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Siting Industrial Facilities in the Western United States

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SITING INDUSTRIAL FACILITIES
 IN THE
 WESTERN UNITED STATES

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SITING INDUSTRIAL FACILITIES
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ABSTRACT

This paper reviews elements of the conflicts about siting of large industrial facilities, particularly energy facilities, in the western United States. The paper concludes that generic concerns about the need for and economics of major energy facilities have become as important as site-specific impact considerations, and that these generic concerns tend to make ambiguous what most project sponsors have traditionally seen as clear-cut guidelines for facility siting. The paper suggests that currently evolving changes in economic and energy policy are creating a yet different climate for facility planning, in which many assumptions about the goals of industry and its critics will be challenged.

KEY WORDS

energy
energy conservation
land use
planning
environment
siting
public lands
natural resources
electric power
regulation
pollution
INTRODUCTION

When industrial development requires the use of large amounts of land in areas where dominant land uses have been agricultural or recreational, conflicts are inevitable. The introduction of an airport, power plant, mine or synthetic fuel facility into such areas will cause permanent damage to some resources and temporary damage to others, and will force many surviving resources -- and human communities -- into different, more complex relationships with changed physical, cultural and economic environments.

The process of weighing the damages and negative changes that might be caused by industrial development against a project's benefits and positive changes has always been difficult. Much of the power of local government, and an increasing amount of power vested in the state and federal governments, has been established to broker conflicts among private interests, and between private interests and various publics, over benefits and costs of competing land uses. Government action at all levels has led to many fairly well defined processes and standards for evaluating proposed industrial sites.
Political and economic developments of the past fifteen years have greatly diminished the utility of these rules. Technical compliance with site-specific environmental standards, and the demonstration of positive local economic impacts, no longer assure a receptive response from state and federal regulators and land managers. Particularly in the west, where government agencies exercise considerable discretion about how best to use federally owned lands, the judgement of land managers and regulators has been influenced by broader considerations: the opinions of agricultural interests, environmental and consumer groups, governors, key state and federal legislators, Indian tribes, and others with policy or political concerns.

For the most part, industry has been slow to understand and accept this change. As a result, billions of dollars in planned investments have been delayed or cancelled because of failure to site and plan properly, or failure to effectively advocate projects that do comply with sound environmental, economic and social standards but are opposed for other reasons. Other projects, more responsive to changed circumstances, have moved expeditiously through the new regulatory environment.

Now, additional changes are taking place that are making the energy facility development process even more complex, but at the same time are creating new opportunities for some developers. Many regulators and much of the environmental community are as slow and reluctant to understand these new changes as was industry in responding to the changes of almost two decades ago.
Increased Influence of Environmental Interests

In the late 1960's and early 1970's, three proposed developments resulting from cooperation between government and industry stimulated concerted, national opposition from organized environmental interests. Indeed, these proposals -- a dam in the Grand Canyon, the world's largest airport in the Everglades, and the Trans Alaska Pipeline -- helped shape the present structure, goals and tactics of the national environmental community in the United States. Each conflict involved, from the environmental perspective, defense of natural values within undeveloped, largely federally-owned lands against proposals to site facilities that, as proposed, posed serious threats to the natural environment. Each required disparate national and local environmental interests to form coalitions, to attempt to develop new kinds of legal, technical and economic competence, to display increased determination to educate and influence their own members, the press and the government, and to become participants in economic development decisions that previously had been the exclusive province of business, labor and government.
Each conflict resulted in abandonment or modification of the proposed project. Equally significant, each conflict led to policy changes with impacts felt far beyond the boundaries of the sites in question. Federal inter-agency disputes over the Everglades jetport helped prompt the late Senator Henry Jackson (D., Wash.) and other Congressional leaders to enact the National Environmental Policy Act (NEPA). Later, litigation over the inadequate initial Environmental Impact Statement (EIS) for the Trans Alaska Pipeline demonstrated that NEPA must be honestly complied with, or federally-approved projects would face delay. The Grand Canyon dam conflict had a more complex result: stimulation (with initial support from the environmental leaders who stopped the dam), earlier than would otherwise have occurred, of major coal-fired plants in the Southwest to supply California's then apparently insatiable appetite for electricity.

Of greatest interest, for purposes of this analysis, was the general result for siting policy: at a time when the growth of the national environmental community was encouraged by many other issues, environmentalists were forced, by the course of events, to develop a special interest and political competence in conflicts over siting. The environmental sector thus became prepared to actively participate in national siting policy just as an international crisis -- the Arab oil embargo of 1973 -- made energy, and energy facility siting, issues of paramount national importance.
By the time concern about the Arab oil embargo reinforced industry worries about the timely siting of energy facilities, siting questions had already begun to grow beyond specific conflicts. Although Congress' brief flirtation with national land use planning in the early 1970's, led again by Sen. Henry Jackson, was described as environmental legislation, the proposed bills were actually designed to encourage states to preempt the ability of local governments to oppose major energy facilities. The legislation died, partly because of opposition from anti-planning interests that rejected or failed to understand utility industry siting concerns, and partly because key environmental leaders quietly but effectively opposed the legislation.

Again, a major policy consequence of that debate was the impact on some of the most active national environmental organizations: increased interest in siting as a policy issue, not just as a project-specific question centered on individual development proposals. Industry leaders seeking to further centralize the role of government in approving major facilities failed, and their attempt to do so elevated the issue on the agenda of the environmental community.

Unhappily, during a time when rational analysis of energy and energy siting needs would have served the nation well, and a time, coincidentally, when interests skeptical about claims in behalf of new energy development became influential in national policy, energy development proponents in government and industry created expectations and fears that led to even more intense conflict.
In today's climate, with industry making highly visible efforts to encourage energy conservation, and displaying a post-Watt understanding that concern about environmental protection can not be ignored, it may be difficult to understand the importance of the conflicts that were so prominent from 1970-1976 (and that flared again from 1981-1983).

OPEC oil price increases and the Arab oil embargo shocked the world economy, and gave energy policy a more prominent place on the U.S. political agenda. Industry and government reaction to the economic and national security implications of more costly, less reliable world oil supplies produced some predictable but very unproductive consequences: among them, a national debate about energy production and facility siting that created unrealistic expectations among energy developers, and stimulated even stronger opposition to some energy developments.

Development proponents projected highest-case scenarios for energy production and conversion. Early reports such as the U.S. Bureau of Reclamation's North-Central Power Study, and later documents produced by a succession of federal energy agencies, predicted the construction of hundreds of large new coal-fired and nuclear power plants, synthetic fuel plants, and oil refineries, accompanied by a massive expansion of coal, uranium, shale and offshore oil production. Government and some industry leaders spoke glibly about the need for economic activities of considerable regional importance in many parts of the U.S. -- farming, ranching, commercial fishing -- to make way for the obviously more important energy industry. The magnitude of damage to existing values
in the West was predicted to be so great that one federally-commissioned study suggested that some regions might simply have to be declared "national sacrifice areas."

At the same time, energy development proponents in government and industry projected strongly negative attitudes about two issues, energy conservation and environmental protection, that enjoyed support from most of the American public. Energy production proponents reacted to energy conservation, and to environmental protection, as if these policies were alternatives to, rather than conditions of, continued expansion of energy production.

The stage was thus set for an interesting period of conflict. When the Ford Foundation published a thoughtful study suggesting that energy conservation could moderate the growth of energy use without diminishing economic productivity, many oil and gas industry leaders denounced the study as subversive nonsense. The federal government's energy policy manager (one of many to hold that unenviable post during the past several years) reflected the U.S. auto industry's belief and proclaimed that no matter how costly gasoline might become, Americans would never become attracted to small, fuel-efficient cars, and should not be encouraged to do so.

The mining and utilities industries persuaded two successive administrations to oppose federal legislation requiring the reclamation of lands strip-mined for coal, more careful economic management in the sale of federally-owned coal to private mining companies, environmental
have given the federal government unprecedented power and influence over local and state land use and economic development decisions.

In the end, a strange coalition defeated the federal siting bill. Environmentalists, some industry leaders who believed the legislation was unnecessary and unworkable, and political conservatives opposed to greater centralization of federal authority, prevailed over those in industry who hoped to use expanded federal power to overcome local or state objections to their projects, and over federal political figures who wanted to demonstrate they were doing something about the energy crisis.

The Abstract and Particular Converge

For industry, the prolonged debate had a very negative consequence: the genuine individual projects proposed during this period were judged not simply on their own merits, but as symbols of the larger development and policy agenda being promoted by industry advocates. Consumer and environmental critics, by this time, had begun to analyze not only the specific environmental and economic consequences of individual projects, but also to challenge the basic credibility of industry and federal policy analysis. Maps showing the combined projections of trade associations and federal agencies called for so many energy facilities in the West that the Northern Plains and Rocky Mountain states, from Montana to New Mexico, appeared filled with proposed new sites. On the Atlantic, Gulf and Pacific coasts, the prospects of exporting U.S. coal to Europe and the Orient brought forth plans for development of new coal terminals wherever rails or barges could link the coal fields to the
protection and monitoring during production of off-shore oil, and planning to protect agricultural and wildlife uses of federally-owned lands when mining takes place. At the height of these debates, a leading mining industry spokesman, asked about the impact of greatly expanded coal strip mining on wildlife and agriculture in the West, said "We never promised you a rose garden."

The important environmental legislation was passed -- one bill became law after the Congress over-rode a Presidential veto during the Ford Administration, others attracted so much Congressional support that enactment took place in spite of White House opposition, and the surface mining reclamation legislation, after twice being vetoed by President Ford, became law in the first year of the Carter Administration.

But the transition from Republican to Democratic control of the White House included an ironic surprise for environmental interests: while the Republican leadership had resisted enactment or enforcement of individual energy-related environmental laws, the White House under Presidents Nixon and Ford showed little interest in bringing federal authority to bear on the siting of non-nuclear facilities. It was the Carter Administration, with strong support from key Democratic leaders in the House and Senate, that supported enactment and enforcement of laws to protect the environment -- but worked vigorously to neutralize those laws where they (or state and local regulations) might interfere with the siting of energy facilities. President Carter's proposed Energy Mobilization Board (EMB), lacking even the planning window-dressing of Senator Jackson's earlier land use proposals, would
coastline, with total projected capacities far beyond even the most imaginative coal export scenarios. Each proposed port or plant or mine, of course, was essential to the survival of the American economy.

This boosterism, with the hope of federal subsidies, or federal intervention against environmental and planning standards, made it seem possible for every entrepreneur, any community to promote a nationally important energy center. Energy development took on the porkbarrel character -- and the visibility -- normally associated with the politically equitable distribution of federal transportation or defense spending.

Those in the energy business who found customers, and proposed to open mines or powerplants, build transmission lines or pipelines, operated in an increasingly difficult regulatory climate. Regardless of the merits of individual proposals, the sponsors' credibility as an industry was doubly diminished. The overwhelming number of facilities called for at the national level either could not be believed, in which case an individual project sponsor's justifications were also suspect, or might be given some credence, in which case the project was just the first wave of a full-scale assault on the regional environment. In either case, the nature of the siting debate had changed. While local impacts were not unimportant, individual projects were also judged on their relationship to the issues of need for such a project. So the need issue, first raised by development proponents to stimulate federal subsidies or federal regulatory intervention, turned individual siting conflicts into more abstract policy debates.
Looking at three proposals during the 1970's to construct large coal-fired generating plants in the Southwest that would have supplied power to California, it is possible to see the development of the need issue as an element of individual debates, and to see a relationship between the importance of the need issue and the extent of conflicts over site-specific environmental problems. During the conflict over the proposed Kaiparowits project in southern Utah, opponents questioned the need for the plant, but those arguments were secondary to the more politically effective arguments about protection of the outstanding air quality in nearby National Parks. The subsequent debate over the Allen-Warner Valley project in Utah and Nevada -- which, as was the case with Kaiparowits, was abandoned by its sponsors after a lengthy regulatory battle -- was stimulated by conflicts (impacts on vistas from Bryce Canyon National Park) over the project's proposed coal supply, but ultimately dominated by a sophisticated argument about need for the project. Opponents turned state and federal reviews of the project into a broad debate over California energy policy.

Yet in the case of Intermountain Power Project, an even larger California-sponsored power plant being proposed in Utah at the same time as the Allen-Warner Valley project, the need question was not part of the debate, because all environmental objections to the facility were muted after federal, state and company officials cooperated to move the project away from a site in southern Utah to a less sensitive location elsewhere in the state. Indeed, when, after all federal and state approvals had been obtained, the size of the IPP project was cut in half, the reduction took place not because of objections from the
environmental groups so concerned about California energy planning, but at the insistence of a Utah investor-owned utility with a minority ownership in the project.

ENERGY FACILITY DEVELOPMENT TODAY

New Rules, New and Changing Players

It is now understood by most participants that the nature of energy facility siting debates has changed. Proponents, regulators and the public must weigh not only the traditional issues, but complex questions about the economy's need for the proposed services from the facility, and whether, if that need exists, it might be better satisfied through alternative technologies. Government, and through government the public, now have the ability to influence not just where a facility should be built, but what kinds of facilities, if any, should serve our energy needs. Government influence over energy industry investment decisions is not new. There has not been, since the inception of the organized energy industry, a genuinely market-driven decision process. National policy, federal and state economic incentives, the impacts of tax laws, have always favored some segments of the industry more than others. Now, new rules, stimulated by state officials and environmental and consumer groups, are contributing to other changes in the way energy investment decisions are made. But the consequences are not entirely those anticipated by their authors.
The electric utility industry, because of its economic structure, has been the most scrutinized and regulated segment of the energy industry. The existing regulatory regime made it easier for new ideas to be imposed on the utility industry than on other sectors of the energy business. As an example, Congressional efforts in the 1970's (authored by Ralph Nader, opposed by environmental interests) to establish a federally-owned oil exploration company failed. The proposals were viewed as unnecessarily intrusive into an activity where private enterprise had always been responsible for investment decisions. Yet, although most Americans purchase their electricity from investor-owned utility companies, Congress acted with enthusiasm to change the ways in which electric power is financed, owned, produced and distributed.

While there were many motives, and multiple interests, supporting the Public Utility Regulatory Policy Act of 1978 (PURPA), the merger of consumer and environmental interests that made enactment of PURPA possible resulted from one primary objective: a belief on the part of most environmental leaders that PURPA would encourage alternatives to traditional central-station electric generating plants, and thus reduce the number of sites demanded by the utility industry. This, in turn, would reduce the impact of the utility industry and its fuel suppliers on water supply, air quality, public safety, wildlife habitat and recreation areas. The environmental strategy was fruitful. Alternative cogeneration power sources, subsidized by high consumer prices required by federal and state laws, are filling needs that otherwise would be met through expansion of utility production capacity. Late 1970's
environmental responses to the siting excesses presented by industry advocates in the early 1970's are, in the 1980's, contributing to a restructuring of the U.S. electric power industry.

**Consumer and Environmental Interests: New Changes**

As noted earlier, one source of strength for critics of energy industry plans during the 1970's was a coincidence between environmental and consumer interests. As it happened, many of the most visible and environmentally objectionable proposals from energy developers were also extraordinarily costly -- so costly, and so inefficient in the marketplace, that only federal subsidies could give them a chance of success. Apart from the high per-unit cost of energy to be produced by these subsidized processes, it became apparent that some energy industry leaders and their advocates in government thought it necessary to keep the price of all energy high, in order to better justify the high cost of synthetic fuels. From the time of former Secretary of State Henry Kissinger's management of the U.S. government's response to the Arab oil embargo, through the policies advocated by the Carter Administration's energy czar James Schlesinger, keeping world (and U.S.) oil prices up in order to stimulate a market for high-priced oil shale, coal gasification and coal liquefaction was considered essential.

The economic irrationality of so much of the energy industry's agenda made it easier for the industry's environmental critics to be politically credible in economic, as well as environmental, attacks on many proposals -- or at least more credible than industry advocates.
But for the national environmental organizations, energy economic issues were, and remain, difficult to address. Obviously, fewer synthetic fuels plants would be sited if federal subsidies were removed. But some groups wanted more environmentally benign systems to get tax subsidies, and a few proponents of solar energy have been willing to accept subsidies for synthetic fuels in order to get federal solar dollars. The same climbing energy prices that stimulated energy conservation also encouraged synfuel developers. Conserving supposedly scarce natural gas by prohibiting its use by the electric utility industry stimulated more interest in coal-fired powerplants.

For more than a decade, the environmental community was able to avoid reconciling some of the apparent contradictions in its approach to fuel choices, subsidies and high energy prices, because no matter what coincidence might be found between environmental interests and the use of higher energy costs and subsidies, the industry itself had been so visible in the promotion of high-cost energy that consumers and public blamed the industry for rising energy prices.

Recently, however, changes in energy prices and in the economy have made it more difficult for the assumptions of the 1970's to continue unchallenged.

As an example, for several years advocates of cogeneration were able to escape serious scrutiny of the consumer cost implications of substituting cogenerated power for power provided by utilities. The co-generated power could be subsidized by forcing utilities (and their
consumers) to pay independent power producers somewhat under the cost of what a regulatory body would determine to be the "avoided" cost, a high percentage of the cost the utility would have to pay for expanding its own production capacity. With avoided costs pegged to the cost of the highest priced utility plants, cogenerators producing power at much lower prices could be assured of getting high prices and a guaranteed market for their product. But between the even higher cost of other power available to the utilities, and the small percentage of co-generated power in a utility's system, the relatively high-priced cogenerated power has not, until recently, appeared to affect the economics of electric power.

Now, extremely high amounts of high-priced cogenerated power are becoming, in some jurisdictions, the largest source of additional power. In addition to concerns about costs, regulators are reviewing the stability implications of dependence on such unexpectedly large amounts of cogenerated electricity. While many cogeneration proposals are sound, many others appear to be made more because of the availability of tax and price subsidies than because of long-term interest in energy production. Changes in the tax laws, reductions in subsidies, or even investment recovery under existing tax laws could leave a significant amount of cogenerated electricity produced by firms with little interest in long-term maintainence of efficient systems.

A period of falling oil prices, the effective end of subsidies for synthetic fuels, and deficit-induced pressure on government revenues and spending have changed the policy climate for energy, environmental, and
economic issues. The changed policy situation does not suggest that long-standing support from consumers and the general public for application of environmental standards -- even costly environmental standards -- is eroding. Political and industry leaders who have, from time to time, attempted to invoke the interest of the consumer in order to relax environmental standards have not been found credible, because public support for environmental protection continues to be strong.

What does appear to be happening is a more widespread acceptance that the economic consequences of energy and natural resource policies, including those advocated by the environmental community, must be better understood. Where the economics of a policy appear questionable, and the environmental benefits could be achieved with less economic disruption, the environmental benefits themselves may not be enough to win support for a particular environmentalist-sponsored approach.

The most dramatic illustration of this change is in the failure of acid rain proposals advanced by the environmental community. Because advocates of cleaner air favored legislation that would advance Midwest and Appalachian high-sulfur coal interests over western and Appalachian low-sulfur coal interests, at a high dollar cost, with no environmental benefits from the regional favoritism, the legislation was stalemated.

Similarly, in spite of overwhelming public and Congressional support for strong and costly measures to clean up dangerous toxic waste sites, the inability of Congress to effectively address the issue of narrow or broader-based industry responsibility for financing the cleanup blocked passage in 1985 of Superfund legislation.
What is Happening Now?

It is always easier to look back and attempt to explain the past than to understand the importance of current events, but some issues are emerging as indicators of present trends. Most important, and now almost universally acknowledged, is that the electric power business, for decades one of the more stable, predictable elements of our economy, is changing rapidly and will change even more during the next few years.

The nature of this change makes it essential for those who hope to understand or influence electricity policy to recognize that traditional assumptions -- even very recently developed assumptions -- must be constantly reviewed and challenged. The unique insight of five years ago may be this year's useless conventional wisdom, and next year's counterproductive, stubborn mythology.

One of the profound changes resulting from events of the last few years is a near reversal of role of the market in non-utility and utility thinking about investment in new electric power facilities. For years, environmental and consumer groups were concerned that utilities had incentive to invest in new facilities, whether needed or not, because of guaranteed returns on investments approved by regulatory bodies.

Now, in most jurisdictions, it is the non-utility cogeneration investors who are guaranteed that someone -- the utilities and their consumers -- must pay them a certain price for producing electric power.
The utilities themselves operate in the opposite environment: clear signals from regulators that there is little assurance that utility investment in new facilities can be recovered from ratepayers. As a result, some utilities that do face increased growth in the 1990's are looking now at non-traditional, market-oriented options, considering new projects that would not be placed in a power producer's rate base, but would be funded with all development risks born by investors. Others are taking a wait-and-see attitude, knowing that investments should be made, but waiting until regulators themselves acknowledge the need and provide assurance that the investments will be held reasonable before taking any steps to develop future capacity.

The long-term implications of this situation will be interesting. From an environmental perspective, environmentalists have moved from conflicts over dams in the Grand Canyon, to disputes over coal-fired power plants, to stimulation of more small-source air and water pollution, groundwater waste injection, and dams on many previously naturally-flowing streams. How will the problem of regulating pollution from hundreds or thousands of small, marginal enterprises, made temporarily profitable through consumer and tax subsidies, compare to the consequences of applying modern combustion and control technologies to a small number of large central-station power plants? How will political and regulatory perspectives change in cases where power producers favored by environmental groups depend more on guaranteed high prices and guaranteed markets, while utilities or their large-scale power suppliers turn more to the marketplace to determine when and how to invest?
CONCLUSION

Most site-specific environmental aspects of facility siting are, or can be, well understood. It must be assumed that a project which would degrade a National Park, violate air or water quality standards, or damage important wildlife habitat is not likely to survive the predictable opposition from environmental groups and federal or state regulators. Few energy developers are now willing to risk corporate time and resources on such ventures.

For most projects, conflict will come not because of failure to comply with legal requirements, but because of failure to understand the more ambiguous questions raised by a project's intrusion into the existing environment. Debates about individual projects will continue to be influenced by broader policy issues, particularly regarding the public's views about the need for a proposed facility. Local citizens and the environmental community do not, and should not, concede that whatever is not prohibited is always permitted.

Neither, however, should it be assumed that the environmentalists' criticisms and strategies which were valid in the 1970's are necessarily effective in planning for siting in the 1990's. Responses to the abuses which created existing hazardous waste sites may not provide sound guidance for working now to address future waste issues, and may even frustrate the introduction of superior technologies for controlling hazardous wastes. In the energy area, policies that once protected consumers and the environment by stimulating more diverse approaches to
power generation and use may now actually retard the reliable incorporation of the best fuels and technologies into electric power systems, and may create genuine conflicts with the interests of consumers. Even in the energy use area, is the forced introduction of marginally economic cogeneration capacity into a system significantly less a substitute than central-station power for investments in more efficient energy use? The public interest community, regulators, and industry would benefit from a 'reevaluation of all parties' assumptions about the economic, technological, and regulatory aspects of industrial siting.

CITATIONS, FURTHER READING

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Clean Air Act of 1970
Water Pollution Control Act of 1972
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Federal Coal Leasing Amendments Act of 1976
Surface Mining Control and Reclamation Act of 1977
Clean Air Act Amendments of 1978
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