frequently by scholars examining environmental law, a close relative.2 Energy law as a discrete subject, arguably has now reached the stage of definition that environmental law had reached about ten years ago.3 By examining the

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1. "Until quite recently, very few lawyers would have acknowledged the existence of a body of law that could fairly be termed 'energy law.' It seems inevitable, however, that there now is or soon will be, an energy law." Green, Energy Law Guide, 1 Energy L. Serv. (Callaghan) 1-1 (Aug. 1978). One author has already attempted to put the subject "in a nutshell." J. Tomain, Energy Law in a Nutshell (1981).
2. "In the case of environmental law, almost overnight pieces of law drawn from the laws of water, air, property, and torts were forged into a new body of environmental law." Green, supra note 1, at 1-1.
3. Id. There are conflicting appraisals of the extent to which environmental law itself has attained any significant degree of definition as a distinct field. Compare Krier and Stewart, Using Economic Analysis in Teaching Environmental Law: The
various areas from which energy law borrows, including environmental law itself, we can get a sense of what the new field is about.

A more useful way of understanding the subject of energy law, however, is to examine the major issues which arise in the formulation and implementation of energy policies. These concerns and the means of addressing them constitute the basic elements of energy law. Anyone working or studying in this domain needs to understand their importance and interrelationships. It is hoped that this article will provide such understanding.

When a new energy policy is proposed, controversy usually develops over some aspect of it. If new offshore oil and gas exploration is to be allowed by the federal government, questions of environmental impact are raised. If new tax credits or low interest financing schemes are being considered as incentives for home insulation installations, the economic side-effects on other taxpayers and consumers may be a bone of contention. If solar energy installations are promoted, conflict may develop over the extent to which regulated utilities

Example of Common Law Rules, 1 UCLA J. ENVTL. L. & POL'V 13 (1980) ("Environmental Law" is not an integrated body of law) with Hagman, Foreward to the First Issue of the UCLA Journal of Environmental Law and Policy, UCLA J. ENVTL. L. & POL'V vii, xv (1980) (All fields of law other than a basic few lack integration). Other commentators have noted that even ten years is insufficient to "ripen" a major new field of law. N. ORLOFF & G. BROOKS, THE NATIONAL ENVIRONMENTAL POLICY ACT 2 (1979).


5. A broad range of objections of this sort was aired with regard to the Pacific Gas and Electric Company's proposed "Zero Interest Plan" for financing home conservation measures. See Application of Pacific Gas and Electric Co. for Authority to Implement a Conservation Financing Program, Cal. Pub. Util. Comm'n Application No. 59537. One low income consumer group stated,

[as] proposed by PG&E, all residential gas customers and all electric customers bear the costs of the ZIP program. Only those relatively few customers who receive conservation program measures financed under ZIP are sure to benefit from the program. Nonparticipating ratepayers as a class may or may not benefit significantly from financing the ZIP program in lieu of conventional capacity expansion.

should be involved in the work because of the tendency of such utilities to exclude private entrepreneurs. These examples suggest that hardly any new energy proposal is made that does not produce disagreements. Lawyers invariably become involved in these conflicts through processes of drafting, negotiating, legislating, implementing, and litigating. Energy lawyers are thus participants in all of the major disagreements over energy policy which our society now faces. They must be prepared to address the distinctive categories of issues which arise from energy policies.

In referring to "energy policies," this article will focus on approaches to altering and ordering the patterns of fuel production and usage in this country. Despite occasional periods of temporary glut and moderated prices, it is now well recognized that the world faces serious long term shortages in the availability of traditional fuels, especially oil. These shortages have already begun to manifest themselves in supply disruptions and skyrocketing prices, creating social and economic problems of grave significance. The emergence of these problems has called forth a response from legal institutions.

Stated somewhat differently, the inescapable problem of scarcity of resources has shown itself most recently and dramatically in the imbalances between supply and demand for


energy. If renewable energy sources ultimately are developed to displace reliance on nonrenewable fuels, the scarcity problem will become much less acute. The field of energy law might then contract, with some of its elements becoming relics of a transitional era in humanity's use of resources. Other levels of energy law will remain, particularly those relating to property rights and prices, for those concerns have preceded the present "energy crisis" problems and pertain to on-going questions of social organization and equity. Until then, or if the fuels scarcity problem remains intractable, there should be an evolving chain of social strategies to bring supply and demand into balance and to do so in a way which accommodates a variety of interrelated social concerns.

There are four categories of issues which must be considered when developing these energy strategies: resource problems, policy implementation, economic implications, and collateral values. Whether a proposal aims at increasing the supply of traditional fuels, generating new and non-traditional fuels, reducing the demand for certain types of fuel uses, or establishing prices or allocations for specific fuels, the issues to be analyzed fall within these headings. Obviously, particular issues will be easier to deal with for some policies than for others. The fundamental character of these issues, however, requires at least some attention to each of them for every energy policy proposal.

9. Particular legal doctrines have developed regarding ownership and development rights for the various kinds of traditional fuels, such as oil, natural gas, water, wood, and coal. These doctrines should continue to be developed and harmonized within the broader realm of energy law. See generally Getches, On Natural Resources as an Area of the Law, 53 U. Colo. L. Rev. 195 (1981); R. Hemingway, The Law of Oil and Gas (1971); H. Williams & C. Meyers, Oil & Gas Law (1981). Price and rate-setting functions will be addressed more fully infra text accompanying notes 79-88.

10. In its broadest sense, the solution to both the International [sic] and domestic energy problem is simple—U.S. demand for energy and energy supply available from domestic sources must be brought back closer to balance. However . . . bringing U.S. energy supply and demand closer to balance rapidly is only one of many goals policy-makers are attempting to pursue simultaneously.

ENERGY LAW

III. RESOURCES

A. Resource Availability and Depletion

One of the first questions which must be asked regarding any energy policy is what effect it will have on the energy resource base. Some strategies seek to increase the domestic supply of traditional fuels, such as oil, gas, or coal. In order to evaluate the likely success of these proposals, one certainly must have some idea of the extent to which increased commercial supplies of each fuel can be obtained from the resource base. Recent controversies over the extent to which gas and oil price decontrol will stimulate new production indicate that there is great uncertainty over how much of these fuels is physically and economically obtainable. Despite this uncertainty, an attempt should be made to predict the augmented fuel supplies which a given policy realistically can aim at. In this attempt it is evident that the lawyer's role is secondary, for the necessary data and technical opinions must come from other kinds of experts.

In examining the available resource base, certain physical constraints other than the availability of the raw materials, must be evaluated. For example, proposals for vast increases in the production of synthetic fuels from oil shale have met the objection that there is insufficient water available in oil shale and coal regions to undertake the level of production targeted. Similar objections, though technically more complex and controversial in nature, have been raised regarding nuclear power plants. One such argument is that, in the absence of adequate sites and techniques for safely disposing of high level radioactive waste, nuclear generating plants will be forced to curtail or suspend operation long before the predicted end of their useful lives.


13. "California is justifiably concerned about reliance upon additional increments of nuclear generation until there is the assured capacity for waste storage that is necessary to keep nuclear reactors operating." Brief of Appellants at 36, Pacific Legal Found. v. State Energy Resources Conservation & Dev. Comm'n, 659 F.2d 903 (9th Cir. 1981).
If one side of the coin for many strategies is increased fuel supply, the other side is depletion of the resource base. Policies which would help this country use its gas and petroleum reserves more fully in the next few years could virtually exhaust those resources for later needs. Some energy experts would say this is not a problem because alternative, unconventional sources of energy will be available after a "transition" period, hopefully sometime early in the next century. On this premise, the absence of significant quantities of oil and gas in the future need not matter to anyone. Under this view, however, it is essential that policymakers ask the right questions and obtain realistic answers regarding the rate of depletion of the major, traditional fuels. If they do so, then the country might cease to need the older fuels at just about the time they cease to be available.

One must also pay attention to the full range of potential uses for our fuels. Fuels which are fully consumed now must not be needed later for uses which are not yet fully manifest, which are presently satisfied in other ways, or which cannot be satisfied by the expected future array of energy technologies. For instance, there may be good reason to feel confident now that high rates of usage of natural gas and oil for home heating can give way in future years to greatly increased reliance on solar heating, at least in some regions of the country. Is there, however, as much room for confidence that the traditional fuels for electricity production can be displaced by solar power? Must we ensure that enough petroleum is available later to provide material for plastic solar panels and other active solar system components?

Similar concern can be expressed about the long-term availability of fissionable uranium for nuclear power produc-

17. C. Flavin, The Future of Synthetic Materials: The Petroleum Connection 42 (1980) ("Most solar water heaters contain at least some synthetic materials, and many are made almost entirely of plastic . . . . Solar collectors could be made entirely of metal or glass but they would be much more expensive.").
Such concern is not as serious regarding domestic coal reserves, but even there resource availability and depletion must be addressed. Just because the answer may turn out to be a favorable one does not mean the question need not be asked, for the precise content of the answer may be illuminating in a variety of ways.

Although the importance of the dual issue of resource availability and depletion is most clearly seen with reference to policies which explicitly aim at increasing supply, the issues must also be addressed for other types of policies. Conservation strategies such as appliance efficiency standards should have the effect of reducing demand for electricity. This effect in turn may lead to reduced usage of fuels for electricity production, thus moderating the depletion rate of those fuels. Similar conclusions can be drawn regarding requirements or incentives for the production of more fuel-efficient automobiles. Any energy policy, in other words, has a potential impact on the long term resource base. By examining that impact, we get the best assessment of the policy’s prospects for success, as well as its implications for other policies and for future needs dependent upon that same base.

B. Environmental Impacts

Another problem to be faced with regard to physical resources is environmental impact. The resource depletion concern discussed above relates to the future availability of the energy resource base itself for supply needs. The environmental focus includes a full range of physical effects which warrant consideration apart from their implications for present or

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20. Id.
The energy lawyer here must enter the domain of environmental law. Many energy law conflicts involve environmental law issues, and vice-versa, but the two fields are not congruent. Most energy policies involve a modification of the activities of energy producers or consumers and inherently relate to the interaction between those activities and certain types of resources. Accordingly, every energy policy should be evaluated fully for its environmental impact precisely because such impact usually will be wide-ranging and complex.

Sometimes the effects will be fairly evident, as with strip mining of coal." Sometimes they will be more subtle and uncertain, as with small radiation discharges into the air and water from the normal operation of a nuclear power plant." At other times they will be rather unexpected, as with the increases in indoor radioactive air pollutants resulting from improved home insulation techniques."

Here again the energy lawyer is not fungible with the technical expert who can identify and evaluate the environmental side-effects of an energy policy. But the energy lawyer must be prepared to understand these effects, the conflicts they generate, and the legal rules which are developing to deal with them. The energy lawyer, at a minimum, should be aware of the two major environmental regulatory approaches which have emerged in recent years and which are pertinent to many energy projects. One approach is detailed, advance review of the "environmental impact" of government decisions likely to have substantial environmental consequences. This approach emanated from the National Environmental Policy Act and similar state statutes. The other approach can be most generally described as comprehensive national pollution control

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legislation using a variety of direct and indirect methods for limiting emissions quantities and concentrations. The Clean Air Act\textsuperscript{27} and the Clean Water Act\textsuperscript{28} are the outstanding examples of the latter approach.

IV. POLICY IMPLEMENTATION

As has already been noted,\textsuperscript{29} not all energy policy issues are ones which lawyers are in the best position to investigate and understand. Technical experts from a broad range of disciplines—chemistry, biology, geology, engineering, economics, etc.—must be relied upon by the policymaker and the lawyer in formulating energy strategies, implementing them, and resolving conflicts over them. Policy implementation issues, however, are most clearly the kinds of concerns in which legal training and knowledge are indispensable. The array of issues to be examined now constitutes the heart of energy law—the area of energy policy activity in which lawyers can offer the most assistance, relatively apart from the need to rely upon the expertise of others.

A. Federalism and Bureaucracy Allocations

Assuming that the implementation of a given energy strategy involves some government activity, we must decide what level of government—federal, state, or local—and what type of government agency—executive, legislative, judicial, or administrative hybrid—would be best for its implementation. In selecting the appropriate government level, the segment of American constitutional law which deals with the doctrine of preemption must be examined.\textsuperscript{30} On the question of state and local power to regulate the development of nuclear power, for example, the courts have been required to interpret the United States Constitution to ascertain the proper realm of control open to the various levels of government.\textsuperscript{31} Similar is-
sues have been resolved judicially regarding federal statutory attempts to control strip mining practices.  

As for the most appropriate type of agency to which implementation power should be allocated, there are several strictly legal considerations. These fall mainly under the heading of due process requirements and will be discussed below. Even beyond those, however, lawyers cannot help but be involved in the power allocation decisions. Drawing on the field of administrative law and on their own experience, lawyers must be prepared to help evaluate schemes involving varying degrees of reliance upon executive departments and independent administrative agencies for both rule-making and adjudication, upon the courts for traditional review of agency action, and upon the legislature itself for intermittent scrutiny and alteration of statutory programs.

The resolution of these questions of power allocation among the levels and types of government institutions will involve a great deal of practical politics. It might also involve contributions from such fields as political science and public administration. But whether on the basis of constitutional and administrative law doctrines, their own experience in dealing with government, or the learned observations of experts from other fields, lawyers frequently will be faced with these organizational issues when the implementation of energy policy is considered. The regulatory measures needed to effectuate a given policy and the level and type of institution best able to develop and implement those measures must be identified if policy goals are to be achieved.

659 F.2d 903 (9th Cir. 1981), cert. denied, 102 S.Ct. 2959.


33. See infra text accompanying notes 51-59.

34. With regard to the validity of “legislative vetoes,” see Consumer Energy Council v. Federal Energy Regulatory Comm’n, 673 F.2d 425 (D.C. Cir. 1982) and Chadha v. Immigration & Naturalization Serv., 634 F.2d 405 (9th Cir. 1980).

B. Clarity, Enforceability, and Predictability Requirements

Much of the recent controversy over energy policies seems to stem from their chronic unpredictability.66 Because so much of a lawyer's traditional role involves predicting the legitimacy of a client's activities, lawyers should have a keen interest in making sure that policies are clearly stated and predictable in their consequences. Additionally, the enforcement of a policy is much more likely to be uniform and effective if the formulation of the strategy is intelligible. Voluntary compliance also will occur more readily if persons subject to requirements know what is expected of them and what consequences will follow if they fail to comply.

Clearly presented energy policies will encourage realistic planning by persons subject to them. Because so many large energy projects now involve massive amounts of capital and long lead times for facility design and construction, policy uncertainty can have the implicit effect—intended or otherwise—of discouraging such new ventures. This seems to have been the case with some recent, major nuclear power and coal production projects in the United States.37

No one realistically can ask that present policy account for all events and knowledge which only the future will reveal. The discovery of an offshore earthquake fault in close proximity to a nuclear plant already under construction may be the type of incident which could not have been avoided even with stringent requirements for preconstruction environmental re-

36. A special principle underlies any approach to energy policy—the principle of uncertainty. No one really knows how much undiscovered fuel there is, how quickly it will be discovered, how much it will cost to produce and what the environmental effects of consumption will be. It is not likely that uncertainties about resources and the costs of using them will be dispelled within a decade, or even two. We must design policies that admit the possibility of surprise and that weigh the relative risks of being caught sometime in the future with unanticipated good news, or unanticipated bad news.


view of the proposed facility.\textsuperscript{38} A mishap such as occurred in 1979 at the Three Mile Island nuclear plant near Harrisburg, Pennsylvania may present new learning about security measures, evacuation procedures, and equipment design which realistically could not have been obtained earlier, although this is debatable.\textsuperscript{39} Nonetheless, lawyers and others involved in policy formation must exert every effort to structure policy to reflect present knowledge and requirements as fully and clearly as possible, to make explicit timing schedules for future policy reviews and possible changes,\textsuperscript{40} and to set forth procedures to be followed should unexpected, new information make changes in prior policy decisions necessary.

Another justification for inquiring into the predictability and clarity of energy policy requirements is fairness. Apart from the public's interest in the effective enforcement of policy, and its interest in rational planning of energy projects, changes in policy or enforcement practices should not work unnecessary hardship on those who honestly have relied upon a prior policy presentation. The development of a power plant should not be subject to ambiguous and fluctuating environmental requirements as the project proceeds through construction and even into operation.\textsuperscript{41} An investor in new oil exploration projects should not find that the financial incentives created by law for his large and long-term investment have been abruptly and unexpectedly removed.\textsuperscript{42} If energy policy is to encourage new activities and new expenditures by many citizens, it should be presented in such a way that reliance upon it will not later be found to have been misplaced. Unfair results to individuals will be minimized, and an excessive distrust of legal requirements in general will be avoided.

\begin{itemize}
\item[38.] The discovery of an active earthquake fault near the Pacific Gas & Electric Company's Diablo Canyon nuclear plant near San Luis Obispo, California after plant construction had begun is discussed in Berger, \textit{supra} note 18, at 344-45.


\item[40.] An example of the type of phased policy formation is The Energy Policy and Conservation Act of 1975, 15 USC §§ 2001-2012 (1976 & Supp. IV 1980), which extended price controls on crude oil and refined petroleum for a 40 month period, subject to a later, discretionary extension by the President beyond 40 months, but to no later than September 30, 1981. 15 U.S.C. §§ 757(a), 760(g) (1976).

\item[41.] \textit{See supra} note 37.

\end{itemize}
C. Data Adequacy Assurance

In both the formulation and implementation of energy policy, the need for accurate and complete information is critical. The lawyer's frequent function is to prepare and provide information for these processes, drawing upon clients and consultants for data which the lawyer fashions into a formal presentation. The energy lawyer also has a broader contribution to make, however, in identifying the procedures for obtaining, testing, and using the data which underlies energy policies. The question which a lawyer should be ready to address for each policy is what level of accuracy, completeness, and reliability can be attained for the information upon which the policy will be based, and what procedures can be devised to ensure the highest such level? This question, an important component of the energy law inquiry, overlaps in varying degrees with all of the other components under discussion here. No other issue properly can be addressed unless the underlying information is sound.

The need for effective procedures to ensure reliable data input exists regarding both policy formation and implementation. The formation process at the legislative and administrative levels must be based upon reliable information, and the same is true regarding all aspects of implementation, including legal enforcement measures. Saying this, however, offers no clue as to what information is reliable. In a general sense, data should represent the best technical facts and opinions regarding the issue at hand, whether they relate to reserves of fissionable uranium, potential levels of homeowner utilization of tax credits for solar heating installations, or the degree of sulfur dioxide emission control from installation of wet scrubbers on coal fired power plants. Unfortunately, as lawyers well know, experts frequently disagree, even regarding so-called "facts." \(^{43}\)

Recognizing both this need for the best technical information and the difficulty of identifying the "best," a broad range of procedures is available to raise policy decisions to the highest possible level of reliability. The lawyer is familiar with some of these through the adversary processes of the courtroom, as well as through legislative hearing procedures, and

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administrative adjudication and rule-making. The inescapable difficulty, of course, is to ascertain which procedures are most suitable to the development and execution of the particular policy under consideration. The resolution of this difficulty overlaps considerably with the determination of which level and type of government agency are best invested with power over a given policy, for the traditional or constitutional characteristics of various government organs obviously have great impact on their respective information gathering and sifting capabilities.

The overall challenge is to obtain the most accurate and comprehensive data input relevant to the policy issue in question, to review and test the data through a procedure that airs all responsible views, and to entrust decisional power to persons whose authority, discretion, and abilities are appropriate to the decision. Looking at the elements of this challenge in detail will involve a host of specific inquiries. Should we obtain our information regarding levels of natural gas usage by power plants which are subject to statutory fuel usage limits through periodic reports submitted by those users, through reports submitted by gas suppliers, through metering devices under governmental control, or through some combination of these and other methods? Should required strip mining reclamation efforts be monitored through mining companies’ reports of their activities or through government inspections, or both? Should we use formal, adversary processes in resolving applications for power plant licenses, or more informal, hybrid approaches? Should we entrust some licensing decisions to legislative bodies, non-political expert panels, or politically appointed agency members? The answers to these questions

44. The Powerplant and Industrial Fuel Use Act of 1978, requires power plants to make periodic reports to the Secretary of Energy as to their compliance with the statute’s regulations on usage of natural gas. 42 U.S.C. §§ 8421-8422 (Supp. IV 1980).

45. The Surface Mining Control and Reclamation Act requires that the Secretary of the Interior implement an enforcement program in each state which includes unannounced, on-site inspections of surface coal mine sites at least once every six months until the state has its regulatory program federally approved. 30 U.S.C. § 1252(e) (Supp. IV 1980).


47. In the Warren-Alquist Act, California created a State Energy Resources Conservation and Development Commission and a politically appointed board with the power to approve power plant facility sites. Certain provisions of the Act also
have a great bearing on the quality and quantity of information which is the foundation of energy policies.

Another objective of the procedures to be chosen is to clarify points of uncertainty and determine the proper course of action in the face of uncertainty. If offshore oil and gas leases are to be increased in anticipation of greater production, but in fact there is uncertainty as to the reserves to be found, there should be a clear statement of the bases for the decision to proceed, i.e., the range of possible reserves which is believed to justify the decision. To take a more negative example, what is known and unknown about the “greenhouse effect” and acid rain implications of increased coal burning should be clearly identified and balanced against considerations believed to justify the increase. These and other questions illustrate the importance of assuring adequate energy policy data.

D. Democratic Requirements and Traditions

Another broad issue is whether a given energy policy is consistent with certain concerns which are fundamental to American law and government. One such concern is the procedural due process requirement of notice and hearing prior to any governmental abridgement or determination of fundamental rights. In a multitude of contexts—ranging from termination of utility services for non-payment of bills to the licensing of large new oil refineries—the energy lawyer may be

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51. See L. Tribe, supra note 30, at 501-06.
involved in determining or applying the constitutionally proper mode of procedure.

Due process considerations arise when claims are made that compensation is required because a taking or damaging of property by government has occurred. Many energy projects, such as electricity transmission lines constructed by regulated utilities, ordinarily involve the exercise of powers of eminent domain with concomitant requirements for just compensation. In more complex situations, inverse condemnation claims may arise when government regulation or other impairment of property use results in alleged uncompensated takings. Examples of the latter type of problem have arisen regarding local legislation mandating solar access rights and easements and mandatory land reclamation by strip mine operators.

In addition to the constitutional concerns, there are others which are perhaps not quite as firmly rooted in legal requirements, but which nonetheless require attention as a matter of important democratic traditions and even current legislation. “Openness” in government recently has been promoted in a variety of ways, building upon a long-standing tradition that processes of American government should be open to the public both for observation and participation. Statutes and regulations have established formal procedures for advising the citizenry of proposed action and allowing the public to present its views. Lawyers should be attuned to these requirements and prepared to design energy programs to respect their letter and spirit.

52. U.S. CONST. amends. V & XIV.
53. CALIF. CONST. art. I, § 19.
54. See, e.g., CAL. PUB. UTIL. CODE §§ 610, 612-615 (West 1975).
Similarly, government openness reflected in "open records" or "freedom of information" legislation is also important. For example, to the extent that shortages necessitate the creation of allocation schemes affecting millions of consumers intimately, the potential arises for invasions of personal privacy. Democratic traditions respecting individual privacy and restricting secret collection of personal information by government thus become an important element of energy policy analysis.

Finally, the inquiry into democratic traditions overlaps with the inquiry into power allocations among different levels and types of government agencies. The avoidance of over-centralization of power and the corollary reliance upon separated powers in a relationship of checks and balances are well-established tenets of our governmental system. These basic concerns should be heeded when energy policy is developed and institutional arrangements for implementation are created.

V. ECONOMIC IMPLICATIONS

A. Market Restraint or Reliance

It is impossible to understand many energy policies without understanding their relationship to market activities. Does a policy rely upon competitive forces in the marketplace to accomplish its purposes, or does it presume a need to restrain those forces? Particularly in this time of hot debate over the proper degree of government regulation of private business activity, the question is important. A realistic and informed answer will promote understanding of precisely how a policy is intended to work. Attention to the relationship between reliance upon the marketplace and restraint of it will also permit evaluation of the best balance.

Federal controls on field prices of natural gas are an instructive example. For many years, a succession of approaches to gas price regulation was pursued. It culminated

60. In Economic Regulation, supra note 10, the authors pay special attention to the market restraint or reliance issue, and include extensive materials on the natural gas controls drama. Id. at 457-545.
in the 1978 legislation which set up a phased decontrol program. Earlier it was believed that restraint of competitive pressure was necessary to keep natural gas prices at a favorably low level for the ultimate consumer. By the mid-1970's, however, many observers concluded that such restraint was counterproductive. It offered inadequate incentives for new exploration and production while encouraging increased consumption. The new legislative approach generally removes most of the restraints and instead relies more upon the market to set prices and call forth greater production while inhibiting consumption. In a partial contrast to this approach, the more rapid and complete decontrol of oil prices presupposes greater reliance on unrestrained market forces to achieve policy objectives.

The natural gas example raises a few additional points. First, the role of the economist is critical in these policies. Reliable explanations, predictions, and measurements of market and price behavior are indispensable. Second, procedures for assuring adequate data are especially critical here. Without such procedures it will be difficult to prescribe intelligent pricing policies or to evaluate their results. Third, the natural gas saga highlights the obvious fact that an energy policy may aim simultaneously at multiple, complementary objectives,

63. See Energy Regulation, supra note 61, at 59-66, 72-87. "The [Act] makes a bow in the direction of gradualism through the use of pricing formulae which permit gradual price rises over time and phased deregulation of some types of gas."
66. The methods and norms of economic analysis which some legal scholars are introducing into the environmental law field would seem to have their greatest potential utility in energy law with regard to these market issues. This article does not seek to add to the debate over the extent to which such analysis can indeed become the central organizing and analytic tool in these fields, rather than just one of many means of grappling with their various areas of conflict. Some positions in that debate may be found in the sources cited supra note 3.
such as increased supply and diminished consumption. Ex-
amination of the history of oil price controls further reminds
us that a given policy may relate to market forces in multiple
ways which are less than consistent, such as trying to en-
courage new private production and simultaneously to hold
down consumer prices. Such internal tensions should come
as no surprise when we recognize the political cauldron in
which most energy legislation is concocted.

Similarly, it should not be expected that analysis of a
particular policy through the issues under consideration here
will always produce harmonious results. Examination of the
now completed decontrol of oil prices in terms of its relation-
ship to free market forces highlights the hope that competi-
tion and the possibility of higher oil prices will lead to in-
creased production. Examination of the policy's
environmental impacts, however, leaves room for serious con-
cern about the effects of increased offshore drilling. In short,
addressing the various issues categorized here does not auto-
matically provide a means of avoiding conflict, either within a
given policy or among policies. The analysis is intended only
to identify the major elements and implications of energy pol-
icies and the resulting points of conflict. Again, clearer under-
standing of these conflicts should lead more rapidly to their
resolution. Attention to the market restraint or reliance impli-
cations issue may well disclose that much of the controversy
over a given energy policy stems from its assumptions—or
from ambiguity and inadequate information underlying its as-
sumptions—regarding the balance between market restraint
and market reliance.

67. "The purposes of [the Natural Gas Policy Act] are (1) to bring the natural
gas market back into better balance by reducing the demand for natural gas and
increasing the supply . . . and (3) to provide for the conservation of natural gas
. . . ." NATURAL GAS POLICY ACT, S. REP. No. 436, 95 Cong., 1st Sess. 2 (1977)
(Committee on Energy & Natural Resources).

68. See Statement [by President Reagan] on Signing Exec. Order 12,287, 17
WEEKLY COMP. PRES. Doc. 53 (Jan. 28, 1981) (decontrolling crude oil and petroleum
products) [hereinafter cited as Statement].


70. See Statement, supra note 68; see also Lohr, The Great Oil Rush of the

71. See supra note 4 and accompanying text.

72. See generally U.S. DEPARTMENT OF ENERGY, ENERGY PROGRAMS/ENERGY
MARKETS (1980).
B. Equity

One of the most pervasive and complex issues for energy lawyers is economic equity. Energy policies should be designed with concern for distributional equity, meaning fairness to all affected persons, with particular regard for treating similarly situated persons in a similar manner. The energy policy levels at which equity concerns arise can be classified into three major categories: (1) among producers; (2) among consumers; and (3) between producers and consumers.

Conflicts over equity among producers most frequently arise when allegations are made that government energy policies tend to give preferential treatment to one form of energy over another. Federal subsidies for nuclear power research have been compared with the subsidies for solar energy development, for example, and assertions have followed that nuclear power has been economically favored. Similar arguments arise over the relative subsidizing effects of various tax credit provisions aimed at promoting investment in some conservation measures and non-traditional fuels rather than others.

Questions of equity among producers surfaced within the now abandoned petroleum price and allocation regulations. At one stage it appeared that the regulations did not create "equal treatment of refiners differentially dependent on imported oil." An attempt was made to redress those inequities, and in this effort new preferential measures were developed which aided smaller and more inefficient refiners in comparison to larger and more efficient ones.

73. See generally works cited, supra note 8. See also N. Bowie, Towards A New Theory of Distributive Justice (1971).

74. For example, the Federal Energy Administration budget for fiscal year 1975 reported allocations of about $200,000 for contracts and interagency agreements related to research and development of solar energy. In the same year, the federal budget for development of nuclear power was approximately one billion dollars. B. Commoner, supra note 69, at 33.

75. "[T]he federal government currently foregoes significant amounts of tax revenues in order to help taxpayers improve the energy efficiency of their homes or make use of alternative energy sources, and some argue that the government should devote similar levels of resources to helping low-income households achieve these goals." Congressional Budget Office, Low-Income Energy Assistance: Issues and Options 22 (1981); see also Ferrey, supra note 6, at 499-508.


example, the complete decontrol of crude oil prices, in comparison with the phased and partial decontrol of natural gas prices, arguably works to the relative disadvantage of gas producers. The apparent inequity there may not be as great as it seems, however, for producers who have the capability to pursue either gas or oil may be induced to seek oil and thus take themselves out of the disfavored category. This option raises a tangential question as to whether the two approaches can exist side by side without the more gradual decontrol policy failing to meet its goal of inducing more natural gas production; the problem again is policy favoring one fuel over another.

The second area of equity concern is among consumers. The most vivid example is the disproportionately large share of their resources which low and fixed income persons must spend on home heating and other basic energy needs as a result of policies which promote higher energy prices. Higher prices have greater relative impact on these persons than on other segments of the population, and various programs have been initiated in recent years to mitigate this inequity. A similar concern has been raised regarding the effect on the ordinary utility rate-payer when utilities offer low interest or no interest loans to customers who install conservation or solar heating equipment in their homes or businesses. The objection is that other rate-payers, including lower income persons who do not own homes or businesses, will end up bearing higher rates to subsidize those who can afford to avail themselves of the programs. Similar arguments have been made about tax credit programs, with their greater subsidization benefits for those in higher tax brackets.

These examples lead to the vast and venerable area of utility rate regulation. Rate regulation is primarily an ongoing exercise in establishing equity between producers and con-

78. Decontrol Seen Benefitting Users Through More Production, Efficiency, ENERGY USERS REPORT, No. 390, at 175, Jan. 29, 1981; Early Decontrol Proposed in House; Senate Bill Expected This Year, id., No. 395, at 383 March 5, 1981.


80. See supra note 5.

81. See supra note 75. But see GENERAL ACCOUNTING OFFICE, STUDIES ON EFFECTIVENESS OF ENERGY TAX INCENTIVES ARE INCONCLUSIVE (1982).
sumers. Regulated rates and practices, however, can raise questions of equity among consumers as well. One example of this was the judicial finding that the natural gas curtailment policies of the Federal Energy Regulatory Commission tended to produce higher prices for consumers in some regions than in others and that, therefore, an elaborate compensation scheme might be needed to insure inter-regional equity.\textsuperscript{2} Obviously, rationing and curtailment programs also will have great significance for equity among consumers.

Energy policies have many other equity implications among consumers. One of the most intriguing is the "boom town" effect of new energy projects. A national policy which promotes oil shale or coal development may bring great prosperity to a specific region in which the resource is to be pursued.\textsuperscript{3} This development may be of a short-lived nature, however, depending upon how long the resource base justifies the effort and upon the later relative attractiveness of other energy resources. The equity concern which then arises is whether persons elsewhere, who as consumers have benefitted from the exploitation of the particular area's resource, have done so at the long-term expense of the development area residents. Perhaps the short-term "boom" does not in itself compensate the residents for the later, long-term "bust." The selection of this resource and location may well have been a result of national policy decisions, despite the contrary wishes of at least a substantial segment of the affected community.\textsuperscript{4}

The third area balances the interests of producers against those of consumers. The traditional forum for this balancing has been the state public utility commissions. The task there is to establish customer rates which will cover utility costs,


\textsuperscript{3} See, e.g., Blaylock, Denver's Mile-High Energy Boom, \textit{TIME}, Aug. 13, 1979, at 34. Conversely, areas whose energy resources are not favored may stand relatively worse off, although here again we are discussing something more like equity among producers. This suggests that the line between producers and consumers is sometimes difficult to draw.

\textsuperscript{4} See H. LANDSBERG & J. DUKERT, HIGH ENERGY COSTS: UNEVEN, UNFAIR, UNAVOIDABLE? 75 n.17 (1981). Perhaps another way of conceptualizing this problem is as one in which consumers are benefitted at the expense of producers, rather than the other way around. The difficulty with this, of course, is that the residents of the development area most likely are not properly seen as the producers, but rather as the suppliers of labor and services to the producers. This suggests the utility of examining such suppliers' interests as a category separate from producers' and consumers'.
allow rates of return sufficient to maintain the economic vitality of investor-owned utilities, and provide affordable gas and electricity service to the consuming public as a whole. The challenge, of course, is not just to treat similar persons similarly, but also to accommodate fairly the very different interests and needs of producers and consumers. On the broader national stage the same problem has permeated the regulatory policies on oil and gas prices. The culmination of these efforts, as far as the equity problem is concerned, was the 1980 passage of the Crude Oil Windfall Profit Tax. Congress recognized that higher prices for oil might serve the national interest in greater production and also would serve the oil producers' interest in greater profits. In an attempt to redress the concomitant hardship to the consuming public, a tax on the producers' "windfall" was levied, and some attention was given to diverting its revenues to the hardest hit energy consumers. Energy assistance programs to aid the poor in meeting high energy prices are also an attempt to establish equity between producers and consumers. The broad issue simply is whether private producers' interests in maximum profits can be reconciled fairly with consumers' interests in being able to afford to meet their energy needs. Such reconciliation must include attention not only to energy prices per se, but also to the indirect, inflationary effect of higher energy prices generally in the economy.

C. Growth

It is no secret that energy policies influence economic

86. Pub. L. No. 96-223, 94 Stat. 229 (1980). "The windfall profits tax which is actually a severance tax on oil pumped out of the ground, rather than a tax on profit, captures part of the revenue accruing to crude oil producers as decontrol is phased into the regulatory system." U.S. Department of Energy, supra note 72, at 18.
growth. The effects may be viewed in terms of the national economy or in their implications for different regions or localities.\footnote{89} From either perspective, controversy often flows from differing appraisals of a policy's effect on the pace and character of growth. This area of inquiry overlaps considerably with the first economic issue, market restraint or reliance; the choice among approaches to the energy marketplace often will rest upon projections as to economic growth. Also, as with that issue, the role of economists and other business experts looms large here, and lawyers tend to be relegated to an intermediary function in presenting positions in the policy debates.

VI. COLLATERAL VALUES

A. Other Social Goals

Because of the importance of energy issues, it will be rare that an energy strategy will not have implications that reach beyond fuel supply and usage goals. Some non-energy concerns already have been addressed here in the discussion of environmental impacts, market restraint or reliance, and democratic requirements and traditions. There are other non-energy concerns as well, probably in unlimited number and character. It should suffice here only to identify a few of the most prominent.

Perhaps the most notable area widely seen as affected by energy policy is personal "lifestyles." Frequently it is asked whether energy conservation programs can successfully effect major reductions in energy demand without seriously altering "American lifestyles."\footnote{90} The question may at times be a smokescreen for persons fearing some impairment of vested interests or luxurious privileges. In general, however, there is a legitimate concern with reference to both conservation and other energy policies. What would life be like if more homes were designed for solar heating or cooling, if gasoline were $5.00 a gallon, if possession of an electric toothbrush were a


90. "We must face the prospect of changing our basic ways of living. This change will either be made on our own initiative in a planned and rational way, or forced on us with chaos and suffering by the inexorable laws of nature." A. LOVINS, supra note 14, at 5-6 (quoting President Carter). See also, id. at 147-53; Yergin, supra note 36, at 176-82.
misdemeanor, or if the United States actually had no need to import foreign oil? Different answers may well lead to different positions on the wisdom of any proposed energy policy.

The lifestyle inquiry is a particularly worthy one. When proposals are made for increasing energy supplies, it is useful to consider lifestyle implications, especially in light of available demand-reducing alternatives. This consideration injects directly into policy analysis the weighing of preferences regarding our material comforts and daily activities.

Related to the economic growth and market reliance inquiries is a well-entrenched American value that everyone should be able to find a job, i.e., that full employment is a good thing. Energy policies thus will be, and should be, examined for their implications toward the attainment of this goal. Energy policies also have an impact on the usage and placement of different modes of transportation. Similarly, exterior and interior building design is becoming increasingly a function of energy considerations. The objectives and focuses of labor policy, transportation and urban planning, and architecture and design frequently will intersect with energy policy.

B. Future Generations

The discussion thus far has identified policy implications for persons presently affected by them. Only when looking at the resource availability and depletion inquiry did we also consider the legacy that current policies leave for future generations. Similar implications arise under the issues of economic growth, democratic requirements and traditions, mar-

91. NATURAL RESOURCES DEFENSE COUNCIL, Inc., supra note 12, at I-35 (1980), analyzes a multitude of demand-reducing alternatives and concludes "that California's near-term energy requirements can easily be met without any major new conventional supply projects . . . ."

92. In examining these preferences, we also should be aware of the ways in which policies implicitly have an educational or attitude-shaping effect on future preferences. It is difficult to say, however, that this effect often will be a major shaping force in policy design. The "preference shaping problem" is discussed in Stewart, The Reformation of American Administrative Law, 88 HARV. L. REV. 1667, 1704-06 (1975).


94. S. SCHURR, supra note 7, at 143-59, 187-88.

ket reliance or restraint, and environmental impacts.

The most impassioned discussions of an energy policy's environmental legacy involve disposal of high level nuclear wastes. Some forms of such waste have incomprehensibly long periods of risk. The nature of this issue necessitates efforts to look far into the future. Such attempts are not common.

This inquiry is an important component of energy policy formulation. Some scholars are now grappling with the problem of inter-generational equity and the difficult ethical and cognitive challenges it poses. Energy lawyers and policymakers should contemplate it and prepare themselves to confront it as energy strategies are developed.

C. International Implications

American energy policy frequently has significance for the energy positions of other nations. This is particularly evident regarding resource availability and depletion, environmental impacts, and economic growth. Some of the implementation questions, on the other hand, such as federalism and bureaucracy allocation or even democratic requirements and traditions, are less likely to have international implications.

International issues occasionally have been addressed in the development of United States energy policy. The most direct instances are policies on importation of oil and, more recently, liquefied natural gas. There also has been contro-


97. Increasing attention to the "greenhouse effect" is another notable example. See Council on Environmental Quality, supra note 50. The environmental review statutes discussed above attempt to make anticipation of future effects standard practice. See supra note 26 and accompanying text.

98. See B. Ackerman, supra note 8, at 201-27; Stewart, supra note 92, at 1746-47.

99. Some might say our answers to the implementation questions will be viewed as possible examples for other societies to consider, for better or worse. This depends upon one's view of "the power of the American example in an essentially imitative world . . . ." A. Lovins, supra note 14, at 52.

100. "Today there is a new emphasis on the foreign relations aspect of energy policy. It now includes as an objective, the creation or maintenance of international organizations . . . within which the United States and other consuming nations can coordinate their policies regarding temporary and long-term plans for dealing with problems of supply and price of energy." R. Krueger, The United States and International Oil 93 (1975). "Gas import applications raise issues of global and local significance. There are issues of international trade and balance of payments, national security and economy, efficient allocation of resources and subsidized imports . . . ."
versy over the extent to which this country should become an exporter of nuclear power technology and fuels.\textsuperscript{101} In the broadest sense, there has been some recognition that the overall level of United States demand for fuels on the world market—especially oil—has major importance for consumption patterns, prices, and general economic development in many other nations.\textsuperscript{102} Although it cannot now be expected that such direct and indirect international implications will often have major influence on United States policies, there will be some clear instances of such influence. The energy lawyer should be aware of these implications, for they may enter into policy processes in unstated or unexpected ways.

VII. Conclusion

This analysis has attempted to identify the major issues to be addressed in energy law and policy. The four categories of inquiries—resources, policy implementation, economic implications, and collateral values—seem to bring together all of the issues on which energy lawyers and policymakers currently are working. The categorization is intended to help orient the energy lawyer whose work requires intensive research into questions arising under one or more of these headings. The energy lawyer who keeps this analytical structure in mind while exploring a specific aspect of an energy policy is less likely to overlook important, related concerns. Furthermore, a keener appreciation of the broader policy significance of the energy lawyer's individual tasks, and of the various nonlawyer experts upon whom the energy lawyer must rely, should result.

This article is, of course, only a starting point. Its scope is general and taxonomical. It provides a conceptual structure for more specific research in energy law and policy in a myriad of directions. The passage of time and the maturation of this young area of the law may find that some of the issues identified here will diminish in significance. Some new questions

\begin{footnotesize}
\textsuperscript{102} S. Schurr, supra note 7, at 409-38.
\end{footnotesize}
may have to be added. For now, however, this introductory analysis may shed some light on the nature and purposes of the work to be done.