

Stakeholder Analysis Methodologies Resource Book

William M. Babiuch and
Barbara C. Farhar



National Renewable Energy Laboratory
1617 Cole Boulevard
Golden, Colorado 80401-3393
A national laboratory of the U.S. Department of Energy
Operated by Midwest Research Institute
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Preface

This work was carried out in the Programmatic Studies Office, Analytic Studies Division of the National Renewable Energy Laboratory (NREL). It was supported by the Office of Planning and Assessment, Office of Energy Efficiency and Renewable Energy, U.S. Department of Energy (DOE).

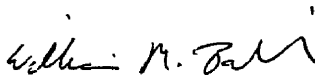
This report develops the concept of stakeholder analysis in the context of public participation in energy decision making, discusses the rationale for its use in DOE, and recommends appropriate steps in a stakeholder analysis process. It also examines such methodological issues as sampling and generalizing findings.

The project benefited from the oversight and guidance of an advisory group of DOE officials, national laboratory scientists, and academic participants. Members of the advisory group were:

Fred Abel, Office of Planning and Assessment, DOE
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Kurt Finsterbusch, University of Maryland
Joe Galdo, Office of Utility Technologies, DOE
Dan Packey, NREL
David Rodgers, Office of Transportation Technologies, DOE
Gary Williams, Argonne National Laboratory.

These participants provided invaluable suggestions and comments that improved the Resource Book.

Other NREL staff supporting the project included Becky Baldwin, Mary Anne Dunlap, Rod Franklin, Fran Hodson, Lisa Shertz, Kay Vernon, and Joe Woodburn.

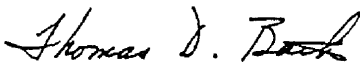


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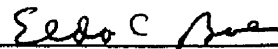


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Executive Summary

Stakeholder analysis is a process that allows analysts to identify how parties are likely to be affected by government projects and programs, referred to as "proposed actions." The process involves identifying the likely impacts of a proposed action and the affected stakeholder groups. In addition, analysts assess how the stakeholder groups are likely to be affected by a proposed action and suggest measures to mitigate any adverse impacts.

Evidence suggests that the efficiency and effectiveness of government actions can be increased and adverse social impacts mitigated when officials understand how stakeholder groups are likely to be affected by a proposed action. A small investment of time and money in a stakeholder analysis in the early stages of a decision-making process is likely to reduce the probability that program managers will confront unexpected long-term investment demands because the proposed action has been obstructed by negatively affected stakeholder groups.

An ideal decision process on a proposed action combines both analytical and stakeholder involvement processes. The first phase is strictly analytical, relying on an expert-based stakeholder analysis. The second phase, which is also analytical, extends the analysis to include the input of stakeholder group representatives. In the third phase, stakeholder groups themselves hold center stage and analysts assist in synthesizing inputs. Decision makers weigh and evaluate the information and arrive at a decision in the fourth phase. In later phases, the decision is implemented and evaluated. Stakeholder analysis in each of these phases is discussed in this report.

The U.S. Department of Energy (DOE) and its Office of Energy Efficiency and Renewable Energy (EE) have endorsed the stakeholder analysis concept in strategic plans, policy statements, mission statements, and recommendation papers. Their calls for greater stakeholder involvement imply a need for increased stakeholder analysis because, ideally, analysis should precede and accompany involvement. The quality of the information provided during stakeholder involvement processes depends on a comprehensive identification of stakeholder groups. Stakeholder analysis methodologies provide the means to ensure that stakeholder groups are not overlooked and unintentionally excluded from involvement processes.

Recent EE projects illustrate that stakeholder analysis is gaining greater acceptance. Much of the analysis, however, continues to be performed on an ad hoc basis. Although this type of analysis provides useful information for EE officials, efforts should also be made to conduct systematic stakeholder analyses that use tested social science techniques to identify impacts and stakeholder groups, collect data, and assess impacts. A systematic approach increases the reliability of the data accumulated in stakeholder processes, thereby ensuring that program managers have access to credible information about the likely impacts of the proposed action on stakeholder groups.

Several methodological issues that may affect the validity and reliability of findings from any stakeholder analyses are discussed. These include sampling, generalizability, validity, "uncooperative" stakeholder groups, use of social indicators, and the effect of government regulations such as the Federal Advisory Committee Act (FACA) and Office of Management and Budget (OMB) clearance of forms. Finally, resource directories and specialists in stakeholder analysis and involvement are listed.

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Chapter 1

Introduction and Background

At times, government's intentions in policy initiatives are effectively realized. At other times, policies can go awry with unexpected and surprisingly negative results. An example of the latter recently occurred in the United Kingdom as a result of U.K. energy policy during the 1980s under the conservative regime when integrated public sector utilities [British Gas and the electricity supply industry (ESI), which relied primarily upon coal] were both privatized.

The dominant fuel supplier for electricity, accounting for 70 percent of fuel supplies, was the publicly owned British Coal, which supplied coal at higher-than-world-market prices under contract with ESI. When electricity was privatized, open access—both low and high voltage—was established. In addition, the existing generating company was split into several competing companies, and a spot market in generation, called "the Pool," was established. Independent power producers emerged when electricity prices began to vary every half hour. ESI started to shop for electricity supplies after the coal contract expired and as a result British Coal lost much of its ESI business. In October 1992, British Coal announced that 30,000 coal miners would be laid off within 5 months. In the U.K.'s economic recession, this caused a major public outcry that the government had reportedly not anticipated.¹ The result was a major review of coal and energy policy in the United Kingdom, which focused on the appropriate roles of the market and government in the energy sector.

Among many other groups, British coal miners were stakeholders affected by the U.K.'s energy policy decisions. If the U.K. government had used results of a stakeholder analysis examining the impacts of its proposed policy on various groups, it might have modified the policy to minimize negative results. At minimum, even if the government was committed to the proposed action for ideological or other reasons, a stakeholder analysis could have reduced surprise at the public outcry when 30,000 miners faced unemployment.

In spring 1993, the U.S. Department of Energy's (DOE) sister agency in the United Kingdom contacted DOE to discuss these unexpected consequences of privatization and seek input on measures that could mitigate adverse impacts. The British privatization experience provides useful information for U.S. policy makers as America's electric utility industry moves away from an integrated structure and toward a more decentralized, competitive system. In particular, it illustrates the problems U.S. government officials may face if stakeholder groups are excluded from the policy making process.

The passage of the Energy Policy Act of 1992, coupled with public support for renewable energy, suggest that energy efficiency and renewable energy will be key elements of the United States' future energy policies. As such, DOE's Office of Energy Efficiency and Renewable Energy (EE) will play an increasingly important role in energy decisions that affect specific stakeholder groups and the general public. Information on how stakeholder groups are likely to be affected by proposed energy programs can help EE managers develop projects that are more socially and politically acceptable, thus paving the way for more efficient implementation.

This report (hereafter referred to as the Resource Book) discusses how to conduct useful stakeholder analyses for government officials making decisions on energy-efficiency and renewable-energy

¹Memorandum from Allan Hoffman, Office of Utility Technologies, Office of Energy Efficiency and Renewable Energy, U.S. Department of Energy, regarding Michael Morrison seminar, March 18, 1993.

technologies and their commercialization. It presents information on stakeholder analysis methods to provide a resource for federal government managers and the analysts supporting them.

Analysts should use information presented in the Resource Book as a menu from which to select various approaches—not a recipe for conducting stakeholder analyses. A menu presents a list of options that may be used selectively to meet the specific needs of any particular analysis. In contrast, a recipe presents a list of ingredients, each of which must be included for a particular outcome to occur. When making selections from the menu, analysts should be sure to focus on specific needs of the project.

What Is an Impact?

Impacts are defined as positive, negative, or neutral changes in social, economic, or political structures that will be caused by a proposed action. They can occur over space and time. Stakeholder groups may either be directly affected by the proposed action (i.e., first-order impacts), or affected by secondary impacts resulting from the action (second- or higher-order impacts) (see Chapter 3 for more details). For example, the government may propose that new electric utility plants only use natural gas for fuel. Electric utilities would experience a direct first-order impact by this proposed action because their fuel choice for new plants would be severely constrained. Coal miners, however, are also likely to be affected if the demand for coal decreases in the years ahead because of the proposal leading to the second-order impact of layoffs in the coal mining industry.

What Are "Stakeholder Groups?"

Impacts affect stakeholder groups. Stakeholder groups are parties affected by, or perceiving themselves to be affected by, a proposed governmental action.² Proposed governmental actions include (1) policy initiatives, (2) facility siting projects, (3) R&D programs, (4) information programs, (5) incentive programs, (6) regulation, (7) grants, and (8) joint ventures with industry to develop energy-related technologies.

The term "parties" includes organizations, groups, and aggregates of individuals. The parties may be aware or unaware that a proposed action affects them. They might be actively involved in an issue (attentive) or indifferent to it (inattentive). Furthermore, stakeholder groups may be powerful and able to influence proposed actions (such as an oil or utility company), or seemingly powerless to affect a decision process (such as a minority electricity consumer).

There are two types of stakeholder groups: (1) groups that are perceived by others and themselves to be affected by the proposed actions, and (2) groups that objective analyses show, or experts claim, are *not* affected by the proposed actions, but believe they are.

In the first instance, analyses show—and experts agree—that a particular stakeholder group is affected by a proposed action. For example, if the federal government implemented a Btu tax on energy suppliers, there would be little dispute that industries dependent on oil would be affected. Empirical formulas could show how production costs would increase for oil-dependent industries with an additional Btu tax. Analysts conducting a stakeholder analysis on such a proposal would classify oil-dependent industries as stakeholders, and representatives of these industries would, no doubt, take the position that their firms would be affected.

²Appendix A presents 16 definitions of the term "stakeholder" as found in the literature. These definitions overlap considerably.

In the second instance, experts conclude that a particular stakeholder group is *not* going to be affected by the impacts of the proposed action. Members of the stakeholder group still maintain, however, that they will be affected by the action. Even when there is an absence of objective information to support a stakeholder group's claim, a group may insist that it is an affected party. For example, if the federal government wanted to construct a nuclear waste depository in Hancock County, a group of citizens could conceivably object because they believe it will adversely affect their health or property values.³ Even if scientific evidence from a number of studies indicated the depository would likely have no adverse health effects, the group of citizens could continue to maintain that it will harm them. These citizens comprise a stakeholder group. Conversely, a group of citizens could object to the nuclear waste depository because they believe it would adversely affect their property values. Scientific evidence from a number of studies supports this belief. These citizens would thus also comprise a stakeholder group.

The Stakeholder Analysis Process

Stakeholder analysis is a process that enables analysts to identify how various parties are likely to be affected by proposed government actions. It relies upon valid scientific techniques to identify likely impacts of the action, identify relevant stakeholder groups, and gather data about how these groups are likely to be affected. Analysts supply this information to decision makers and stakeholder groups to assist in identifying potential adjustments to proposed actions as a means of mitigating adverse impacts and increasing the likelihood that the actions will be implemented efficiently and effectively.

Figure 1 typifies an idealized decision process once a proposed action has been recommended. The proposed action is analyzed, and the results are provided to DOE officials. If officials decide to move forward with the action, they enter a period of analysis combined with stakeholder and public involvement to obtain feedback and share information among affected groups on expected impacts and stakeholder attitudes. Analysts continue to assist decision makers by categorizing, classifying and interpreting information. Finally, officials make a decision on the proposal, which is then either implemented or canceled.

Stakeholder groups often contribute to the formulation of the initial idea for a proposed action. Stakeholder input provides a desirable start to decision processes. The literature on public participation shows that the earlier stakeholders are involved in decision processes, the greater their satisfaction with the decision outcome (e.g., Peelle and Reed 1992).

Who Are the Analysts, Experts, and Program Managers?

Each of these individuals plays a role in the stakeholder analysis process. Analysts are responsible for overseeing the stakeholder analysis process and are knowledgeable about relevant methodologies. Experts are individuals knowledgeable about the proposed action. They may range from government officials to college professors to officials in private or nonprofit organizations. Program managers, also knowledgeable about the proposed action, are the government officials responsible for making programmatic decisions related to the proposed action.

The Decision Process on Proposed Actions

When government officials decide on a potential course of action, either autonomously or with the assistance of stakeholders, they should ideally go through a process that takes into account the advantages

³This is a hypothetical example and any similarity to an actual siting is purely coincidental.

and disadvantages that the action may bring to various groups in society. Figure 1 presents stages in an idealized analysis and decision-making process.

If a decision is made to implement the proposed action, program managers, analysts, and stakeholder groups, as well as the media and public, watch to see if the action fits its intended consequences. If expected consequences are met and negative impacts successfully mitigated, the action is likely to be continued. If unanticipated or negative consequences occur, however, the action may need to be modified or even abandoned, often at great expense. Stakeholder analysis can help reduce the likelihood of this.

The first four phases of the process shown in Figure 1 are depicted in greater detail in Figure 2, which shows varying proportions of involvement in the decision process by DOE officials ("decision makers"), analysts, and stakeholder groups. Early in the analysis stage (Phase One) analysts can perform significant assessments by relying on experts and secondary sources of information. This work provides a necessary foundation for identifying stakeholder groups and gathering accurate, meaningful information from stakeholders about the impacts of a proposed action and their preferences concerning it.

Later in the process (Phase Two), analysts contact representatives of stakeholder groups to obtain primary data for the decision through interviews, questionnaires, focus groups, and other data collection techniques.

In the public participation phase of the process (Phase Three), additional input is derived from such techniques as public meetings, hearings, and written testimony. Information from these sources is then analyzed and synthesized. Stakeholder participation and public participation (Phases Two and Three) overlap. Public participation generally involves stakeholders and attentive members of the general public.

In Figure 2, the analysis process ends with a decision on the proposed action (Phase Four). The analysis actually continues in the project implementation and observation-of-effects phases. This part of the analysis is generally termed the "evaluation."

DOE Positions on Stakeholder Analysis and Involvement

Stakeholder analysis, per se, has recently begun to receive attention in EE and DOE. This section reviews the strategic plans, policy statements, mission statements, and recommendation papers that highlight EE and DOE positions on the stakeholder analysis concept. Generally, these documents focus on the need for greater stakeholder involvement in DOE policy decisions. The EE and DOE position papers in favor of stakeholder involvement translate into an implied endorsement of stakeholder analysis because, ideally, analysis should precede involvement to ensure that analysts identify all affected stakeholder groups and consider them in the process.

The following brief review of six documents illustrates how EE and DOE's positions on stakeholder involvement use the stakeholder analysis concept:

1. U.S. Department of Energy, Office of Conservation and Renewable Energy. 1992. *CE Strategic Plan*.⁴
2. U.S. Department of Energy. 1992. *Public Participation Policy for Environmental Restoration and Waste Management*.

⁴On April 2, 1993, DOE changed the name of the Office of Conservation and Renewable Energy (CE) to the Office of Energy Efficiency and Renewable Energy (EE).

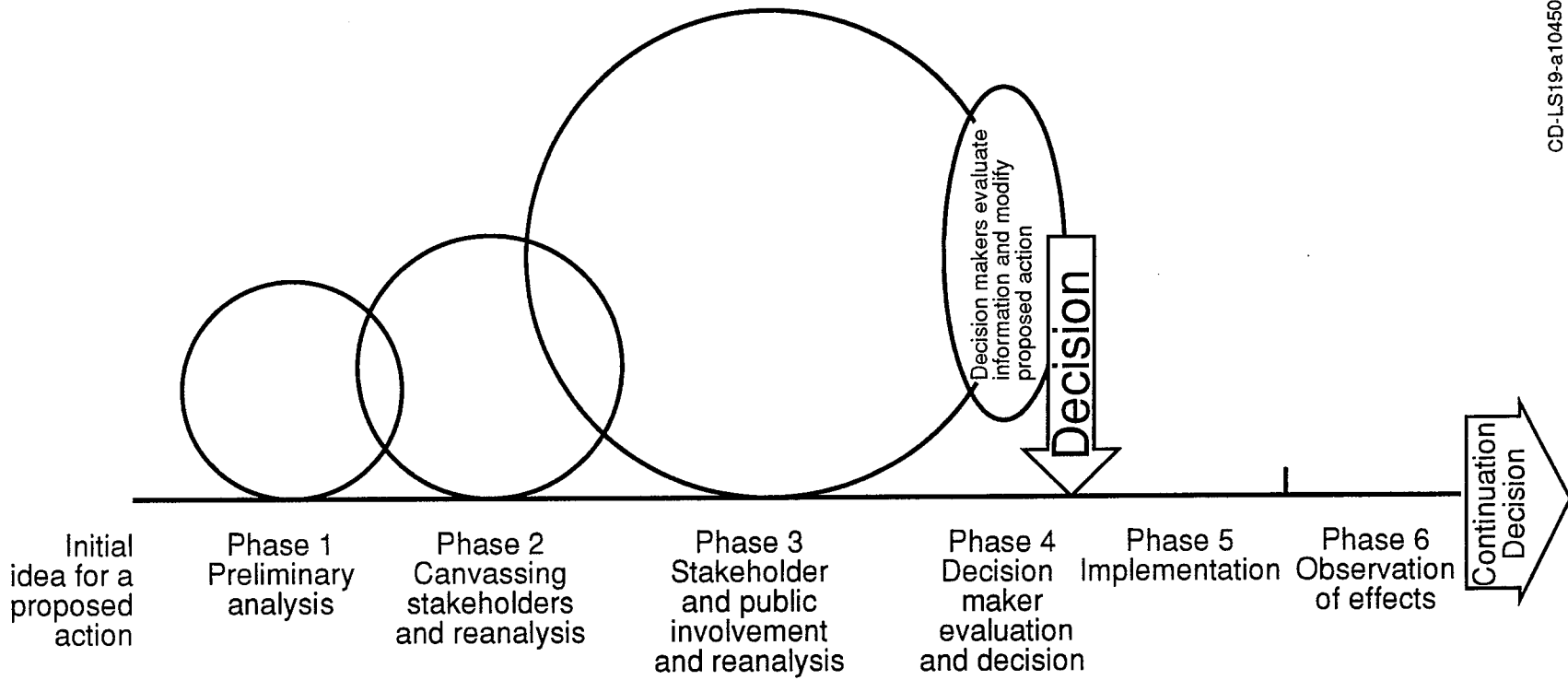


Figure 1. Phases in an ideal decision and analysis process on a proposed action

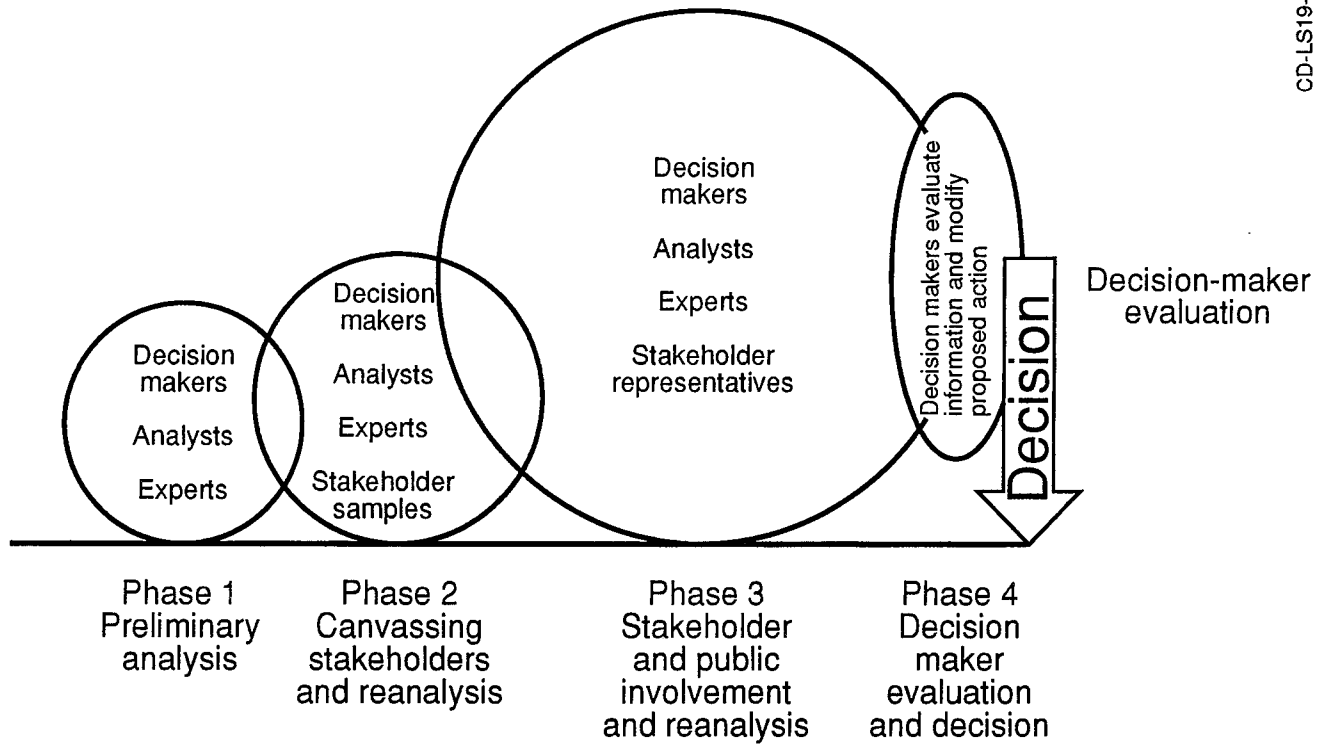


Figure 2. Decision maker, stakeholder, and analyst involvement in decision processes

3. U.S. Department of Energy, Office of Environmental Guidance, RCRA/CERCLA Division, EH231. 1991. *Public Participation in Environmental Restoration Activities*.
4. Young, Charlotte, Gary Williams, and Marsha Goldberg. 1992. *Evaluating the Effectiveness of Public Meetings/Workshops: A New Approach for Improving DOE Public Involvement*.
5. U.S. Department of Energy, Energy Advisory Board. 1992. *Draft Final Report of the Secretary of Energy Advisory Board Task Force on Radioactive Waste Management*.
6. U.S. Department of Energy, State Energy Advisory Board. 1992. *A New Voice: Strengthening State/Federal Energy Actions, Communications, and Progress*. The Inaugural Report of the State Energy Advisory Board.

1. CE Strategic Plan

The Office of Conservation and Renewable Energy addressed the stakeholder concept in its 1992 Strategic Plan. This plan presented stakeholder considerations as a context within which CE programs could fulfill their mission to develop and promote the adoption of cost-effective renewable energy and energy-efficient technologies and practices in the building, industrial, transportation, and utility sectors. The plan highlighted the importance of stakeholder analysis by briefly identifying several CE stakeholder groups and presenting their positions on renewable energy and conservation. In addition, it identified the positions of stakeholder groups in relation to CE's mission.

The 1992 Strategic Plan identified the following stakeholder groups as relevant to EE's programs: the public, senior DOE management, the Congress, U.S. industry, DOE national laboratories, universities, regulatory agencies, utilities, independent energy producers, and foreign governments.

2. Public Participation Policy for Environmental Restoration and Waste Management

This statement highlights the Environmental Restoration and Waste Management's (EM) commitment to fulfilling DOE's policy to conduct its programs in an open, responsive, and accountable manner. EM's policy states that the public should have the opportunity to participate in EM decisions on program planning, design, and implementation.

The policy statement defines public participation as the process by which DOE incorporates the views and concerns of the public into its decisions. An effective public participation program is essential to the success of the EM program because it:

- Provides stakeholders a role in the decision-making process
- Allows DOE to make decisions that address a variety of concerns
- Provides a forum for DOE to work with stakeholders to build a consensus
- Assists DOE in building credibility with the public by demonstrating openness, responsiveness, and accountability.

In short, EM recognizes that a public participation program can help create an open, visible, and fair decision-making process for issues that are technically and economically feasible, environmentally sound, inclusive of public values and concerns, and implementable.

3. Public Participation in Environmental Restoration Activities

In November 1991, DOE published a guidance document to assist officials in conducting effective public participation activities for environmental restoration activities under various legislative mandates.⁵ Throughout much of its history, DOE was reluctant to encourage stakeholder involvement in its activities because of the secrecy surrounding its role in the national defense mission and as a producer of nuclear materials for weapons. The end of the Cold War, however, marked the beginning of a new culture at DOE. The guide states that the

principles that embody this new culture include seeking out constructive criticism, being solicitous of and open to public views, and creating an atmosphere in which problems are identified and resolved cooperatively. . . . This commitment includes listening to DOE's critics as well as supporters and treating the public as a partner and resource in the decision-making process. (DOE 1991, p. 2.1)

In the context of DOE's evolving organizational culture, stakeholder involvement is becoming a key element in the process of deciding proposed actions. The guide defines stakeholder involvement as "the process by which the views of the parties interested in DOE decisions (i.e., interested and affected individuals, organizations, state and local governments, Indian tribes, and other federal agencies) are integrated into DOE's decision-making process" (DOE 1991, p. 2.2). The guide's support for stakeholder involvement implies support for stakeholder analysis because the involvement process cannot begin until decision makers and analysts have identified the range of stakeholders affected by proposed actions. A systematic effort to identify stakeholders helps ensure that the analysts identify all affected parties, thereby decreasing the likelihood that relevant stakeholders are accidentally excluded from the involvement process.

4. Evaluating the Effectiveness of Public Meetings/Workshops

In August 1992, DOE published an evaluation of the effectiveness of the DOE Office of Environmental Restoration and Waste Management stakeholder involvement activities. The evaluation lists three goals that reflect DOE's view on what constitutes an effective stakeholder involvement program. A program should

- Contribute to public knowledge and understanding of the issue
- Obtain public input on the issue
- Create an atmosphere to build public trust and confidence by providing a visible, equitable, and legitimate process for decision-making (Young et al. 1992, p. 4).

Contained within DOE's criteria for an effective stakeholder involvement program is a key element of stakeholder analysis—obtaining input so stakeholder interests can be identified and understood by DOE officials. Thus, although in this document DOE did not refer to stakeholder analysis per se, it is endorsing a key element of the canvassing-stakeholders phase of analysis (i.e., obtaining input from the affected stakeholder groups).

⁵The legislative mandates are the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA); the Resource Conservation and Recovery Act of 1976 (RCRA), as amended by the Hazardous Waste Amendments of 1984 (HSWA); and the National Environmental Policy Act of 1969 (NEPA).

5. Draft Final Report of the Secretary of Energy Advisory Board (SEAB) Task Force on Radioactive Waste Management

In December 1992, the Secretary of Energy Advisory Board Task Force on Radioactive Waste Management released a draft report on public trust and confidence. The task force⁶ organized an extensive research effort using workshops, focus groups, site visits, and surveys to collect the data for their analysis. They concluded: "DOE stands little chance of strengthening public trust and confidence unless it recognizes that its decision-making behavior will have to fundamentally change" (DOE 1992b, p. 25). Among the specific measures and policies recommended to increase public trust and confidence are the following:

- Ensure that the programs speak consistently to stakeholders
- Improve the quality of interaction with *all* public stakeholders (italics added)
- Make public involvement a means for creating partnerships (DOE 1992b, pp. 36-38).

Implicit in this call for DOE to change its decision-making behavior and recognize stakeholders and their concerns is a position supporting the basic element of stakeholder analysis—that all relevant stakeholder groups be identified.

6. A New Voice: Strengthening State/Federal Energy Actions, Communications, and Progress

In December 1992, the State Energy Advisory Board (STEAB) released an inaugural report summarizing the recommendations it made in fiscal 1992.⁷ To assist CE in clarifying and actualizing its goals and objectives, STEAB's Strategic Planning Committee reviewed the CE Strategic Plan. While the committee commended CE on both the focus of its objectives and the successful steps it had taken to realize those goals, it made a number of recommendations designed to improve CE's ability to create true energy efficiency and renewable opportunities for the American people. It encouraged CE to seek public input, give proper attention to that input, and provide for its appropriate evaluation. Each of these recommendations are compatible with the stakeholder analysis process.

This brief review of EE and DOE documents shows that officials have begun to recognize the significance of stakeholder groups to the design of effective policy actions, and the need to understand how stakeholder groups are likely to be affected by the proposed action before the action is implemented.

Uses of Stakeholder Analysis

Stakeholder involvement processes are necessary in many circumstances. They can be time-consuming and costly, although not as costly as the failure of some unacceptable proposals. For this reason, government officials are well advised to assess stakeholder interests and impacts before embarking on extensive public participation processes. This permits a stepwise process that can help shape policy

⁶The SEAB Task Force members included political scientists, a sociologist, government health department officials, environmental and energy organization members, and engineers.

⁷Congress established the board to provide advice to DOE on the Weatherization Assistance Program (WAP), Institutional Conservation Program (ICP), and State Energy Conservation Program (SECP). In addition, STEAB provides DOE with advice on conservation and renewable energy programs in general and the efforts of the department relating to market deployment of energy efficiency and renewable energy research.

options that have the best potential for widespread acceptance and identify others that could result in extensive negative impacts too difficult to mitigate.

The purposes of stakeholder analysis are to:

- Identify the impacts of the proposed actions, both positive and negative
- Identify the entire range of stakeholder groups that could be affected by a proposed action or that might believe themselves to be affected
- Assess how the stakeholder groups are likely to be affected by the identified impacts
- Identify potential adjustments to the proposed action that could mitigate adverse impacts, especially negative ones on stakeholder groups.

The following are the reasons for providing this information to DOE officials:

- It provides them with an early warning of potential stakeholder and public opposition to a proposed governmental action so they are not surprised by negative reactions once the action is made public
- It permits them to modify a proposed governmental action and take into account its potential effects on stakeholder groups so as to maximize benefits and minimize adverse impacts
- It identifies stakeholder groups that may be involved in the type of public perception and involvement activities that are increasingly being incorporated into department policy.

A stakeholder analysis can be simple or elaborate, depending on the complexity of the issue, the number of groups potentially affected, and the level of controversy a proposed action is likely to engender. At the outset, even a minimal stakeholder analysis can uncover unanticipated consequences of proposed actions. Such a discovery could lead to a more extensive analysis, the result of which can inform the policy-shaping process and public participation procedures in which the department is increasingly likely to find itself engaged.

Resource Book Methodology

Information contained in the Resource Book is derived from primary and secondary sources. The authors initially collected data from books and articles published on impact assessment, public involvement, and methodological issues. After they completed the review of literature, they located government documents and contacted government officials to obtain information about DOE's position on and experience in stakeholder analysis.

The authors coordinated an interdisciplinary project advisory group to enable the Resource Book to meet EE's needs in relation to stakeholder analysis. EE officials, analysts from national laboratories, and an expert in social impact assessment comprised the project advisory group.

The authors initially presented the information obtained from primary and secondary sources, government documents, and government officials in a compendium entitled *Draft Materials for CE Stakeholder Analysis Methodologies Project*. The compendium was an initial attempt to systematically present information relevant to the Resource Book.

The advisory group reviewed the document and provided input. The authors used the advisory group's input and information contained in the compendium to create an annotated outline that was to be the basis of the Resource Book. The project advisory group reviewed the annotated outline and the authors changed it in accordance with their comments. As a result of these changes, the authors researched several issues further before they began writing the Resource Book text. Two drafts of the text were written and reviewed before the final report was published.

Organization of the Resource Book

Chapter 2 discusses the reasons that stakeholder analyses are so important. It begins by presenting several instances in which stakeholder analysis or the lack thereof has affected the implementation of a proposed action. It then elaborates on the rationale for conducting systematic stakeholder analyses. The chapter concludes by summarizing recent efforts in EE and DOE to use stakeholder analysis methodologies in energy-related projects.

Chapter 3 examines the basic features of Phase One, the preliminary analysis. It begins by reviewing the principles underlying a systematic stakeholder analysis, and goes on to discuss the steps comprising the preliminary phase.

Chapter 4 examines the basic steps in Phase Two, the canvassing stakeholders. Sampling and data collection techniques are described.

Chapter 5 briefly highlights several techniques for public participation, which occurs in Phase Three of the decision-making process. Stakeholder analysis has an active part in this phase of stakeholder and public participation.

Chapter 6 discusses several key methodological issues germane to stakeholder analysis.

Chapter 7 presents concluding comments on stakeholder analysis. Throughout the text, references are made to the appendixes. They provide detailed information about several points alluded to in the text as well as a number of resources available to EE officials interested in conducting stakeholder analyses.

Chapter 2

The Critical Nature of Stakeholder Analysis

An effective government requires that officials be informed about public concerns and seek to understand the effects policies and projects are likely to have on various parties prior to implementation. The stakeholder analysis process generates information about affected parties to assist government officials in developing policies that can be implemented efficiently and effectively. This chapter elaborates on the implications of conducting or failing to conduct stakeholder analyses. The first two sections present examples to illustrate the benefits of stakeholder analysis. The third section presents a rationale for systematic stakeholder analyses. The chapter concludes with a discussion of how stakeholder analysis methods have been used in a number of recent EE projects.

Instances in Which Stakeholder Analysis Led to Efficient and Effective Policy Implementation

1. Stakeholder Input Benefitted Water Quality Improvement Programs

The Great Lakes Water Quality Agreement of 1978, as amended and signed November 18, 1987, requires the development of remedial action plans that embody a systematic and comprehensive ecosystem approach to restoring water quality in the Great Lakes region. The remedial action plan provision mandates that stakeholder interests be recognized in the policy planning process and that the public be involved in the development of water quality plans and consulted on their implementation. Interviews are carried out with water quality officials, scientists, business people, coastal managers, elected officials, and citizens to identify innovative funding and administrative strategies. Information obtained from the interviews has assisted in the development of effective programs that have improved the water quality of streams, rivers, ponds, and lakes throughout the Great Lakes region (Glassner 1991).

2. Stakeholder Input Led to Changes in Kennedy Library Project

In 1961, the White House announced that President Kennedy was interested in building his presidential library in Cambridge, Massachusetts. After the president was assassinated, the library project expanded from a home for Kennedy's presidential papers to a facility composed of a research library, a public museum, and the Harvard University School of Government and Institute of Politics. The expansion of the library project raised concerns among the citizens of Cambridge over how their community would be affected by the project. The Kennedy Library Corporation, the organization overseeing the library project, maintained that the affects of the library and museum on the community would be minimal. In 1973, local citizens voiced their opposition to the corporation's claim at an Environmental Impact Statement (EIS) public forum on the project. The EIS process proved to be an important tool by which local citizens could express their concerns about a major federal project. Because of continued public opposition to the project, the Kennedy Library Corporation decided to move the museum portion to another location rather than risk long and costly construction delays due to public opposition. In the long run, the Kennedy Library Corporation saved both time and money because it became aware of the communities' opposition to the library before investing large sums of time and money in the construction process (Francis 1975).

Instances in Which the Lack of Stakeholder Analysis Obstructed Policy Implementation

1. Stakeholder Groups Mobilized to Resist America's Nuclear Industry

The nuclear industry met increasing public opposition in the 1980s, which delayed the construction of nuclear power plants, reduced the profitability of nuclear energy, and fostered the collapse of the industry in the United States. The structure of the policy-making process played a key role in the collapse of the nuclear industry because nuclear policy decision makers used the decide, announce, defend (DAD) approach and were therefore shielded from the interests of lower level governments and interest groups. The implementation process, however, was decentralized and accessible to stakeholder groups that were closed out of the policy-making process. Since these stakeholder groups were unable to shape nuclear policy in the formation process, they mobilized to thwart the implementation of the nuclear policy. In a sense, the anti-nuclear movement was energized by the fact that the lower levels of government and the public were shut out of the policy formation process. The implementation of nuclear policy suffered as a result (Campbell 1988).

2. Dissatisfied Stakeholder Groups Threaten Russia's Economic Reform

Russia's transition to a private market economy has been a painful process. Those orchestrating the transition contend that Russia's economy is in trouble because reforms designed by the economists are not being implemented properly. They argue that "reactionary elements" (e.g., military industrial complex and former communist party officials) are fighting the reforms and pressuring the government to print more money, promoting dramatic increases in inflation. Those dissatisfied with the reforms being advocated by U.S. economists contend that American capitalism is being pushed upon a Russian culture and social system dramatically different from the United States. They argue that economic principles are not immune to national variations and that economic reformers need to let Russia implement a Russian form of capitalism. Unless the old line communist party officials and other stakeholder groups are included in the decisions regarding Russia's transition to a market economy, the Yeltsin government may find it impossible to implement the necessary reforms (McNeil/Lehrer Newshour, November 10, 1992).

3. Failure of 1982 Nuclear Waste Policy Act

In 1982, Congress enacted the Nuclear Waste Policy Act (NWPA) to provide a national solution to nuclear waste disposal problems. Five years later, NWPA proved demonstrably to be a policy failure. Efforts by the federal government to survey and evaluate possible sites for permanent, mined geological repositories for high level radioactive waste were publicly opposed at the evaluation sites. In 1987, the Reagan Administration halted the act's implementation and Congress amended the measure because of continued public opposition to the process and an increase in lawsuits against DOE. The lack of stakeholder analyses during policy formation processes may have contributed to the ultimate failure of the act. In short, DOE's neglect of stakeholder issues, in combination with its singular emphasis on technical issues, undercut public support for NWPA and eventually led to the act's demise (Clary and Kraft 1988).

Rationale for Systematic Stakeholder Analyses

The reasons for conducting systematic stakeholder analyses vary, but they hinge on the fact that a properly conducted analysis provides reliable information to assist decision makers in selecting socially acceptable policies or projects that can be implemented efficiently and effectively.

Although the stakeholder analysis concept is gaining greater acceptance in EE, many of the analyses conducted in EE in recent years have been done on an ad hoc basis. This increases the likelihood that the analysts will overlook stakeholder groups that should be included in the analysis. The omission of

relevant stakeholder groups decreases the reliability of the information and increases the likelihood that these groups will obstruct implementation of the proposed action. Additional reasons for conducting systematic stakeholder analyses are that they

1. Generate public policy information
2. Establish multi-way channels of communication
3. Predict community adaptation to EE policy
4. Define EE problems and clarifying issues
5. Generate R&D program information
6. Identify potential social changes that may be caused by energy-related policies and projects
7. Help EE fulfill its mission
8. Assist EE officials in understanding high priority analysis topics
9. Assist EE officials in understanding the nature and value of stakeholder perceptions and attitudes in EE's decision processes.

1. Generate Public Policy Information

Stakeholder analysis yields information that can help shape EE public policy initiatives. The analysis methodologies provide tools to identify relevant stakeholder groups, generate reliable information about their concerns, assess the impacts of proposed actions on stakeholder groups, and define ways to mitigate adverse impacts. In turn, decision makers can use this information to shape public policy in ways that accomplish desired goals effectively by maximizing stakeholder benefits and minimizing stakeholder costs.

2. Establish Multi-way Channels of Communication

Interaction with key stakeholder groups allows EE's programs to have maximum impact on decisions affecting the nation's use of energy efficiency and renewable energy technologies. DAD approaches rely upon a one-way channel of communication that place EE in the often precarious posture of having a major stake in the implementation of the policy while excluded stakeholder groups may have a stake in seeing that the policy or project fails. By EE officials working to establish multi-way channels of communication that include relevant stakeholder groups in decision-making processes, all interests concerned can communicate with each other and the government. In short, stakeholder groups can develop shared responsibility with DOE officials in seeing that policies and projects are implemented successfully.

3. Predict Community Adaptation to EE Policies and Projects

By identifying the impacts that proposed actions are likely to have, stakeholder analysis provides information that allows EE officials to predict how various interests are likely to adapt to its policies and projects. Such information assists EE officials in developing ways to mitigate the adverse effects of its policies and enhance the positive effects.

4. Define EE Problems and Clarify Issues

Stakeholder analysis allows EE to understand how interest groups define energy problems and to clarify the issues involved in energy policy and projects. This information can assist EE officials in developing broad-based strategies for realizing EE's goal of meeting growing energy needs at the least cost to society through the contributions of improved efficiency and renewable energy.

5. Generate R&D Program Information

Most R&D programs in DOE take little account of how stakeholder groups may react to the introduction of a new technology, either proposed or under development. Rather than developing the technology first and then "selling" it to the public, R&D programs need to link science and technology to societal goals. Stakeholder analysis can help EE officials do this.

6. Identify Potential Social Changes That May be Caused by Energy-Related Policies and Projects

DOE has invested millions of dollars in projects intended to improve the economic well-being and quality of life in the developing world. Some of the projects have successfully met their goals while generating few adverse effects. A few have caused more harm than good. The majority have met some of their goals while generating both beneficial and harmful effects that were not anticipated by development planners (Finsterbusch and Van Wicklin 1988). Most energy related projects cause social change. Social change in developing countries is a complicated process, and the links between a project and the changes it produces may not be obvious. Stakeholder analysis can shed light on the interests of various parties early on, thereby increasing the likelihood that the project will meet its goals without generating too many adverse affects (Dietz and Pfund 1988).

7. Help EE Fulfill Its Mission

Stakeholder analysis can help EE attain its mission of promoting energy efficiency and renewable energy. Contained within EE's mission statement is a recognition that EE can best accomplish its objectives by working with stakeholder groups affected by its policies.

8. Assist EE Officials in Understanding High Priority Analysis Topics

In April 1992, the Super Planning and Assessment Committee (SPAC) identified four high priority EE analysis topics for FY 1993:

- Stakeholder analysis—identification of key upcoming decisions and decision makers to define analysis needs and questions
- Technology program analyses—characterizations of EE technologies
- Market analysis—characterizing CE's markets and developing sound research methods to analyze energy markets
- Regulatory analyses—identification of rules, regulations and laws to assist in the development of quantitatively-guided strategic responses.

All four analysis topics require that EE identify parties relevant to the analysis area and obtain information pertinent to the analysis, characterization or identification process. Stakeholder analysis methodologies provide valuable tools that can assist EE officials in identifying useful sources of information and ensure that the information gathering process furnishes valid and reliable data.

9. Assist EE Officials in Understanding the Nature and Value of Stakeholder Perceptions and Attitudes in EE's Decision Process

"Truth" may lie in the juxtaposition of various perceptions. It is a mistake to explain stakeholder opposition to policy actions and facility siting actions as irrational. Interestingly, many experts choose to argue that the public is irrational instead of concluding that their assumptions are inaccurate. Natural scientists, in aiming at the ideal of objectivity, sometimes have difficulty applying their assumptions to human beings. They assume that there is some objective reality in which the "real" alternatives, the "real" consequences, and the "real" utilities exist. In actuality, human beings are subjects who exercise choice in respect to a limited, approximate model of the real situation. What is more, elements of the subject's definition of the situation are not given, but are themselves outcomes of psychological and sociological processes, including the subject's own activities and the activities of others in his or her environment (Simon 1947, 1955; March 1955; Cyert and March 1955, 1956; March and Simon 1958; Newell et al. 1958). Stakeholder analysis allows EE officials to better understand the perspectives of the stakeholder groups and develop policies and projects that are consistent with the realities of stakeholders, program managers, and technical experts.

Summary of Recent Stakeholder Analysis Projects in EE

Analysts have used stakeholder methodologies in several recent EE projects. The project overviews presented below discuss the methods used by analysts in a number of these projects.

1. Office of Utility Technologies Key Stakeholders Analysis Project: Phase I
2. PV for Utilities: Developing a National Photovoltaic Strategy for Utilities
3. Office of Technical and Financial Assistance Research and Development Project
4. National Collaborative on Home Energy Rating Systems and Energy-Efficient Mortgages
5. Federal Energy Management Program.

1. Office of Utility Technologies Key Stakeholders Analysis Project: Phase I

In 1992, the National Renewable Energy Laboratory (NREL) completed the first phase of the Key Stakeholder Analysis task for EE's Office of Utility Technologies (OUT). The Phase I report presents a preliminary list of parameters that influence the decision-making processes of key stakeholders in relation to renewable energy technologies. These parameters are intended to assist OUT in focusing research and analysis in areas deemed necessary by the stakeholders, thereby reducing barriers to the use of conservation and renewable technologies in the utility sector.

The analysts divided the stakeholder population into six industry categories and 10 regions.⁸ The six industry groups are: (1) utilities, (2) public utility commissions, (3) financial institutions (i.e., banks and nonbanks), (4) owners/operators/developers, (5) manufacturers, and (6) others (i.e., federal marketing agencies, municipal utilities, and trade associations). The sample identified 152 individuals who possess

⁸The 10 regions are: Region 1 - Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont; Region 2 - New Jersey and New York; Region 3 - District of Columbia, Delaware, Maryland, Pennsylvania, Virginia, and West Virginia; Region 4 - Alabama, Florida, Georgia, Kentucky, Mississippi, N. Carolina, S. Carolina, and Tennessee; Region 5 - Illinois, Indiana, Ohio, Michigan, Minnesota, and Wisconsin; Region 6 - Arkansas, Louisiana, New Mexico, Oklahoma, and Texas; Region 7 - Iowa, Kansas, Missouri, and Nebraska; Region 8 - Colorado, Montana, N. Dakota, S. Dakota, Utah, and Wyoming; Region 9 - Arizona, California, Hawaii, and Nevada; and Region 10 - Alaska, Idaho, Oregon, and Washington.

the authority to critically influence the implementation of conservation and/or renewable energy technology.

The analysts relied on simple random sampling and purposive sampling to identify stakeholders. They used the former to identify stakeholders in the utility, commission, and bank categories, and the latter to identify stakeholders in the remaining categories. The analysts chose to use purposive sampling in addition to random sampling because groups comprising the remaining categories were not well distributed within the 10 regions (see Chapter 4 for more details on sampling procedures).

Analysts collected information directly from the stakeholders identified in the study. To introduce the study to stakeholders, the analysts mailed questionnaires to each respondent. The questionnaires contained 13 to 20 questions covering topics ranging from the stakeholders' perception of their organizations' key decision-making criteria to perceived barriers to the use of renewable energy and energy efficient technologies. Analysts then contacted the stakeholders by phone for interviews. Ninety-four of the 152 stakeholders identified by the analysts agreed to be interviewed (a 62 percent response rate).

The data collected in Phase I allowed analysts to develop a list of parameters that are influencing the decision-making processes of the stakeholders in the sample. Two key preliminary parameters identified by the stakeholders are relative costs/economic factors and risk factors. The study's findings will contribute to the development of strategies to remove barriers to the integration of conservation and renewable energy technologies and to establish the basis for future research.

2. PV for Utilities: Developing a National Photovoltaic Strategy for Utilities

In December 1991, stakeholder groups from the utility, regulatory, photovoltaic, government, and consumer communities participated in a meeting in Tucson, Arizona, to develop a strategy for stimulating greater near term use of photovoltaics (PV) in the utility market.

Before the Tucson Photovoltaic Meeting (TPM) was held, a steering committee composed mainly of officials from utilities, PV manufacturers, state regulatory agencies, and federal government offices identified the stakeholder groups interested in the relationship between PVs and utilities. The steering committee used the "analysis of staff information" technique to identify the stakeholder group representatives invited to the December 1991 meeting (see Chapter 3 for more details on this technique). Approximately 120 representatives from the five stakeholder groups mentioned above attended the TPM.

The steering committee organized workshops at the TPM for stakeholder input on a guiding strategy and operational plan to accelerate PV technology through customer-driven, collaborative, state-based action. On the last day of TPM the stakeholders reviewed the interests and recommendations presented in the workshops, developed consensual positions and strategies, and recommended actions.

In December 1992, the steering committee organized a second photovoltaic meeting in Stuart, Florida. In addition to using the "analysis of staff information" techniques, the committee relied on first- and third-person identification methods to identify stakeholder groups to be represented at the second PV meeting (see Chapter 3 for more details on stakeholder identification techniques). More than 170 representatives from utilities, the regulatory community, state and federal governments, consumer advocacy organizations, and the photovoltaic industry met to continue the strategic planning for photovoltaic commercialization.

As at the TPM, the steering committee relied on workshops composed of break-out groups of meeting participants in order to understand the impacts on stakeholder groups. These workshops provided an environment that allowed the stakeholder representatives to disseminate information, discuss options, and recommend action. Their efforts resulted in the compilation of more than 60 action steps. This

represented clear progress from development of a PV-for-utilities strategy to actual identification of steps to achieve that goal.

3. Office of Technical and Financial Assistance Research and Development Project

NREL is managing two projects that attempt to identify the needs of renewable energy technology users. To increase the availability and quality of information about technical assistance sources on renewable energy and energy efficiency, DOE has directed NREL to support the Renewable Energy and Energy Efficiency Assistance Center (REACT) of the Office of Technical and Financial Assistance (OTFA). The Center for Utility Renewable Assistance (CURA) is an NREL Director's Discretionary Fund (DDF) project designed to increase NREL's understanding of the technical assistance needs of the utility sector. The purposes of REACT and CURA are to obtain input from individuals in the utility sector about their technical needs in renewable energy and energy efficiency matters.

The analysts relied on "staff identification techniques" to identify the stakeholders (see Chapter 3 for more details on this technique). They began the identification process by dividing the utility sector into four categories:

- Technology transfer agents
- Energy suppliers
- Regulators
- Energy consultants.

Analysts then identified the stakeholder groups in the four categories and developed an inclusion criterion based on geographical location (time zones) and relative size of the group (large or small). The analysts reviewed the group lists in each utility sector category and selected four groups from each time zone for inclusion in the analysis. Of the four groups identified from each time zone, two of the choices represented large groups and two of the choices represented small groups. The analysts interviewed 5 to 10 members of each group to obtain information for the analysis. In all, they interviewed more than 80 respondents.

Analysts solicited stakeholder input about the technical information needs of the respondents by using a number of data collection techniques. These techniques included informal focus groups, teleconferencing, in-depth interviews, and group discussions (see Chapter 4 for more details on data collection techniques). During the data collection sessions, the analysts asked each respondent six exploratory questions that focused on the following topics:

- Technical assistance provided by the respondent's group
- Clients receiving technical assistance from the respondent's group
- Technical assistance available to the respondent's group
- Places/persons the respondent's group turns to for technical assistance
- Tested approaches used by the respondent's group for providing technical assistance
- Respondent's perception about the role public and private sectors should play in providing technical assistance.

The analysis supplied data that allowed development of initial conclusions. A further review of the data is underway.

4. National Collaborative on Home Energy Rating Systems and Energy-Efficient Mortgages

Recognizing the potential for Home Energy Rating Systems (HERS) linked with energy-efficient mortgages (EEMs) to stimulate residential energy efficiency, DOE, in cooperation with the U.S. Department of Housing and Urban Development (HUD), initiated the National Collaborative on Home Energy Rating Systems and Mortgage Incentives for Energy Efficiency. The National Collaborative was created to prepare *A Blueprint for Action*, which was a plan for extending the benefits of HERS and EEMs throughout the United States.

The National Collaborative's members represented 25 organizations and interests which, working together, can make a voluntary system of HERS and EEMs a national reality. The members represented states, mortgage lenders, builders, remodelers, public and environmental interests, utilities, and existing HERS programs. The National Collaborative was supported by four technical advisory committees in the subject areas of EEMs, HERS, implementation, and awareness.

The idea of using mortgages to finance home energy improvements was not new, but the attempt to link the HERS and EEMs through a collaborative process was. Because federal officials had several years of experience with HERS and EEMs, they were knowledgeable about the types of interests involved. A prior effort by the National Institute of Building Sciences to bring some of the parties together had also resulted in identification of some stakeholder organizations.

This existing expert knowledge was brought to bear in identifying the types of stakeholders to be included in the National HERS/EEMs Collaborative, as it came to be called. For example, it was known that the federally chartered financial institutions—Fannie Mae and Freddie Mac—offered EEMs and would have a direct interest in the collaborative. In addition, the Federal Housing Administration under HUD insures federally backed mortgages, and the U.S. Department of Veterans Affairs is a direct mortgage lender, as is the Farmers Home Administration. Each of these agencies was identified as a stakeholder.

Federal officials had expertise and knew about the following stakeholder concerns:⁹

- Builders were concerned about energy efficiency in new home construction.
- Utilities and public power agencies were already using programs to determine whether new electrically heated homes were efficient.
- Home inspectors had an interest in the integrity of building shells.
- Real estate professionals were concerned about processes that might affect home sales.
- Mortgage lenders would have to implement changes in lending practices.
- Appraisers were an integral part of any mortgage-lending process.
- Remodelers might be involved as contractors in improving existing housing.
- Environmentalists would be concerned about the benefits of increased energy efficiency.

⁹Tables 1a and 1b show a systematic matrix approach to identifying the stakeholder groups that would be affected by a national approach to HERS/EEMs.

- Public interest groups would want to know about the effects of programs on property values.
- Those involved in HERS programs would be directly affected.
- Energy-efficiency advocates would want to lend support.
- Code officials might be concerned about the eventual impact of home inspections and ratings for efficiency on local building codes.¹⁰
- Product manufacturers might find markets if there was a program.
- Senior citizens were particularly concerned about the impact home energy ratings might have on property values.
- State energy officials were looking for effective programs that would improve residential efficiency.

Once the major stakeholder groups with respect to HERS/EEMs had been identified, the project management team developed a preliminary list of organizations that could potentially represent them. For example, the team suggested the Natural Resources Defense Council (NRDC) to represent environmental stakeholders because it discovered that major national environmental organizations have divisions of labor with specialties in relevant issues. NRDC specializes in energy issues and the team selected it to receive an invitation to join the collaborative.¹¹ Other organizations that were invited included the Consumer Federation of America (known to be familiar with residential energy efficiency issues) and the American Association of Retired Persons (known to have concerns about the property values of houses owned by seniors).

The DOE sent an invitation to a highly placed official within each organization to attend the collaborative's initial meeting in March 1991. At that meeting, the list of stakeholder groups was reviewed and modified by the stakeholder representatives. Those representing stakeholder organizations formed the Collaborative Consensus Committee (CCC), which was responsible for reaching consensus on the collaborative's policy recommendations. Members reviewed and approved the stakeholder groups included in the CCC, as well as the composition of technical membership in the collaborative's technical advisory committees.

5. Federal Energy Management Program

The Federal Energy Management Program (FEMP), administered by EE's Office of Building Technologies (OBT), relies on stakeholder analysis methodologies, usually expert based, to evaluate the interests of federal agencies in meeting conservation and energy efficiency standards contained in legislation and executive orders.

The Energy Policy and Conservation Act (EPCA) of 1975 (Public Law 94-163) required that the president develop and implement a plan for energy conservation with respect to buildings owned or leased by an agency of the United States. In 1978, section 656 of the Department of Energy Organization Act (DEOA)

¹⁰The Council of American Building Officials (CABO) has developed and promulgated a 1992 Model Energy Code (MEC) known as the 1992 CAB-MEC.

¹¹The Environmental Protection Agency was also invited as a federal representative to provide staff support to the collaborative, but declined.

authorized the formation of a policy-making committee to develop plans to enable the federal government to meet energy conservation goals contained in EPCA.

In 1988, the Federal Energy Management Improvement Act (FEMIA) created an Interagency Task Force to assist the 656 Committee in developing policy to meet the energy conservation goals outlined in EPCA. The task force is composed of the chief energy managers of agencies represented on the interagency committee organized under section 656 of DEOA. It serves as a technical adviser to the 656 Committee, providing in-depth analysis of energy issues affecting federal facilities and operations and assessing the progress of the various agencies in achieving energy savings.

The task force typically creates working groups to gather information on specific energy management topics. Depending on the topic under investigation, working groups may use several data collection techniques to evaluate stakeholder groups' interests, including analysis of secondary data and interviews with agency officials (see Chapter 4 for more details about the data collection techniques).

In short, FEMP initiated a process that allows the 656 Committee, in cooperation with the task force and working groups, to develop the policies necessary to meet federal energy conservation goals contained in EPCA. These policies moved the federal government closer to the energy consumption goals outlined in EPCA. In addition, federal energy management information accumulated through the FEMP process contributed to the formation of the federal energy management provisions contained in Executive Order 12759.

FEMP is an example of policy makers recognizing that federal government energy management goals could be developed and implemented more efficiently if the stakeholder groups (in this case, 14 federal agencies) were consulted in the policy-making process.

The projects discussed above illustrate a number of recent EE projects that have used stakeholder analysis methods to identify stakeholder groups and understand their concerns. These projects suggest that EE already has some familiarity with the stakeholder analysis concept.

Chapter 3

Stakeholder Analysis: Phase One

Introduction

The goal of stakeholder analysis is to understand how stakeholder groups are likely to be affected by a proposed action, how proposed actions can be modified to result in the greatest number of positive impacts, and how potential negative impacts can be mitigated by modifying the proposed action. Stakeholder analysis is anticipatory, looking to the future rather than describing and explaining a current situation or documenting one that has already occurred. The forward-looking nature of stakeholder analysis is valuable to decision makers. These characteristics make stakeholder analyses (and social impact assessment generally) different from most other forms of behavioral, social, and institutional analysis.

The phases of analysis and techniques discussed in this chapter and the next comprise the means to attain these goals. DOE officials and analysts should understand these basic features of stakeholder analysis. This chapter presents basic principles underlying stakeholder analysis and then focuses on Phase One of the stakeholder analysis process—the preliminary phase.

Stakeholder analysis rests upon three basic principles:

1. **The impacts of a proposed action on stakeholder groups should be assessed systematically.** The use of impact assessment techniques allows analysts to accumulate reliable data on how stakeholder groups are likely to be affected by a proposed action. This helps ensure that the decision makers receive accurate information.
2. **Stakeholder groups should be identified comprehensively.** If any stakeholder groups are omitted from the analysis, the findings will be incomplete and inaccurate. DOE officials would not be able to rely on the results. The stakeholder identification process should ensure that the analysts identify all stakeholder groups affected by the proposed action. This requires the use of systematic stakeholder identification techniques in the identification process.
3. **Stakeholder analysis information should be used to evaluate and modify the proposed action.** Stakeholder analysis information helps decision makers weigh the costs and benefits of implementing an action as originally proposed, and suggests ways to modify the action that can mitigate its adverse impacts.

The balance of this chapter and Chapter 4 present two phases of stakeholder analysis. The preliminary phase scopes a stakeholder analysis. The preliminary phase of analysis is a first step in identifying the potential effects of an action on stakeholder groups. In this phase, analysts obtain preliminary information about the impacts the proposed action is likely to have on stakeholder groups by reviewing primary and secondary materials and consulting with experts knowledgeable about the field. Analysts do not solicit input directly from the stakeholder groups. If resources do not permit further analysis, or if results are so overwhelmingly negative that it appears sensible to abandon the proposed action, decision makers may decide to halt the analysis in this first phase.

The canvassing stakeholders phase of analysis constitutes Phase Two of a stakeholder analysis. In this phase, analysts involve representatives of the stakeholder groups in the analysis process itself. These representatives furnish information directly about their perceptions of the proposed action, their attitudes

toward it, their beliefs about its impacts on their interests, and their ideas about mitigating any adverse impacts that they might perceive.

Experts may define impacts differently than stakeholder groups do. Nevertheless, stakeholder perceptions are critical to social acceptability because situations defined as real by stakeholders are real in their consequences.¹²

Experts and stakeholders each contribute uniquely to understanding the effects of proposed actions. Experts can contribute technical information, results of economic and social analyses, and information from analogous situations. This input can provide a balanced and objective assessment of impacts and their severity across an array of stakeholder groups.

Stakeholders provide information that either validates, augments, or differs from experts' assessments, and often contribute information experts may not know. Stakeholders also contribute invaluable information about actions needed to make a proposed action more acceptable. Thus, preliminary and canvassing stakeholders complement each other: a more complete picture of the proposed action's impacts is obtained by including both. Completing both Phase One and Phase Two analyses permits comparison of similarities and differences between the expert analysis and stakeholders' perceptions of the likely impacts of a proposed action. Such comparisons, when used by decision makers to evaluate mitigation options, provide valuable information in developing socially acceptable outcomes that can be implemented efficiently and effectively.

The approaches for Phase One and Phase Two are presented as steps in an analysis process. The steps comprising each phase are intended as a menu for conducting stakeholder analysis, not as a recipe. Analysts do not have to use all of the steps to produce useful information. They should allow their research design to be guided by factors specific to the analytical situation, such as resources available and the nature of the proposed action. The sequential nature of the two analytical phases permits analysts to initially adopt the expert-based approach and later add the stakeholder-based approach.

The steps comprising the expert-based stakeholder phase of analysis are as follows:

- Step 1. Review the relevant literature
- Step 2. Assess the likely impacts of the proposed action
- Step 3. Systematically identify the stakeholder groups
- Step 4. Expand the impact assessment
- Step 5. Present mitigation recommendations.

Step 1. Review the Relevant Literature

The first step in the preliminary phase is a review of secondary data and information on the proposed action and those it might affect. The review may range from secondary sources such as books and journal articles to primary sources such as newspaper articles and meeting minutes. The literature review familiarizes analysts with the proposed action itself, possible stakeholder groups, and relevant methods and data sources. Doing the homework of reviewing the literature also reduces the number of avoidable mistakes and omissions in the stakeholder analysis.

¹²This notion is a basic sociological principle. Its classic phrasing was by W.I. Thomas: "If people define situations as real they are real in their consequences."

The amount of research being done makes it impossible for analysts to be aware of all the studies conducted in a specific area. The literature review brings analysts up to date with the materials available in the area under investigation. If the analysts learn that a similar study has already been conducted, they should bring this fact to the attention of the DOE managers, who must then decide if the stakeholder analysis project should continue. Although it is uncommon for an existing study to meet all the needs of a stakeholder analysis, the analysts should make an effort to determine if such studies exist.

Step 2. Assess the Likely Impacts of the Proposed Action¹³

The second step answers the question: What will be the likely impacts of the proposed action? Analysts should identify the likely impacts as systematically as possible. If potential impacts are overlooked, the analysis will not be as accurate as is necessary.

Experts and the literature review provide information on likely impacts of a proposed action. Preliminary brainstorming can serve as a first attempt to identify likely impacts and their pathways. An interdisciplinary team of DOE managers, analysts, and experts can provide valuable input to identify the likely impacts and begin to define the relationships among them. This information is examined in later phases of the analysis to determine the impacts of the proposed action more systematically.

Experts and analysts should identify first-, second-, and third-order impacts. Figure 3 presents an example of the results of a brainstorming session on the possible impacts of the Btu tax on energy proposed early in 1993.

- 1. First-order impacts.** These are directly attributable to the proposed action. For example, a first-order impact of a Btu tax on energy is that revenues to the U.S. Treasury would increase.
- 2. Second-order impacts.** These result from the first-order impacts. For example, if a Btu tax resulted in an increase in coal prices, this would probably increase electricity prices.
- 3. Third-order impacts.** These are indirect impacts that flow from second-order (and other third-order) impacts. For example, if electricity prices increase, consumers might pay more for goods and services. Also, an increase in utility bills might induce more home owners to invest in household energy-efficiency measures. This, in turn, could lower electricity demand.

Figure 3 is an example of an impacts analysis product.¹⁴

In addition to illustrating the order of impacts and some preliminary information on the interrelationships among impacts, an impact identification diagram, such as the one shown in Figure 3, helps analysts and experts by making it easier to identify affected groups. Analysts can identify which stakeholder groups are likely to be affected by each impact identified. For example, Figure 3 indicates that some of the stakeholder groups affected by a Btu tax would include:

¹³Several resources on impact assessment are relevant to stakeholder analysis: Branch, Hooper, Thompson, and Creighton (1984); Daneke, Garcia, and Priscoli (1983); Finsterbusch, Llewellyn, and Wolf (1983); and Porter, Rossini, Carpenter, and Roper (1980).

¹⁴The example shown does not illustrate potential feedback loops among impacts.

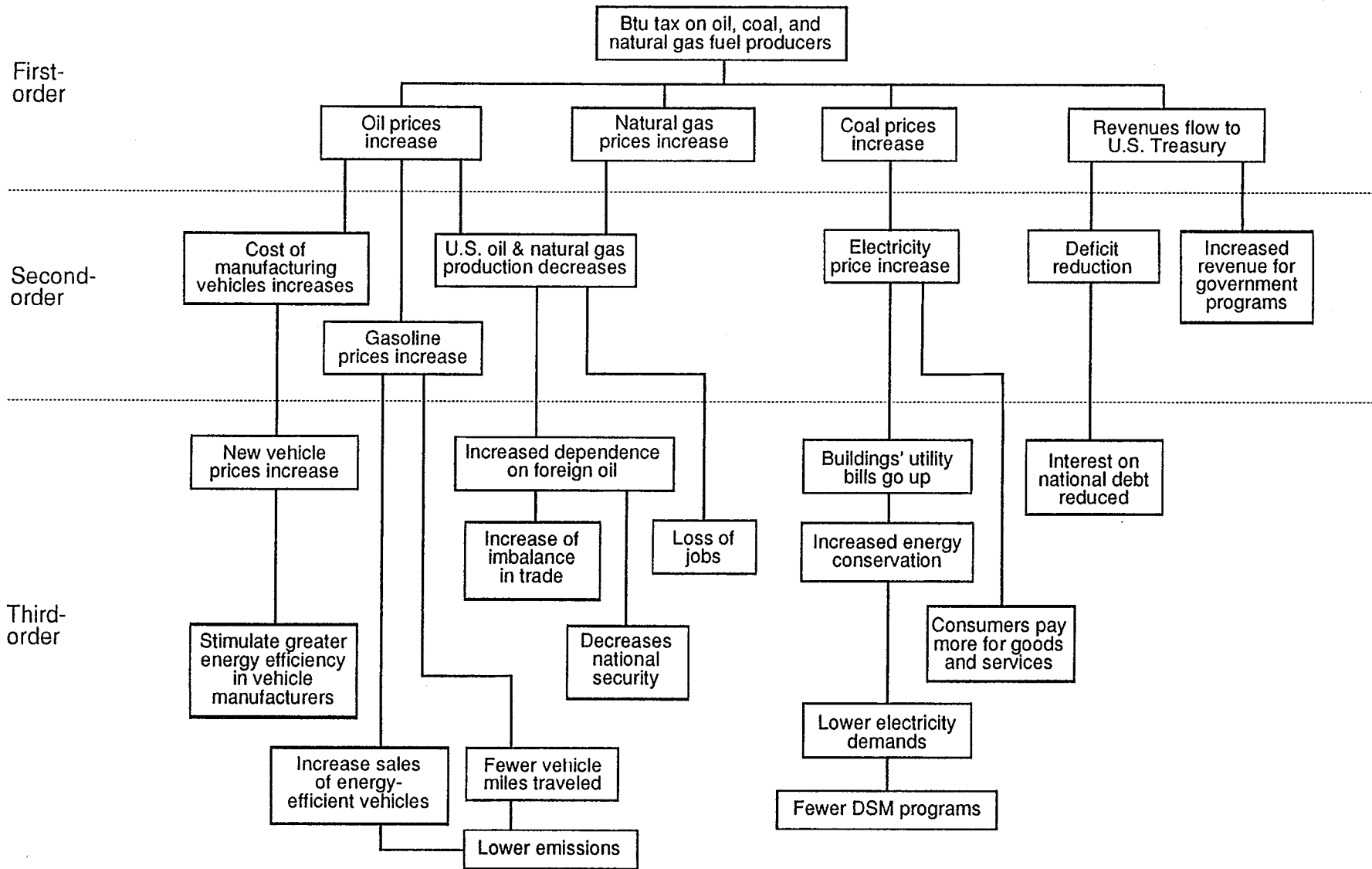


Figure 3. Interrelationships of impact (Example: Potential Btu tax)

- First-order impacts
 - Oil industry
 - Coal industry
 - Natural gas industry
 - U.S. Treasury
- Second-order impacts
 - Vehicle manufacturers
 - Trucking companies
 - Oil companies
 - Natural gas companies
 - Utility companies
- Third-order impacts
 - Consumers
 - DSM program managers
 - Energy-efficiency product manufacturers.

Other stakeholder groups beyond this illustrative list would also be affected by a Btu tax. However, use of this technique provides a preliminary listing of the impacts and affected parties.

Step 3. Systematically Identify the Stakeholder Groups

Stakeholder groups must be identified systematically to avoid inadvertently overlooking affected parties. In addition to identifying stakeholders by looking at likely impacts of a proposed action, analysis can identify stakeholders by considering the domains of influence affected by the proposed action. Whose business is it, if the action is taken? Who would like to be told that the action is being considered? This question can be approached systematically.

The Collectivity as the Unit of Analysis

To design their research properly analysts need to understand appropriate units of analysis. Stakeholder analysis always seeks to describe impacts, taken together, on a social collectivity, whether that is a local community, an interstate region, a nation, or the international community. It seeks to include the diversity represented within these social units so that decision makers can weigh the consequences of proposed options for the social whole. In all stakeholder analyses, the collectivity is the unit of analysis.

A stakeholder analysis does not use organizations as a unit of analysis because the analysis does not seek to describe or explain organizational behavior, except as organizations, such as trade or professional associations, speak for stakeholder groups. Nor does stakeholder analysis seek to describe or explain the behavior of individuals. Instead, stakeholder groups—social entities which are identified in relation to their domains of interest in the proposed action—are the appropriate units to include in the analysis.

Domains of Interest

Proposed actions usually have implications for multiple domains of interest. To identify the stakeholder groups that need to be included, domains of interest first need to be identified. The stakeholders

identifying with those domains can then be identified. Domains of interest can be identified by specifying (1) the functions that the proposed action affects and (2) the geopolitical domains of influence.

Functions are those social activities that the proposed action is attempting to change or that the proposed action might inadvertently change. Analysts should think through the functions that can be affected by the proposed action. For example, a Btu tax would affect the taxation function. Depending on how the Btu tax is collected, it could also affect energy distribution or sales functions. Although there is no systematic approach to identifying the functions that a specific proposed action could affect, at least two techniques can help ensure the most comprehensive definition of functions possible. The first technique is to use a preliminary analysis of first-, second-, and third-order impacts, such as that shown in Figure 3, to begin to identify affected functions. The second technique is to ask experts and stakeholders themselves to review the functions, or the first draft of the stakeholder matrix, to determine whether any function has been omitted.

Using a different example, changing mortgage finance policy for housing could affect the following functions:

- Housing design
- Production of housing and housing materials
- Distribution/sales of materials
- Building
- Regulation
- Energy service delivery
- Research, analysis, and demonstration relevant to energy improvements and mortgage and loan concepts and practices
- Sales of real estate
- Appraisal of real estate
- Finance/investment
- Education/training of home energy raters, real estate professionals, loan underwriters, loan officers, appraisers, and home inspectors
- Energy end use
- Environmental protection and improvement.

In addition, consumers and voters as a group can be affected by proposed actions. As such, they are parties-at-interest and together comprise one of the stakeholder groups that should be included in analysis when appropriate.

Geopolitical domains of interest also should be identified. Stakeholder groups are parties with interests in the following geopolitical, business, or market divisions:

- Communities (e.g., city government officials, local businesses, newspapers, municipal utility)
- County (e.g., county commissioners, utility companies)
- Intrastate region (e.g., power plants along Lake Erie in Ohio or areas represented by regional councils of government)
- State (e.g., state energy offices, governments, and business or economic organizations)
- Interstate region (e.g., the regions served by the Bonneville Power Administration or the Western Area Power Administration)

- National (e.g., federal government, national corporations, and national trade and professional associations)
- International (e.g., multinational corporations, national governments, and international organizations, such as the International Energy Agency).

Accurately defining the collectivity level under investigation is important. For example, if an analyst is trying to understand the impacts and parties affected by the placement of a nuclear waste repository in Nevada, the affected parties include not only Nevada stakeholders, but also the national nuclear industry, utility customers using electricity generated by nuclear energy elsewhere in the nation, thus producing the waste, and national-level industry associations. Therefore, just because a project is proposed for a particular geographical area does not limit domain considerations to that area.

Using a Matrix Technique¹⁵

Tables 1a and 1b present a stakeholder identification matrix that was constructed to show domains of interest using functional domains as the row heads and geopolitical domains as the column heads. Such a matrix is a valuable tool in the stakeholder identification process. It provides a way to visually organize stakeholder groups and to exhibit graphically any which might have been overlooked. Table 1a can be used to show the type of stakeholder group (e.g., secondary mortgage markets). Table 1b can show the specific organizations representing the type (e.g., Fannie Mae and Freddie Mac).

Identification Techniques

Two stakeholder identification techniques can assist in making more complete identification of parties affected by any proposed action. By using more than one technique, analysts can increase the likelihood that all the affected stakeholder groups are identified. Generally, techniques will be selected in a context of a specific analysis situation. For example, with limited resources only one or two techniques can be used. Analysts should thus strive to obtain the best fit between the stakeholder identification techniques and the analysis at hand.¹⁶

The two stakeholder identification techniques are self-identification and staff-identification.¹⁷

1. Self-identification techniques provide information that enable individuals, groups, and organizations to step forward and inform EE managers and analysts that they have an interest in the proposed action. Self-identification occurs through a number of techniques, such as:

- **Media presentations** - DOE officials and analysts may float trial balloons or disseminate news stories, brochures, and newsletters regarding a proposed action to a general audience. Staff then records the names, addresses, and phone numbers of parties who contact DOE to ask questions and express concern about the proposed action. Analysts review the call-in list to identify relevant stakeholder groups.

¹⁵This concept is based on Farhar (1985).

¹⁶These are techniques for generating a list of stakeholders, but there is no technique for ensuring the list is (reasonably) complete.

¹⁷The primary sources of information for the discussion on identification techniques were Willeke (1981), Creighton (1980), Daneke, Garcia, and Prisco (1983).

- **Public meetings** - DOE officials and analysts organize public meetings to disseminate information about the proposed action. Parties attending the meeting provide their name, address, and telephone number on a sign-in sheet which the analysts later review to help identify relevant stakeholder groups.
2. **Staff-identification** techniques rely primarily on DOE officials, analysts, and readily available written materials to assist in identifying stakeholder groups affected by proposed actions. Along with self-identification techniques, the following are some of the quickest and most efficient methods of identifying stakeholder groups:
- **Analysis of staff information** - DOE officials provide the names of individuals, groups, and organizations that may be affected by the proposed action. Analysts identify the stakeholder groups these entities represent and determine their fit into sampling designs.
 - **Analysis of associations** - Analysts consult available lists and reference materials of groups and organizations and examine the ones that may be affected by the proposed action. After each group and organization is reviewed, analysts select the relevant stakeholder groups.
 - **Historical analysis** - Analysts review public hearing transcripts, clippings, reports, records, and correspondence files of studies and projects in the field and closely related fields to generate information that may help identify affected stakeholder groups.
 - **Demographic analysis** - Analysts use sources containing demographic information such as age, sex, and race to assist in identifying affected stakeholder groups, such as senior citizens, that may not be self-identifying. Demographic information is particularly valuable if the analysts want a representative sample of stakeholder groups that is stratified by demographic categories.
 - **Geographic analysis** - Analysts review maps and other sources of geographic information to assist in identifying stakeholder groups that reside in the area affected by the proposed action.

Although analysts identify stakeholder groups in relation to a proposed action, stakeholder groups that are identified for different proposed actions may overlap within and across EE sectors (i.e., buildings, industry, transportation, and utility). DOE officials can use previously identified sets of stakeholders in a current analysis if they want to obtain stakeholder input for quick decisions. This is possible because sets of identified stakeholder groups generally contain core EE stakeholder groups which are likely to be affected by more than one EE policy, program, or facility siting action.

Step 4. Expand the Impact Assessment

Analysts draw upon information obtained in steps two and three to assess how stakeholder groups are likely to be affected by proposed actions. Generally they follow the steps below in the process of identifying how stakeholder groups are likely to be affected by the proposed action.

Table 1a. Stakeholder Identification Matrix

Example: Version 1. Types of Stakeholders Affected by a Program of Home Energy Rating Systems and Energy-Efficient Mortgages

Functional Domain	Geopolitical Domain					
	International	National ^a	Regional	State	Intrastate region	Community ^b
Design		<ul style="list-style-type: none"> • Architectural firms • Product designers 		<ul style="list-style-type: none"> • Standard organizations • Code officials 		Code officials
Manufacturing of products		<ul style="list-style-type: none"> • HVAC equipment • Manufactured homes • Lighting • Energy-efficiency equipment • Solar industry • Wind systems manufacturers • Building materials 				
Distribution/sales		<ul style="list-style-type: none"> • Home improvement centers • Builders • Distributors of products above 				
Regulation	International scientific bodies	<ul style="list-style-type: none"> • National scientific organizations • National governments • International political entities 	Interstate commissions	<ul style="list-style-type: none"> • State energy offices • State code organizations • Legislators • Governors • PUCs 	Regional Councils of Government	Code officials

^aSubdivisions and similar organizations may exist at the regional, state, intrastate region, and community levels. These do not appear in the matrix; however, analysts can supply these levels as appropriate for each specific analysis.

^bCounty could also be a relevant category.

Table 1a. Stakeholder Identification Matrix

Example: Version 1. Types of Stakeholders Affected by a Program of Home Energy Rating Systems and Energy-Efficient Mortgages (Cont'd)

Functional Domain	Geopolitical Domain					
	International	National ^a	Regional	State	Intrastate region	Community ^b
Inspection		<ul style="list-style-type: none"> • Home inspectors • Appraisers 				
Trade/professional communications		<ul style="list-style-type: none"> • Remodelers • Home inspectors • Builders • Real estate agents • Bankers • Appraisers • HERS industry • Electric utilities • Gas utilities 		Code officials		<ul style="list-style-type: none"> • Builders • Bankers • Real estate agents • Appraisers • HERS industry • Utilities
Media communications	Wire services	<ul style="list-style-type: none"> • National networks • Cable networks • Magazines • Wire services 	Cable networks		<ul style="list-style-type: none"> • Television stations • Newspapers • Radio stations 	Local newspapers and radio stations
Energy services				Home energy rating firms	<ul style="list-style-type: none"> • Electric utilities • Gas utilities 	<ul style="list-style-type: none"> • Electric utilities • Home energy raters • Gas utilities
Education/training		Government training of lenders		Universities		<ul style="list-style-type: none"> • Local trade/technical schools • Community colleges
Research		<ul style="list-style-type: none"> • National laboratories • Nonprofit organizations 		Universities		<ul style="list-style-type: none"> • Consulting firms • Nonprofit organizations
End use		<ul style="list-style-type: none"> • Homeowners • Senior homeowners 				<ul style="list-style-type: none"> • Homeowners • Senior homeowners

Table 1a. Stakeholder Identification Matrix

Example: Version 1. Types of Stakeholders Affected by a Program of Home Energy Rating Systems and Energy-Efficient Mortgages (Cont'd)

Functional Domain	Geopolitical Domain					
	International	National ^a	Regional	State	Intrastate region	Community ^b
Finance		<ul style="list-style-type: none"> • Primary lenders • Secondary mortgage markets 				
Environmental protection		Environmental organizations				<ul style="list-style-type: none"> • Grassroots environmental groups • Local chapters, national environmental organizations

Table 1b. Stakeholder Identification Matrix

Example: Version 2. Specific Stakeholders Affected by a Program of Home Energy Rating Systems and Energy-Efficient Mortgages

Functional Domain	Geopolitical Domain					
	International	National	Regional	State	Intrastate region	Community
Design		<ul style="list-style-type: none"> • AIA • Product designers in firms • CABO 		<ul style="list-style-type: none"> • ASHRAE • State code officials 		City government
Manufacturing of products		<ul style="list-style-type: none"> • GAMA • United Illuminating • KOOLPLY • The Trane Co. • CertainTeed Corp. 				
Distribution/sales				Elec. Util. Mktg. Mgrs. of Texas		
Regulation	<ul style="list-style-type: none"> • United Nations • International Energy Agency • IPCC 	<ul style="list-style-type: none"> • CABO • DVA • FmHA • NIST • DOC • DOE • HUD • FHA • EPA 	<ul style="list-style-type: none"> • DOE regional offices • HUD regional offices 	<ul style="list-style-type: none"> • NASEO • NCSBCS • NCSL • NGA • Colorado Public Utilities Commission • Oregon Dept. of Energy • Colorado Off. of Energy Conservation • Indiana Dept. of Commerce • New York State Energy Office • Arizona Dept. of Commerce 		<ul style="list-style-type: none"> • City government • County government • City of San Jose Env. Svcs. Dept.

AIA - American Institute of Architecture

ASHRAE - American Society of Heating, Refrigerating and Air-Conditioning Engineers

CABO - Council of American Building Officials

DOC - U.S. Department of Commerce

DOE - U.S. Department of Energy

DVA - U.S. Department of Veterans Affairs

EPA - Environmental Protection Agency

FHA - Federal Housing Authority

FmHA - Farmers Home Administration

GAMA - Gas Appliances Manufacturers Association

HUD - Housing and Urban Development

IPCC - Intergovernmental Panel on Climate Change

NASEO - National Association of State Energy Officials

NCSBCS - National Conference of States on Building Codes and Standards

NCSL - National Conference of State Legislatures

NGA - National Governors Association

NIST - National Institute of Standards and Technology

Table 1b. Stakeholder Identification Matrix

Example: Version 2. Specific Stakeholders Affected by a Program of Home Energy Rating Systems and Energy-Efficient Mortgages (Cont'd)

Functional Domain	Geopolitical Domain					
	International	National	Regional	State	Intrastate region	Community
Inspection		<ul style="list-style-type: none"> • ASHI • AI 				City government
Trade/professional communications		<ul style="list-style-type: none"> • NARI • ASHI • NAHB/EEBA • NAR • MBA • AI • Nat'l Glass Assn. • Home Automation Assn. • Air Conditioning Contractors of America 		<ul style="list-style-type: none"> • NCSBCS • CABO 		<ul style="list-style-type: none"> • Home Builders Ass'n • Crestar Bank • Century 21
Media communications						

AI - Appraisal Institute
 ASHI - American Society of Home Inspectors
 CABO - Council of American Building Officials
 EEBA - Energy-Efficient Builders Association
 MBA - Mortgage Bankers Association

NAHB - National Association of REALTORS
 NAR - National Association of REALTORS
 NARI - National Association of the Remodeling Industry
 NCSBCS - National Conference of States on Building Codes and Standards

Table 1b. Stakeholder Identification Matrix

Example: Version 2. Specific Stakeholders Affected by a Program of Home Energy Rating Systems and Energy-Efficient Mortgages (Cont'd)

Functional Domain	Geopolitical Domain					
	International	National	Regional	State	Intrastate region	Community
Energy services		<ul style="list-style-type: none"> • EEI • AGA • NRECA • Good Cents • ERHA 	<ul style="list-style-type: none"> • Northern Indiana Power Company • TVA • BPA • Lower Colorado River Authority • Commonwealth Gas 	<ul style="list-style-type: none"> • Energy Rated Homes of Vermont • CHEERS • RISE • Energy Wise Homes of Illinois • Florida Dept. of Community Affairs 	<ul style="list-style-type: none"> • Public Service Company of Colorado • Oklahoma Gas & Elec. Co. • Oklahoma Nat. Gas Co. • Florida Power Corp. • Central Power & Light • Virginia Power • Alabama Power Co. • Carolina Power & Light • Washington Gas Co. • PG&E, etc. • Minnegasco • Duke Power 	<ul style="list-style-type: none"> • Energy Star (Austin) • Energy Score (Fort Collins)

AGA - American Gas Association
 BPA - Bonneville Power Administration
 CHEERS - California Home Energy Rating System, Inc.
 EEI - Edison Electric Institute

ERHA - Energy Rated Homes of America
 NRECA - National Rural Electric Cooperative Association
 RISE - Rhode Islanders Saving Energy
 TVA - Tennessee Valley Authority

Table 1b. Stakeholder Identification Matrix

Example: Version 2. Specific Stakeholders Affected by a Program of Home Energy Rating Systems and Energy-Efficient Mortgages (Cont'd)

Functional Domain	Geopolitical Domain					
	International	National	Regional	State	Intrastate region	Community
Education/training		<ul style="list-style-type: none"> FHA training of lenders ASE 		Colorado State University		<ul style="list-style-type: none"> Boulder Valley Vo-Tech Center Red Rocks Community College
Research		<ul style="list-style-type: none"> NREL PNL LBL NIBS D&R International ASE 				Barakat & Chamberlin
End use		<ul style="list-style-type: none"> CFA AARP 				
Finance		<ul style="list-style-type: none"> Fannie Mae Freddie Mac 		<ul style="list-style-type: none"> Alaska Housing Finance Agency Vermont Housing Finance Agency 		
Environmental protection		NRDC				NRDC local chapter
Consulting firms						<ul style="list-style-type: none"> DMC Services, Inc. Architectural Energy Corp. RRH Associates Conservation Mgmt. Group

AARP - American Association of Retired Persons
 ASE - Alliance to Save Energy
 CFA - Consumer Federation of America
 Fannie Mae (FNMA) - Federal National Mortgage Association
 Freddie Mac (FHLMC) - Federal Home Loan Mortgage Company
 FHA - Federal Housing Authority

LBL - Lawrence Berkeley Laboratory
 NIBS - National Institute of Building Sciences
 NREL - National Renewable Energy Laboratory
 NRDC - Natural Resources Defense Council
 PNL - Pacific Northwest Laboratory

- Estimate the future baseline conditions of the stakeholder groups if the proposed action is not taken.
- Estimate the impact the proposed action is likely to have on the baseline conditions of the stakeholder groups if the proposed action is carried out.
- Document the differences between the projected baseline conditions of the stakeholder groups with the proposed action and without the proposed action.

Throughout these steps, analysts rely on a variety of impact identification techniques. Techniques that require expert input are as follows:

1. Delphi technique. This is a group of related procedures for eliciting and refining the opinions of experts. It generally uses reactive data collection techniques, such as interviews, questionnaires, and focus groups, to obtain input. Delphi techniques operate on the principle that several heads are better than one in making subjective conjectures about the future, and that experts will make conjectures based upon rational judgment and shared information rather than on unsubstantiated speculations. In its simplest form, a group of experts in a particular field is asked to respond individually to a questionnaire and make independent judgments about the effect the proposed action is likely to have on stakeholder groups. The Delphi technique is advantageous because it relies on testimony from individuals who are experts on the proposed action. Their estimates thus tend to be more specialized and often reflect a greater awareness of second- and third-order impacts. Analysts should be aware, however, that they may receive input from experts who hold biased attitudes toward the proposed actions. Analysts should therefore rely upon filter questions to discern any personal biases on behalf of the experts.

2. Brainstorming. Analysts conduct group meetings of experts under a set of simple rules designed to create an environment conducive to freewheeling speculation about how the proposed action is likely to affect stakeholder groups. Brainstorming relies on reactive data collection techniques like focus groups to generate information that is, in turn, examined by the analysts to identify the likely impacts of a proposed action. A trained group leader is usually needed to make a brainstorming session work effectively. The leader's job is to referee, remind the participants of the rules, and otherwise facilitate the presentation of ideas.

Five basic rules apply to a brainstorming session:

- It should focus on a single, well-defined problem.
- All ideas should be considered regardless of apparent relevance.
- Participants should not criticize or evaluate ideas.
- Participants should not explore the implications of ideas.
- Participants should develop a generic relevance tree or list to stimulate ideas.

Brainstorming is advantageous because it allows the analysts to obtain a broad range of views on how the proposed actions may affect society. Because the level of knowledge about the proposed action may vary among the participants, analysts should scrutinize the input after the brainstorming session is completed.

3. Trend extrapolation technique. This technique assesses future impact patterns in the affected area by extrapolating future trends from present patterns. It usually relies on unobtrusive data collection,¹⁸ such as secondary data collection and archival investigation, to accumulate the data necessary to extrapolate trends. Trend extrapolation is advantageous because it typically provides clear estimates of

¹⁸See Chapter 4.

incremental trends. It has limited applicability, however, when reliable past/present data are not available and in times of great uncertainty (e.g., transition in Russia from a command economy to a market economy). Analysts should be cautious of swings or cycles when analyzing past trends and refrain from extrapolating trends from such data. In addition, they should recognize the possibility of "ceiling effects" whereby the past data are applicable to trends only to a certain point, and then are no longer reliable for extrapolating trends.

4. Analogs. Analysts identify a geographic location that has already implemented an action similar or analogous to the proposed action. This technique typically uses unobtrusive data collection to obtain information about a place similar to the area affected by the proposed action. The analysts examine how a similar proposed action affected various parties-at-interest in a similar place and use this information to estimate how stakeholder groups similar to the parties-at-interest are likely to be affected by the proposed action. The analysts can check these "impact assumptions" by questioning experts about the standard pattern in similar cases and comparing the expert input with their assumptions.

The analog stakeholder technique has the advantage of providing a sense of reality for decision makers by identifying a real place in which stakeholder groups have been affected by a similar action. By focusing on actual stakeholder groups, analysts develop a greater sense of the total impact of the proposed action, rather than understanding the impacts piecemeal and in the abstract. However, the similar analog technique can be problematic if it is difficult to locate a place that has already implemented an action similar to the one under review. In addition, the realism of the parties-at-interest in the identified place may handicap the analysts because they may overlook key differences between the parties-at-interest and the stakeholder groups identified in their stakeholder analysis project.

By using a variety of impact assessment techniques, the analysts can develop tentative conclusions about the likely impacts of the proposed action on the stakeholder groups. This information is, in turn, used in the final step of the preliminary phase of the analysis.¹⁹

Step 5. Present Mitigation Recommendations

In the final step of the preliminary phase of analysis, the analysts present their best professional appraisal of measures that could mitigate the adverse impacts of the proposed action. The analysts' recommendations are based on the information accumulated in steps two through four. The recommendations are intended to be useful to decision makers in clarifying the magnitude of change required to mitigate the adverse affects of the proposed action.

Information about the impacts a proposal is likely to have on the stakeholder groups (provided in step four), in combination with information about the amount of change required to reduce the adverse impacts of the proposed action (provided in this step), is valuable to decision makers as they seek to develop a proposed action that can be implemented with minimum social disruption.

¹⁹Econometric techniques, such as conditional demand, could be used to augment the impact assessment. These are beyond the scope of this report.

Chapter 4

Stakeholder Analysis: Phase Two

Introduction

The canvassing-stakeholder phase involves stakeholder representatives in the analysis process, thus allowing the analysts to obtain original information on how the stakeholder groups believe they will be affected by the proposed action. The first three steps outlined for the preliminary phase of the analysis should be completed before initiating Phase Two, canvassing stakeholders. The first three steps follow:

- Step 1. Review the literature relevant to the proposed action
- Step 2. Identify the likely impacts of the proposed action
- Step 3. Identify stakeholder groups in relation to the proposed action.

The additional steps in the canvassing-stakeholders phase of the analysis are as follows:

- Step 4. Examine existing government linkages with stakeholder groups
- Step 5. Obtain stakeholder input about the proposed action
- Step 6. Present recommendations for mitigating the adverse effects of the proposed action.

The discussion below focuses exclusively on steps four and five of the canvassing-stakeholders phase. (Step six is similar to step five in the preliminary phase, which was discussed earlier in this report.)

Step 4. Examine Existing Government Linkages with Stakeholder Groups

The fourth step in the canvassing-stakeholders phase is an examination of the existing government linkages with the respondents. This step serves two purposes:

- Ensures that the analysts respect "sectoral protocol"
- Encourages EE officials to integrate issues that cross DOE Program Office boundaries, as well as to broaden perspectives to include other cognizant federal agencies.

First, while involving stakeholder groups in the analysis may provide valuable information for decision makers, representatives of the stakeholder groups should not be contacted until the analysts determine the relationships between DOE sectors and the stakeholder representatives. In other words, analysts should be sensitive to "sectoral protocol" when obtaining stakeholder groups' perceptions of the proposed action. Analysts should recognize that DOE officials may have spent years developing working relationships with the parties affected by the proposed action. To maximize coordination and the likelihood that affected stakeholder groups will be included in the analysis, analysts should clear all identified stakeholder group representatives with appropriate DOE sectors before contacting them for input.

Second, EE officials and analysts should be knowledgeable about DOE sector activities and responsibilities related to the proposed action before they attempt to involve stakeholder groups in the analysis and decision processes. Before contacting stakeholder groups, EE officials and analysts should determine which other DOE sectors are involved in matters related to the proposed action. By examining existing EE linkages with stakeholder groups and clarifying the positions different sectors have presented to these groups, EE can reduce the likelihood that contradictory messages are given to stakeholder groups that would reduce the external credibility of DOE. An organization's external image is a reflection of its internal composition.

A study evaluating the effectiveness of the Office of Environmental Restoration and Waste Management's (EM) public involvement activities recommended that DOE "develop methods for integrating issues that cross DOE Programmatic Office boundaries so that the public is not confused about which organization has responsibility for particular actions and who has access to information" (Young et al. 1992, p. 29).

Step 5. Obtain Stakeholder Input about the Proposed Action

In the fifth step of Phase Two, the analysts involve the respondents/informants¹⁶ of the identified stakeholder groups in the analysis process to assess how these groups believe they will be affected by the proposed action.

In the canvassing-stakeholders phase of analysis, analysts commonly use reactive data collection techniques, which are explained in Table 3, to obtain stakeholder input about the baseline conditions and the impacts of the proposed action. Before collecting data, however, analysts may need to select a sample of respondents/informants if they are unable to include all the identified stakeholder groups in the analysis. For example, rather than collect data about every utility company in the United States, which would be costly, analysts may decide to sample utility companies. They then collect data only from the utility companies in the sample. If a representative sample is chosen, the analysts can generalize the data to all utilities in the United States. If a nonrepresentative sample is chosen, however, the data can be generalized only to the utilities chosen for the sample.

Sampling

The chief objective of sampling is to allow inferences to be made about an unknown parameter that accurately describe the population using a quantifiable sample statistic. For example, EE may want to know the level of interest (parameter) that a stakeholder group (population) has in photovoltaics. Rather than survey the entire population of that type of stakeholder in the United States, EE surveys a subset of the stakeholder population (sample) to determine the sample's level of interest in photovoltaics (statistic). EE then infers the information about the sample's level of interest in photovoltaics to the population (that type of stakeholder in the United States).

Once a set of stakeholder groups has been identified, a decision must be made about how to sample each stakeholder group. Sampling procedures are used to identify the sample that will be included in the analysis. The concern is that analysts strive to prevent biased results by employing proper sampling techniques. Generally when sampling, analysts should try to randomize as much as possible to help increase confidence in results, even when they derive from nonprobability samples.

Sampling procedures. Sampling procedures are generally divided into two types: (1) probability sampling and (2) nonprobability sampling (see Table 2).

1. **Probability.** Each of the units has the same probability of being included in the sample, making a representative sampling design possible. Types of probability sampling include the following:
 - **Simple random samples** - Assign each sampling unit a unique number and select sampling units from a table of random digits.
 - **Systematic samples** - Determine the sampling interval (population size/sample size); select the first sample unit randomly and the remaining units according to the interval.

¹⁶See page 43 for the distinction between respondents and informants.

- **Systematic samples** - Determine the sampling interval (population size/sample size); select the first sample unit randomly and the remaining units according to the interval.
 - **Stratified samples:**
 - **Proportionate** - Determine strata and select from each stratum a random sample proportionate to its size in the population.
 - **Disproportionate** - Determine strata and select from each stratum a random sample of the size, dictated by analytical considerations.
 - **Cluster samples** - Determine the area covered in the study. Designate particular geographic boundaries and divide the boundaries into numbered blocks. Select from each block a simple random or systematic sample of blocks. List and number each dwelling unit in each of the selected blocks. Select a simple random sample or a systematic sample of dwelling units and select respondents within each dwelling unit to include in the study.
2. **Nonprobability** - The probability of including each unit in the sample is unknown, making a representative sample design impossible.
- **Convenience samples** - Researcher selects whatever sampling units are conveniently available (e.g., EE program managers who happen to be in their offices on the afternoon the analyst sets aside for interviewing).
 - **Purposive samples** - Researcher selects a sample especially designed to focus on a particular topic for a particular purpose (e.g., refrigerator salespeople are asked their views on energy guide labels).
 - **Quota samples** - Researcher selects whatever units he or she wants, so long as the sample is an accurate replica of the population (e.g., if it is known that investor-owned utilities (IOUs) comprise 8% of the electric utility industry, 8% of the sample should be IOUs).

Table 2. Probability and Nonprobability Sampling

Probability Sampling	Nonprobability Sampling
Simple random samples	Convenience samples
Systematic samples	Purposive samples
Stratified samples	Quota samples
Cluster samples	

To draw inferences about unknown parameters from a known sample statistic, the researcher must be certain the sample represents the population from which it is drawn. A sample is representative of a population when each unit in the population has the same probability of inclusion. Therefore, only probability sampling makes representative sampling designs possible. In nonprobability sampling, there is no way of specifying the probability that each unit has of being included. Nor is there assurance that each unit has some chance of being included. Nonprobability samples are typically used by social scientists when the need for convenience and economy outweigh the decreased accuracy involved in not

using probability sampling. Analysts also should consider that data collected from nonprobability samples are not generalizable.

Sampling Stakeholder Groups

Sampling stakeholder groups in a scientifically defensible fashion poses special problems because it is difficult and expensive to obtain a sampling frame for each of the groups-at-interest from which to draw probability samples. For example, it would be difficult to obtain a list of all U.S. homebuilders, those belonging and not belonging to a builders' association.¹⁷ Yet, ideally from a scientific perspective, a probability sample of each stakeholder group, at the appropriate level of geographical domain, would provide data from which analysts could generalize. Ordinarily, the funding available for analysis is insufficient to permit such sophisticated sampling techniques.

How, then, should analysts proceed? Can something useful for decision making still be done, even with limited resources and nonprobability sampling? Even under these circumstances, analysts can provide useful and credible information if they follow systematic procedures carefully. Usually, under these circumstances, analysts employ purposive samples in which informants are selected to represent particular viewpoints on specific topics. Far from introducing bias to a study, this technique permits analysts to collect data representing the *range*, *divergence*, and *salience* of viewpoints on a proposed action, even if the analysts cannot provide a quantitative estimate of the proportions of various stakeholder populations embracing particular positions on that action.

An approach found useful in several field studies involves identifying organizations that represent stakeholder groups, such as the trade and professional associations listed in Table 1b in Chapter 3. Analysts can realistically anticipate multiple viewpoints and perspectives to be represented within those organizations. To obtain information on the *range and divergence or similarity* of viewpoints, analysts need to sample several informants within organizations representing stakeholders.

Some analysts simply mail a questionnaire to an organization and allow its members to select the individual to respond. This is not a recommended procedure, simply because the questionnaire could be shunted to a lower-level staff person not able to accurately speak for the stakeholder group in question. Ideally, any data collection technique—whether interview or questionnaire—should be used with specific instructions about the type of informant to be included within the sample.

As an example, an analyst might elect to ask a response from every n^{th} member of the association's board of directors, the executive director, the director of public or consumer affairs, the manager for external affairs, the director of intergovernmental relations, and similar association officials. The particular value of the input from these informants is that they are used to thinking about issues from a broad perspective representative of the membership and its interests.

In addition, because the staff of the association may view an issue differently than its members, an analyst could devise a method for purposive sampling within the membership. For example, an analyst might sample the presidents or chairs of each of the state or local chapters of the organization. Or an analyst could ask each of the staff informants queried to recommend the name of one or two members (not on the association's staff) to be included as an informant, thus producing a "snowball" sample.

¹⁷When using trade association directors, analysts should be cognizant of the fact that all stakeholders are not members of trade associations; therefore, analysts should take additional steps to identify "nonmember" stakeholders.

Efforts of this type to systematically extend the purposive sample to allow for collection of data across several divisions of an organization representing stakeholders tends to decrease bias and increase the representativeness of the findings, even when relatively small samples are contacted. Of course, findings from purposive samples cannot be generalized beyond the group of informants themselves. Yet, social scientists have found this type of information valuable and reliable in providing sound pilot information on issues for programmatic and policy analysis.

The *salience* of the opinions expressed by stakeholders can be assessed directly by asking informants how important they believe the impacts of the proposed action would be to their group, how significant an issue it is compared with other recent issues important to the group, and what activities the stakeholder group is likely to engage in to support or oppose the proposed action.

When an analyst desires to obtain official positions from stakeholder organizations, a search for written artifacts is especially helpful. These would include, for example, written resolutions on the issues that have been voted on by the membership of the organization; published letters to the editor by writers identifying themselves as spokespeople for the organization or group; published articles in the trade press; testimony at hearings or in court; and newspaper and other media stories reporting on the group's positions as quoted from officials.

In stakeholder analysis, it is more important to have a sense of the range and significance of perceptions and preferences, and relatively less important to have quantifiable measures of the distribution of stakeholder opinion.

Data Collection

After analysts have identified either a population or a sample of respondents/informants, they can begin the data collection process. Analysts will use the data to assess likely impacts of the proposed action on stakeholder groups.

To collect reliable data, accepted social science techniques must be rigorously employed. Questionnaire items should be carefully structured and pretested before use. Ideally, questionnaire items should be based on qualitative pilot focused interviewing to ensure that question content, response categories, and language are appropriate, comprehensive, and unbiased. Structured interviewing and observation can successfully be completed with modest amounts of training. Focused interviewing requires considerable training and expertise to yield the most replicable results. The use of high quality data collection techniques is essential to the accuracy and validity of the findings, and its importance cannot be overestimated.

"Respondent" is the term used to describe an individual answering questions about his or her personal opinions, beliefs, knowledge, values, attitudes, and behavior. These are topics on which the individual responding is the sole expert. "Informant," in contrast, is a term used to describe an individual answering questions about the beliefs, positions, and behavior of a stakeholder group, an organization, or some other group or aggregate, speaking from a position of membership in the group, organization, or aggregate. Single informants, no matter how elevated in their position, are not assumed to answer accurately for the entire group, organization, or aggregate. Therefore, multiple informants are needed to adequately measure the positions of these social entities.

As the basis for collecting data in the stakeholder-based prototype, analysts should use basic data collection techniques accepted in the social sciences. These techniques may be classified into three categories: (1) reactive techniques, (2) observational techniques, and (3) unobtrusive techniques.

- Reactive techniques rely on interaction with respondents and informants to gather information. They involve intervention in respondents' ongoing activities to stimulate them to focus their attention on the question at hand.
- Observational techniques can be structured or unstructured. In structured observations, behavior can be observed by setting up laboratory situations or by attending public meetings and hearings on the proposed action to observe the interactions of the participants. In unstructured, or participant, observation, analysts watch elements of ongoing behavior that are occurring naturally.
- Unobtrusive techniques involve no interaction with respondents or informants and behavior is measured by some indirect means. For example, one way of determining the favorite painting at a museum is to poll visitors as they leave the museum. This would be a reactive technique. Another technique would be to measure the physical wear in the floor in front of paintings. This is an example of an unobtrusive technique. Archival investigation is particularly helpful in stakeholder analysis. Official resolutions of trade and professional associations on issues can illuminate stakeholder perspectives, for example.

Table 3 presents these fundamental data collection techniques and elaborates on the types within each category.

Each of these data collection techniques, or combinations of them, are used in designing methods specific to particular stakeholder analyses. For example, a Delphi method may employ a focus group, a questionnaire, or an interview format.

As noted earlier, the canvassing-stakeholders phase of analysis relies primarily on the reactive techniques to obtain input from the identified stakeholder groups. When using these techniques, analysts want to make certain that the respondents (individuals providing data about themselves) and informants (individuals providing data about social entities of which they are members) put on their "stakeholder hats" and provide input from the stakeholders' perspective, rather than from other roles they may play (employee of a company, citizen of a community, and so on). For example, a utility company informant may also be an active environmentalist. If an analyst asked the informant to provide the utility's view of the Clean Air Act Amendments of 1990, the informant must present the view of utility stakeholders on the amendments and not an individual viewpoint.

In addition to using reactive data collection techniques, analysts can employ observational techniques to obtain input from stakeholder groups. By observing the behavior of and interactions among stakeholder groups, analysts obtain useful information to increase the understanding of how the groups believe they will be affected by proposed actions.

After analysts obtain input and assess the data from stakeholder groups, they develop recommendations for mitigating the adverse effects of the proposed action. Data on mitigation also can be collected from stakeholder representatives. This information is then presented to the decision makers (step six).

Once the first two phases of the decision process have been completed, the decision process moves to Phase Three, in which stakeholders themselves are involved in providing input in an open environment. Analysts continue to work during this third phase on classifying and synthesizing stakeholder inputs. Stakeholders and the public are active participants in the decision-making process in Phase Three.

Table 3. Social Science Data Collection Techniques

After a sample of stakeholders is identified, an analyst must select a technique to collect the data. This table presents the techniques an analyst can choose from.

Reactive Techniques

1. **Interview** - Analysts collect data by verbally asking respondents or informants questions. Three types are:
 - **Focused** - A personal interview focused on a particular topic. Questions are constructed during the interview and consist of probes to obtain comprehensive and specific answers. Focused interviews are best conducted face to face; however, they can also be conducted by telephone. Qualitative data result.
 - **Semi-structured** - A personal or group interview that follows a list of topics to be covered. The precise question wording is not prespecified. Questioning is face to face or by telephone. Both qualitative and quantitative data can result.
 - **Structured** - A personal or group interview that follows a set of specific questions in a specific order. This type of interview can use either open-ended questions, forced-choice questions, or both. Questioning is face to face or by telephone. Quantitative data result.
2. **Questionnaires** - Respondents or informants answer written questions in a structured sequence. Questionnaires which are self-administered usually use forced-choice responses and can also include open-ended items. Quantitative data result.
3. **Focus groups** - Groups of respondents are assembled to experience and discuss the proposed action. Qualitative data result.

Observational Techniques

1. **Structured or controlled observation** - Analysts collect data in prestructured categories of behavior by observing behavior in the field or in controlled environments, allowing clear and explicit decisions on what, how, whom, and when to observe. Quantitative data result.
2. **Participant observation** - Analysts observe behavior after entering a group as both a participant in its activities and as an observer of the group's processes. Both group and observer agree on the role. Qualitative data result.

Unobtrusive Techniques

1. **Secondary data collection** - Analysts use available information, such as census data or data bases, in secondary analysis.
2. **Archival investigation** - Analysts use written documents as data sources. Organizational resolutions, speeches, papers, public records, media sources, and books are examples of this type of data.
3. **Physical traces** - Analysts examine physical evidence left behind by a population (e.g., the extent that a library book is worn is an indicator of its popularity).

Chapter 5

Stakeholder Analysis: Phase Three

Introduction

Public participation is a process in which decision makers and analysts openly obtain input about a proposed action from interested and affected parties. The participation is not limited by scientific or sampling considerations. Stakeholders and members of the public can choose to participate. It serves the dual purpose of informing the parties¹⁸ about the proposed action and soliciting input on how they perceive the action and its impacts on them (Creighton 1980:1).

Public participation has a number of purposes in addition to informing stakeholder groups and soliciting input about their perceptions.

- It allows EE officials to comply with public participation requirements contained in federal legislation (e.g., CERCLA, NEPA, RCRA, etc.)
- It allows EE officials to obtain input on ways to modify and alter proposed actions
- It provides a mechanism for interested and affected parties to identify important environmental, social, economic, and cultural conditions and values that decision makers might want to consider when choosing a course of action
- It allows parties outside DOE to better understand the complex environment in which decision makers must develop a plan of action
- It provides a way of making the analysis process credible to parties with highly divergent viewpoints
- It facilitates the implementation process because the stakeholder groups have become part of the process and have an interest in seeing that the proposed action is executed efficiently and effectively.

An extensive literature covers effective public participation processes, which are an inherent part of decision making on proposed actions.¹⁹ Review of this literature is beyond the scope of this Resource Book. Because public participation provides information useful to stakeholder analysis, however, the Resource Book would be incomplete without some reference to it. The book touches on a few of the techniques available for fostering the participation of interested publics in decision processes.

Three elements of the public participation process discussed briefly are (1) soliciting participation, (2) forming meeting groups, and (3) demonstrating responsiveness.

¹⁸The main source of information for the discussion of public participation techniques is Zeiker (1981), which contains more detailed and comprehensive information about these and other techniques.

¹⁹See, for example, Young et al. (1992); DOE, Office of Energy Guidance (1991); Peelle and Reed (1991); Millard (1983); and Creighton (1980).

Soliciting Participation

Efforts should be made to solicit public participation in the decision-making process. By bringing public participation activities to stakeholders' and the public's attention, analysts and program managers can increase the likelihood that a diverse audience participates in the activities and a broad range of input is received. Solicitation can be accomplished through a number of communication vehicles. Some of the most commonly used are

- Written invitations to comment or testify
- Mass media advertising about public meetings or hearings
- Published notices in the *Federal Register* of reports and hearings
- Newsletter articles and announcements of opportunities for public input
- Announcements at meetings that interested audiences are likely to attend.

Although each communication vehicle can be effective in soliciting public participation analysts and program managers should use as many of these vehicles as possible to increase the likelihood that a broad and diverse audience of stakeholders and the public are notified about the public participation activities.

Forming Meeting Groups

Meeting groups are a valuable element of the public participation process because they provide a degree of structure. Several types of working groups may be used to foster public participation. Some of these working groups are described below.

- **Working meetings** are held for the purpose of accomplishing particular objectives. The individuals attending the meeting focus on an agenda of work to be accomplished. The objective of the meeting should be clearly defined beforehand and the meeting organizers should design the attendance, agenda, and the preparation for the meeting to maximize the chances of realizing the objective. The meeting size should remain small—usually less than 12 people—to increase the likelihood that the participants will resolve the points in the meeting agenda.
- **Open meetings** are similar to working meetings in all respects, except there is an audience present. These types of meetings are ideal when it is important that the decision-making process be open for public observation. The public nature of these meetings, however, usually means they are more formal than working meetings. Participants are more likely to guard their remarks and adhere strictly to the meeting agenda.
- **Forums** are designed to air certain issues, hear different points of view, and shed light on a subject. A forum is not intended to negotiate an issue or resolve differences among stakeholders. But it can play a very constructive role in bringing out the views and perceptions of various interests.
- **Nominal-group workshops** are generally comprised of at least 25 individuals representing a broad range of stakeholder groups. These individuals participate in workshops made up of four to seven people who work together to identify problems associated with the proposed action. The participants review all the problems and vote on those they think will present the most significant difficulties. The votes are tallied and the issues with the highest number of votes are presented to the participants in descending order. A moderator then asks participants to lobby for or against the top issues. After a round of lobbying is completed, the participants vote on the issues again and a new priority list is developed. This technique is a good way to identify a broad range of problems associated with the proposed action while providing constructive input toward their resolution.

- **Popularity advisory groups** are created to tell decision makers how popular or unpopular ideas are in the eyes of affected stakeholder groups. The members of the advisory group should reflect the feelings of the affected groups and be composed of representatives from a broad range of those groups. This technique is useful when decision makers do not have the time or money to solicit input from all affected stakeholders but want some stakeholder input on the proposed action.
- **Content advisory groups** are developed to provide substantive advice to decision makers. There are no restrictions placed on the issues discussed, and decision makers evaluate all the information provided by the group. Members of the advisory group should represent a variety of viewpoints, and no stakeholder group should be omitted from participation.
- **Blue ribbon advisory groups** are designed to provide impartial advice to decision makers on very sensitive or controversial matters. Such panels are ordinarily composed of individuals with reputations based on
 - An extensive and unimpeachable record of public service
 - The respect of a broad spectrum of the public interests
 - A demonstrated ability to use and supervise a staff of experts to do the necessary investigative homework
 - A grasp of the need for getting to the bottom of issues.
- **Consensus-building advisory groups** are developed to depolarize stakeholder groups that hold opposite positions on a proposed action or that have a poor record of interaction. These advisory groups are made up of individuals representing the polarized stakeholder groups. Consensus is reached by developing operating procedures that
 - Encourage the polarized stakeholder groups to appreciate other legitimate points of view
 - Minimize grandstanding among the polarized stakeholder groups
 - Ensure that representatives of the stakeholder groups come to know each other
 - Encourage consensus by focusing on areas of agreement, no matter how small, between the polarized stakeholder groups
 - Institute, if possible, procedures to establish a long-term working relationship between the polarized stakeholder groups.

Demonstrating Responsiveness

Throughout the public participation process, analysts and program managers should make an effort to educate the public about the proposed action and keep it informed about the decision-making process. The techniques to demonstrate responsiveness are similar to the "communication vehicles" presented previously. They differ, however, in that the vehicles to solicit participation focus on alerting the public about public participation activities, whereas the techniques to demonstrate responsiveness attempt to educate the public about the proposed action and keep it informed about the outcomes of the decision-making process.

- **Materials** are disseminated through the media, informing the public about the proposed action. Mass media coverage is a convenient way to reach a large number of affected parties, but government officials should take precautionary steps to ensure that the information they present is not distorted in the media's editing process. Government officials can do several things to reduce the likelihood of media distortion:
 - Establish a working relationship with at least one reporter
 - Encourage electronic media to present extensive coverage of the press conference on the proposed action instead of just sound bites
 - Refrain from presenting a one-sided picture of the proposed action and from holding back potentially embarrassing information
 - Present information in its proper context
 - Present issues concisely, using a few well-presented messages rather than one big, complex explanation
 - Work with a public relations professional
 - Distinguish fact from opinion
 - Avoid jargon.
- **Project newsletters** are published as the decision-making process advances and as the DOE sector becomes familiar with the affected stakeholder groups. Newsletters allow the sector to stay in regular contact with the stakeholder groups even when the groups are not directly involved in the decision process.
- **Responsiveness summary** is designed to demonstrate to stakeholder groups that the DOE sector is not just asking for input but is genuinely considering that input. The sector uses a visible method for documenting stakeholder input and displaying how it is being evaluated by decision makers. There is no single method for documenting or responding to stakeholder input. One way that has proven useful in some environmental impact statements, however, is to reduce the original letter submitted by the stakeholder group and attach that letter to a page containing the agency's response. All of these pages are then incorporated into an appendix to the final report.



Comparison of Different Techniques

A brief summary of the pros and cons and objectives of the public participation techniques discussed is presented in Figure 4. Although there are many similarities between the techniques, they differ on minute points. Figure 4 highlights those variations and presents the strengths and weaknesses of each technique to assist analysts and program managers in selecting the public participation technique(s) best suited to their needs.

In closing, whatever the methods chosen for participation, analysts can take the input generated, classify it by stakeholder group, and subject it to content analysis.²⁰ In this manner, decision makers can receive the benefit of a systematic presentation of information from the public participation process, rather than that of an impressionistic or anecdotal nature.

²⁰For more details on content analysis, see Weber (1990); Krippendorf (1980); and Holsti (1969).

\$ costs	Time demands	Risk	Difficulty	Flexibility and adaptability		Establish the legitimacy of the process	See the proposed action through their eyes	Articulate and clarify the key issues	Nurture and protect DOE's credibility	Ensure DOE's communications are received and understood	Ensure stakeholder communications are received and understood	Search for consensus
Pros & cons					Techniques		Objectives					
-	-	-	-	-	Working meeting	●	●	●	●	○	○	●
-	-	-	-	-	Open meeting	●	●	●	●	●	●	⊗
-	-	-	-	-	Forum	●	●	●	●	●	●	●
-	-	-	+	+	Nominal-group workshops	○	●	●	●	○	●	●
-	-	-	-	-	Popularity advisory group	●	●	●	●	●	●	●
-	-	-	-	-	Content advisory group	●	●	●	●	●	●	●
-	-	-	-	-	Blue-ribbon advisory group	●	●	●	●	○	●	●
-	-	-	-	-	Consensus-building advisory group	●	●	●	●	●	●	●
+	-	-	-	+	Disseminate materials	●	○	●	●	●	●	●
-	-	-	-	+	Publish project newsletter	●	○	●	●	●	●	●
+	+	+	-	+	Responsiveness summary	●	●	●	●	●	●	●

Legend:
 + Advantage (i.e., "pro")
 - Disadvantage (i.e., "con")
 PIS Potentially impacted stakeholder
 Pros and cons for analysts  Pros and cons for PIS
 Neutral or no effect

Legend:
 ● Technique is a strong tool for achieving objective
 ● Technique is quite good
 ● Technique can help
 ● Technique can help a little
 ○ Technique does not contribute to achieving objective
 ⊗ Technique is counterproductive for this objective

Source: Constructed by the authors using information from Zeiker (1981).

Figure 4. Public participation techniques

Chapter 6

Methodological Issues

A scientific method is a system of explicit rules and procedures upon which research is based and against which claims of knowledge are evaluated. The system is neither closed nor infallible (Nachmias and Nachmias 1981, p. 15). Analysts should be familiar with certain methodological issues to reduce the likelihood that methods used in the analysis are applied or interpreted inappropriately. The methodological issues discussed here are considered especially applicable to stakeholder analysis. They include:

- General considerations of the analysis design
- Effects of government clearance requirements on the analysis design
- Effects of the Federal Advisory Committee Act (FACA) on advisory committees
- The importance of social indicators in stakeholder analyses
- The importance of relating measurement indicators to theoretical concepts being measured (i.e., construct validity)
- The importance of obtaining reliable findings
- Accurate generalization of the findings
- Dealing with "uncooperative" stakeholder groups.

General Consideration of the Analysis Design

For the purposes of this text, analysis design refers to the entire process of conducting a stakeholder analysis. Analysts should be aware of three considerations when developing research analysis design:

- **There is no single correct design.** Different analysts will construct different designs based on the specific proposed action requiring analysis.
- **An analysis design must be practical and feasible.** Since designs are always constrained by the availability of resources such as money, time, personnel, facilities, equipment, and available data, analysts should strive to tailor the best design under the circumstances. In developing design, they should recognize that resources are interrelated and changes in one will likely affect and be affected by others. For example, analysts may receive extra funding for a project and decide to interview 100 additional respondents. But if they failed to obtain a time extension when they received the added funding, they may find there is insufficient time to interview the additional respondents and code, input, and analyze the data.
- **The analysis design is a guide for the stakeholder analysis project.** Analysts should be aware that designs developed in the office must sometimes be modified in the context of field considerations.

Effect of Government Clearance Requirements on the Analysis Design²¹

Analysts should be cognizant of the provisions in the Paperwork Reduction Act when selecting a data collection technique in a stakeholder analysis. Congress passed the act in 1980 to reduce the burden of government paperwork. The act requires the Office of Management and Budget (OMB) to approve federal

²¹The Paperwork Reduction Act of 1980 (P.L. 96-511), 5 C.F.R. 1320 (Controlling Paperwork Burdens on the Public), the "OMB Review of CDC [Center for Disease Control] Research: Impact of the Paperwork Reduction Act," and officials within DOE were the primary sources of information on this issue.

research projects that collect information from individuals outside the federal government. OMB approval is not required if a research project is seeking information from federal employees.

OMB is responsible for determining "whether the collection of information by an agency is necessary for the proper performance of the functions of the agency, including whether the information will have practical utility" (5 C.F.R. 1320, 1986). The term "collection of information" is defined in the act as

the obtaining or soliciting of facts or opinions by an agency through the use of written report forms, application forms, schedules, questionnaires, reporting or record keeping requirements, or other similar methods calling for either[:] (A) answers to identical questions posed to, or identical reporting or record keeping requirements imposed on, ten or more persons, other than agencies, instrumentalities, or employees of the United States; or (B) answers to questions posed to agencies, instrumentalities, or employees of the United States which are to be used for general statistical purposes. (44 U.S.C. 3502 et seq. 1980)

OMB focuses its review on the paperwork burden and the practical utility of the information collection project rather than a project's scientific content. To obtain OMB approval, the act requires each agency involved to demonstrate that its proposed information collection request is:

1. "The least burdensome necessary for the proper performance of the agency's functions to comply with legal requirements and achieve program objectives"
2. "Not duplicative of information otherwise accessible to the agency"
3. Of "practical utility" (5 C.F.R. 1320.4).

As defined in the act, the term "practical utility" means "the ability of an agency to use information it collects, particularly the capability to process such information in a timely and useful fashion" (44 U.S.C. 3502 et seq. 1980).

Each agency is mandated to "be responsible for carrying out its information management activities in an efficient, effective, and economical manner, and in compliance with the information principles, standards, and guidelines prescribed by [OMB]" (44 U.S.C. 3506 et seq. 1980). The Secretary of Energy has made the Office of Administration and Human Resource Management (AD) responsible for carrying out these requirements in DOE. Within AD, the Record Management Division (AD-244) handles information collection matters. Analysts submit the approval request materials to AD-244, which reviews them to be sure they are filled out properly. If materials are missing or unclear, AD-244 requests that changes and additions be made. After the analysts have resubmitted the request materials they are reviewed again, and, if revised properly, sent to OMB for approval.

Analysts preparing to collect information from persons other than federal employees must provide the following information to AD for review before it is submitted to OMB:

1. A statement indicating the reason for collecting the information
2. Documentation verifying that the information is not available from other sources within the federal government
3. Text explaining how the analysts will reduce, to the extent practicable and appropriate, the burden on persons who will provide information to the agency

4. Documentation verifying that the information will be formulated in a manner that will enhance its usefulness to other agencies and to the public
5. Text indicating how the collection of information by the agency is necessary for the proper performance of the functions of the agency, including whether the information will have practical utility
6. Copies of pertinent regulations and other related materials as OMB may specify
7. A notice to be published in the *Federal Register* providing an overview of the information collection project.²²

The notice supplied by the analysts appears in the *Federal Register* for a 30-day public comment period. OMB also has the approval request materials during this 30-day period, but typically does not act on the request until the public comment period expires. If there are no public comments on the *Federal Register* notice, OMB reviews the materials. If there are public comments, OMB reviews the comments and makes AD-244 aware of the remarks. AD-244 is responsible for informing the analysts about public comment and OMB's view of those comments. In accordance with this information, the analysts make the appropriate modifications to the information collection request and the materials are resubmitted to OMB for review.

Under the provisions of the act, OMB must either deny or approve an agency's information collection request within 90 days.²³ If an agency's request is disapproved, the agency can submit the project for reconsideration if it provides "significant new or additional information relevant to the original decision" (U.S. Senate 1980).

Typically, the review process takes four to six months. OMB has a history of being stringent on the number of surveys approved for each department. If the analysts are unable to obtain OMB approval, they must select a data collection technique that allows them to collect the information necessary to conduct the stakeholder analysis while also complying with the Paperwork Reduction Act.

²²The *Federal Register* notice should contain the following information:

- a. The title for the collection of information
- b. A brief description of the agency's need for the information to be collected, including the use to which it will be put
- c. A description of likely respondents
- d. An estimate of the total annual reporting and bookkeeping burden that will result from each collection of information. This total burden for each collection of information shall also be desegregated and set forth in terms of the estimated average burden hours per response, the proposed frequency of response, and the estimated number of likely respondents (5 C.F.R. 1320.15).

²³The agency submitting the approval request to OMB should be notified within 60 days, but if the director determines that a request cannot be reviewed within that time, the director may, after notice to the agency involved, extend the review period for an additional 30 days (44 U.S.C. 3507 et seq. 1980).

Effect of Federal Advisory Committee Act (FACA) on Advisory Committees

Advisory committees or panels can provide valuable information to help analysts conduct stakeholder analyses. Their expertise can assist in the identification of stakeholder groups as well as the assessment of likely impacts. However, obtaining legal approval of stakeholder advisory committees established by DOE is difficult. DOE officials and analysts should, therefore, carefully consider a decision to set up an advisory group that would require FACA approval because FACA can be an impediment to stakeholder analysis and public participation processes.

The Federal Advisory Committee Act of 1972 established a system to govern the creation and operation of advisory committees in the executive branch of the federal government. The act originated from Congressional concern that advisory committees were proliferating without any clear idea of how many existed or any comprehensive assessment of their work. FACA set forth criteria for establishing and operating advisory committees in the executive branch.

Although the term "advisory committee" was, and still is in many instances, commonly used in government, FACA provided a specific meaning for the term. The act defines advisory committees as any committee, board, commission, council, panel, task force, or other similar group, or any subcommittee or subgroup²⁴ that is

1. Established by statute or reorganization plan
2. Established or utilized by the President
3. Established or utilized by one or more agencies.

According to FACA, advisory committees should be established in the interest of obtaining advice or recommendations for the President or one or more agencies or officers of the federal government (P.L. 92-463, Sec. 3). Advisory committees composed of nongovernment individuals who are providing advice to government officials should comply with the provisions contained in FACA.

To be recognized as an advisory committee chartered under FACA, the committee must be:

1. Specifically authorized by statute or by the President
2. Determined as a matter of record by the head of the agency involved, after consultation with the director and with timely notice published in the *Federal Register*, to be in the public interest in connection with the performance of duties imposed on that agency by law (P.L. 92-463, Sec. 9).

An advisory committee recognized under FACA cannot meet or take any action until it has filed an advisory committee charter. The charter must be filed with the OMB director if it is a Presidential advisory committee, or with the head of the agency to whom the advisory committee reports. Charters must also be filed with the standing committees of the Senate and the House of Representatives having legislative jurisdiction over the agency. Advisory committees chartered under FACA are expected to terminate after a two-year period unless the committee is renewed by the President or its duration is otherwise provided for by law. Upon the renewal of an advisory committee, the committee must resubmit a charter.

The Clinton Administration has recently placed restrictions on FACA. In an effort to streamline the federal government, the administration called for the termination of advisory committees and a stricter

²⁴FACA does not apply to any advisory committee established or used by the Central Intelligence Agency or the Federal Reserve.

approval criterion. President Clinton's Executive Order 12838, issued February 10, 1993, requires that each executive department and agency terminate at least one-third of the advisory committees subject to FACA that are sponsored by the department or agency no later than the end of fiscal year 1993 (*Congressional Quarterly*, February 13, 1993, p. 342). Although the executive order applies only to fiscal year 1993, the federal government's budgetary constraints imply that OMB will continue to be stringent about the approval of advisory committees. According to government officials, unless the advisory group pertains to health and safety issues, national security or national interests, EE will find new committee approval difficult to obtain from OMB.

Table 4 shows currently approved DOE advisory committees as of April 1993, numbering only 23. The plethora of other advisory groups (for example, cf. Scrimgeour 1993) have not gone through established clearance procedures, for whatever reason.

Importance of Social Indicators in Stakeholder Analysis

For cases in which utility companies want to assess the impact that a renewable energy facility, such as a wind farm, a geothermal plant, or a waste-to-energy facility, is likely to have on a local area and EE officials want to facilitate the utility's understanding of these impacts, social indicators might be included in an analysis.

Analysts use social indicators to measure and analyze social concepts such as industrialization, conservation, socioeconomic status, political participation, and social well-being. These social indicators operationalize the social concepts of interest to the analysts.²⁵

For siting EE technologies, analysts need to select social indicators for variables specific to the type of site they are examining. For example, quality of life and aesthetic factors might be more germane to a waste-to-energy facility than to a wind farm in an agricultural area.

Social scientists often rely on multiple indicators to measure abstract concepts. For example, if analysts wanted to determine the level of political participation in a county, they could use multiple social indicators, such as:

1. The proportion of eligible adults in the county who are registered
2. The turnout rate of voters in the county during the last election
3. The average financial contribution county residents made to a political party and/or politicians during the last election
4. The average number of hours county residents contributed toward the election of certain officials during the last election
5. The average number of political rallies attended by county residents during the last election.

By measuring these social indicators, analysts can quantify the level of political participation in a particular county.

Table 5 provides an example of several quality of life social indicators.

²⁵Appendix B lists social indicators.

Table 4. FACA Chartered DOE Advisory Groups (1993)

Chartered Advisory Committees	
1.	Advisory Committee on Renewable Energy and Energy Efficiency Joint Ventures
2.	American Statistical Association Committee on Energy Statistics
3.	Basic Energy Sciences Advisory Committee
4.	Environment, Safety, and Health Advisory Committee
5.	Environmental, Restoration and Waste Management Advisory Committee
6.	Fusion Energy Advisory Committee
7.	Health and Environmental Research Advisory Committee
8.	High Energy Physics Advisory Panel
9.	Hydrogen Technical Advisory Panel
10.	Inertial Confinement Fusion Advisory Committee/Defense Programs
11.	Metal Casting Industrial Advisory Board
12.	National Coal Council
13.	National Petroleum Council
14.	Secretary of Energy Advisory Board
15.	Secretary of Energy Advisory Board Task Force on Energy Research Priorities
16.	Secretary of Energy Advisory Board Task Force on Radioactive Waste Management
17.	Secretary of Energy Advisory Board Task Force on the Department of Energy's Role in Education
18.	Secretary of Energy Advisory Board Task Force on Space Nuclear Systems
19.	State Energy Advisory Board
20.	National Electric and Magnetic Fields Advisory Committee
21.	Superconducting Super Collider Environmental, Safety and Health Advisory Committee
22.	Technical Advisory Committee on Verification of Fissile Material and Nuclear Warhead Controls
23.	Technical Panel on Magnetic Fusion

Importance of Relating Measurement Indicators to the Concept Being Measured

Construct validity involves accurately relating measurement indicators to the theoretical concept that the analysts wish to measure. In other words, are the social indicators measuring the concept the analysts think they are measuring? Systematic error affects construct validity, whereas random error affects reliability. Systematic error represents a constant error that results from the analysts using improper social indicators to measure a social concept. In other words, the measurement is consistent, and thus reliable, but it is not measuring the concept that the analyst wants it to measure, and is thus invalid. For example, "if the shots from a well anchored rifle hit exactly the same location but not the proper target, the targeting of the rifle is consistent (and hence reliable) but it did not hit the location that it was supposed to hit (and hence it is not valid)" (Zeller and Carmines 1980, p. 77).

The key question underlying validity is not so much a technical as a theoretical question (Zeller and Carmines 1980, p. 101). Therefore, construct validity requires a demonstration that the concept in question exists, that it is distinct from other concepts, and that the social indicators comprising the measurement instrument measure that particular concept.

Table 5. Social Well-Being Indicators²⁶ at the Community Level of Analysis

Component	Selected Indicator
1. Demographic	a. Size b. Density c. Ethnicity
2. Education	a. School enrollment b. Dropout rates c. Number of personnel and facilities d. Satisfaction
3. Government services	a. Number of governments b. Government budgets c. Satisfaction
4. Housing and neighborhood	a. Persons in substandard housing b. Number of units c. Costs of housing
5. Law and justice	a. Number of violations b. Number of police officers c. Budgets d. Satisfaction
6. Social services	a. Number on welfare b. Social service personnel and facilities c. Satisfaction
7. Religion	a. Church membership by denomination b. Number in clergy c. Church stance on community issues
8. Culture	a. Ethnic composition b. Language c. Historical sites
9. Recreation	a. Types of facilities b. Costs c. Satisfaction

Source: Constructed by the authors from information in Leistriz and Murdock 1981, p. 176.

²⁶Examples of operationalized variables.

Several methods of construct validation exist.²⁷ Two examples follow:

- **Known groups technique.** Analysts select two groups of people with characteristics diametrically opposed to each other. They then administer the measurement instrument and predict the direction of differences. If the instrument is valid, the measurement should clearly differentiate the two groups in the predicted direction.
- **Logical process technique.** Analysts rely on a logical process to determine if the measurement instrument is actually measuring the concept under investigation in their study. The process is as follows: (1) a proposition is put forth that an instrument measures a certain concept; (2) the proposition is inserted into the present theory of the concept; (3) working through the theory, one predicts other concepts that should exhibit no relation to the instrument; and (4) analysts collect data that empirically confirm or reject the predicted relations.

Importance of Obtaining Reliable Findings

Reliability is an indication of the reproducibility of the study's findings. For example, "if a well-anchored rifle is fired but the shots are widely scattered about a target, the rifle is unreliable. But if the shots are closely concentrated around the target, the rifle is considered reliable" (Zeller and Carmines 1980, p. 48). Analysts need to be conscious of two aspects of reliability:

- The reliability of a measuring instrument can vary from observation to observation within a single study.
- The reliability of the same measuring instrument can vary from one study to another.

In the first instance, analysts should administer the measurement instrument consistently to all the respondents in order to increase the reliability of the measuring instrument between observations. For example, the findings of a study would be compromised if the analysts interviewed half of the respondents by telephone and half face to face but did not recognize this distinction when they coded the data.

In the second instance, analysts should be able to measure the same sample with the same instrument at a later point in time and obtain similar findings. For example, a study's findings would be unreliable if the level of political participation was measured in a particular county in June 1988 and found to be high, and the same measurement instrument was used a month later and the participation level was found to be low.

The standard for reliability in applied work (and much academic work as well) is to use techniques that are standard and accepted and to describe the procedures to enable the readers to evaluate reliability.

As a rule, analysts can often use measurement instruments developed for other studies to collect data in a stakeholder analysis. A number of sources are available that present measurement instruments that can be used by social scientists in research projects. For example, analysts could use as measurement instruments Riley Dunlap's New Environmental Paradigm (NEP) Scale or Dorothy Leonard-Barton's Voluntary Simplicity Scale for lifestyles. If analysts are unable to locate sources for related measurement instruments, they can review the methodology sections of studies related to their topic to determine which measurement instruments have been used in previous studies. The measurement instrument's indicators, as well as the validity and the reliability scores, are usually presented in methodology sections.

²⁷For more details on methods of construct validation, see Nachmias and Nachmias (1981); Zeller and Carmines (1980); Campbell and Fiske (1959); and Cronbach and Meehl (1955).

Accurately Generalizing the Findings

Generalizability is an indication of the extent to which the findings of a specific study can be applied to other similar cases. For example, if analysts interview 100 managers from the "big three" automobile manufacturing firms to obtain input about their decision-making processes, can this information be generalized to other decision makers in the automobile manufacturing sector?

To ensure that the findings of a specific study are generalizable, analysts should use probability sampling procedures that assure input is obtained from a representative sample of the population. A probability sample design allows analysts to empirically estimate the extent to which findings based on one sample are likely to differ from what they would have found by studying the entire population.

Analysts should be cautious when generalizing the findings from nonprobability samples, such as purposive samples, beyond those responding. Analysts should use nonprobability samples only when the need for convenience and economy outweigh the limitations of using such a sample, or when they are doing preliminary research.

Dealing with "Uncooperative" Stakeholder Groups

Respondents and informants have the right not to participate in a study. Stakeholder groups may refuse to participate for reasons that vary from a belief that the group can more effectively further its interests by directly lobbying ("strategically uncooperative"), to a lack of interest (i.e., "lazy uncooperative"), to organizational rules and regulations which prohibit involvement ("unwilling uncooperative"). Several practices are available to encourage participation by uncooperative stakeholder groups. For example, analysts can

- Repeatedly contact the group through letters or phone calls and encourage their participation
- Minimize the number of reasons available for not participating (e.g., include a self-addressed stamped envelope if a questionnaire has to be returned by mail)
- Interact with networks familiar to the uncooperative stakeholders, such as associations, clubs, organizations, etc., to form contacts that may encourage their cooperation and increase their level of trust
- Hold meetings they do not want to miss (and assure them they will benefit from the participation by interacting with other stakeholders).

For cases in which analysts are unable to obtain direct stakeholder input, they should rely on unobtrusive data collection techniques to understand the interests of uncooperative stakeholder groups. Although the analysts want to make a concerted effort to encourage participation, they should recognize that uncooperative stakeholders are providing data by their refusal to participate. The analysts can examine the characteristics of the nonparticipants to discern similarities and differences between the stakeholders to: (1) provide information that can be used in future projects to increase the probability that these stakeholders will participate and (2) provide information about certain categories of stakeholders that may be useful to the decision makers.

Chapter 7

Conclusion

Credible, even-handed analyses of the impacts of government decisions on stakeholder groups can contribute to more efficient and effective governmental action. Comprehensive stakeholder identification is a prerequisite to the involvement of appropriate stakeholders in decision processes as well as to sound analysis. Coupled with stakeholder involvement, stakeholder analysis provides decision makers with accurate, balanced information on the impacts of proposed activities in advance of final decision making. Program managers, working with stakeholders and analysts as partners, can shape programs and policies so that they elicit the maximum possible public acceptance and are implemented cost-effectively and with a minimum of turmoil. Adverse impacts can be anticipated and mitigated in advance, leading to outcomes that function as smoothly as intended.

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Acronyms

AD	Office of Administration and Human Resource Management
AD-244	Record Management Division
CCC	Collaborative Consensus Committee
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CURA	Center for Utility Renewable Assistance
DAD	Decide, announce, defend
DDF	NREL Director's Discretionary Fund
DEOA	Department of Energy Organization Act
DOE	U.S. Department of Energy
EE	Office of Energy Efficiency and Renewable Energy
EIS	Environmental Impact Statement
EM	Office of Environmental Restoration and Waste Management
EPA	U.S. Environmental Protection Agency
EPCA	Energy Policy and Conservation Act
FACA	Federal Advisory Committee Act
FEMIA	Federal Energy Management Improvement Act
ESI	British Gas and the Electricity Supply Industry
FEMP	Federal Energy Management Program
HERS	Home Energy Rating Systems
HUD	U.S. Department of Housing and Urban Development
ICP	Institutional Conservation Program
IRP	Integrated resource planning
NECA	National Energy Consensus Experiment
NEPA	National Environmental Policy Act
NRDC	National Resource Defense Council
NREL	National Renewable Energy Laboratory
NWPA	Nuclear Waste Policy Act
OBT	Office of Building Technologies
OFTA	Office of Technical Assistance
OMB	Office of Management and Budget
OTA	Office of Technology Assessment
OUT	Office of Utility Technologies
PV	Photovoltaics
RCRA	Resource Conservation and Recovery Act
REACT	Renewable Energy and Energy Efficiency Assistance Center
RWM	Radioactive Waste Management Program
SEAB	Secretary of Energy Advisory Board
SECP	State Energy Conservation Program
SPAC	Super Planning and Assessment Committee
STEAB	State Energy Advisory Board
SWG	State Working Groups
TAC	Technical Advisory Committees
TPM	Tuscon Photovoltaic Meeting
UPVG	Utility PhotoVoltaic Group
WAP	Weather Assistance Program

Glossary

- Analysts** - Individuals responsible for overseeing the stakeholder analysis process who are knowledgeable about analysis methodologies.
- Construct validity** - The degree to which a measure relates to other variables as expected within a system of theoretical relationships.
- Correlation coefficient** - A measurement of the association for interval- or ratio-level variables that assesses the fit of the data to the regression line.
- Ecological fallacy** - The mistake of erroneously drawing conclusions about individuals based solely on the observations of groups or organizations (see Generalizability).
- Expert-based phase of analysis** - The phase in which analysts assess the proposed action's impacts on stakeholder groups by reviewing primary and secondary materials and consulting with experts. In this phase, analysts do not directly contact stakeholder groups.
- Experts** - Individuals who are knowledgeable about elements of proposed actions. Experts may range from government officials to college professors to members of private and nonprofit organizations.
- Functional domains** - Usually pertain to types of occupational functions that individuals, groups, and organizations fulfill.
- Generalizability** - The ability to generalize sample findings to the population from a representative data sample (see Ecological fallacy).
- Geopolitical domains** - Usually encompass interests within geographical territories defined by political and bureaucratic boundaries.
- Informants** - Individuals who represent groups and organizations and provide input to analysts about the group's or organization's beliefs, positions, and behavior.
- Parameter** - A specified variable that is measured by analysts through a sample.
- Population** - The aggregate of all cases that conform to some designated set of specifications (e.g., all stakeholders).
- Program managers** - The government officials responsible for making programmatic decisions on proposed actions.
- Proposed action** - A policy, program, or facility siting initiative about which a decision needs to be made.
- Reliability** - The degree to which the measurement instrument is able to duplicate the study's findings at a later point in time.
- Respondents** - Individuals who provide input to analysts about their personal opinions, beliefs, knowledge, values, attitudes, and behavior.

Sample - A subset of the population (e.g., sample of stakeholders).

Sampling distribution - A statistical model that gives the probability of observing a result.

Sampling frame - A list of the sampling units that is used in the selection of the sample (e.g., telephone directory).

Sampling unit - A single member of a population (e.g., stakeholder).

Stakeholder analysis - A process that allows analysts to identify how parties are likely to be affected by government projects and programs.

Stakeholder-based phase of analysis - The phase in which researchers assess the proposed action's impacts on stakeholder groups by seeking primary information from stakeholder groups about how they believe they will be affected by the proposed action.

Stakeholder groups - The parties affected by, or perceiving themselves to be affected by, a proposed action.

Statistic - A specified value of the sample (e.g., stakeholder interests).

Unit of analysis - The units that analysts study to create summary descriptions of all such units and to explain differences among them. Units of analysis can be individuals, groups, organizations, or collectivities (which are human communities). Stakeholder groups comprise a social collectivity, whether that be a local community, an interstate region, a nation, or the international community.

Appendix A
Definitions of "Stakeholder"

Definitions of "Stakeholder"

This Appendix lists 16 definitions of the term "stakeholder" as taken from the literature.

1. Publics, well or poorly organized, who are affected by public policy. These publics are considered stakeholders even when they are not aware of their status as such (Redelfs and Stanke 1988, p. 65).
2. A population that would likely exert an influence on the proposed action or to be affected by it (Interorganizational Committee on Guidelines and Principles for SIA, March 31, 1992, p. 20).
3. Parties-at-interest in the impact situation (such as proponents, opponents, and regulators) (Wolf 1988, p. 21).
4. Affected parties whose interests are at stake because of a proposed action (Finsterbusch 1980, p. 71).
5. Parties-at-interest are persons or groups impacted by the action who may either gain or lose, depending on the nature of the impact (Porter et al. 1980, p. 55).
6. Stakeholders are groups-at-interest that perceive themselves to be affected, either positively or negatively, by energy policies, programs or technologies (Farhar 1990, p. 3; Farhar 1985, p. 329). Affected groups-at-interest involved in public policy debates (attentive publics) and affected publics not involved in public debates (inattentive publics) are both stakeholders (Farhar 1990, pp. 3, 8; Willeke 1981, p. 305).
7. The variety of publics and groups whose interests are or will be affected by the outcome of some proposed action or change in situation (Peelle and Reed 1991, p. 14).
8. Organizations with a vested interest, either directly or indirectly, in energy efficiency and renewables that could be instrumental in facilitating or impeding successful implementation of the program (U.S. Department of Energy, Office of Conservation and Renewable Energy, July 1992, p. A.7).
9. Parties in the private or public sectors who may be affected by the technology and are involved in the technology assessment process through interviews, workshops, hearings, surveys, conferences, or other techniques (Hansen 1981, p. 25).
10. People who might be directly and adversely affected by proposed projects (Millard 1983, p. 22).
11. Groups who are currently subject or will be subject in the future to impact from a project or policy (Little and Krannich 1988, p. 25).
12. Groups who are immediately affected by a project or policy, as well as groups who will be impacted in the future (Francis 1975, p. 385).
13. Parties/constituents who are interested and/or affected by DOE decisions (DOE 1991, pp. 2.2, 3.3).
14. Organizational units in society, such as education, religious, labor, cultural, and political, that may be directly or indirectly affected by a technology (Crane and Friedman 1985, p. 3.7).

15. Organized social groups who aim for different policy goals and possess a plurality of values (Peters 1986, p. 154).
16. Identifiable but not necessarily socially connected groups with similar behavioral patterns relative to a proposed action (Willeke 1981, p. 305).

Appendix B
Social Indicators

Social Indicators

Social indicators are an important part of stakeholder analysis because the data used in the analysis are collected by measuring social indicators.

This section highlights a number of social indicators that have been developed to assess the social impacts of a proposed action.

1. U.S. Forest Service Social Variables (Gale, Richard and Roy Feuchter. 1977. *Social Impact Assessment Handbook: U.S. Forest Service*. Washington, DC: U.S. Forest Service, June Draft.)
2. Quality of Social Life Indicators (Olsen, Marvin and Donna Merwin. 1977. "Toward a Methodology for Conducting Social Impact Assessments Using Quality of Social Life Indicators." In *Methodology of Social Impact Assessment*, eds. Kurt Finsterbusch and C.P. Wolf. Pennsylvania: Dowden, Hutchinson, & Ross, Inc.).

1. U.S. Forest Service Social Variables (Gale and Fuechter 1977)

The U.S. Forest Service Social Variables were developed to assist the Forest Service in assessing the social impacts of mining, lumbering, grazing, and recreation policies and projects. Several considerations in particular surround the Forest Service's involvement in social impact assessment: (1) the Forest Service has had a long-standing concern with resource-people impacts; (2) the National Environmental Policy Act of 1972 requires that the Forest Service pay careful attention to the social impacts of major agency actions; (3) the diverse uses of the forest (e.g., mining, lumbering, grazing, and recreation) require that the Forest Service balance competing interests; (4) the fact that planning efforts in forest environments include complicated planning procedures, detailed descriptions of the existing social environment, projected future impacts, and an interest in more qualitative changes typical of urban area planning; and (5) the fact that more National Forest lands are being brought under different intensities of management.

The Forest Service recognizes that no single list of variables is uniformly applicable to all the diverse social situations on which Forest Service actions have potential impacts. The list of social impact categories below provides a framework within which planners select the most appropriate variables (see Figure 5 [from Gale and Fuechter 1977] on the next two pages for a list of corresponding social impact variables).

- a. Social institutions
- b. Ways of life
- c. Special concerns
- d. Cohesion and conflict
- e. Land, tenure, and land use
- f. Population dynamics
- g. Community context
- h. Symbolic meaning
- i. Basic values

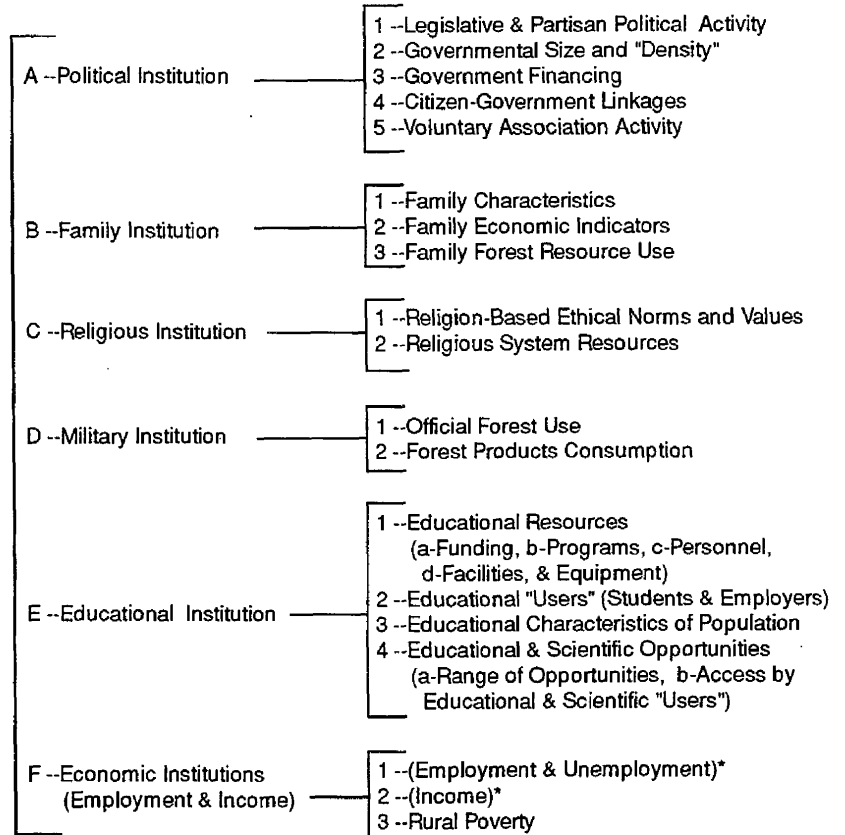
Figure 5: Master List of Social Impact Categories, Variables, and Components

Social Impact Categories

Social Impact Variables

Social Impact Components

I. Social Institutions

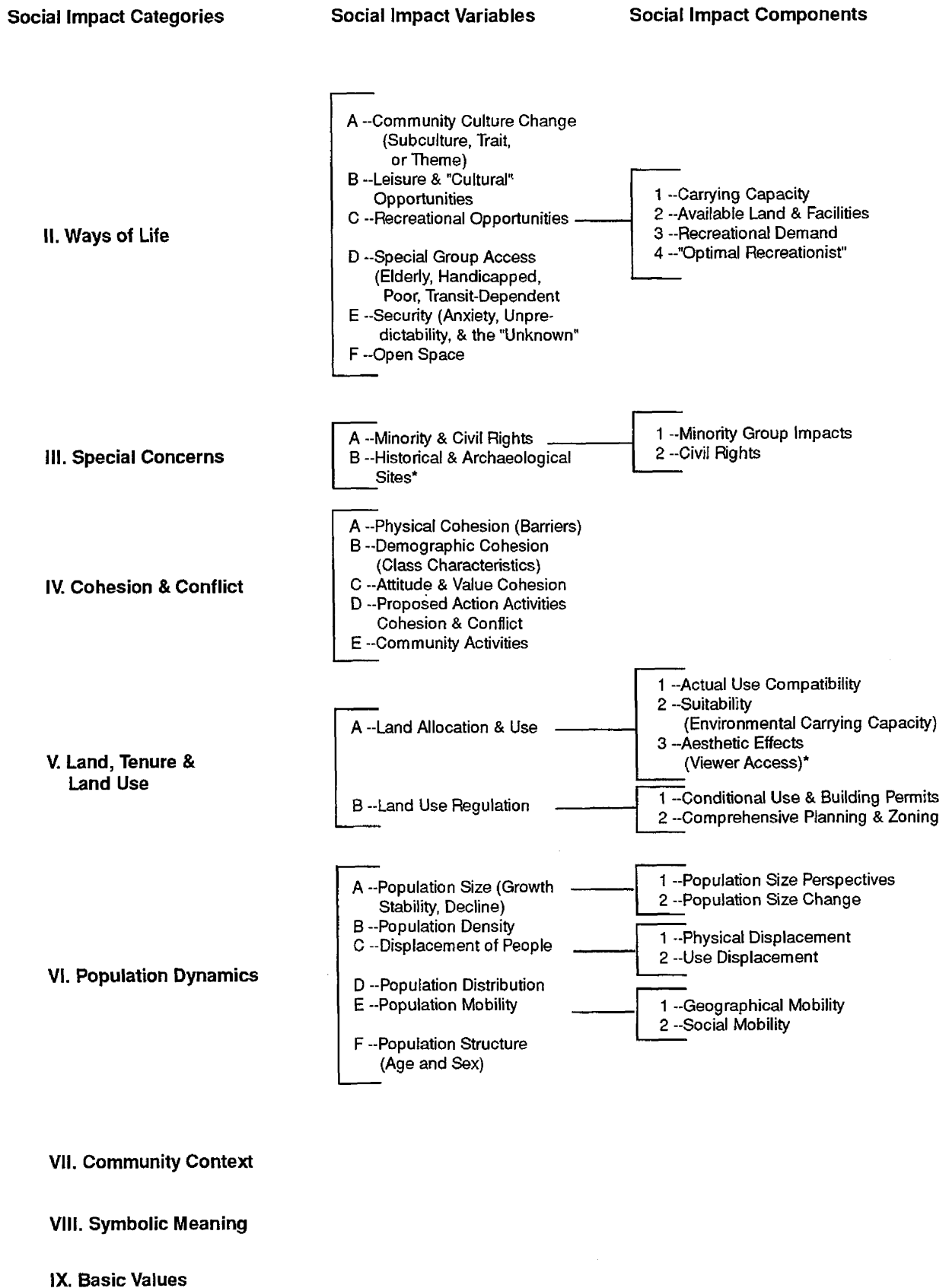


* Detailed approaches to these variables appear in other Forest Service materials, and will receive only minimal mention in the SIA Notebook

**Figure 5: Master List of Social Impact Categories, Variables, and Components
(Continued)**

Social Impact Categories	Social Impact Variables	Social Impact Components
I. Social Institutions (continued)	G --Economic Institutions (Infrastructures)	1 --Transportation (Forest Access) a -Legal Access Limits (Easements; Special Use Permits; Trespass) b -Travel Time c -Seasonality of Access d -Transportation Equipment Type (Foot, Horse, Boat, Plane, Auto, ORV, Rail) e -Transportation Facilities (Roads, Trails, Water, Airstrips, Railroads) f -Experience Type (Travel-Through vs. Destination) g -Travel Route "Difficulty"
		2 --Communications and Media a -Media Market (Population Size & Structure) b -Forest as "Supplier" of Information & Issues c -Impacts on Media Advertisers
		3 --Utilities & Special Districts a -Utility Uses of Forest Resources b -Utility Access & Development c -"Consumption" Impacts (Population & Economic L d -Supply Capability Thresholds (Population & Use Li e -Special Districts as Voluntary Associations & Social Support Systems
		4 --Housing a -Housing Supply Systems b -Housing Quality c -Housing-Related Economic Factors d -Forest-Related Housing Materials
		5 --Emergency Preparedness & Law Enforcement a -Natural Disaster Potential b -Emergency Infrastructure c -Normative Questions (What is "Legal"?) d -Illegal (or "Deviant") Behavior (Incidence & Locati e -Law Enforcement & Justice Systems (Personnel, Equipment) f -Enforcement "Results" (Arrests, Convictions, Litigation, Property Impact) g -Safety (Accidents)
		6 --Health a -Physical & Mental Health b -Health Systems Resources (Facilities & Equipment, Personnel) c -Money to Counties (Public Health Services) d -Health Services "Demand" (Population Change)
		7 --Social Services & Public Assistance a -Social Services "Suppliers" (Funding & Personnel) b -Social Services "Receivers" c -Money to Counties (Social Services) d -Forest as Formal/Informal Social Service Organization

**Figure 5: Social Impact Categories, Variables, and Components
(Continued)**



2. Quality of Social Life Indicators (Olsen and Merwin 1977)

At the time the Quality of Social Life Indicators were developed, cost-benefit variables were typically being employed to assess the social impacts of a broad array of policies and projects. Although appropriate for assessing the likely economic consequences of a proposed action, economic variables are inappropriate for assessing social impacts because: (1) most social phenomena cannot be specified in monetary terms; (2) what is beneficial to one group or set of people may be detrimental to another; (3) often those who receive the benefits are not the ones who pay the cost; and (4) there is usually a considerable time lag between the imposition of costs and the realization of long-term benefits (Dunning 1974:61).

The measurement of quality of social life variables was viewed as a way to overcome the shortcomings of relying on economic variables to determine the social impacts of a proposed action. Six quality of social life indicator categories are listed below. (See the outline [from Olsen and Mervin 1977] on the following pages for the corresponding quality of social life indicators). The categories listed below attempt to be relatively exhaustive and provide a pool of indicators from which the most useful ones for a specific action would be drawn.

- a. Demography
- b. Economy
- c. Social structure
- d. Public service
- e. Social well-being
- f. Collective responses (directly or indirectly related to the proposed action)

Quality of Social Life Factors and Indicators

(From Olsen and Merwin 1977)

©1977. Published with permission of Van Nostrand Reinhold; located in Kurt Finsterbusch and C.P. Wolf's *Methodology of Social Impact Assessment*.

A. Demography

1. Population size of the community
 - a. Number of inhabitants
+ = positive relationship up to 500,000; negative above that*
2. Amount of population growth in the community
 - a. Annual amount of growth through natural increase during the past 10 years
+ = cannot be specified at the present time
 - b. Annual amount of growth through net migration during the past 10 years
+ = cannot be specified at the present time
3. Rate of population growth in the community
 - a. Annual percentage rate of growth during the past 10 years
+ = the closer to 1%
4. Degree of urbanization of the county
 - a. Proportion of population in cities of 20,000 or more
+ = the closer to 60-75%
5. Population density of the county
 - a. Number of persons per square mile
+ = the closer to 100
6. Population concentration of the county
 - a. Proportion of the total population in the largest urban place
+ = the closer to 20-50%
7. Age dependency in the community
 - a. Proportion of the population under 18 and over 65
+ = the smaller the proportion

* + for each indicator specifies that condition we provisionally judge most favorable for the quality of social life.

8. Sex ratio of the community
 - a. Ratio of males to females
+ = closer to 1.0
 9. Ethnic composition of the community
 - a. Percent of the population nonwhite
+ = the closer to 13%
 10. Family size in the community
 - a. Number of persons per household
+ = the closer to 2.0
- B. Economy**
1. Job opportunities
 - a. Proportion of available unskilled jobs that are vacant
+ = higher proportion
 - b. Proportion of available semiskilled jobs that are vacant
+ = higher proportion
 - c. Proportion of available skilled jobs that are vacant
+ = higher proportion
 - d. Proportion of available clerical/sales jobs that are vacant
+ = higher proportion
 - e. Proportion of available managerial jobs that are vacant
+ = higher proportion
 - f. Proportion of available professional jobs that are vacant
+ = higher proportion
 2. Job distribution
 - a. Proportion of available jobs that are unskilled
+ = lower proportion
 - b. Proportion of available jobs that are semiskilled
+ = lower proportion
 - c. Proportion of available jobs that are skilled
+ = higher proportion
 - d. Proportion of available jobs that are clerical/sales
+ = lower proportion
 - e. Proportion of available jobs that are managerial
+ = higher proportion
 - f. Proportion of available jobs that are professional
+ = higher proportion
 3. Gross county product size
 - a. Gross county income per year
+ = greater amount

4. Gross county product growth
 - a. Annual percentage rate of growth in gross county income during past 10 years
+ = higher rate
 5. Employment level
 - a. Proportion of the labor force that is employed
+ = greater the proportion
 6. Participation in the labor force
 - a. Proportion of women in the labor force
+ = greater the proportion
 - b. Proportion of persons age 65 or older in the labor force
+ = greater the proportion
 7. Property tax base
 - a. Total value of assessed real property
+ = higher amount
 - b. Total value of assessed personal property
+ = higher amount
 8. Financial inflow from federal government
 - a. Amount of federal revenue sharing funds received per year
+ = greater amount
 - b. Amount of direct federal aid to impacted areas received per year
+ = greater amount
 - c. Amount of other federal monies received per year
+ = greater amount
 9. Price level
 - a. Consumer price index for the community
+ = lower the index
 10. Public revenues
 - a. Total revenues collected by all community governmental units in past year
+ = greater amount
- C. Social structure**
1. Educational attainment
 - a. Median educational attainment of persons age 25 or older
+ = higher attainment

2. Socioeconomic status
 - a. Mean occupational status of the work force
+ = high status
 - b. Median gross family income
+ = high income
3. Housing availability
 - a. Number of unoccupied dwelling units per 1000 population
+ = greater number
4. Housing space
 - a. Mean dwelling unit size (sq. ft.) per person
+ = greater space
 - b. Proportion of dwelling units that are single-family detached
+ = high proportion
5. Residential stability
 - a. Mean length of occupancy of all dwelling units
+ = greater length
 - b. Proportion of all dwelling units that are owner occupied
+ = higher proportion
6. Mass media coverage
 - a. Combined circulation per capita of all local newspapers
+ = high circulation
 - b. Number of television channels in the area
+ = greater number
7. Civic association extensiveness (e.g., business, professional, fraternal, service, educational, ethnic, and political associations)
 - a. Number of associations per 1000 population
+ = greater number
8. Civic association participation
 - a. Total memberships per capita in all such associations
+ = higher number
9. Political participation
 - a. Proportion of eligible persons who are registered
+ = higher proportion
 - b. Turnout rate in local elections during previous year
+ = higher rate

10. Local government size
 - a. Total number of community governmental employees per 1000 population
+ = higher number
 - b. Total program budget of all community governmental units per capita
+ = greater amount

- D. Public Services**
 1. Public education
 - a. Mean class size (students per classroom)
+ = low number
 - b. Mean student-teacher ratio
+ = low ratio
 - c. Mean educational level of teachers
+ = high level
 - d. Total educational expenditures per student per year
+ = greater amount

 2. Medical care
 - a. Hospital beds per 1000 population
+ = greater number
 - b. Total hospital expenditures per capita per year
+ = greater amount
 - c. Number of mental health clinics per 1000 population
+ = greater number
 - d. Number of physicians per 1000 population
+ = greater number
 - e. Number of dentists per 1000 population
+ = greater number
 - f. Number of psychiatrists and clinical psychologists per 1000 population
+ = greater number

 3. Public health
 - a. Total local governmental expenditures on public health per capita per year
+ = greater amount
 - b. Number of public health workers (excluding sanitation) per 1000 population
+ = greater number
 - c. Number of sanitation employees per 1000 population
+ = greater number

 4. Fire protection
 - a. Number of fire employees per 1000 population
+ = greater number
 - b. Total local government expenditures on fire protection per capita
+ = greater amount

- c. Fire protection classification of the community
+ = higher the classification
5. Police protection
- a. Number of police employees per 1000 population
+ = greater number
 - b. Total local government expenditures on police protection per capita
+ = higher proportion
 - c. Proportion of all cases cleared by arrest
+ = higher proportion
6. Public transportation
- a. Total expenditures for public transportation of all kinds per capita per year
+ = greater amount
 - b. Number of miles of scheduled bus routes per capita
+ = greater number
 - c. Number of buses per capita
+ = greater number
 - d. Total expenditures for street maintenance per capita per year
+ = greater amount
7. Legal services
- a. Number of attorneys per 1000 population
+ = greater number
 - b. Total budgets of legal service centers per capita
+ = greater amount
 - c. Median months to trial in criminal cases
+ = lower number
 - d. Median months to trial in civil cases
+ = lower number
8. Social Services
- a. Total number of professionals in all social service agencies per 1000 population
+ = greater number
 - b. Total budgets of all social service agencies per capita per year
+ = greater amount
 - c. Number of social service agencies per 1000 population
+ = larger number
9. Recreational facilities
- a. Number of movie theaters per 1000 population
+ = greater number
 - b. Acres of public parks per 1000 population
+ = greater number

- c. Total governmental expenditures for parks and recreational facilities per capita per year
+ = greater amount
- d. Total governmental expenditures for recreational programs and activities per capita per year
+ = greater amount

10. Cultural facilities

- a. Number of books in municipal public library per 1000 population
+ = greater number
- b. Total budgets of all major museums per capita per year
+ = greater amount
- c. Number of publicly sponsored cultural courses per 1000 population per year
+ = greater number

E. Social Well-Being

1. Lack of crime and delinquency

- a. Number of violent crimes per 1000 population per year
+ = low number
- b. Number of property crimes per 1000 population per year
+ = low number
- c. Number of serious delinquency violations per 1000 population per year
+ = low number

2. Lack of alcohol and drug abuse

- a. Number of people treated for alcoholism or drug abuse by hospitals per 1000 population per year
+ = low number
- b. Number of contacts made with alcohol and drug abuse programs per 1000 population per year
+ = low number

3. Lack of physical and mental illness

- a. Hospitalization rate for physical or mental illness per 1000 population per year
+ = low number
- b. Number of disability days per year per capita
+ = low number
- c. Suicide rate per 1000 population per year
+ = low number

4. Lack of racial or sexual discrimination

- a. Ratio of black to white unemployment rates
+ = 1.0 ratio
- b. Ratio of black to white family income
+ = 1.0 ratio

- c. Ratio of female to male unemployment rates
+ = 1.0 ratio
 - d. Ratio of female to male income
+ = 1.0 ratio
5. Lack of family disruption
- a. Number of divorces filed for per 1000 population per year
+ = low number
 - b. Proportion of all families with only one adult
+ = low number
6. Lack of educational difficulties
- a. Rate of school dropouts per 1000 students per year
+ = low rate
 - b. Mean score of all students on national achievement tests, compared to national averages
+ = ratio of 1.0 or higher
 - c. Functional illiteracy (less than 5 years of education) rate per 1000 population
+ = low rate
7. Lack of employment difficulties
- a. Gross labor turnover rate per year
+ = low rate
 - b. Proportion of unemployment compensation recipients exceeding maximum benefits
+ = low proportion
8. Lack of poverty
- a. Proportion of all families below the official poverty line
+ = low proportion
 - b. Proportion of all families receiving public welfare
+ = low proportion
9. Lack of substandard housing
- a. Proportion of housing units classified as dilapidated
+ = low proportion
 - b. Proportion of housing units without plumbing
+ = low proportion
10. Lack of public violence
- a. Number of riots or similar events per year
+ = low number
 - b. Number of deaths and serious injuries due to riots or similar events per 1000 population per year
+ = low number
 - c. Amount of property damage due to riots or similar events per capita per year
+ = low amount

F. Collective Responses (directly or indirectly related to the event being investigated)

1. Public issues

- a. Number of public issues that receive extensive mass media attention per year
+ = greater number
- b. Number of public interest lawsuits filed per 1000 population per year
+ = greater number
- c. Number of appeals to governmental decisions per 1000 population per year
+ = greater number

2. Organizational activities

- a. Number of organizations making public statements on issues or problems per 1000 population per year
+ = greater number
- b. Amount of financial contributions by organizations to programs or other activities per capita per year
+ = greater amount
- c. Number of programs or other activities initiated by organizations per 1000 population per year
+ = greater number

3. Political activities

- a. Number of petitions and initiatives filed per 1000 population per year
+ = greater number
- b. Number of political movements or ad hoc political groups created per 1000 population per year
+ = greater number
- c. Number of political protests and demonstrations per year
+ = greater number

4. Governmental programs

- a. Number of new governmental programs or activities initiated per 1000 population per year
+ = greater number
- b. Number of existing governmental programs or activities expanded per 1000 population per year
+ = greater number
- c. Amount of increased expenditures for new or expanded governmental programs or activities per capita per year
+ = greater amount

5. Community planning

- a. Existence of a planning department in the local government
+ = yes

- b. Number of employees in local planning department per 1000 population
+ = greater number
- c. Total budget of local planning department per capita per year
+ = greater amount

Appendix C
Resources

Resources

This section presents information to assist DOE program managers in locating professionals who can conduct stakeholder analyses. Two basic types of information are presented.

- Individual specialists
- Directories and rosters of research organizations and analysts.

Individual Specialists

A number of experts are available to assist DOE program managers in conducting stakeholder analyses. Provided below are definitions of the categories of specialization and a brief list of individuals experienced in these categories.

- Stakeholder analysis - knowledgeable about the concepts and methods used by social scientists to analyze the impacts of proposed actions on stakeholder groups
- Social impact assessment - familiar with the concepts and methods used by social scientists to estimate the impacts of proposed actions on society
- Public participation processes - understands the concepts and methods used by facilitators to involve the public in the decision-making process
- Economic impact assessment - informed about the economic concepts and methods used by economists to estimate the impacts of proposed actions on the economy.

A nonexhaustive list of individuals specializing in the categories above follows:

William Babiuch, Ph.D.
National Renewable Energy Laboratory
409 12 St. S.W., Suite 710
Washington, D.C. 20024
(202) 484-1090
Specialty: Stakeholder analysis

Rabel Burge, Ph.D.
University of Illinois
1101 W. Peabody Drive
Urbana, IL 61801-2122
(217) 333-2916
Specialty: Social impact assessment

Judith Bradbury, Ph.D.
Battelle Pacific Northwest Laboratory
901 D. St. S.W.
Suite 900
Washington, D.C. 20024
(202) 646-5235
Specialty: Public participation processes

Kristi Branch, Ph.D.
Battelle - Human Affairs Research Center
P.O. Box C-5395
Seattle, WA 98105-4528
(206) 528-3336
Specialty: Social impact assessment

James Creighton, Ph.D.
347 Massol Avenue #605
Los Gatos, CA 95030
(408) 354-2023
Specialty: Public participation processes

Desmond Connor, Ph.D.
5096 Catalina Terrace
Victoria, B.C.
Canada V8Y2A5
(604) 658-1323
Specialty: Public participation processes

Thomas Dietz, Ph.D.
Department of Sociology and Anthropology
George Mason University
Robinson II, Room B305
Fairfax, VA 22030-4444
(703) 993-1440
Specialty: Social impact assessment

Barbara Farhar, Ph.D.
National Renewable Energy Laboratory
409 12th St. S.W., Suite 710
Washington, D.C. 22024
Specialty: Stakeholder analysis
Social impact assessment

Kurt Finsterbusch, Ph.D.
5225 Wyoming Rd
Bethesda, MD 20816
(301) 229-5364
Specialty: Social impact assessment

William Freudenberg, Ph.D.
Department of Rural Sociology
University of Wisconsin
Madison, WI 53562
(608) 263-4893
Specialty: Social impact assessment

Richard Gale, Ph.D.
Department of Sociology
University of Oregon
Eugene, OR 97439
(503) 346-3984
Specialty: Social impact assessment

Dan Packey, Ph.D.
National Renewable Energy Laboratory
1617 Cole Boulevard
Golden, CO
(303) 231-7002
Specialty: Economic impact assessment

John Petterson, Ph.D.
Impact Assessment Incorporated
2160 Avenida de la Playa, Suite A
La Jolla, CA 92037
(619) 459-0142
Specialty: Social impact assessment

James Thompson, Ph.D.
Department of Geography and Recreation
University of Wyoming
P.O. Box 3371
Laramie, WY 82071-3371
(307) 766-3311
Specialty: Social impact assessment

Elizabeth Peelle
Oak Ridge National Laboratory
P.O. Box 20008
Oak Ridge, TN 37831-6201
(615) 574-5948
Specialty: Public and stakeholder involvement

Gary Williams, Ph.D.
Argonne National Laboratory
370 L'Enfant Promenade, S.W., Suite 720
Washington, D.C. 20024
(202) 488-2418
Specialty: Public participation processes

Charlie Wolf, Ph.D.
P.O. Box 2087
Canal Street Station
New York, NY 10013-9998
(212) 966-2708
Specialty: Social impact assessment

Directories and Rosters of Research Organizations and Analysts

Several sources are available to help DOE program managers locate companies and individuals qualified to conduct stakeholder analysis. A description of some of these is provided below. The materials listed are available in the National Renewable Energy Laboratory library in Washington, D.C. by contacting the authors.

The 1993/1994 Blue Book of the American Association for Public Participation (AAPOR)

Available from AAPOR, P.O. Box 12, Ann Arbor, Michigan 48106, (313) 764-1555.

AAPOR is a professional society of individuals engaged in public opinion research, market research, and social research. Its membership includes people from academic institutions, commercial organizations, government agencies, and nonprofit organizations.

The blue book is developed in cooperation with the World Association for Public Opinion Research (WAPOR) and lists agencies and organizations inside and outside the United States that contribute to AAPOR and WAPOR. It provides the names, addresses, and telephone and fax numbers of 223 research organizations. A brief description of the research specialty of each organization is provided.

The 1993/1994 Blue Book of the World Association for Public Opinion Research (WAPOR)

Available from WAPOR, University of North Carolina, Chapel Hill CB 3365, Howell Hall, Chapel Hill, North Carolina 27599-3365, (919) 962-4078.

WAPOR is a professional society of individuals engaged in public opinion research, market research, and social research. Its membership includes people from a broad spectrum of the research community, including academic institutions, commercial organizations, government agencies, and nonprofit organizations.

The blue book is developed in cooperation with AAPOR and lists agencies and organizations inside and outside the United States that contribute to WAPOR and AAPOR. It provides the names, addresses, and telephone and fax numbers for 223 research organizations. A brief description of the research specialty of each organization is provided.

Council of American Survey Research Organizations (CASRO) 1993 Membership Roster

Available from CASRO, 3 Upper Devon Belle Terre, Port Jefferson, New York 11777, (516) 928-6954.

CASRO is the national trade association for commercial survey firms. It seeks to provide a vehicle whereby survey research companies can interact with one another and promote the establishment, maintenance, and improvement of professional standards in survey research. The 1993 membership roster provides the names and telephone numbers of more than 150 commercial survey research companies.

International Association for Impact Assessment (IAIA) 1993 Membership Directory

Available from IAIA, P.O. Box 70, Bellhaven, North Carolina 27810.

IAIA is composed of private and public organizations that assess environmental, social, and technological impacts. Its purpose is to improve analysis techniques, promote high-quality performance in the field, advance the training of impact assessors, and provide for peer review.

The 1993 directory contains the names, addresses, and phone numbers of IAIA members and subscribers; a listing of IAIA members and subscribers by country; narrative descriptions of the background of IAIA members; and a listing of members by area of expertise.

International Association of Public Participation Practitioners (IAPPP) 1993 Roster

Available from IAPPP, 555 Bryant Street, Suite 712, Palo Alto, CA 94301, (503) 621-3376.

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The roster contains the names, addresses, and phone and fax numbers of public participation practitioners who have volunteered to have this information published. Although a brief description of each practitioner's specialty is not provided in the roster, this information is available from IAPPP and can be supplied upon request for the price of reproduction and mailing.

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16. Abstract (Limit: 200 words) Stakeholder analysis allows analysts to identify how parties might be affected by government projects. This process involves identifying the likely impacts of a proposed action and stakeholder groups affected by that action. Additionally, the process involves assessing how these groups might be affected and suggesting measures to mitigate any adverse effects. Evidence suggests that the efficiency and effectiveness of government actions can be increased and adverse social impacts mitigated when officials understand how a proposed action might affect stakeholders. This report discusses how to conduct useful stakeholder analyses for government officials making decisions on energy-efficiency and renewable-energy technologies and their commercialization. It discusses methodological issues that may affect the validity and reliability of findings, including sampling, generalizability, validity, "uncooperative" stakeholder groups, using social indicators, and the effect of government regulations. The Appendix contains resource directories and a list of specialists in stakeholder analysis and involvement.			
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