

The Role of Energy Ideologies in Developing Environmental Policy
By Peter J. Jessen, Chapter 7, pp. 103 – 123,
Environmental Policy Formation: The Impact of Values, Ideology, and Standards,
Edited by Dan E. Mann, Lexington Books, 1981.

Any extraction, development, or generation of energy has an impact on the environment. Therefore, any energy policy, by definition, has an impact on environmental policy. Policy issues concern the kind, the extent, and the consequences of the impact. Beliefs about the extent or significance of such environmental impacts will have direct effects upon environmental policy, by which we mean environmental-protection policy. Such beliefs range from the conviction that energy can be obtained without doing irreparable damage to the environment on one end of the belief spectrum to the conclusion on the other end that continued extraction/generation of energy will so pollute the environment that all life will cease. The midpoint between these poles is that a balance can be struck—namely, that energy can be obtained and that any resulting damage to the environment can be repaired. The policy-studies/policy-analysis/policy-science community undertakes its work in the area of energy and environmental protection along this spectrum.

The focus of this chapter is the concept of ideology and its utility for energy policy analysis. Several energy scenarios/futures are outlined, followed by an analysis of how they would be viewed in terms of various ideologies. Finally, an outline is presented of a conceptual framework for use in analyzing energy ideologies (or any ideology), both in subjective and objective terms, and for analyzing their impact on environmental policy.

Energy and Environmental Balance

Balance over Time: A Futures Perspective

Earl Finbar Murphy, in his book *Energy and Environmental Balance*, points out the fundamental goal for any environmental-protection policy that seeks to sustain the environment while allowing energy development/extraction/generation—namely, the ultimate protection of the planet.¹

Another way of putting this is to assert that energy, environmental and all other policies in the foreign and domestic arenas for all countries should enable human beings to live successfully for succeeding generations until the earth, on its own, is no longer able to sustain life of any kind.² When we add the political and social dimension, we have Dahlstrom's view that policies should be developed within a context of striving toward the goal of a society that is "just and effective for all its members at the same time that it is viable in the world community of nations" and in its relationship to the ecosystem of the planet earth.³

The basic problem, as Murphy states, is that the various policies and systemic relationships of the people and institutions of the industrialized, modern world are fragmented. Each is conceived to be isolated and self-contained. This perception of the unrelatedness of one policy to another enables impacts on other parts of the ecosystem to be ignored or understandably denied. Energy and environmental-protection policy, as well as community planning, must be considered together, not separately.

The Dilemma of the Current Energy-Environmental Cycle: Sink to Sink

The energy-environmental-balance question centers on the understandings held by those individuals who shape policy (policy decision makers, policy implementors, policy influencers) about the complex cycle of energy production and its subsequent impact on the environment. These understandings are shaped by the framework of their values. In other words, one's understanding is colored by one's ideas and beliefs.

Energy is developed from raw materials. The raw materials for energy are either renewable or nonrenewable. The waste products from the use of energy have to go somewhere, not to mention the energy wastes formed just from extracting and generating energy. These wastes are received by the air, water, and biomass. To keep from destroying the energy cycle, the extraction and use of energy cannot exceed the assimilative capacity of the air, water, and

biomass and their capacity to renew themselves after receiving the wastes. Should the wastes build up faster than the air, water, and biomass can assimilate/renew themselves, the life-sustaining capability of these elements for human beings would be destroyed.

A large number of reports have provided massive empirical data to support the contention that current policy is allowing the development of waste sinks at a rate that, if continued, will lead to the disastrous conclusion just noted, the end of life.⁴ Yet, a sense of emergency does not exist in all policy-studies/citizen quarters. Why? Because some ideologies provide a sense of certitude that such a disaster cannot happen. Other ideologies hold that future generations are not our responsibility. Whether we wind up destroying all of life or not is one of the chances each generation takes. Yet another ideology suggests that a technological breakthrough will occur in time to prevent any life-ending result. Such is the power of ideas, ideologies.

Energy-Environment as Idea Package: Fragment or Unity?

In the 1970s, the emphasis was on protecting the environment at the expense of energy development (because of the belief in unlimited energy sources). For the 1980s, the idea climate has changed (greatly influenced by the unanticipated oil embargo and subsequent OPEC price increases, as well as by a fear of an oil cutoff due to the results of a Middle East war) so that policies are now being adopted or proposed to reverse the 1970s' emphasis. Today, energy development is promoted by many groups at the expense of environmental protection. Concern for environmental protection is giving way in some policy quarters due to the priority placed on energy, which is resulting in the advocacy of raising the allowed levels of air, water, and biomass pollution, development/extraction in previously barred areas, and so on. This is a key area of debate in the policy-analysis/policy-decision-making community.

Governmental, nongovernmental, and quasi-governmental institutions are in competition over whose ideas will control the fragmented policies regarding energy development and environmental protection. Yet, these ideas are basically social phenomena, the perceptions and beliefs of people, resulting from an assortment of experiences and cultural learning. Government policies are founded on ideas. These ideas about policy interact with those about the material world. When these ideas are ordered in a systematic way, they form an ideology.

Ideology

Defining the Term for Use as an Analytical Tool

The term *ideology* does not enjoy a standard, widely accepted definition in the social sciences. The difficulty in arriving at a consensus definition of this elusive term is a sad commentary on social science, and is illustrative of the ideological problems inherent in the social sciences. Too often, the term is manipulated to fit the conceptual projects of its users.

If we define ideology too all inclusively, it will have neither discriminating power nor empirical relevance. In developing an acceptable definition, we must include what will enable us to deal with and analyze both the objective and subjective aspects of ideology (of what it does in functional terms and of what it means to its adherents in substantive terms). We need a utilitarian definition (using *utilitarian* in a theoretical, not practical, sense).

Basic social-science textbooks usually put forth the broad understanding that an ideology is a set of beliefs that explains and justifies the existing order, that legitimates the existing arrangements and makes them seem natural and morally acceptable.⁵ Such belief sets usually include explanations of the present and past and within such explanations provide a framework for statements about what the future should be and what steps should be taken to obtain that future. Policy studies are also about such legitimations (including the legitimation sets of policy-studies practitioners). Indeed, when we recall that policy studies are to provide "meaningful research on the causes and effects of alternative governmental policies,"⁶ to facilitate the resolving of various policy problems,⁷ we recognize we are also talking of choices about the future, of what it will be, of what it should be.⁸

What we need is a definition and understanding of ideology to enable us to better undertake policy-oriented research, which can provide us with the best understanding we can muster within our own set of values. Through it all, we attempt to provide the best approximation of the

soundest solution to the given policy problem under study so that we can recommend what can or should be done, and why. If we do not understand or recognize the ideological component/influence in our work, we cannot provide this approximation.

Ideologies have usually been understood in substantive terms. With a choice now possible between valued alternatives in modern social systems and the human social action taking place within them, we can now add the functional use of ideology to our analysis. We need both. From the standpoint of policy studies, it is important to distinguish between the substantive and functional use of ideology for the distinction affects one's definition of the term. Substantive use is based on the terms of its believed contents, on how it is understood "from within" by the holder(s) of the ideology. Functional use concentrates on the ideology's social and psychological functions, of what it does to people and society. As analysts and students of policy, to emphasize the substantive is to ignore the structural-change potential of the ideology and to thus decrease the quality of analysis, especially in terms of intended and unintended consequences. To emphasize the functional is to ignore the potential strength of an ideology, dismissing it as ridiculous and judging its power on the basis of one's own judgment of its credibility, rather than on the credibility it holds in the minds of its followers, which is a better indication of its potential to bring change.

Ideological Analysis as a Helpful Tool for Policy Studies

Like all social reality, ideologies are socially constructed. This is the classic insight of the sociology of knowledge.⁹ In other words, all reality, all ideas, all meanings including ideologies are social constructions. Policy is a social construction. Scientific paradigms, as Thomas Kuhn outlined in *The Structure of Scientific Revolutions*,¹⁰ are social constructions. Ideas that underlie ideologies succeed in history by virtue of their relationship to specific social processes rather than by virtue of their "truth."¹¹ Hence, they are undergirded with specific values and meanings. The central concern of the sociology of knowledge is not to discover the truth, per se, but rather to discover what passes for truth (and how, why, where, when).

This is not to denigrate scientific knowledge but to recognize that it, too, falls under social influence. Hence, any scientific approach to policy must recognize that any discussions about the future, and science's role in that discussion, is not only part of a complex movement of cultural resources but also "a movement which is mediated through and molded by the changing pattern of social relationships and by the clash of group interests."¹²

Relative to ideologies, both in analyzing and developing them, the sociology of knowledge can help in the unraveling of not only the different layers of meaning but also in supplementing the most immediate and apparent levels with a disclosure of both underlying authorial intentions and overarching contextual presuppositions. In this way, Mannheim's fundamental goal of conquering a common ground of discourse in order to elucidate the stakes can be met, and the skirting of critique or conflict can be avoided.

The recognition of the role of energy ideology is clearly stated in Supporting Paper #7 of the CONAES report "Energy Choices in a Democratic Society":

We need to understand something about the social organization of energy experts. Who are they? What is their rank? We need to know about the voluntary means and government measures. ... We need to know something about barriers to certain kinds of research. Conventional economic theory has it that people's desires operate through the market to create profit for technological developments that meet these desires. In the United States today, most research and development is initially funded outside the market so that the values of most people, which would be reflected in a perfect market, are not the motivating force. Research-and-development allocation is made by a small group of scientists and civil servants in government agencies that may be insulated from the people. ...The future offers a broad and rich range of choices; what seems possible at present depends on our bias toward high-or low-energy use. The human component must be recognized as the primary factor in the success or failure of technologies-a factor that has never been free of error.¹³

We again run up against those key words, *bias* and *choice*. They remind us that when choice exists there is no one "best" or "only" way. This is a particularly important point for the planning of new energy plants (synfuels, oil shale, and so on) and for the communities and environments

supporting them, which today are discussed under the heading of "support communities for industrial development."¹⁴

To analyze the choices, we need to develop theoretical propositions about social reality containing our value-preference justifications and critiques. Thus, we need an analytical framework to help in the ordering not only of the data and knowledge involved but also the ideas and ideologies. To best understand these ideologies, and the total realities they represent, an ideological analysis must be undertaken. The conceptual framework for use in analyzing energy ideologies proposed here would take into account all of the various "locations" and strategies for the success of the various ideologies. Such locations include the following:¹⁵

Historical (in terms both of time and ideas);

Self-description of social reality (micro and macro, vis-a-vis empirically verifiable research);

Social location (biography and class background of theorists, leaders, and followers);

Costs society is willing to pay (in terms of disruption of society and institutions);

The calculus of meaning and pain for people impacted by the policies;¹⁶

Political-analysis location ("objectives/possibilities" of achieving goals, in terms of Max Weber's historical-context use of this term and his insights regarding the unintended consequences of political action, which refers to the almost certain inevitability that some aspects of any policy will result in negative, unwanted, unintended results, which are often unnoticed or unrecognized by those rooted in ideological certitude);

The strategy components for survival location (legitimation or how its conceptual order is explained as superior to other conceptualizations);

Nihilation (a negative version of legitimation, explaining why its reality will not be supplanted by another reality later);

Therapeutics (to explain defections and to strengthen potential backsliders).

What, then, is an energy ideology? The column on the left in the following list provides four excellent definitions of ideology. The column on the right puts them into an energy context.

Ideology Defined

Frameworks for Energy Ideologies

An interpretive scheme used by social groups to make the world more intelligent to themselves;¹⁷

An interpretive scheme used by energy-policy advocates to legitimate their energy policies;

Value-preference justifications (criticisms);¹⁸

Legitimizing energy policies (or criticizing others) based on an expressed scale of values, ranking the available choices;

Any theoretically articulated proposition about social reality;¹⁹

Deliberate, systematic reflection that results in a specific world view and the energy policies that follow from it;

A set of ideas publicly articulated for the express purpose of explaining the past and present historical conditions (how we got to where we are) and for establishing what are the appropriate political means (where we should be going and how we should/could get there);²⁰

Energy policy based on a specific understanding of history and an interpretation of it that suggests the energy policy to best enable society to be and become what it wants to be;

A variant form of those comprehensive patterns of cognitive and moral beliefs about man, society,

Energy policy based on explicit, over-arching ideas about how human beings should relate

and the universe in relation to man and society, which flourish in human societies.²¹

to each other, other nations, and the environment. Such ideas are found in all human societies. Energy policy is dependent upon such ideas.

Clearly, specific area ideologies are but a part of a larger whole. Both energy and environmental policies are based on larger, overarching concepts about the way the world/society ought to be. Therefore, in studying environmental policy (or any policy, for that matter), and working with images of future society, the technique of ideological analysis needs to be adopted for analyzing not only energy policy assumptions but also those propositions and assumptions contained in the total political platform or proposed program about society and the place and significance of energy and the environment. All images of the future both affect and effect policy (public policy, institutional policy, personal policy, and so on). Therefore, any vision of the future and its supporting rationale (ideology) will have an impact in some way on existing policy, suggesting social change of some kind.

This is not to say that ideologies at any time or in any place have ever been implemented consistently. Consistency is not a dominant characteristic of human beings, whether they are in power or not. One should not deny these ideas on the grounds of human inconsistency or because the ideologies did not/ do not explain reality. Whether definitions or ideas are real or not, if believed, they will be real in their consequences.

Modern ideologies about energy (or any other policy) take three forms:²² (1) "promodernism"-endorsement of modernization ("the institutional concomitants of technologically induced economic growth")²³ as redemption and hope; (2) "antimodernism"-opposition to modernization, seeing it as damnation, advocating a return to traditional values by destroying modern things/ideas/ inventions/technology and the values that go with them; and (3) "postmodernism"-shaping or constructing the future by controlling or containing the fruits of modernization (technology) and using values perceived to be independent of it (as the Ayatollah Khomeini attempted to do, to maintain the oil fields of Iran within the values framework of an Islamic republic).

Energy-Path Scenarios/Futures

Many recent studies discuss various energy paths, concluding with specific policy conclusions and recommendations about them. As of this writing, the most prominent recent studies include Sam H. Schurr, Joel Darmstadter, Harry Perry, William Ramsay, Milton Russell, *Energy in America's Future: The Choices Before Us* (Baltimore: Resources for the Future, The Johns Hopkins University Press, 1979); Mans Lonnroth, Peter Steen, and Thomas Johansson, *Energy in Transition: A Report on Energy Policy and Future Options*, (Berkeley: University of California Press, 1980); *Energy in Transition 1985-2010* (Final report of the Committee on Nuclear and Alternative Energy Systems), National Research Council, (Washington, D.C., National Academy of Sciences, 1979) also called the CONAES Report; Robert Stobaugh and Daniel Yergin, eds., *Energy Future: Report of the Energy Project at the Harvard Business School* (New York: Random House, 1979); *Energy: The Next Twenty Years*, (Report by Resources for the Future and sponsored by the Ford Foundation) (Cambridge, Mass.: Ballinger Publishing Company, 1979); Jeremy Rifkin with Ted Howard, *Entropy: A New World View*, (New York: The Viking Press, 1980); Nicholas Georgescu-Roegen, *The Entropy Law and the Economic Process*, (Cambridge, Mass.: Harvard University Press, 1971); Amory B. Lovins, *Soft Energy Paths: Toward a Durable Peace*, (New York: Harper Colophon Books, Harper & Row, Publishers, 1977).

The purpose of this chapter is not to critique these studies but rather to provide a framework for analyzing their ideologies. The value of all analysis is directly proportional to the degree of "value freeness" in the analysis. "Value free" does not refer to the illusory standard of "objectivity" but to Weber's original meaning-that is, understanding not only one's own biases but also how one's biases influence scientific observations, experimentations, and conclusions. In other words, to be value free, one must be aware of one's own ideology and of how it affects his or her scientific work.

The spectrum of scenarios and ideologies falls between two poles that have been called the "post-industrial view" and the "neo-Malthusian view," the view of unlimited growth and the view

of no growth respectively. For the former, the problem is an overreaction to the environmental problem and the problem of scarcity, which is seen as only temporary. The neo-Malthusian view, on the other end of the spectrum, sees the problem as one of too much: too much pollution and depletion of scarce resources, and too many people and demands. The post-industrial solution is seen as an ideology of more: more growth, technology, and innovations, combined with better managerial and political leadership. The neo-Malthusian solution is that of the double-zero school: zero population growth (ZPG) and zero economic growth (ZEG).²⁴

Another term for the energy-growth ideology is what Kenneth Boulding calls a policy of "cowboy economics," in which Western civilization is viewed as having taken a Faustian ride on the planet Earth as if it were a spirited bronco to be tamed. This conception derives from the belief (ideology) stemming from Locke that the earth is filled with limitless resources.²⁵

Scientists have identified different energy paths or futures and analyzed the consequences of each. To select the "right" one depends on one's values, not on science. It depends upon one's ideology. The following tables outline several energy-path choices. An ideological analysis follows the tables. Table 7-1 is based on unpublished studies of the Office of Technology Assessment (OTA) regarding a series of alternative-energy-futures assessments of major structural types of energy-future scenarios now being debated. The "eclectic-path" scenario most resembles the present U.S.-government policy direction.²⁶

All of the scenarios of table 7-1 are considered within the bounds, by OTA, of the contemporary congressional energy debate. Advocates of these scenarios have testified before congressional committees, and government funding for programs reflecting these positions have been made available. Other scenarios have been considered out of bounds and thus have not been examined or have been given only superficial treatment by Congress. Included in the latter are failure scenarios—that is, futures marked by decision-making delays or errors that result in sharp economic decline or the elimination of desirable future options. Included in former are what OTA labels *low-energy /low-technology scenarios*. Although no detailed scenario has been fashioned on this kind of energy future, it does have adherents, especially some of the appropriate technology-movement members. Another possibility is *ultrahigh-energy* scenarios. Again, no studies have been done of the possible consequences of the development of unanticipated but conceivable technical breakthroughs, for example, low-cost, small-scale fusion technology.²⁷ Other scenarios OTA has looked at but not factored into the previous ones are Barry Commoner's "gas-transition" scenario and the "hydrogen-economy" scenario (based on solar electric, solar/nuclear or solar catalysts).²⁸ As OTA has done no detailed work on these, they are not included in the table 7-1.

Table 7-2 is adapted from a support paper for one of the panels contributing to the CONAES Report. It attempts to expand the intellectual framework for making energy policy by contrasting four scenarios, as they relate to twelve dimensions of life in the future, in order to "learn something about the wider context and consequences of energy use."²⁹ The four futures are distinguished by their different predictions of the future. The first, "Superindustrial," views rapid energy growth as the cure for the economy, social problems, and pollution control. The second group, "Plenitude," sees a slow, more-selective energy growth. This prediction assumes energy frugality combined with improving the environment. The term plenitude refers to the belief that this envisioned future will provide a full quality of life and sufficiency for people and their environment. The third group, "Small Is Beautiful," predicts a transition to a more-cautious, less-energy-intensive life-style that is environmentally sound. It is to come about due to the unwillingness to increase environmental imbalances and the desire to achieve, instead, a stable state in the life systems of the earth. The last group, "Minimum Feasible," predicts that because the United States has exceeded its environmentally optimal range of energy use, it must cut back to the least possible use, something which can only be achieved by ending the current social control of a large, centralized government and technocracy.

Table 7-1
OTA AEF Assessment of Energy-Future Scenarios Now Being Debated

<i>Scenario</i>	<i>Energy Use</i>	<i>Energy Growth</i>	<i>Sources</i>	<i>Transition Sources</i>	<i>Conservation</i>	<i>Advocate</i>
Hard path	High; 140 quads by 2000.	Continued after 2000.	Large-scale centralized electric technologies: fission breeders, fusion (if possible), solar.	Oil, gas, coal, synfuels, LWR nuclear technology.	Low to moderate	Electric Power Research Institute.
Scaled-down hard path	Mid-level; 90-115 quads by 2000.	Continued after 2000.	Same as above.	Same as above.	Moderate	CONAES; ^a Earl Hayes.
Eclectic path	Mid-level; 90-115 quads by 2000.	Continued after 2000.	Above plus renewable, especially solar.	Same as above plus conservation.	Moderate to high	President's Domestic Policy Review on Solar. ^b
Soft path	Low; 55-75 quads by 2000, declining thereafter.	Declining after 2000.	Distributed renewable sources.	Oil, gas, coal on small and intermediate scale.	High	Amory Lovins. ^c
Life-style-transition path	Low; 60-70 quads by 2000, 33 quads by 2050.	Declining after 2000.	Same as "soft path," small scale.	Same as "soft path."	High	SRI California Energy Futures Study; ^d CONAES Support Paper #7; ^e J. Steinhart ^f
Space path	High; solar generated.	Continued after 2000 (scenario begins in 1990s, complete by 2050).	Microwave transmission of solar (5GW), laser transmission (100MW).	Same as "soft path."	High	Peter Glaser ^g
Entropy path	Very low	Declining	Wood, wastes, and low-energy-input agriculture (decentralized, changed life-style, agrarian society).	Chaotic (if current practice of doing what does not work is continued).	High	Howard Odum ^h Jeremy Rifkin ⁱ

Note: Quad = one quadrillion Btu

^aIbid. [Earl Hayes, "Energy Resources Available to the United States, 1985-2000," *Science*, 19 January 1979.]

^bIbid. ["Domestic Policy Review of Solar Energy: A Response Memorandum to the President of the United States," U.S. Department of Energy Publication No. TID-22834, Washington, D.C.]

^cIbid. [Amory Lovins, *Soft Energy Paths: Toward a Durable Peace* (New York: Harper Colophon Books, 1977).]

^dIbid. [Willis Harmon, "Societal Change and California's Energy Futures: The Limitations of Economic Analysis," Stanford Research Institute International, Palo Alto, Calif., 1980, (Report prepared for Mark Levine, Lawrence Livermore Laboratories, University of California).]

^eIbid. ["Energy Choices in a Democratic Society," Supporting Paper #7 of the Consumption, Location, and Occupational Patterns Group Synthesis Panel of the Committee on Nuclear and Alternative Energy Systems, National Research Council, (Washington, D.C.: National Academy of Sciences, 1980).]

^fIbid. [John S. Steinhart, Mark E. Hanson, Carol C. DeWinkel, Robin W. Gates, Kathleen Briody, Mark Thornsjo, and Stanley Kabala, "A Low Energy Scenario for the U.S., 1975-2050," Report no. 83, Institute for Environmental Studies, University of Wisconsin, Madison, July 1977.]

^gIbid. [Peter E. Glaser, "The Benefits of Solar Power Satellites," (Paper presented at the Fourth Princeton Conference on Space Manufacturing, Princeton University, Princeton, N.J., 15 May 1979).]

^hIbid. [Howard T. Odum, "Net Energy from the Sun," in *SUN! A Handbook for the Solar Decade*, ed Stephen Lyons (San Francisco: Friends of the Earth, 1978); and *Environment, Power and Society* (New York: Wiley-Interscience, 1971).]

ⁱIbid. [Jeremy Rifkin with Ted Howard, *Entropy: A New World View* (New York: Viking Press, 1980).]

Table 7-2
Four Alternative Energy Futures

<i>Energy Futures/ Life Dimensions</i>	<i>Superindustrial^a</i>	<i>Plenitude^b</i>	<i>Small Is Beautiful^c</i>	<i>Minimum Feasible^d</i>
Natural environment	Technologically enhance assimilation of energy wastes.	Reduction in energy due to the reduced resilience and waste-absorbing capacity of the environment.	Stable state, environmentally sound, less energy intensive.	Less energy and more social control and technocracy.
Settlement patterns	Less rural, more urban and suburban; "urban region" and megalopolises.	Urban; decentralized agriculture and manufacturing; small-scale cities.	Decentralized agroindustrial integration of rural urban.	Decentralized, self-sufficient villages.
Occupations	Full employment; less employment in primary and secondary activities and more in tertiary and quaternary services.	More labor-intensive jobs in primary and secondary activities.	More labor intensive, satisfying work; more self-employment; reduced separation of home and work environs.	Complete restructuring from "manipulative" to "convivial" institutions.
Leisure	More escape and tourism to relieve boredom; free to pursue own interests.	Materially frugal, human growth.	Work and leisure are the same; wholesome, escapist leisure.	Deemphasize commodity intensive, goods-rich, time-poor; use energy only for backbreaking, boring work.
Personal possessions	Poverty problems solved; misery from anxieties and ambiguities of wealth and luxury.	Voluntary simplicity; less competitive; human-development emphasis.	Maximum well-being with minimum of consumption; simple possessions over affluence.	Shared possessions to relieve psychic poverty of materialism.
Institutional scale	Less family and community; bigger government and multinational companies as central social institutions.	Moderate decentralization; more family and community; transnational coordination.	Mix of large- and small-scale organization; small where possible.	Lost human scale replaced by voluntary cooperation in small-scale communities.
Dispersion of decision-making power	Economic centralization in multinational corporations and political power centralized in federal government; use of elites and specialists.	Transition to a frugal society of humanistic capitalism; avoid authoritarian government through voluntary and collective redirection of society.	Principle of subsidiary function: all social/government functions to be at lowest level feasible.	Human scale needs to be achieved; can be done through voluntary cooperation of relatively autonomous, self-determining, small-scale communities.
Civil liberties	To reduce energy and GNP means a massive abridgment of civil liberty; maintain freedom through economic health; apply innovative and manipulative social engineering by elites and specialists.	Transition by promoting change in values; key value: to meet the goal of a materially frugal, human-growth-oriented society.	Nuclear power equals threat to civil liberties (due to safeguards required); maintain civil liberties by ending nuclear power.	Civil liberties are lost with more energy; superindustrial society means more programming of society, along with the administration of "therapy" on dissidents, up to and including assassination.
Vulnerability or stability of current situation	Current problems transient; watch for pollution, alienation, and take-over attempts by poor during transition: eventually, all will be OK.	Crisis can be resolved through evolutionary transformation of ideas, values, and institutions toward a more-frugal, human-growth-oriented society; replace nuclear with solar.	Unstable due to problems of greed and envy leading to collapse of intelligence; susceptible to pyramiding catastrophies.	A crash cannot be avoided.
Pluralist or homogeneous society	World more homogeneous: westernized, modernized, industrialized; fading of dangerous counterculture.	Pluralistic (with widespread acceptance of ecological ethic and self-realization ethic).	Diversity within framework of agreement re simplicity, nonviolence, hard work, restraint.	Wide choice of life-styles and culture (except high energy-consumption choice).
Equity	Both rich and poor will be richer; abolishing absolute poverty will be accomplished by the twenty-first century.	A materially frugal, humane society redistributing wealth and power, allowing inequality within limits set by Rawls. ^e	Promote intermediate technology to fit between traditional immobility of poor nations and materialistic modernization of rich nations.	True equity requires least feasible energy use by the most powerful members of society.

Table 7-2 continued

<i>Energy Futures/ Life Dimensions</i>	<i>Superindustrial^a</i>	<i>Plenitude^b</i>	<i>Small Is Beautiful^c</i>	<i>Minimum Feasible^d</i>
Professionalism	Society run by professional elites with a high level of certification.	Demystify professional jargon; preventive and holistic medicine to decrease need for doctors; guaranteed annual income to reduce growth of professions living off ills of society; to be judged by nonprofessional criteria.	Same emphasis as "plenitude" but more so.	Same emphasis as "small" is beautiful" but more so.

^aCONAES Support Paper 7 [based on Herman Kahn and B. Bruce-Briggs, *Things to Come: Thinking About the '70s and '80s* (New York: Macmillan, 1972); and J. Kahn, W. Brown, and L. Martel, *The Next 200 Years* (New York: William Morrow, 1976).]

^bIbid. [based on J.E. Armstrong and Willis W. Harmon, *Plausibility of a Restricted Energy Growth Scenario* (Menlo Park, Calif.: Stanford Research Institute, Publication #CSSP 3705-8, 1975).]

^cIbid. [based on E. Callenbach, *Ecotopia* (Berkeley: Banyan Tree Books, 1975); Percival Goodman and Paul Goodman, *Communitas: Means of Livelihood and Ways of Life* (New York: Vintage Books, 1960); and E.F. Schumacher, *Small is Beautiful* (New York: Harper and Row, 1973).]

^dIbid. [based on Ivan Illich, *Tools for Conviviality* (New York: Harper and Row, 1973); Illich, *Energy and Equity* (New York: Harper and Row, 1974); and Marcus Raskin, ed., *Encyclopedia of Social Reconstruction* (Washington, D.C.: Institute for Policy Studies, 1973).]

As these four predictions are compared along twelve different dimensions of life in the future, the reader will note some inconsistencies and overlaps. All of the descriptive material is that of the four groups identified in the notes to table 7-2. Such overlaps and inconsistencies reveal the lack of rigor in many such predictions and the existence of favorite aspects of their ideologies over others. It also reveals the great deal of work available to policy analysts for conducting ideological analyses of the competing belief systems about the modern world, energy use, and protection of the environment. The primary economic activities of table 7-2 refer to agriculture, mining, fishing, and forestry. Secondary economic activities refer to construction and manufacturing. Tertiary services include transportation, finance, management, and government. Finally, quaternary services refer to learning, communications, and services to services.

The four futures of the columns in table 7-2 represent three ideologies (the third and fourth are alike). The value judgments and assumptions (ideological components) of each are highlighted by outlining their positions on twelve life dimensions, as depicted in the rows.

We can summarize all of the preceding regarding energy ideologies and their impact on environmental policy by collapsing them together into table 7-3. The columns of this table reflect three basic ideologies seeking dominance over policy today. The rows present seven basic characteristics of each. These characteristics reflect the policy preferences of each ideology. Hence, such entries as "ZPG," "ZEG," "no problem is unsolvable", and so on are not ideologies per se, but reflective of the ideas of the values of the overarching ideologies of which they are a part, as denoted by the ideology column in which they appear.

When we look at table 7-3, therefore, within the context of tables 7-1 and 7-2, we can easily see the role of the particular energy ideology with references to the environment. The ideological spectrum is bounded at one pole by cowboy economics-that is, any energy is good energy, because getting it and using it causes only incidental damage to the environment and the damage is easily remedied. At the opposite end of the pole is the neo-Malthusian ideology-that is, any more growth fueled by further energy development will bring the Apocalypse. The warning is to halt nonrenewable energy development and promote energy production from renewable sources. Between these two poles is another ideology reflective of Aristotle's "golden mean"-moderation in all things. It suggests that growth at an appropriate rate is fine, appropriate being defined as that rate that balances the well-being and survival of people and their environment.

Table 7-3
Energy Ideology/Environmental Policy Significance

<i>Ideologies/ Characteristics</i>	<i>Cowboy Economics</i>	<i>Assimilative</i>	<i>Neo-Malthusian</i>
Value preference	Unlimited growth.	Assimilated growth.	No growth.
Closest correlation to scenarios of table 7-1	Hard path scaled down hard path space path.	Eclectic path; soft path; life-style transition path.	Entropy path.
Closest correlation to futures of table 7-2	Superindustrial.	Plenitude; "small is beautiful."	Minimum feasible.
Assumptions	Earth to be tamed; unlimited resources; temporary scarcity.	The two pole ideologies can be moderated.	Too much pollution and depletion of resources; too many people and demands.
Solution	More technology and innovation combined with both managerial and political leadership.	Successfully install assimilation as the guiding principle for energy/environment balance.	ZPG; ZEG.
Ideology's believed impact on the environment	No problem is unsolvable.	Can protect it while allowing energy development/extraction/use.	Only ZPG and ZEG will save it.
Ideas related to the environment	More energy equals more wealth equals dollars for cleaner industrial processes equals improved pollution control; moderate pollution is inevitable and worth the benefits of which it is a cost.	New scarcity equals reduction in waste-absorbing capacity of environment; therefore, have selective and slow energy growth; caution is required as we do not know how close the many smaller imbalances are.	United States has long since exceeded the environmentally optimal energy-use range; future energy use must be in self-sufficient, decentralized communities using solar and other renewable energy sources.

All three ideologies are promoted by well-meaning people, often armed with the same statistics and studies. The way in which the policy-studies analysts investigate them will be a key factor in the interpretations made and the conclusions drawn about the consequences of adopting one or another of them as the framework for developing, interpreting, and implementing energy and environmental policy.

The reason we call these ideologies, as opposed to points of view or outlooks, is because each major ideological orientation, be it the four of table 7-2 or the four collapsed into the three of table 7-3, is all inclusive about society, values, and the nature of man and society. Following from this base (their ideological posture), they each suggest a structure of societal governance, each claiming that its framework will strengthen and guarantee greater liberty while others may lead to a loss of liberty. In particular, for example, the cowboy-economics ideology sees nuclear-powered energy as the preserver of liberty, whereas the neo-Malthusian ideology sees it as ending liberty. The assimilative ideology is not sure one way or the other.

Regarding the environment, the adherents of each ideology claim that if only people will follow them, environmental protection will be achieved. They cannot all be correct. This is why ideological analyses present such a rich vein for policy studies. For people particularly concerned about the protection of the environment, ideological analyses can enable them to cut through and across political platforms and programs to get at the heart of the real consequences to the environment of existing and proposed policies, especially the crucial and very high impact on the environment of energy policy. In other words, such an ideological analysis as proposed here can lead to an increase in empirical investigation and a reduction in ideological knee-jerking responses. The reader is urged to reflect upon these tables, especially

table 7-3, to conduct an analysis to see just where his or her own personal/institutional/political-party positions fall on the spectrum outlined, and to ponder what this means in terms of energy policy, environmental-protection policy, community development in "energy zones," and whether or not these positions are consistent, inconsistent, or a combination of the two.

The energy-path alternatives of table 7-1, the four alternative futures of table 7-2, and their collapse into the three major ideologies of table 7-3 clearly reflect the fact that tremendous competition exists over the definitions of reality that relate to energy and the environment. High energy growth, and demand for more, has led many people to perceive of the environment as "either a source for the supply of energy and materials or as a sink for the wastes produced."³⁰ The costs are thus passed on to nature. Energy is treated "as if it were unrelated to the renewing environment."³¹ However, since the extraction of energy, combined with the use of water, air, soil, and the biomass as a sink for energy users' wastes, will have the greatest impact on the environment, environmental policy must be considered with energy policy simultaneously, if the goal is environmental protection.

The key for policy studies about the environment, if the standard objective of developing the understanding necessary to develop the best policy is to be met, is to accumulate the necessary, and empirically verifiable, knowledge to use in analyzing the various competing ideologies and their underlying values.

Energy is used to provide material goods. Policy studies can contribute a great deal to the policy debate by not isolating the pursuit of economic satisfaction (the "oophelimity limit") to psychological and cultural terms only. That isolation will not be broken until the linkage has been made with the environment in which such satisfaction is pursued. This means going beyond the mechanistic model of energy and including also the biological and life-support systems of the environment. An ideological analysis can help in providing such understanding. The policy-studies analyst knows environmental protection will be difficult if the view is "the enemy is the innate intransigence and inscrutability of nature."³² As Murphy states, "planning that perpetuates a violation of the unity among natural systems, and between human demand and nature, cannot have a positive component for environmental protection."³³

Conclusion

Human beings have always lived by visions of what life and society must or should be like. These visions have always had legitimating or justifying explanations for their existence. Prior to modern times, change was so slow that, barring extraordinary events such as natural disasters, invasions, or the rise of a charismatic leader, life was routine for many generations at a time. A kind of stasis was achieved (stability in a kinetic situation) in which the stability was taken for granted and the kinetic usually not perceived.³⁴ The modern world no longer enjoys this traditional aspect of a stable world.

Human beings, without biological instincts to tell them how to behave in various social situations, construct their own social world (hence the total lack of common social behavioral traits in crosscultural studies, which again underscores the crucial aspect of choice). The institutions that sustained earlier ages have broken down under the strain of rapid technological and social change and fragmented intellectual endeavors.³⁵ Various ideologies that encompass visions of what we need to do, which institutions we need to create, and the accompanying rationales as to why are in competition with each other.

Although we could not discuss in any detail the various philosophical questions about the essence of ideology,³⁶ we have been able to chart the dominant ideologies in competition over the way to view the relationship between energy and environmental policy. It should be clear that energy and environmental decisions are inseparable. With high energy demands, the need has arisen for a unified view for energy and environmental planning, which means "a unified view of the interleaved actions and reactions of both high energy demand and the renewing environment's ability to cope with the burden."³⁷

The degree to which we understand the role of ideology will influence the degree to which we accept the need to develop an analytical frame of reference that admits and recognizes both the existence of and need for policy visions, world views, and ideologies. How they become institutionalized in both procedural formats and individual consciousness will determine the role

they play in impacting on the public-policy process. This is particularly true regarding the role of energy ideology in the development of environmental policy.

Notes

1. Earl Finbar Murphy, *Energy and Environmental Balance* (New York: Pergamon Press, 1980).
2. Nicolas Georgescu-Roegen, *The Entropy Law and the Economic Process* (Cambridge, Mass.: Harvard University Press, 1971).
3. Carl E.W.L. Dahlstrom, *Concerning Proposals for a Good Society* Portland, Oregon, privately printed monograph 1971).
4. Murphy, *Energy*, p. 6.
5. Ian Robertson, *Sociology* (New York: Worth, 1977), pp. 225, 296.
6. Stuart S. Nagel, "Introduction," in *Policy Studies in America and Elsewhere*, ed. Stuart S. Nagel (Lexington, Mass.: Lexington Books, D.C. Heath and Company, 1975), p. xi.
7. *Ibid.*
8. In the past, fate or tradition answered and, indeed, dictated such answers. There was no choice. Modern consciousness represents a change and thinks not in terms of fate or tradition but in terms of choice. The task before us is put into even sharper focus when we note that "choice" comes from the Greek word meaning heresy (*haireisis*, the taking of a choice) as discussed in Peter L. Berger, *The Heretical Imperative: Contemporary Possibilities of Religious Affirmation* (Garden City, N.Y.: Anchor Press/Doubleday, 1979), pp. 15-17,132.
9. Peter L. Berger and Thomas Luckman, *The Social Construction of Reality: A Treatise in the Sociology of Knowledge*, (Garden City, New York: Doubleday & Company, 1966).
10. Thomas S. Kuhn, *The Structure of Scientific Revolutions*, 2d edition (Chicago: University of Chicago Press, 1970).
11. Peter L. Berger "Towards a Sociological Understanding of Psycho-analysis," *Social Research* (Spring 1965), p. 32.
12. Michael Mulkey, *Science and the Sociology of Knowledge*, (Boston: George Alien & Unwin, 1979), p. 118.
13. "Energy Choices in a Democratic Society," Supporting paper #7 of the Consumption, Location and Occupational Patterns Group Synthesis Panel of the Committee on Nuclear and Alternative Energy Systems, National Research Council (Washington, D.C.: National Academy of Sciences, 1980), pp. 7-8.
14. D. Sam Scheele, *Support Communities for Industrial Development* (Los Angeles: The SET-Social Engineering Technology, 1980). See also Robert Lawrence, *New Dimensions to Energy Policy* (Lexington, Mass.: Lexington Books, D.C. Heath and Company, 1979), pp. 3-77.
15. Based on Berger, *The Heretical Imperative*; and Peter L. Berger and Thomas Luckmann, *The Social Construction of Reality: A Treatise in the Sociology of Knowledge* (Garden City, N.Y.: Anchor Books, Doubleday & Company, 1967).
16. Peter L. Berger, *Pyramids of Sacrifice: Political Ethics and Social Change* (New York: Basic Books, 1974), pp. 137-89.
17. Talcott Parsons, *Theories of Society* (New York: Free Press, 1961).
18. Bernard Barber, "Function, Variability, and Change in Ideological Systems," in *Stability and Social Change*, eds. Bernard Barber and Alex Inkeles (Boston: Little, Brown, 1971), p. 248.

19. Peter Berger, Brigitte Berger, and Hansfried Kellner, *The Homeless Mind: Modernization and Consciousness* (New York: Random House, 1973), p.159.
20. Morris J. Blackman and Ronald G. Hellman, eds., *Terms of Conflict: Ideology in Latin American Politics* (Philadelphia: Institute for the Study of Human Issues, 1977), p. x.
21. Edward Shils, "Ideology," in *The International Encyclopedia of the Social Sciences*, vol. 7 (New York: Crowell, Collier and McMillan, 1968), p. 66.
22. Berger, Berger, and Kellner, *Homeless Mind*, pp. 159-60.
23. *Ibid.*, p. 9. Hence, "there is no such thing as a 'modern society' plain and simple; there are only societies more or less advanced in a continuum of modernization."
24. A.G. Kefalas, "On Managerial Philosophy: Competing Future-Views," *World Future Society Bulletin* (March/April 1980), p. 22.
25. Frederick A. Brussat, "An Energy Renaissance," *Cultural Information Service*, (New York: CISTems, Inc. June 1974), V: 6, pp. 1-5.
26. Robert L. Olsen, "Alternative Energy Futures Assessment" Report for the Office of Technology Assessment Energy Group, presented at the Ad-Hoc Inter-agency Committee on Futures Research, National Academy of Science, 16 May, 1979, and in three subsequent conversations.
27. *Ibid.* ["Demand 1977" and "Supply 1977," Electric Power Research Institute, 1977.]
28. *Congressional Quarterly*, Energy Policy.
29. CONAES Support Paper #7, pp. 10-22.
30. Murphy, *Energy*, p. 130.
31. *Ibid.*, p. 131.
32. Walter Orr Roberts, president. University Corporation for Atmospheric Research, to the 1965 convention of the American Meteorological Society, quoted in *CFC Conservation Foundation Newsletter*, January 1973, p. 5 and cited in Murphy, *Energy*, p. 145.
33. Murphy, *Energy*, p. 147.
34. Carl E.W.L. Dahlstrom, "Homeostasis," in *Social Stasis and Kinesis*, forthcoming.
35. Arnold Gehlen, *Man in the Age of Technology*, translated by Patricia Lipscomb (New York: Columbia University Press, 1980).
36. Larrain raises four questions about the essence of ideology: (1) Is it a negative or a positive ("false consciousness" or "world view")? (2) Is it a subjective or an objective phenomenon (psychological or social)? (3) Is it an element of society or culture (the "superstructure" of society or the whole sphere of culture)? and (4) Is it not or is it science (an irrational element disturbing reason and distorting knowledge or a system of opinions, values, and knowledge based on scientific premises)? Jorge Larrain, *The Concept of Ideology* (Athens: University of Georgia Press, 1979), pp. 13-15, 172-73. Bennett identifies three fronts on which the arguments about the term are taking place: the epistemological/ontological front (which emphasizes the ontological status of ideas); the theoretical front (which emphasizes prepositional schemes of explanation, for example, tying ideology to the concept of interest, as derived from Marx, or tying ideology to the concept of strain, as derived from Freud); and the methodological front (which emphasizes various strategies for observing ideology in empirical research). Douglas C. Bennett, "Defining Ideology: The Dangers of Methodological Deformation," in Blackman and Hellman, *Terms of Conflict*, pp.249-63.
37. Murphy, *Energy*, 159,200.