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LEGISLATIVE MANDATES FOR ENERGY MODEL
DOCUMENTATION AND ACCESS: A HISTORICAL ANALYSIS

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Legislative Mandates for Energy Model Documentation and Access: A Historical Analysis

1. Introduction

In the last decade, public access to government operations and documents has become of increasing interest to many Americans. At least in part growing out of the tumult of the 1960s, the desire for release of government documents has become a trend leading in some cases to direct confrontation between the public and the government, as with the Pentagon Papers and the Nixon tapes. More conventional steps to increase public scrutiny have also been taken including the Sunshine Law of 1976 [1] and the Freedom of Information Acts [2].

Of more direct interest to the energy information community, however, is the subset of the access issue which concerns government access to energy industry information, and in turn, public access to government data and data analysis tools, notably computer models. Since the oil embargo of 1973, the U.S. government has tried to develop systems to accommodate increasing numbers of requests for access to energy information; the creation of various departments within the government to coordinate, maintain, and publish energy information was a first obvious action.

However, the definition of access itself, and appropriate means of supplying that access, are still at issue, and affected agencies (in particular the Energy Information Administration of the Department of Energy) are presently engaged in the process of determining how public access to energy models might best be established.

While the extent to which analytical models become fully accessible to the public will no doubt depend to some degree on the cost and ease of

implementation of proposed methods, a policy context for access procedures can be developed by examining pertinent existing legislation and its intent. Pragmatic access practices can then be designed to fall within the scope of that context. As a means of providing such a framework, and in order to understand more clearly the processes that have led to current model assessment and access activities, this paper will first examine the general set of issues and concerns that led to legislative efforts, and then will turn its attention to specific actions taken by Congress to address those concerns.

2. Issues and Concerns

A survey of the Congressional energy literature produced during the 1970s (including legislation, committee reports and prints, hearings proceedings, and testimony) has indicated that concern during the decade over energy information was widespread among sectors of the public, and was comprehensive in nature. Not only was government use of energy information at issue, but the data itself was considered suspect. In general, concerns about the energy information fell into four categories:

- 1) concerns over the credibility of available data,
- 2) concerns over the analysis of that data,
- 3) concerns about the appropriateness of policy responses to the analysis, and
- 4) concerns about computer modeling.

The integrity of governmental and corporate dealings was not a new issue when it surfaced with the energy crisis; in fact, it has been a theme throughout the development of the American system of democracy. The original three-tiered format of the government, the popular electing of

officials, and the antitrust legislation of the turn of the century all were aimed at reducing concentration of power, and maintaining accountability and accessibility of the nations's decision makers. However, during the last decade the issue of accountability arose in a new context. The highly visible profits of the oil companies during a time of energy shortage and the government's use of increasingly complex analytical tools tended to focus attention on concerns about the basis, form, and impact of energy information and policy. In the following sections four substantive components of that concern will be examined in more detail.

2.1 Credibility of Energy Data

During the early 1970s there was much discontent over the adequacy of the data upon which U.S. energy policy was ostensibly based. A review of various Congressional hearings held from 1973 to 1977 [22-27] has indicated that this concern had several aspects, summarized as follows:

- o Companies (energy producers) were withholding too much information, classifying it as proprietary, and thereby limiting the data with which the government could work.
- o The data that the government did have was largely supplied by the energy industry, thereby biasing the data base in favor of industry interests.
- o There was a lack of independent verification of industry-supplied data.
- o It was impossible to compare the data bases of different agencies because of differences in definitions of the same technical terms (such as "proven resources") and variations in measurement and quantification techniques.
- o Gaps existed in the data, and conflicting statistics were reported at the same time by different agencies (such as the Bureau of Mines and the U.S. Geological Survey).

These complaints addressed the actual condition of the data base upon which any analysis was dependent. Therefore, the development of a complete, accurate, and orderly data base was of the first order of importance.

Specific examples of this kind of concern are extremely numerous, particularly in the wake of the Arab oil embargo of 1973. As Senator John Glenn [22] has pointed out, it was generally recognized that at the time of the embargo no one in the U.S. government was able to accurately state the amount of reserves of oil and gasoline in the United States. Indeed, reports were widespread that reserves of gasoline during the shortage were 5 percent higher than normal, as were rumors that tankers full of petroleum were forced to wait off the coast of the United States because there were no storage facilities available at which they could offload their cargo. The General Accounting Office (GAO) in 1976 [26] agreed that much of the rampant public skepticism about government energy pronouncements could be traced to the oil embargo. Although four government agencies undertook studies of reserves at that time, the credibility problem was not resolved when those studies were published, even though, according to GAO, most aggregate figures did not differ from those produced by the energy industry by more than about 10 percent. The reason for this lack of credibility was the fact that the reports could not be compared to one another due to disparities in the format of the data bases.

Public interest groups, such as the Public Citizens Congressional Watch and the Environmental Policy Center, echoed these concerns [22], particularly as they reflected on the large extent of government reliance on industry-supplied data, and the need for more disclosure of corporate

information. For example, Ken Bossong, of the Center for Science in the Public Interest stated the following at hearings held in 1976:

"[Due to] excessive reliance upon energy data supplied by the Nation's oil, coal, natural gas and electric utilities industries, FEA's policies and analyses have . . . paralleled to a very large degree the views of the companies which the agency is supposed to be watch-dogging [23]."

One theme, then, was for full disclosure of private industry's data, a theme strongly opposed by most companies and many legislators. The argument for disclosure, however, found a strong advocate in Senator Abourezk of South Dakota [25]. While some witnesses at government hearings argued that more complete disclosure of private sector information would not hurt any individual corporation as long as all companies were subjected to the same regulations, Senator Abourezk took a more extreme approach. It was his feeling that the federal government and the energy producers had together "rigged" the energy shortage in order to increase the prices of gas and oil. This distrust led him to argue that all industry information should become public unless the company could prove the need for confidentiality. The companies, not surprisingly, took the opposite stance—that the burden of proving the need for the information rested on the public sector.*

Proponents of disclosure of industry information also pointed to the movement of employees between the large corporations, and interlocking directorates. They asked how companies could claim that proprietary information was being kept "secret" from competitors, when a given

*Senator Abourezk claimed that a precedent supporting his viewpoint had been set in what he called the "landmark decision" of February 4, 1974, in which the Federal Power Commission won the point that ". . . the public right to the information outweighs the private proprietary interest" of the energy producers [25]. Others at these hearings supported this viewpoint, including Senator Gaylord Nelson, and Ralph Nader.

individual might be sitting on the Boards of Directors of two or more major oil companies simultaneously [25]. While industry representatives and some legislators (including Senators Bartlett and Fannin [22]) argued for proprietary protection, Congressional actions subsequently indicated the general support for greater disclosure of industry data in order to improve the government data base.

2.2 Analysis of Energy Data

A second major set of issues revolved around the analysis of available data. The problem of analysis was in some ways of graver concern than that of insufficient information, because inadequacies of analysis were considered more difficult to detect than inadequacies of data.

In general, critical opinions about government analysis of energy data were grouped as follows:

- o the analysts were too closely related to the oil industry to prepare truly independent and objective reports;
- o the analysts were under pressure from the Executive Branch to develop data that would support particular policy positions; and
- o the assumptions and interpretations that went into the analyses were not distinguishable from the factual bases and were not identified, making replication of results difficult.

In essence, many people wished to insulate analysis activities from outside influences that might deter objectivity. They also demanded better documentation of what analytical assumptions had been made, in order to facilitate review and alteration of important inputs.

For example, one complaint was that the government's energy analysts had been "groomed" by the private energy industry prior to joining the public sector, and thus would be biased toward industry viewpoints.

While trading of experts between public and private sectors is not uncommon, and can be a positive influence in many ways, the energy debate was highly sensitive to suggestions of bias. (Indeed, this viewpoint still persists as a recent study produced by Common Cause, listing important energy officials and their past employment affiliations, indicates [37].)

Thus, insulation from industry pressure was a concern. However, an equally strident demand was for insulation from Administrative pressure. Ken Bossong described succinctly what many witnesses at Congressional hearings were indicating about the need for this kind of insulation [23]:

"The responsibility for collecting and analyzing the information upon which FEA bases its pricing decisions should be vested elsewhere. Currently FEA is a captured agency of the White House and its interpretation of given data reflects both the biases of the Administration as well as the priorities of the industries that supply the data. We believe that information gathering and analysis should be located in a separate agency--possibly one located within Congress."

The desire was to assure the nation of accurate basic data on which to base its energy decisions. In order to do this effectively, that data had to be "as independent of political influence as humanly possible [22]."

In February of 1974, William Simon, then the Administrator of the Federal Energy Office, wrote the following in a letter to Senator Gaylord Nelson of the Senate Interior Committee:

"As I indicated in my testimony before your committee, there is an urgent need for a strong and objective Energy Information Center. This office must have the authority to collect a wide range of data including reserves, inventories, production, consumption, cost, pricing, and other energy related information. Legislation is needed to establish the Energy Information Center in the Federal Energy Administration upon passage of its enabling legislation, and to temporarily staff and manage the Center in the FEA Independence and objectivity of the Office would be a high priority and would be assured by the release to the public of as much information as possible and the establishment of an independent review group to oversee the office's operations [25]."

This kind of strong statement of assurance was specifically intended to quell the fears of non-objectivity in data analysis that had been voiced on nearly every front. However, to many people, merely having a stated assurance was not enough. Ralph Nader, for example, coined the term "simonizing" to describe his opinion of William Simon's ability to sidestep any direct attempt by Congress to force disclosure of information [25]. In fact, two years later, in 1976, criticisms similar to those discussed above were still being voiced. While the organization for handling energy data was better established by then, the analytical results were subject to the same attacks on credibility. Therefore, it was the attitude of many that openness had to be legislated and that relying on Administration assurances was no longer sufficient.*

In early 1976 the GAO made a series of suggestions to Congress about the ways in which the energy data collection and analysis functions could be insulated from policy functions [23]. Some of these included:

- o "Do not provide the data agency with any regulatory or policy functions.
- o "Stipulate by specific legislative provisions the responsibilities of the energy data agency emphasizing its independence, objectivity, and credibility as a source of energy data. In this regard, provide through legislative history the intent of the Congress that the head of the data agency independently speak of all matters relative to energy data, including testimony before the Congress.

*A clear instance of fears about Executive Branch pressure on the Energy Information Office can be seen in the discredit to which the Ford stripmining veto was subjected in 1975 [22]. Investigative reporters and other concerned citizens charged that the facts on which President Ford based his controversial veto were either fabricated or "massaged" to fit the case; indeed, they claimed that some of the facts had been produced after the veto, in order to support and legitimize the decision. Whether or not these charges were substantiated, the fear that analysis was being altered in order to fit Administration policy goals was an extremely strong one.

- o "Provide for close Congressional monitoring and oversight of the data agency's activities, including calling for the exercise of GAO's new responsibilities under the Energy Policy and Conservation Act to verify energy data."

The suggestion was that these objectives should be accomplished through statutory or other legislated provision.

While the fear of data manipulation might have been strong in any statistical setting, it was made even stronger due to the use of complex integrated modeling techniques, such as those used in the 1974 Project Independence Evaluation System (PIES). In dealing with this issue, Senator Floyd Haskell in 1976 [22] called for both internal (i.e. governmental) and external (i.e. institutional, university) model assessment activities. His argument was that if it is true that the use of different models containing differing methodologies and assumptions leads to different conclusions about the impacts of energy policy actions, then it is the assumptions and methodologies which need to be understood most clearly.*

*In fact, he recommended comparing the results of several modeling techniques focused on the same issue in order to identify congruences, rather than differences. If similar forecasts existed in spite of methodological variations, then the given results might be construed to be more accurate. In Senator Haskell's words: "If uniformity in certain types of energy information will facilitate the policy process, in other areas we should be seeking the diversity which arises from a number of independent assessments of information. The role of the federal government should be both that of an analyzer and a provider of basic data. The sophisticated calculations and models which use basic energy information to compute the consequences or impacts of policy options should be carried out in several independent and technically qualified centers of expertise. This may lead to differing estimates of the economic impact of energy policies or to differing estimates of domestic energy reserves, because different assumptions and methodologies are employed. In this case we should discuss those assumptions and methodologies explicitly and learn from the differences. It may be that we can truly evaluate assessments of this sort only by looking for a convergence of a number of independent estimates. Where judgment is involved in dealing with energy information, the federal government should make the basic data available and encourage independent efforts to analyze this information. The creation of an institution and the procedures to open up access to energy information is a primary goal of the Energy Information Act and my amendment to it [22]."

2.3 Issues in Energy Policy

A third major component of the dissatisfaction surrounding the government's handling of energy information and data concerned policy ostensibly developed on the basis of the analysis of government energy information. While debates on the appropriateness or desirability of any particular course of action are the essence of policy formulation, the character of this particular debate was somewhat different, since not only the substance but the underpinnings of the policies were being challenged. The major points were the following:

- o As in the analytical process, there was a fear that the energy industry was dictating the policies that were to be enacted, and that the Administration was implementing those policies regardless of the results of its own analyses;
- o there was a great deal of dissatisfaction about lack of consideration of the impact of policy on the consumer, and lack of consumer and citizen participation in general in the policy formation process; and
- o there was an apparent conflict inherent in the fact that the FEA in 1976 was in a sense promoting the same industry that it was supposed to be regulating.

Again, specific instances of these charges are numerous. For example, there is evidence in the literature that at least some Americans felt that government and big business were conspiring together to implement programs that would not necessarily be of benefit to the general public.* Others

*Martin Lobel of the Citizens' Energy Platform said the following [28]:
". . . Most energy planning is still being done by the major oil companies behind closed doors with the administration. Public access to decisionmakers and public involvement in decisionmaking has been a big PR confidence game. There was a lot of hoopla about public hearings around the country on Project Independence, yet, the plan was released before the transcripts of most of these hearings could even reach Washington, let alone be considered by the FEA or the White House. The same was not true with the major oil company input-- that was ready and welcomed. The FEA has admitted that it conferred privately with the American Petroleum Institute before sending out a congressionally mandated questionnaire on domestic oil reserves and had deleted 11 questions at the API's suggestion. No public input was sought in designing this form and not surprisingly the deletions made at the API's "suggestion" eliminated almost all the relevant data."

were more concerned about the consumer per se, and the general lack of public involvement. Ken Bossong, for example, of the Center for Science in the Public Interest, maintained that even legislated consumer mandates present in the FEA Act of 1974 were being ignored by the Administration in its energy deliberations [23].* Again, this trend was viewed as a deficiency not in the analysis of the data itself, but in the policy formation process based on that analysis.

The third point of contention, concerning conflicting roles being carried out within a single agency, found proponents in at least three senators in 1976--Percy, Leahy and Chiles. These gentlemen argued at Congressional hearings [23] that the FEA promoted the same industry that it regulated. Their feeling was that if the role of the FEA was to represent oil interests, and they thought it was, then that same agency couldn't possibly be expected to regulate the industry in a just manner. There was also a perceived conflict between FEA's role as a promoter of

*Ken Bossong: "While possessing an extensive public information office operation, FEA has consistently failed to alert the public to pending policy decisions early enough to give the public an opportunity to participate in their formulation. The opportunities for public participation have only come in the final stages of decisionmaking such as the statutorily mandated proforma public hearings and Federal Register comments. It has proven to be virtually impossible for the public to have any impact upon FEA's energy planning when the public input is so restricted.

This very limited participation is best reflected in the consumer impact analyses which section 18(a) of the FEA Act clearly specifies must accompany all major FEA regulatory and other actions. In the 2 years since FEA has been in existence, the agency has never prepared a satisfactory consumer impact analysis. This absence can perhaps be best seen in the FEA's 1974 "Project Independence" and the 1976 "National Energy Outlook" reports as well as in its entitlements program and its many oil-pricing decisions including the most recent residual fuel oil decontrol action. In spite of repeated requests from individuals, national and local consumer groups, and its own Consumer Affairs Special Impacts Advisory Committee, the FEA has consistently neglected to provide satisfactory consumer impact studies [23]."

deregulation and its responsibility for the legislative continuation of price controls. Any policy which that agency proposed, and indeed any analyses which it produced, were suspect, in view of the conflicting jobs that it was expected to perform.*

2.4 Concerns About Computer Modeling

One further issue concerned the role of analytical models in government energy planning. In its 1977 Annual Report the Energy Information Administration defined modeling as "organizing available information, guided by informed judgment, to provide insights [11]." In EIA's view, modeling fills the gap that occurs between data collection and validation on the one hand, and forecasting and analysis on the other. The key to the difficulty of accepting modeling as an objective, scientific means of decision making lies in the terms "judgement" and "insight." In his book Energy Planning and Policy [29] Tom Teitenberg argues that it is precisely because of the need for judgement and insight in the forecasting of energy trends that tension and distrust exist between decision makers (i.e. the members of Congress and the public) and modelers (in this instance, FEA, now EIA). Any time a modeler makes an analytical assumption, or makes a judgement about treatment of variables, a decisionmaker's opportunity to make a choice is reduced. Since judgement has been the traditional sphere of the decision maker, it is Teitenberg's theory that even with other issues more or less resolved, tension will exist between these participants.

*As Joseph Fisher, of Resources for the Future put it, "Agencies charged with complicated and difficult and sensitive responsibilities, like rationing, or allocation or price controls, simply don't do well at objective, careful, balanced appraisal of what is going on [25]."

The review of the literature indicates that some such concerns may indeed have existed, particularly when PIES was first released. As the computer modeling systems became more complex, and were thus readily comprehensible to fewer and only more highly trained people, the nature of the analytical process became more remote from the public's understanding. This, coupled with fears about Administration or industry tampering, led to a feeling that biases in computer models might be too deeply obscured to be detected. The models, purporting to be objective and factual, might not in fact be so.

This is not to imply however, that all comments concerning models were critical. For example PIES was widely praised as a good first attempt, even while flaws were noted. In its 1976 review of the model GAO stated [9]:

"GAO believes that the 1974 Project Independence Evaluation is a valuable attempt to provide an integrated framework for evaluating energy policy. Under severe time constraints, the Federal Energy Administration developed an innovative framework for analyzing the complex and interdependent sectors of the U.S. energy system."

While GAO noted many problems with the system, they felt that FEA was aware of the limitations of PIES and was working toward improvements. However, GAO also stated that they felt FEA "should give highest priority . . . to development of complete documentation for the system [9]."

Reviewers from the MIT Energy Laboratory and from the Battelle Columbus Laboratories cited PIES as a "critical step" in the creation of an adequate information base [13] and as "a point of departure for . . . promoting a more rational and less wasteful approach . . . to energy resources" [38]; other scholarly evaluations of the system contained

similar statements.* While these comments reflect a positive attitude towards the potential role of modeling activities in energy policy formation, they also show support for serious efforts toward improved and documented systems, and credible results.

We have seen, therefore, that the entire process of energy data collection and analysis was subject to criticism and skepticism during the mid-70s, not only because of suspicion of Administration intent and industry lobbying, but also because of fundamental weaknesses in the composition of the data base proper. However, one issue on which there was literally no disagreement was the general need for better energy data organization and manipulation. According to a GAO statement made in 1976, there were 261 separate energy-related programs being administered by 44 federal agencies and bureaus [26]. The FEA, ERDA, NSF and Bureau of the Census accounted for one-third of those, with the federal government operating 98 separate computerized data bases containing energy-related information. This was clearly too fragmented, and undoubtedly led to duplication and an increased reporting burden on companies. Again it is important to note that this was not an argument against the concept of computer modeling. Rather, the purpose of the process was to look for ways to improve the modeling capabilities of the government, first by better in-house methodology, and second by

*A reviewer from the University of New Mexico indicated that "the progress which the FEA has made in refining the PIES since the Project Independence Report gives every reason for optimism in terms of the potential of their approach in serving as a useful tool for analyzing policy options for the United States in its efforts to deal with an uncertain energy future [14]."

constructive evaluation efforts.* In the following section the legislative initiatives to achieve these objectives will be considered.

3. Legislation Concerning Energy Information

3.1 Early Efforts

Congress, through a series of energy bills, asked the energy agencies in the federal government to implement a strategy for public access and model assessment which had never been tried before. In response, the government has been grappling in an increasingly direct way with achieving public access to energy information and analytical tools. Below, the steps in this legislative process are examined.

In April of 1973, Senator Jackson of the influential Senate Committee on Interior and Insular Affairs asked the GAO to perform a feasibility study on the formation of an energy data bank which would study both supply and demand of various energy resources [25]. Jackson wanted this data bank to be subject to an independent input and verification process, and asked if it could profitably be placed in the Executive Branch of the government. The GAO's study, which came out early the next spring concluded that such an energy bank would be feasible within the Executive Branch, but would need to be established through a legislative procedure. Moreover, GAO indicated that it would probably take several years to develop the bank to the point of real competence [25].

*Laurence Moss of the FEA Environmental Advisory Committee testified that his aim was to see more ambitious modeling efforts undertaken as a means of improving the basis for decision making in the U.S. [23].

Concurrently, in the spring of 1973, the Executive Branch was considering the energy information problem. Dismantling the Office of Emergency Preparedness, President Nixon established by Executive Order a National Energy Office within the Executive Office of the President. In addition, an Office of Energy Data and Analysis was established as a part of the Department of the Interior, in response to a 1973 Nixon "energy message."

In October of 1973, as a result of the Egyptian-Israeli war in the Mid-East, the Arab nations imposed an embargo on oil exported to the United States and other nations supporting Israel. The embargo ended in March, but the associated higher prices remained in force, bringing the nation's dependency on foreign oil into virtually every American's conscious awareness. In November of 1973, while the embargo was in full swing, President Nixon galvanized his energy staff into action with a highly publicized speech proclaiming as a goal the energy "independence" of the United States by the year 1980. In addition, he issued an Executive Order that established the Federal Energy Office (FEO) within the Office of the President as an interim measure pending the implementation of the Federal Energy Administration Act by Congress [25]. This legislation [4], signed in May of 1974, consolidated the energy information offices, moving the FEO and the Office of Energy Data and Analysis to the new FEA.

The FEA Act made a start at addressing some of the access and information concerns which were discussed above, though not to the extent of later laws. In the "Functions and Purposes" section of the Act, mention is made of involving state and local governments, as well as business, labor, and consumer interests, in the work of the

Administration. Another section details the GAO's role in monitoring all activities of the FEA. Finally, Section 14 (a) reads as follows: "The Administrator shall make public, on a continuing basis, any statistical and economic analyses, data, information, and whatever reports and summaries are necessary to keep the public fully and currently informed as to the nature, extent, and projected duration of shortages of energy supplies, the impact of such shortages, and the steps being taken to minimize such impacts [4]." Other language regarded release of industry data and the participation of advisory committees in FEA operations. One month later, in June of 1974, the Energy Supply and Environmental Coordination Act [5] was signed, which essentially strengthened the enforcement of reporting requirements to the FEA by energy producers and users.

However, while these bills were first steps towards better information collection and dissemination, their provisions did not really address the complicated access issues which became evident with the publication of the Project Independence Report in November of 1974 [18]. This report summarized the results of the computer modeling effort which had been undertaken by the President's energy staff in the previous six months, an unprecedented effort in terms of scope and complexity. While nearly all reviewers agreed that the system, and indeed modeling and forecasting in general, were important to the understanding of energy/economic trends in the U.S., dissatisfaction with the extent to which assumptions could be identified and the extent to which the entire process was documented, was also widespread (see reviews by GAO [9], M.I.T. [13], Battelle [38]). Thus the general fears of Administration manipulation of data for policy goals, and the other concerns discussed above, were perhaps heightened rather than alleviated by the PIES report.

The energy information issue continued to be debated and many energy-related bills were submitted, considered, and enacted throughout the next two years. The Energy Policy and Conservation Act of 1975 [6] further strengthened the FEA's information-gathering capabilities, and authorized GAO accounting audits into energy-related corporate finances. In addition, in December of 1975 an Interagency Council on Energy Information was formed, with representatives from FEA, the Federal Power Commission, the Department of the Interior, the Energy Research and Development Administration, GAO, and the Office of Management and Budget. The purpose of this council was to provide for better coordination and quality of energy information gathering activities, and it had three basic tasks [26]:

- 1) to standardize the terminology and classification used by various energy parties in order to allow for study results to be more easily compared;
- 2) to register all energy data collected in order to identify and eliminate duplication of effort; and
- 3) to analyze future requirements for information--that is, to identify gaps in the existing data network.

3.2 The Energy Conservation and Production Act

However, the most direct tool for providing access not only to government and industry data and reports, but also to the methodology and analysis behind those reports, was provided in the Energy Conservation and Production Act of 1976 [7]. This piece of legislation addressed itself directly to the problems posed by computer modeling and to increased access in general. It did this by means of two major amendments to the FEA Act of 1974, the first concerning PIES and the second establishing an Office of Energy Information and Analysis.

The first amendment, which dealt with PIES, was an addition provided by the House Committee on Interstate and Foreign Commerce. It contained three major provisions:

- 1) that all structural, parametric and operational documentation of the model must be submitted to Congress;
- 2) that representatives of Congressional committees must be provided with access to the model; and
- 3) that members of the public be permitted access to the model on the FEA computer system, on reasonable terms.

The reasoning behind such unprecedented language can be found in the Committee's report on the bill [34]. As the excerpt below taken from that report indicates, the Committee's concern was that public access to the model should be as broad as possible. Because the intent of this legislation is as critical to further interpretation of access requirements as the letter of the law itself, this section of the Committee report is reproduced below in full.

"The Office of Energy Policy and Analysis has been assigned principal responsibilities for the development of the Project Independence Evaluation System (PIES) computer model. This model has played a major role in the evolution of the policies of the Federal Energy Administration and, indeed, of the Congress in dealing with the energy problems which confront us. The Committee is persuaded that such an analytical tool can indeed serve a highly useful purpose, but is concerned that the model should be given searching and independent review and that it should be made accessible to all segments of the public which desire access to it. The Committee has recently contracted for the services of a group of independent consultants to prepare an evaluation and review of the PIES model. This evaluation will be made available to the Congress, and hearings will be held on this matter after this evaluation is completed this summer.

In keeping with a perceived need for public access, the Committee wrote into the legislation a specific requirement that the Administrator provide full descriptive documentation of the computer model by September 1 of this year and operating documentation by January 1, 1977. This was required not only because such documentation is necessary in order to allow independent access to the model, but also because the Committee is aware that a number of individuals involved in the construction of this model may soon leave, making it difficult for their successors to accurately understand and operate the model.

The Committee also required the Administrator to provide ready access to the PIES model to representatives of Congressional Committees. While the costs of any such access must be borne by the Administration, it is believed that open access to Members and to duly accredited employees of Congressional committees will not result in extensive additional costs or burdens. If the Committee's expectations in this regard prove ill-founded, the Committee is prepared to consider remedial legislation.

The Committee also concluded that it would be appropriate and desirable for the Administration to make its model accessible to members of the public as well, but wishes to make it clear that any such access would be conditioned upon proper terms and conditions imposed by the Administration to insure that its other official functions are not impeded. Costs of such access, including both computer time and costs of providing staff to assist members of the public using the model, would be borne entirely by those obtaining access.

Some concern was expressed that this broadened public access to the PIES model might in some manner encourage access by unauthorized persons to proprietary information. While it is true that FEA does have access to such information, the legislation requires only that the model itself be accessible to the public—not that the data base which the model was established to deal with should be accessible. The Committee intends that the confidentiality of any such information will not be endangered by this legislation.

It is the purpose of the Committee in adopting these additional constraints to insure that the model is given thorough and adequate public review. The Committee notes the intention of the Administration continually to update the model and annually to update its National Energy Outlook. We commend this activity as a useful and, indeed, essential element in the effort to maintain the utility of this model as an element in the development of a national energy policy. It is the Committee's expectation that the annual reviews and revision of the model will be conducted openly and that members of the public will be provided an opportunity to review decisions which lead to changes in the model structure, assumptions and scenarios tested. The Committee is reluctant to write specific, rigid, technical and procedural requirements since it is very much aware that excessive rigidity may inhibit efficient and timely results. The Committee does, however, expect the Administration to make every effort to insure that this process continues in an open manner [34]."

Thus the Committee's concerns revolved around independent review of the model, future usability of the analytical tools, and broad public access to the model in general. This interpretation of the access issue was also referred to in a 1978 report prepared by the Logistics Management Institute (LMI) for DOE, which concluded after talking with staff members

of the same House Committee that drafted the ECPA Amendment that the broadest interpretation of access was to be implied by the legislation [2].

The second major set of amendments contained in the ECPA established the Office of Energy Information and Analysis (OEI&A), which was subsequently to be named the Energy Information Administration (EIA). This amendment was not a part of the bill as it went to the committees, but instead was added from the Senate floor by Senator Floyd Haskell. While it was adopted by the narrow margin of only one vote (46-45), the amendment was retained by the Conference Committee, who stated the following:

"The purpose of the Office of Energy Information and Analysis amendments is to insulate the energy data-gathering and analysis functions of the FEA from the policy making responsibilities of the agency [33]."

The purpose as contained within the Act itself was to "assure the availability of adequate, comparable, accurate, and credible energy information to the FEA, to other government agencies responsible for energy-related policy decisions, to the Congress, and to the public." To quote Senator Haskell from an earlier attempt to set up such an administration:

"Where judgement is involved in dealing with energy information, the Federal government should make the basic data available and encourage independent efforts to analyze this information. The creation of an institution and the procedures to open up access to energy information is a primary goal. . . [22]"

Thus, both credibility and accessibility were priority concerns.

The most important sections creating the OEI&A established a comprehensive Energy Information System, guaranteed that this Office would have sophisticated analytical capabilities, coordinated energy information collection activities, provided for adequate documentation

for all reports prepared including validation audits, provided for Congressional access to all energy information in the possession of the Office, and finally, called for outside review of the procedures and methodology employed by the OEI&A [7]. This review was to be accomplished by a Professional Audit Review Team (PART) composed of members of other Federal agencies and chaired by the GAO. The mandate of PART was to investigate all aspects of the Office's performance and activities and to report once annually to the President and to Congress. The PART review function is still intact at this time, and two such annual reports have been produced.

It is evident that the Haskell amendment, and thus the EPCA of 1976, was a sweeping attempt to address many of the concerns discussed above, including adequacy of the energy information data base, credibility of the analytical functions of the agency, insulation from policymaking activities, and thorough review and oversight by other agencies and by the public. A question exists about whether access to the agency's information was not already guaranteed by the Freedom of Information Act of 1966 and its amendments, but an examination of this subject by LMI led them to the following conclusions:

"Even without an EPCA, the Freedom of Information Act (FOIA) would enable the public to obtain much of the PIES information that they might require. Nonetheless, the EPCA does enlarge the public's rights to such information and services beyond what they might have obtained under the FOIA." [21].

3.3 The DOE Organization Act and Recent Events

In spite of specific legislative protection for access and review, criticisms of the federal government's energy information organization were not quelled. In August of 1977 the entire organizational structure of energy administration was changed with the passage of the Department

of Energy Organization Act (DOE Act) [8]. This legislation, which received strong support from both houses of Congress, created a new, Cabinet-level Department of Energy in which the Administration's energy affairs would be consolidated. According to a Senate Committee on Governmental Affairs report of May 1977, in which the DOE bill was reported favorably [32], over 100 separate energy data programs were to be folded into the new DOE. While many considerations other than those related to data and information were present in this report, the Committee did concern itself with the need for better data organization. For example, the report claimed that the FEA, ERDA, and the Department of Interior had published conflicting reports, interpretations, and forecasts concerning the nation's energy situation. At hearings accompanying the proposed legislation [39], similar refrains were heard: dissatisfaction with fragmentation of data collection efforts; non-usability of information; lack of public participation in energy decisions; lack of access to PIES and other information; and a need for more public accountability.

The Senate Committee Report, however, emphasized that it intended to ameliorate these difficulties in the new department. The report stressed insulation of the new Energy Information Administration (EIA) from policy affairs, production of independently verified data, and credible reports. For example: "The Committee strongly endorses this separation and wishes to explicitly incorporate in DOE those provisions which require that the independence of data gathering and analysis from policy formulation be reflected in the organization of the Department [32]." The House Committee on Government Operations addressed the access issue more directly in their report [30] on the DOE Act:

"One of the most pervasive problems which various citizens groups have seen with the energy situation has been their inability to obtain accurate energy information: . . .H.R. 6804 establishes as one of its purposes encouraging public participation in the development and enforcement of a national energy program. To assist in achieving this purpose, the Energy Information Administration was established to independently collect, analyze and disseminate energy information. In performing these functions, the Administrator of the Energy Information Administration is not subject to the supervision of any officer or employee of the Department of Energy. This administration should provide the public with pertinent energy information."

Finally, the Conference Committee, whose final version of the DOE bill was accepted overwhelmingly by Congress (353-27 in the House; 76-14 in the Senate), also emphasized in their report [31] that the new EIA would specifically be expected to accept all responsibility for public access and review which had been required by the EPCA of 1976. While the DOE Act consolidated many activities, the EIA was to remain as independent as possible, and to remain as open to the public as existing disclosure laws would allow.

In August of 1977 the DOE bill became law. In December of that same year the first annual PART review was published [3]. PART had been in existence nine months at that time, and was only considering OEI&A's performance through October of 1977. Therefore it was not surprising that the report contained many of the same complaints that had been voiced previously, and stated that little progress had been made by OEI&A in meeting legislated requirements. Specifics cited included questions about accuracy of data, adequacy of verification, credibility, insulation from policy making, and lack of model documentation. The latter point was considered critical, since documentation of model assumptions and methodology is a key factor in model access. PART stated that access to PIES was blocked due to changes in assumptions without adequate notation of the facts, and they concluded the following:

"OEIA's credibility was adversely affected by a failure to make available to the public the results of all its forecasts and the source and rationale for the assumptions upon which the changes to the model were based. Moreover, OEIA failed to insure the integrity of the model by not obtaining the views of modeling and energy experts outside of FEA regarding the model's assumptions and the appropriateness of the changes [3]."

In the ensuing two years, much time and money has been spent considering the access issue, both within and outside of government. While recent energy legislation has not addressed access to energy models directly, the ongoing use of models as tools for formulating energy policy has led to increased attention to issues of model development and credibility, documentation, and assessment. For example, the Energy Information Administration has contracted the Argonne National Laboratory's National Energy Software Center to archive PIES and other energy models, as a means of making them available for public use. In addition, EIA transferred PIES (now called MEFS) to the Texas Energy and Natural Resources Advisory Council, and has issued internal interim documentation standards for EIA-sponsored efforts. The very broad interpretation of "access" which Congress intended has challenged the modeling community, and concerns over data, analysis, policy, and modeling have not yet been totally satisfied. However, objectives of credible energy information are being pursued, and will undoubtedly continue to be so in the future. For example, the second annual PART review [40] concluded,

". . . PART believes that EIA operated independent of the energy policy function, that it was organized and managed in a more professional manner than its predecessor. . . Moreover, recent actions . . . indicate that EIA is making progress toward improving the quality and reliability of Federal energy data and analysis activities. However, these are only the first steps and much more needs to be done before EIA fulfills its Congressionally mandated charter as the principal source of adequate, accurate, comparable, and coordinated energy information within the Government."

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