ALASKA LEGISLATURE COMMITTEE FILES 1987-1988 8672
4965 HRES HB 238 - HB 244

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offer the utility a quick return on its investment. In an era of highly uncertain demand, utilities are finding that conservation and load management investments offer a unique opportunity to improve load factors, increase velocity of cash flow, reduce high capital costs, and reduce the financial risks associated with excess generating capacity.

Untapped investments in energy efficiency and load management offer enormous potential for meeting new electrical demand and remain the most cost-effective of all resource options. Utilities, regulators, and consumer advocates have developed programs designed to increase the efficiency of America's electrical consumption.

Most utilities offer some type of program promoting efficiency investments, ranging from simple bill inserts on conservation tips and school education programs to innovative financing programs like those cited above. However, very few utilities have begun to comprehensively investigate the full potential for improving the efficiency of their customers' energy consumption or to implement incentive programs which are designed to promote efficiency investments.

UTILITY OPPOSITION TO LEAST-COST OPTIONS

The majority of utilities are still planning for high electrical demand growth in the future, despite the drastic decline in the rate of electrical demand growth over the past decade. And they are planning on meeting this demand primarily by building large coal-fired electrical generating plants (and to a lesser extent nuclear power), despite the radical changes in the economics of central power generation. Most utilities are reluctant to shift to a least-cost investment strategy for a variety of reasons, including:

- Utilities have traditionally seen themselves as suppliers of a commodity (electricity), and like most other private enterprises, strive toward increasing profits by increasing sales of their commodity. This has been historically accomplished by constructing large power plants.
- Most utility executives wait for positive signs from their commissioners that least-cost investments will receive preferential rate treatment.
- The revenue formulas established by public utility commissions, which are used to determine return on investment, are often based on total capital investment. Utilities have a built-in incentive to overinvest in capital-intensive plant and equipment.
- Efficiency measures, programs, and technologies for saving energy and electricity are still relatively unfamiliar to the utility industry, and are viewed as risky until proven over a long period.[12]

Because of this reluctance, a few state legislators and regulators have begun to adopt statutes and regulations which assure that utilities will comprehensively examine all resource options, and invest in these on a cost-effective basis.

STATE REGULATORY COMMISSIONS CAN ENSURE LEAST-COST INVESTMENTS

The least-cost concept has garnered strong support from some impressive official bodies, including the American Public Power Association, the American Gas Association, and the National Association of Regulatory Utility Commissioners (NARUC). At its 1984 annual convention, NARUC unanimously passed a resolution urging all state and federal regulatory commissions to adopt a "policy mandating electric and gas utilities to develop and submit for approval least-cost resource plans".[13]

Legislators and commissioners have begun to develop laws and regulations to compel utility investment in demand-side options and renewables due to many utilities' reluctance to pursue least-cost planning on their own initiative. Several states, including California, Wisconsin, Florida, Iowa, and Nevada have now adopted some form of least-cost electrical planning regulations.

The state of Nevada has developed one of the most comprehensive least-cost planning regulations in the country. The

Citizen-based organizations and public interest intervenors have been the primary motivating force behind the adoption of many current least-cost planning laws and regulations.

Nevada Utility Resource Planning Act of 1983, authored by the state's Office of Consumer Advocate, requires electric utilities to submit to the Nevada Public Service Commission a fully integrated, long-range resource plan every two years. These plans must demonstrate that *all* aspects of a utility's future energy needs and resource options have been considered.

Nevada utilities are required to conduct assessments of the cost-effective potential for each resource option, including efficiency, load management, cogeneration, and renewables, and then integrate and prioritize those options according to their cost-effectiveness. Perhaps most importantly, utilities cannot receive approval for a new power plant unless the plant has been previously approved as part of the utility's least-cost resource mix. The Nevada model includes provisions which assure that:

- Demand forecasts are based upon inventories of electrical end-uses such as lighting, heating, and cooling.
- Utilities must also submit a two-year implementation plan that specifies which least-cost resources will be utilized over the next two years.
- Standardized planning methodologies and models are used by all utilities to assure long-term consistency.
- Utilities are held responsible for the creation and coordination of all plan components.
- Enforcement mechanisms are developed to assure utility compliance with their resource plans.[14]

Most states have adopted only individual components of comprehensive least-cost planning regulations, and consequently lack the ability to ensure utility investments on a least-cost basis. For example, many public utility commissions have specific statutory authority to require utility investments in conservation and load management but lack the capability to adequately evaluate utility assessments of conservation potential or program proposals. Other commissions require utilities to file conservation plans which must evaluate all resource options available for meeting new electrical demand yet lack the authority (or initiative) to deny approval of the plan or to require that utilities invest in all cost-effective conservation investments prior to new supply resources.

Unfortunately, very few commissions have adopted comprehensive least-cost regulations which ensure that utilities

invest in the most cost-effective resources to meet new electrical demand.[15] This is due to a variety of reasons. Some state commissions lack adequate information and analytic planning tools, while others are awaiting the results of those states which have enthusiastically promoted conservation. Still, other commissions believe that utilities should decide how to meet demand for electricity or that existing regulations are sufficient in promoting utility conservation investments. However, a truly integrated and comprehensive least-cost planning model, such as Nevada's, is vital to assure utility investments in least-cost energy resources.

A FRAMEWORK FOR CITIZEN ACTION

A well-informed and organized consumer-based coalition can significantly influence its state regulatory and legislative bodies to adopt least-cost planning laws and regulations. Citizen-based organizations and public interest intervenors have been the primary motivating force behind the adoption of many current least-cost planning laws and regulations. The following are specific actions that public policy organizations and citizen-based groups can take to promote least-cost energy planning in their state:

1. **Review Existing Statutes and Regulations Regarding Utility Investments in Least-Cost Energy Resources.** Utility statutes and regulations vary from state to state. Thus, a crucial first step involves reviewing existing statutes and regulations to reveal possible gaps in a comprehensive least-cost planning process. Some of the more pertinent questions to pursue, include:

- Does your public utility commission have the regulatory authority to require utility investments in customer efficiency improvements?
- Are utilities required to undertake a comprehensive assessment of the conservation potential in their service districts?
- Are utilities required to file long-range resource or conservation plans? If yes, do these plans include assessments of demand-side and supply-side options and do they require these options to be integrated according to their cost-effective?
- Does your commission have an adequate enforcement mechanism which ensures that utilities invest on a least-cost basis, i.e. denial of a power plant permit due to lack of consideration of alternatives?
- Has the state adopted favorable buyback regulations to require utilities to purchase electricity from small-power producers, including cogeneration and renewables?

2. **Develop an Independent Conservation Potential Assessment.** Universities offer an ideal base for the development of independent assessments of the potential for energy conservation in a utility service district or the state as a whole. For example, the Center for Energy Studies at the University of Texas, in conjunction with Lawrence Berkeley Laboratories, has recently developed an assessment of the conservation supply potential for residential and commercial buildings in the state of Texas.[16]

University departments with experience in quantitative analysis, computer modeling, or electrical planning issues can be solicited to develop specific information:

- An inventory of available efficiency measures, methods, and technologies capable of cheaply and reliably supplying or saving energy and power.
- A detailed inventory of energy use, indicating how much electricity is consumed for what purposes within the state.
- An assessment of the potential for efficiency improvements in the residential, commercial, and industrial sectors.
- A survey of information on state commission orders, regulations, rate treatments and case histories of efficiency programs.

3. **Form a Coalition.** A successful strategy will be based on linking least-cost planning with other utility issues that are affecting ratepayers. Least-cost planning offers a long-term, comprehensive process for assuring the most cost-effective implementation of electrical resources as well as an ideal complement to shorter-term and single focus, and sometimes adversarial, utility issues.

For instance, "rate shock" (the rate impacts from the cost of new power plants) is an excellent organizing issue because the inclusion of expensive, new power plants costs in the rate base directly result in higher utility bills. While citizen groups argue against the inclusion of imprudent power plant construction costs in the rate base, rate shock also presents an excellent opportunity for consumers to press their regulators with the question of, "How are you going to prevent these astronomical rate increases from occurring in the future?"

Least-cost planning can be used to address other utility issues, such as utility proposals for the construction of new coal or nuclear plants, the inclusion of construction work-in-progress (CWIP) costs in the rate base, and the impacts of rate increases on low-income households. Least-cost electrical planning offers an ideal issue for forging statewide coalitions which can bring together diverse organizations, including low-income, senior citizen, safe energy, and consumer groups.

FOOTNOTES

[1] *The Least-Cost Energy Strategy: Minimizing Consumer Costs Through Competition*, 1979. Roger Sant, Carnegie Mellon University Press, Pittsburgh, PA.

[2] *Power Plant Cost Escalation: Nuclear and Coal Costs, Regulation, and Economics*, 1981. Charles Komanoff, Van Nostrand Reinhold, NY.

[3] *Electricity: New Consumer Choices*, 1985. Dick Munson, Center for Renewable Resources, Washington, DC.

[4] *Rate Shock: Confronting the Cost of Nuclear Power*, 1984. Alan Nogee, Environmental Action, Washington, DC.

[5] *Operation Vs. Abandonment of the Shoreham Nuclear Plant: The Effect on Long Island Unemployment*, 1984. Greg Palast, Union Associates, New York, NY.

[6] "Saving Gigabucks with Negawatts", 1985. Amory Lovins, *Public Utilities Fortnightly*, March 21, 1985.

[7] *Ibid*

[8] *Electricity's Future: The Shift to Efficiency and Small-Scale Power*, 1984. Chris Flavin, Worldwatch Institute, Washington, DC.

[9] *1981 Conservation and Load Management Program*, 1981. South California Edison Co., Rosemead, CA.

[10] "The Great PG & E Rebate Program", 1984. Pacific Gas and Electric Co., San Francisco, CA.

[11] "Don't Pay for Insulation... Buy Conservation," 1983. Slide show presentation explaining General Public Utilities RECAP Program, Richard Esteves, Manager of Conservation Communications, General Public Utilities, Parsippany, NJ.

[12] "Questions and Answers" from Nevada Public Service Commissioner Stephen Wiel at March 5, 1985 hearings before the Energy Development and Applications Subcommittee hearings on Department of Energy 1986 budget.

[13] Resolution on gas and electric utility least-cost resource plans, 1984. Proposed by the Ad Hoc Committee on Energy Conservation of the National Association of Regulatory Utility Commissioners (NARUC). Adopted by NARUC at their 1984 Annual National Convention, NARUC, Washington, DC.

[14] "Utility Resource Planning: The State of Nevada Adopts an Integrated Planning Model", 1984. Jon Wellinghoff and Cynthia Mitchell, Nevada Office of Consumer Advocate, Carson City, NV.

[15] "Results of Survey of Regulatory Utility Commission's Electric Resource Planning and Conservation Activities", November 1985. Conducted by Congresswoman Claudine Schneider's office for hearings on the Least-Cost Planning Initiative. Hearings held before the House Energy Development and Applications Subcommittee, September 26, 1985.

[16] *Electrical Energy Conservation Supply Potential in the Texas Building Sector*, December 1985 (expected date). Center for Energy Studies, University of Texas, Austin, TX; and Energy Efficient Buildings Program, Lawrence Berkeley Labs, Berkeley, CA. Commissioned by the Texas Public Utility Commission, Austin, TX.

PUBLIC CITIZEN
Critical Mass Energy Project
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Is Your State Charting A Least-Cost Electrical Strategy?

A Guide to Evaluating State Laws and Regulations

PAUL MARKOWITZ AUGUST 1986

INTRODUCTION

Since 1973, the electric utility industry has undergone massive changes. Huge increases in power plant construction costs combined with sharp declines in electrical demand growth have resulted in exponential increases in electric rates. These changes have rocked the economic foundation of large-scale generating facilities, and consequently have radically altered the manner in which utilities plan to meet new electrical demand.

In response to these changes, the concept of a least-cost energy strategy has emerged among regulatory commissioners, consumer advocates and some utility planners. A least-cost strategy utilizes those additional sources of energy supply or energy demand reductions that can be obtained for the least total cost to utilities and their ratepayers. Conservation forms the basis for a least-cost strategy because energy efficiency improvements are the most cost-effective of all resource options.

However, a least-cost strategy involves utilizing all available resources for meeting future demand, including: load management, renewable energy resources and cogeneration. Consequently, a least-cost strategy minimizes the cost of electrical service, offers significant environmental benefits, and provides economic benefits to local communities by emphasizing the use of locally-available energy resources.

States can implement a least-cost electrical strategy by adopting laws and regulations which ensure that utilities invest in the most cost-effective resources for meeting new demand. These laws and regulations can ensure that new power plants are constructed only if they represent the least-cost means of providing electricity.

Effective least-cost regulations consist of three major components:[1]

1) Planning: Utilities must submit resource plans that document how they will meet electrical demand at the lowest possible cost.
2) Evaluation: Proposed utility plans are carefully evaluated by the regulatory commission and public.
3) Enforcement: The commission accepts a revised utility plan, and uses its regulatory authority over power plant licensing and setting of utility rates to ensure that actual utility investments conform to the adopted resource plan.

MODEL STATE LEAST-COST ELECTRICAL POLICY

This triad, planning, evaluation and enforcement, provide a framework for evaluating how well your state is ensuring utility investments in least-cost electrical resources.

A. PLANNING: EACH UTILITY SUBMITS A LEAST-COST RESOURCE PLAN

Planning requirements ensure that utilities have identified all available options for meeting new electrical demand before making large expenditures.

Are your utilities required to file long-range resource plans?

Each utility should be required to submit a long-range (ten or twenty years) resource plan every one or two years to the state regulatory commission. Comprehensive utility plans should include all of the following components:[2]

a. Forecast of Future Demand: Utilities should file forecasts of future electrical demand which identify two-to-three possible scenarios for demand growth to help account for the large degree of uncertainty regarding future energy consumption. Demand forecasts should utilize a combination of the following forecast methodologies:

End-use analysis: This methodology calculates the number, type and efficiency of electrical end-uses (e.g. water heaters, lighting, industrial motors) in each customer class. It incorporates the impacts of changes in efficient technologies, appliance saturation levels, and utility sponsored conservation programs.

Econometric analysis: This methodology examines the impact of economic changes (e.g. increases in personal income, population growth, price increases in alternative fuels) upon electricity consumption.

b. Assessment of Supply-Side Resource Options: Utility plans should specify how the utility intends to meet future demand through various supply-side options, including: renewable energy resources (e.g. wind, solar, geothermal, hydro power, biomass), cogeneration, power purchased from

power plant. A certificate of need should only be issued when:

1. *The plant is in compliance with the utility's resource plan:* Permits for new plants should only be considered if the plant is consistent with the utility's most recently approved resource plan. This ensures integration and consistency of utility investments with the utility planning process.[9]

2. *The need for the plant has been firmly established:* Utility demand forecasts should be scrutinized in light of state-conducted forecasts, for compliance with state specifications, and to account for any changes which may have occurred since the resource plan was filed.[10]

3. *The plant is the least-cost means of meeting the need:* Utilities should be required to demonstrate that the proposed plant is the least-cost option in light of all available demand-side and supply-side options.

Further, the commission should have the authority to review the certificate of need every two years in light of any changes in the utility's approved resource plan, with the burden of proof resting on the utilities. Again, state authority to require a certificate of need should be strongly tied to its ability to evaluate proposed utility power plants in light of least-cost alternatives. Further, the commission should still maintain the authority to disallow imprudent costs from the rate base.

Has your commission used its ratemaking powers to encourage utility least-cost investments?

Ratemaking authority is important as a final check to ensure least-cost investments, but is most effective when used in conjunction with comprehensive planning and plant licensing processes. Proposed rate increases should be evaluated in the context of the utility's most recently approved resource plan, and rate recovery should be allowed only for those investments which have been included in the plan. Further, the commission should develop regulatory guidelines for what constitutes used and useful investments to assure that uneconomic utility expenditures are disallowed from the rate base.

Does your commission have authority to require utility conservation programs?

Your commission should have regulatory authority to require utilities to offer financial incentives designed to stimulate customer investments in energy conservation, such as low-interest loans or cash rebates. While most commissions are granted specific statutory authority to require these investments, many commissions have relied on broad regulatory powers to ensure "adequate and reasonable supplies of electricity" as the legal basis for requiring conservation investments.[11]

A few state commissions offer utilities financial incentives and/or impose financial penalties to encourage conservation investments. For instance, some commissions provide revenue guarantees to utilities for innovative or untested resource investments (e.g. pilot conservation programs). Other commissions are moving toward performance based financial incentives whereby utilities are rewarded or penalized according to their progress in achieving certain efficiency goals, rather than a strict rate-of-return on total assets. In this manner, commissions can reward or penalize a utility based upon progress toward achieving conservation goals or implementing its resource plan.[12]

Has your commission set avoided cost rates which require utilities to purchase electricity from small-power producers?

The Public Utilities Regulatory Policies Act (PURPA) of 1978 (Title I of the National Energy Act) requires electric utilities to purchase electricity from small-power (renewable energy and cogeneration) producers at a price equal to the utility's cost of producing electricity. Your commission should establish rates that reflect the long-term cost of building new power plants. This will maximize the development of alternative resources, while assuring lower rates for all ratepayers.

DRAWING UPON STATE EXPERIENCES

Several lessons can be drawn from state experiences in implementing least-cost electrical strategies:

1. The planning process offers a unique opportunity for regulators and the public to review proposed utility investments *before* the utility spends money. Commission authority to set utility rates is a necessary but insufficient mechanism for ensuring utility least-cost investments. As the current rate shock problem has shown, commission ratemaking authority alone is insufficient to assure utility least-cost investments; i.e., regulators are limited to reviewing utility investments after the money has been spent.

   Least-cost energy planning establishes a process whereby regulators and the public can evaluate utility investment decisions before these investments are made. This planning process can ensure that utilities examine the economic potential for all resource options, particularly energy conservation and small-power sources, and invest in the cheapest options first. This will help: 1) avoid building unnecessary power plants; 2) improve local economies by emphasizing the efficient use of electricity and the use of locally-available resources; and 3) provide significant environmental benefits by emphasizing the use of environmentally benign resources.

2. The level of commission resources available to evaluate utility filings should be directly proportional to the extent of the commission's involvement in the resource planning process. A commission with a strong mandate to develop a least-cost electrical strategy for its state must have sufficient staff and adequate financial resources in order to conduct a thorough examination of utility resource plans and other filing requirements.

3. State involvement in the resource planning process should complement, not replace, utility efforts to develop the "in-house" capabilities to plan for and evaluate conservation and alternative resource investments. Some states, such as New York, have initially taken a strong hand in deciding which resource investments are most cost-effective and have ordered utilities to make these investments. Often, utility capabilities to plan for and evaluate alternatives remain limited, and commissions have found themselves im-

3-30-88

SECTIONAL ANALYSIS
OF
PROPOSED RESOURCES COMMITTEE SUBSTITUTE

House Bill 238

Section 1

Integrated Resource Plans. This section establishes a requirement for utilities with annual sales greater than 300 million kilowatt hours (kwh) to prepare 20-year integrated resource plans for approval by the APUC every three years.

(Note: Utilities in Alaska with sales above the 300 million kwh sales level include Chugach Electric Association, Golden Valley Electric Association, Homer Electric Association, Matanuska Electric Association, and Municipal Light and Power - Municipality of Anchorage.)

The required integrated resource plans would:

- list and describe current facilities
- include the utility's projected retirement schedule
- describe the utility's interconnection relationships
- document energy end-use in the service area
- set out a projection of system power demand (load duration curves)
- analyze the utility's existing ability to meet increased demand
- summarize load research
- provide long term forecasts (base, high, low) including assumptions used in developing the forecasts
- identify and evaluate alternative development options with consideration given to availability, reliability, flexibility and cost-effectiveness
- identify the development option with the lowest present value of revenue requirement
- recommend implementation of a specific option
- include other information necessary to ensure adequate evaluation of all supply-side and demand-side alternatives

The Commission is directed to develop a consistent reporting methodology, including joint filing by closely integrated utilities.

The Commission is directed to establish by regulation a public process for the review and approval of integrated resource plans.

The Commission is directed to approve a plan upon a finding that the plan:

1) adequately addresses conserving electrical energy;
2) would provide consumers with the lowest reasonable cost of power;
3) documents a reasonable expectation of future power requirements;
4) uses appropriate methodology for the evaluation of options;
5) adequately evaluates resource alternatives currently available or reliably anticipated to exist in the forecast period; and
6) describes the utility's data collection activities and on-going data collection efforts.

The legislation provides that, notwithstanding the requirement for preparation of an integrated resource plan, a utility may, without commission approval, maintain or repair facilities in order to maintain reliable service, including emergency repairs.

The legislation calls for the submission of annual reports on the implementation of the resource plans which include any departures necessitated by emergency service and any significant changes to the underlying assumptions used in the plan.

The legislation establishes that Commission review and approval of a plan authorizes the utility to implement the plan as approved.

The Commission is directed to adopt regulations and policies that set rates and revenue requirements at a level sufficient to recover costs incurred by a utility in preparing and implementing an approved plan.

Section 2

The Commission is directed to only allow a new or revised tariff to take effect only if consistent with a utility's most recently approved plan.

Section 3

Allows for the allocation of costs of compensation for third parties to commission proceedings as described in section 4 of the bill.

Section 4

Intervenor Financing Provision. Enables the Commission, during a proceeding relating to integrated resource plans, to accept applications from persons other than utilities (ie, intervenors) for compensation of costs for participation in the proceedings. The Commission is authorized to award compensation if it finds that compensation is needed to enable the person to adequately participate and present a "significant position that does not result in the duplication of positions."

Section 5

Clarifies that municipal utilities with sales in excess of 300,000,000 kwh are not exempt from the integrated resource plan requirement.

Section 6

Amends APA statutes to provide specific authority to make grants for the purpose of preparing integrated resource plans.

Section 7

Establishes the due date for the first plan as January 15, 1990.

prepared by: Eric Myers (Office of Representative Kay Brown)

3-30-88

SECTIONAL ANALYSIS
OF
PROPOSED RESOURCES COMMITTEE SUBSTITUTE

House Bill 239

Section 1

$1,000,000 appropriated from the Railbelt Energy Fund to the Alaska Power Authority for the purpose of making grants to Railbelt utilities for integrated resource plans.

Section 2

$170,000 appropriated from the Railbelt Energy Fund to the Alaska Public Utilities Commission to establish three positions to assist with the preparation of integrated resource plans.

Section 3

Lapse date of June 30, 1989.

Section 4

Effective date

prepared by: Eric Myers (Office of Representative Kay Brown)

Municipality of Anchorage

OFFICE OF THE MAYOR

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TOM FINK,
MAYOR

March 30, 1988

Representative Sam Cotten
Co-Chair, House Resources Committee
House of Representatives
P.O. Box V
Juneau, Alaska 99811

Dear Representative Cotten:

Municipal Light and Power and the Municipality of Anchorage are opposed to the passage of HB 238, "An Act requiring certain electric public utilities to prepare certain reports; and relating to costs in proceedings before the Alaska Public Utilities Commission."

If this bill were to be approved by the Legislature, the cost of operations of this utility could increase substantially.

The legislation has the potential for significant financial impact on ML & P. The impacts center on the number of comprehensive planning and technical reports which must be prepared and submitted to the APUC. In addition, the cost of procuring permits from the APUC for plant or transmission line expansion would be very high in terms of meeting new requirements which add nothing to the already burdensome current State and Federal permitting process. Finally, this bill contains provisions which allow the Commission to recover costs from the utility for holding hearings or conducting investigation on these new activities, The costs recovered include the costs of any time devoted to investigation or hired consultants, whether or not the consultants appears as witnesses, expenses incurred by the Commission and the costs of compensating an interested person for all of their reasonable costs of participating in a proceeding or investigation.

The sum of the new regulatory burdens, plus the proposed reimbursement costs would be significant, most likely necessitating a substantial rate increase request. From our perspective, these added new costs and burdens would do little to provide electric power to our customers at a reasonable price.

For these reasons, we oppose the passage of HB 238.

Sincerely,

Tom Stahr
General Manager

Alaska State Legislature

HOUSE OF REPRESENTATIVES

Committee on Finance

Official Business

P.O. Box V
State Capitol
Juneau, Alaska 99811

TO: Representative Sam Cotten, Co-Chair
Representative Adelheid Herrmann, Co-Chair
House Resources Committee

FROM: Representative Kay Brown

DATE: March 29, 1988

SUBJ: HB 238/239: Integrated Resource Planning Legislation

As you know, CS HB 238 (Labor and Commerce) and its companion appropriation measure, CS HB 239 (Labor and Commerce) were the subject of a work session last fall during a Least-Cost Planning conference held in Anchorage. On the basis of the interim worksession, the fall conference and additional discussions with utility representatives and consumer organizations, I would like to propose the attached draft bills for adoption by the Resources Committee as committee substitutes.

Fundamentally, integrated resource planning is designed to achieve the most cost-effective energy system by integrating the analysis of "demand-side" options with "supply-side" options. The integrated resource planning approach enables utilities to consider conservation options (or end-use technologies that conserve electricity) on an equal basis with the construction of new power generation facilities. The value of the integrated resource planning approach is being recognized throughout the country. One recent survey found that **25 states are using or developing integrated resource planning and another 7 are considering** implementation or using a similar type of methodology for facility siting or conservation programs.

A reading of the recently released energy report by the House Research Agency (*Energy Planning in Alaska: Past Efforts and A Future Direction*, February 1988) indicates that integrated resource planning for Alaska is long overdue. Although APA statutes and regulations specify a multi-step review process for power projects, APA reviews are driven by specific project proposals and do not constitute a true planning process. Had integrated resource planning been in place over the past decade, many of the more costly mistakes which have characterized the Energy Program for Alaska could have been avoided.

As noted by the HRA report, in urban areas of the state, the legislature appropriated **$1.3 billion between FY 77 and FY 88**. Over 99 percent of these appropriations were spent on supply-side projects (89 percent on hydroelectric projects) and **less than one percent on demand-side** investments. If an integrated resource planning process had been in place during this period, the HRA report suggests that "a comprehensive analysis would have revealed residential and commercial building standards, commercial ventilation and lighting technical improvements, energy efficient appliances, and load management as feasible or more cost effective alternatives to new generating capacity." Instead, the traditional project-based, supply-side approach used by the APA and Railbelt utilities has resulted in the futile pursuit of infeasible projects (eg, Susitna) as well as to the development of overbuilt systems with expensive excess capacity (eg, Soldotna One).

As with the legislation originally proposed, the integrated resource planning requirements proposed in the suggested Committee Substitute for **HB 238 would apply only to the state's larger Railbelt electric utilities** (defined as those with sales in excess of 300,000,000 kilowatt hours annually). These are utilities with the administrative and financial resources to undertake the planning efforts that would be required. These are also utilities in which the state has an enormous equity investment in the form of Bradley Lake and the Anchorage-Fairbanks Intertie.

Finally, the proposed planning process would ensure that future development of Railbelt utility systems proceeds in a rational and deliberate fashion. Neither the ratepayers in the Railbelt, nor the state, can afford business as usual.

A brief outline of changes from the original bills are outlined below.

Proposed Committee Substitute - HB 238

The major change reflected in the proposed workdraft is one of structure regarding the reporting requirements. The L&C version of the bill had two distinct, but related, reporting requirements. The **reporting requirement has been consolidated** into a single **integrated resource plan**. In addition, the filing deadline for the first integrated resource plan has been moved back; annual implementation updates would be required; and comprehensive review of the integrated resource plan would be required every three years.

The suggested draft also provides for **expedited cost recovery of expenses** associated with the reporting requirements and for recovery of costs incurred as a result of implementation of an approved plan. The proposed draft also **eliminates the requirement that a utility would need approval from the APUC prior to development of a new project or supply resource** with an equivalent capacity greater than five megawatts. The proposed bill retains the requirement that APUC tariff changes would have to be consistent with a utility's most recently approved integrated resource plan.

Proposed Committee Substitute - HB 239

The changes proposed for HB 239 concern an **increased level of funding** for utilities to be provided by the bill. At the fall conference on Least-Cost Planning, a number of participants commented that the proposed funding level would be inadequate for the planning effort required. The proposed changes also reflect some minor language changes to conform HB 239 with the proposed revisions to HB 238.

* * * * *

If there are any questions regarding these measures, I would appreciate an opportunity to meet with you at your earliest convenience.

Rep. Cotten

Kay Brown

Alaska State Legislature
House of Representatives

MEMORANDUM

TO: Representative Dave Donley, Chair
House Labor and Commerce Committee

FROM: Representative Kay Brown

DATE: May 12, 1987

SUBJ: HB 238 and 239 - Least Cost Energy Policy

As a result of last Thursday s teleconference and other comments I have recieved on HB 238 and 239, I would like to suggest that the Labor and Commerce Committee consider making a few changes and clarifications in the bills. Please find attached a summary of these recommended changes.

As you know, some of the issues raised by testimony given during the teleconference require consideration in the larger context of overall state energy policy. Because this will be a major focus of the House Resources Committee over the interim, I would again urge that the Labor and Commerce Committee pass these bills along with minor clarifying amendments. I welcome and encourage individual members of the Labor and Committee who have an interest in energy issues to work closely with the Resources Committee on this legislation.

Once again, thank you for scheduling the teleconference on the bills. As you heard from the various witnesses, there is broad support to establish least cost energy planning requirements for the Railbelt.

cc: Labor and Commerce Committee members
Representative Sam Cotten, Co-Chair, Resources Committee
HB 238/239 co-sponsors

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5/13/87

SUGGESTED AMENDMENTS
by Representative Brown

House Bill 238

Section 1

Sec 42.05.294. Advance Resource Plans.

1. **.294(a) and (a)(1)**: Clarify that a long-term, 20-year power forecast is not optional, but required as part of the Advance Resource Plan. Also, the plan should include "base", "low" and "high" energy demand scenarios.

(See attached work draft language.)

2. **.294(a)(6)**: Clarifying the distinction in subpart (a)(6) between a qualifying cogenerator and a small power producer eligible for system interconnection pursuant to PURPA. Also add load management.

(See attached work draft language.)

3. **.294(a)(8)**: Clarify that the reference in subpart (a)(8) to "load management efforts, load research, and energy end-use analysis efforts made by the utility" are the same as the efforts undertaken pursuant to Sec. 3 - Load Management Reports (AS 42.05.415).

(See attached work draft language.)

4. **.294(a)(9)**: Require that the recommended electrical energy resource supply plan include not only a supply plan but a proposal for implementation of the plan.

(See attached work draft language.)

5. **New subpart - .294(a)(10)**: Add a new subpart (a)(10) allowing the Commission to require additional information.

(See attached work draft language.)

6. **New subpart - .294(b)**: Clarification that forecasts and projections for the Advance Resource Plan should be for a 20 year period.

(See attached work draft language.)

7. **.294(d)-(Fomerly subsection (c))**: Redrafted to provide that the Commission may not only approve, but after a public hearing may also propose modifications to, a utility's Advance Resource Plan.

(See attached work draft language.)

Section 2

8. **.411(d)**: The phrase "tariff" is an overly broad term and should be replaced in this section with the terms "rate" or "rate revision".

(See attached work draft language.)

Section 3

(No changes proposed.)

Section 4

(No changes proposed.)

Section 5

(No changes proposed.)

SUGGESTED AMENDMENTS

by Representative Brown

House Bill 239

Only one change is proposed for HB 239. In Section 3, the unexpended and unobligated portions of the appropriations from the Railbelt Energy Fuind should lapse back into the Railbelt Energy Fund (and not lapse into the general fund). This change will correct an oversight in the original draft.

(Work draft forthcoming.)

5-0638B
Cramer
5/13/87

Original sponsors: Brown, Ellis, Davis, et al.

Changes [ ] — shown to original bill

IN THE HOUSE

CS FOR HOUSE BILL NO. 238 ( )

IN THE LEGISLATURE OF THE STATE OF ALASKA

FIFTEENTH LEGISLATURE - FIRST SESSION

A BILL

For an Act entitled: "An Act requiring certain electric public utilities to prepare certain reports; and relating to costs in proceedings before the Alaska Public Utility Commission."

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF ALASKA:

* Section 1. AS 42.05 is amended by adding new sections to read:

Sec. 42.05.294. ADVANCE RESOURCE PLANS. (a) An electric utility with annual sales that exceed 300,000,000 kilowatt hours shall file an advance resource plan with the commission on or before January 15, 1989, and every four years thereafter. The plan shall

moved to p.2 lines 19-20

[WHEN THE PLAN INCLUDES ... NEXT 20 YEARS.]

(1) include a long-term demand forecast, including base, low, and high projections, that projects the power requirements for the utility service area;

(2) list and describe the facilities and energy supply resources of the utility and project future requirements;

(3) list the facilities that the utility expects to remove from service;

(4) include an annual load duration curve and a forecast of anticipated peak loads and reserve margins for the residential, commercial, and industrial sectors;

(5) describe the projected population growth or decline, urban development, industrial expansion, and other factors influencing demand for electrical energy and describe the bases for the projections;

(6) describe additional system capacity that could be achieved by improvements in generating or transmission efficiency, load management, power pooling, interconnection of qualifying co-generation and small power producers, conservation, and reductions in demand through end-use efficiency improvements;

(7) describe the utility's relationship to other utilities and to regional associations, power pools, or networks;

(8) summarize the relevant load management efforts, load research, and energy end-use analysis efforts made by the utility under AS 42.05.415;

(9) recommend an electrical energy resource supply plan that identifies projected plant retirement, development of additional generating capacity and transmission systems, load management efforts, conservation, and cost-effective end-use efficiency improvements, and include a proposal for implementation of the plan; and

(10) include other information considered necessary by the commission to ensure adequate consideration of all supply-side and demand-side alternatives.

(b) A forecast or projection required under (a) of this section must be for the next 20 years.

(c) The commission shall establish by regulation a consistent reporting methodology for advance resource plans required under (a) of this section and shall encourage closely integrated utilities to prepare the plans jointly.

(d) The commission shall review each advance resource plan and may propose modifications to the plan. The commission shall hold a public hearing before approving or proposing modifications to a utility's plan. The commission shall approve the plan if it finds that the plan adequately addresses conserving electrical energy supply

resources through available cost-effective end-use efficiency improvements.

Sec. 42.05.296. PERMITS FOR CERTAIN ELECTRICAL UTILITY CONSTRUCTION. (a) An electric utility with annual sales that exceed 300,000,000 kilowatt hours may not construct or expand a plant or transmission system to increase its capacity by more than five megawatts unless the utility has obtained a permit from the commission.

(b) The commission may not issue a permit unless it finds that the project is necessary to meet future demand that cannot be met by cost-effective load management alternatives, including conservation and energy end-use efficiency improvements.

* Sec. 2. AS 42.05.411 is amended by adding a new subsection to read:

(d) The commission may not allow a rate revision to take effect for an electrical utility subject to AS 42.05.415 unless the commission determines that the new rate is consistent with the development or maintenance of the lowest cost electrical energy supply system for the utility under the utility's most recent load management report.

* Sec. 3. AS 42.05 is amended by adding a new section to read:

Sec. 42.05.415. LOAD MANAGEMENT REPORT. (a) An electric utility with annual sales that exceed 300,000,000 kilowatt hours shall file a load management report with the commission on or before October 1, each even-numbered year. The commission shall establish guidelines for the report by regulation. The report shall

(1) identify the cost of service for specific classes of customers;

(2) assess the opportunities for improved load management;

(3) evaluate the potential for reducing system costs by reducing demand as a result of end-use efficiency improvements;

(4) document the current load and the load projected for

the next 10 years;

(5) analyze energy end-use in the utility service area and identify as precisely as possible the final, physical use of electricity in the residential, commercial, and industrial sectors, including use within each sector for space heating and cooling, lighting, water heating, refrigeration, office appliances, and shaft power;

(6) review current and anticipated load research activities; and

(7) analyze opportunities to lower total utility system costs through improved generation and transmission efficiencies, including innovative rate designs, increased load factors, reduced demand, and deferral of additional capacity requirements.

(b) The commission shall assist the utilities to coordinate preparation of the report to minimize cost.

* Sec. 4. AS 42.05.651(a) is amended to read:

(a) After completion of a hearing or investigation held under this chapter, the commission shall allocate the costs of the hearing or investigation among the parties, including the commission, as is just under the circumstances. In allocating costs, the commission may consider the results, ability to pay, evidence of good faith, other relevant factors and mitigating circumstances. The costs allocated may include the costs of any time devoted to the investigation or hearing by hired consultants, whether or not the consultants appear as witnesses or participants. The costs allocated may also include <u>costs paid by the commission under (c) of this section and</u> any out-of-pocket expenses incurred by the commission in the particular meeting. The commission shall provide an opportunity for any person objecting to an allocation to be heard before the allocation becomes final.

* Sec. 5. AS 42.05.651 is amended by adding a new subsection to read:

(c) During a proceeding or investigation under this chapter, the commission may compensate an interested person who is not a public utility for some or all of the reasonable costs of participating if the compensation is necessary to enable the interested person to adequately participate and if the participation is necessary to adequately present a significant position in which the person has a substantial interest. After completion of a hearing or investigation under this chapter, the commission may compensate an interested person who is not a public utility for some or all of the reasonable costs of participation in the proceeding or investigation if the commission finds that the participation was significant and has caused a substantial financial hardship to the interested person.

Least-Cost Utility Planning: a Research and Analysis Perspective

Abstract

Mark D. Levine
Energy Analysis Program
Lawrence Berkeley Laboratory

The purpose of the paper is to provide an overview of methodological and empirical aspects of least-cost utility planning studies. An overview of the key elements of a least-cost utility planning effort is presented. Recent results are presented in four areas:

- the cost-effective potential of demand-side programs, using results from a recent study of electricity options for the state of Michigan
- issues in forecasting electricity sales and relationship to utility least-cost planning
- recent work on hourly load shapes and its relevance to least-cost utility planning
- economic studies of impacts of demand-side programs and integrated utility planning, with examples from studies of Nevada Power, Texas Power and Light, and Pacific Gas and Electric Company
- discussion of the applicability to least-cost utility planning to electric utility issues facing Alaska

as a strategy to reduce costs of delivered electricity; their involvement in conservation programs is much more recent

We believe that a combination of factors has led to this attention to energy conservation programs: public service and utility commission requirements, high cost and risk of building large, central station power plants, good public relations with utility customers, and a growing awareness within the industry of the role of demand-side programs in increasing economic efficiency of utility operations are among the most important of these factors

The good news is that utilities have implemented a variety of demand-side programs over the past half decade They have gained considerable experience about these types of activities The bad news, in our judgment, is that many of the programs have been adopted as a palliative to satisfy an immediate problem rather than as a result of an overall strategy to provide services to the consumer at the least cost

We have looked into utility planning activities to find out the extent to which end use (particularly energy conservation) programs are an intrinsic part of the utility planning process. We sought information about utilities that are among the best-known for their end use activities We have discovered that comparatively little effort is placed on estimating financial and economic impacts of conservation plans While many millions of dollars are spent evaluating costs of alternative supply strategies and determining how different supply options fit into the overall utility resource plan before a decision to build new capacity is made, conservation programs are established with much less understanding of their relation to the overall utility plans

This state of affairs raises concerns for the longer term. As many utilities come out of a long period of financial difficulty, they will return to a more business-as-usual approach to their decisions. With a market-to-book ratio of the stock at one or above and with improved bond ratings, many utilities once again have access to capital

markets. The tendency for them to do what they have traditionally done--build new power plants--increases accordingly

New generating facilities are often needed. But they should not be built if demand-side programs can satisfy the demand for services at lower cost than new supply technologies

A number of utilities are presently attempting to treat investments in end-use efficiency on an equal basis with new supply. Pacific Gas and Electric Company (PG&E) explicitly uses the term "least cost planning" in its efforts to achieve this balance. In its 1984 Annual Report [2], PG&E estimated that "conservation will allow us to avoid $5 to $7 billion in outlays for new capacity that would otherwise be needed in the next decade." The Bonneville Power Administration (BPA) is performing extensive studies and planning the implementation of a wide variety of programs to increase energy efficiency, in response to the Congressional mandate that BPA must invest in the least cost measures, with a balanced treatment of both demand- and supply-side programs (BPA gives a 10 percent benefit to demand-side programs) Thus BPA, under the requirements of the Northwest Power Planning Act, is *required by law* to develop and implement least cost resource plans

We have worked with several other utilities that are embarking on the least cost strategy. In our experience, these utilities have generally found the process of changing their planning approach to be slow and painstaking The data and analysis requirements for incorporating end-use plans into the overall planning exercise are substantial We turn later to the ways in which the federal government can assist in speeding up this process.

It is important to note that the Edison Electric Institute (EEI) in concert with the Electric Power Research Institute (EPRI) have started to provide assistance on demand-side management alternatives to the industry as a whole EEI and EPRI have jointly

CORRECTION

THIS DOCUMENT
HAS BEEN REPHOTOGRAPHED
TO ASSURE LEGIBILITY

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The purpose of the paper is to provide an overview of methodological and empirical aspects of least-cost utility planning studies. An overview of the key elements of a least-cost utility planning effort is presented. Recent results are presented in four areas:

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- economic studies of impacts of demand-side programs and integrated utility planning, with examples from studies of Nevada Power, Texas Power and Light, and Pacific Gas and Electric Company
- discussion of the applicability to least-cost utility planning to electric utility issues facing Alaska

Statement of

Arthur H. Rosenfeld
Professor of Physics, University of California, Berkeley, and
Acting Program Leader, Energy-Efficient Buildings Research,
Lawrence Berkeley Laboratory

and

Mark D. Levine
Deputy Program Leader
Energy Analysis Program
Lawrence Berkeley Laboratory

on the Least Cost Utility Planning Initiative
before the

Subcommittee on Energy Development and Applications
of the
Committee on Science and Technology
U.S. House of Representatives

September 26, 1985

I. Introduction

Mr. Chairman, I am here representing myself and my colleague, Dr. Mark Levine. Both of us have responsibility for engineering/economic data bases and analytic tools at LBL that are capable of producing "Supply Curves" of conserved energy and of avoided peak power. These data are used by utilities as input to their resource plans and by the California Energy Commission and the California Public Utilities Commission in evaluating these plans.

I appreciate the opportunity to discuss how we view least cost planning, what we have accomplished so far, and how we hope to contribute to the new initiative.

II. What is a Least Cost Plan?

We believe that gas and electric utilities should strive to provide energy services to their customers at the least practical life-cycle cost, treating investments in end-use efficiency and in new supply on an equal and balanced basis.

Roger Sant popularized the term "Least Cost Scenario" to describe such a plan. Since utilities use supply curves of gas or electricity to describe the cost of supplying a new therm or a new kWh, Sant suggested calculating "Supply Curves of Conserved Energy" to mesh with the utility curves for new energy, and be merged into one least cost curve that includes both demand and supply options for energy services [1].

III. Status of Least Cost Planning in the Utility Industry

The idea of least cost planning is beginning to receive attention in the utility industry. The substantial number and diversity of utility conservation and load management programs signifies the growing importance of measures to control demand growth. Utilities have long been concerned with load management (reducing peaks and filling valleys)

as a strategy to reduce costs of delivered electricity; their involvement in conservation programs is much more recent

We believe that a combination of factors has led to this attention to energy conservation programs: public service and utility commission requirements, high cost and risk of building large, central station power plants, good public relations with utility customers, and a growing awareness within the industry of the role of demand-side programs in increasing economic efficiency of utility operations are among the most important of these factors

The good news is that utilities have implemented a variety of demand-side programs over the past half decade They have gained considerable experience about these types of activities The bad news, in our judgment, is that many of the programs have been adopted as a palliative to satisfy an immediate problem rather than as a result of an overall strategy to provide services to the consumer at the least cost

We have looked into utility planning activities to find out the extent to which end use (particularly energy conservation) programs are an intrinsic part of the utility planning process We sought information about utilities that are among the best-known for their end use activities We have discovered that comparatively little effort is placed on estimating financial and economic impacts of conservation plans While many millions of dollars are spent evaluating costs of alternative supply strategies and determining how different supply options fit into the overall utility resource plan before a decision to build new capacity is made, conservation programs are established with much less understanding of their relation to the overall utility plans

This state of affairs raises concerns for the longer term. As many utilities come out of a long period of financial difficulty, they will return to a more business-as-usual approach to their decisions. With a market-to-book ratio of the stock at one or above and with improved bond ratings, many utilities once again have access to capital

markets. The tendency for them to do what they have traditionally done--build new power plants--increases accordingly

New generating facilities are often needed. But they should not be built if demand-side programs can satisfy the demand for services at lower cost than new supply technologies

A number of utilities are presently attempting to treat investments in end-use efficiency on an equal basis with new supply. Pacific Gas and Electric Company (PG&E) explicitly uses the term "least cost planning" in its efforts to achieve this balance. In its 1984 Annual Report [2], PG&E estimated that "conservation will allow us to avoid $5 to $7 billion in outlays for new capacity that would otherwise be needed in the next decade." The Bonneville Power Administration (BPA) is performing extensive studies and planning the implementation of a wide variety of programs to increase energy efficiency, in response to the Congressional mandate that BPA must invest in the least cost measures, with a balanced treatment of both demand- and supply-side programs (BPA gives a 10 percent benefit to demand-side programs) Thus BPA, under the requirements of the Northwest Power Planning Act, is *required by law* to develop and implement least cost resource plans.

We have worked with several other utilities that are embarking on the least cost strategy. In our experience, these utilities have generally found the process of changing their planning approach to be slow and painstaking. The data and analysis requirements for incorporating end-use plans into the overall planning exercise are substantial We turn later to the ways in which the federal government can assist in speeding up this process.

It is important to note that the Edison Electric Institute (EEI) in concert with the Electric Power Research Institute (EPRI) have started to provide assistance on demand-side management alternatives to the industry as a whole. EEI and EPRI have joint

produced a set of documents jointly entitled "Demand-Side Management--Evaluation of Alternatives" [3] We believe that this is a good start in improving access of utilities to important information to assist them in the least cost planning process We would, however, contrast this early effort by the industry on the demand side with the thousands of times more information available to the industry on investments in supply options

To summarize we believe that the utilities have made an important start in the least cost planning process Some utilities have made commitments to going down this path Industry-wide organizations (EEI and EPRI) are contributing to this process However, to date most demand-side activities have been developed and implemented on an *ad hoc* basis Long-term commitment is uncertain Great effort is needed to achieve a true balance between demand and supply investments One should not expect that this balance will be achieved quickly or without considerable reallocation of research, manpower, and priorities among utility and regulatory commission staffs

IV. Supply Curves of Conserved Energy and Avoided Peak Power

Since 1975, we at Berkeley have been tabulating least cost potentials for the buildings sector of our economy. We started casting them as supply curves in 1979 While our experience and data are (to date) limited to buildings and appliances, this type of information is particularly important for electric utilities, since two-thirds of their electricity goes to buildings, and three-quarters of their income is derived from this sector

Conserved Energy. Figure 1 is a residential electric conservation supply curve for 2000 AD for the Bonneville Power Administration (BPA) [4]. Each small step in the curve represents a conservation measure Its width represents the annual electricity savings and its height is the cost of conserved energy (CCE). A measure is cost-effective if its CCE is less than the cost of the energy it displaces

The cost of conserved energy and the regional electricity savings (in billions of kilowatt hours or BkWh) are calculated for 336 measures, ranked cheapest first The options include retrofit of existing homes and improvements in new homes and appliances. The base case for the calculations assumes "frozen efficiencies" i e , floorspace and amenities are projected to grow according to BPA's resource plan, but efficiencies stay frozen as of 1983 For this base case, in 2000, BPA would have to supply about 81 TWh (1 TWh = 1 BkWh) Actual BPA forecasts count on price increases and on conservation programs to improve efficiencies and cut usage by 13 TWh to 68 TWh Figure 1 shows that 215 measures save electricity for less than 4 cents/kWh (the 1983 price), with a cumulative potential savings of 34 TWh below Base, and 21 TWh below the BPA forecast of 68 TWh. 21 TWh represents the output of about 4 typical 1000-MW baseload power plants whose construction should certainly be deferred until a serious effort is made to acquire the equivalent savings from conservation In fact, a kWh generated by these new plants will sell for about 10 cents instead of 4 cents, in which case we should invest instead in the supply curve up to 10 cents/kWh, which yields another 5 TWh, i e , another conservation power plant

Avoided Peak Power. Figure 2 shows a supply curve, not of kWh, but of avoided peak kW, which we now produce to supplement the kWh curves The curve comes from our current study with the University of Texas at Austin, for the Texas PUC [5] The curve covers 18 measures that improve heating, cooling, and air conditioning in the Texas commercial sector, and shows that about 50% of today's commercial cooling peak can, by 2000 AD, be avoided for less than $1000/kW. The 18 measures are listed at the bottom of Figure 2. These measures can again be merged with equivalent utility data for purchasing new capacity to give a combined capacity resource acquisition plan.

Figure 3 summarizes our Texas study. The top bar charts show potential savings of 50% in BkWh, and the lower ones show similar potential savings in peak power.

V. Relation Between Potentials and Projections

A conservation potential is not a forecast; it is only a calculation of what could happen if suddenly we all began to make rational investments and then didn't reinvest any of our savings in increased amenity. But in this section, we want to show that our potential least cost scenarios, because they are based on engineering/economic calculations, have actually been more useful in describing reality than have older-fashioned, safer-sounding utility forecasts.

We shall give two examples, and we start with **Figure 4**, which dates back to the 1975 testimony of Rosenfeld and Goldstein to the California legislature [6]. It gives the utility projection and our least cost scenario for growth in California peak power. The upper curve shows the average 5 percent/year growth forecast by the utilities; the lower curve is our potential of only 1.2 percent, and the large X's (added later) are what actually happened. One never expects a potential actually to be achieved in this real world, but we see that our scenario missed the mark by only 2.5 GW. By contrast, the utility forecasts were too high by 15 GW.

In 1975, the California utilities were shocked by these estimates, but let's see what remarkable changes have been wrought in their point of view by 10 years of price rises, successful conservation programs, and the beginning of least cost planning among California utilities. **Figure 5** is PG&E's 1984 version of our scenario [7]. Without conservation and load management programs, growth would still be 5 percent/year, but least cost planning, now a planning objective of the utility, cuts this growth to 1.75 percent, similar to our earlier 1.2 percent potential. PG&E thus avoids the need to invest in 6 power plants in the next 20 years (and this scales to 12 plants statewide). Also, it's pleasing to note that we are now working with PG&E on Project Merlin, a study of the potential for yet another "conservation power plant" in the residential sector.

Figure 6 tells a similar story, not for an electric utility, but for the whole U.S. It is a plot of trends per capita in resource energy use vs national income for the U.S. and other industrial nations. We see that energy use is falling fast for all the countries plotted except the USSR, Poland, and Canada. We have added sloping lines corresponding, at today's energy prices, to energy bills of 5 percent through 20 percent of national income. We see that the U.S., which spent 14 percent of its GNP on energy in 1980, has dropped (in constant energy prices) to 12.2 percent in 1984, and France and Japan are way ahead of us and headed for 5 percent. To the Figure we have added the 2000 AD least cost potential energy use for the United States (65 quads) from the SERI Solar/Conservation study [8]. The study assumed that GNP grew by a factor of 1.8 between 1980 and 2000, so that 65 quads corresponds to 6% of year-2000 GNP. In 1981, many people were surprised by the conclusions of this study, but recent trends in Figure 6 suggest that there is a good chance that we'll approach the 6 percent potential by 2000 AD.

We conclude that least cost calculations are a very important way to assess impacts on utilities of the rapid technological changes that have been triggered by energy price rises. Their remarkable messages have quickly turned plausible.

VI. Role of Efficiency Calculations in Utility Planning

In this section, we refer to the data and calculations used by utility planners and discuss where DOE and its laboratories could be helpful.

Figure 7 is a typical utility planning flow diagram, with heavy borders on boxes where we see a useful federal contribution, medium borders where some utilities might want help, and light borders on the boxes where the utilities are doing fine without federal help.

Box A has data for the utility's territory on the stocks and flows of buildings, appliances, equipment, and "eligible fractions" (ie., the fraction of attics that remain to be insulated, clock thermostats to be installed, etc)

Box B contains the data on the hundreds of measures to be considered when calculating the micro supply curves for a single prototype building or energy service (lighting, refrigeration, etc) Box B also contains data on the technical success of buildings and appliances as monitored in the field (see the section on BECA below) By combining Boxes A and B, utilities and laboratories can collaborate to produce the macro supply curves illustrated earlier and the time-of-use profiles needed for Box C

Box C (load shape data by end use) and the accompanying load forecast are essential to the analysis of the impacts of demand-side programs We have done considerable research at LBL to built a computer model that simulates the hourly load impacts *by end use* of demand-side programs The significance of this step is that different end-use programs have different impacts on the load shape of utilities These load shape impacts have large implications on economic consequences of demand-side programs Although utilities perform load forecasts, they rarely evaluate the load shape and resulting economic effects of conservation programs. This omission often means that important benefits (capacity savings) of conservation programs are not taken into consideration in the development of long-term plans

Box D is crucial, but quite different It covers experience on conservation programs: information, incentives, rebates, standards, quality control. Collecting and distributing this information requires a clearinghouse covering federal, state, local, and utility case histories, reports, and evaluations Under the Least Cost Initiative, the natural sponsors of Box D might be NARUC, EPRI, GRI, or similar institutions

An important point about Box D is that its inclusion in the planning activity as shown in Figure 7 is essential to the development of a least cost utility resource plan.

The traditional utility planning process develops a generation expansion plan treating the level of demand (and investment in conservation programs) as a constant, exogenous variable. A crucial point made in Figure 7 is that the effects and costs of conservation programs need to be varied along with the different supply options to produce the long-term utility resource plan Even the California utilities, which are actively pursuing least cost planning, have not yet fully incorported conservation and other demand-side programs into the utility planning effort in the manner shown in Figure 7. Virtually all large utilities have sophisticated models and extensive data for optimizing the supply choices, *but they do this optimization at one or a few demand levels instead of performing the analysis for both demand and supply options together*

VII. Possible Organization of a Least Cost Study

The Least Cost Initiative is to be a national study in the sense that it must be useful to utilities all over the U S. But if it is to yield real least cost plans, it must involve selected individual utilities, each with its characteristic weather, energy supply and prices, stocks and flows of buildings and industry, and related data

We believe that the study should be undertaken as a collaboration between the DOE labs and about ten utilities (or combinations of utilities and PUC's) which are already upgrading their resource plans and wish to work together We would update and upgrade our data bases and computer programs as they apply to these utilities, paying particular attention to measures that are nearly independent of region (lighting, appliances, etc ,) and to time-of-use data for load management

NARUC/EPRI/GRI would work with the same utilities to supply experience on programs from the clearinghouse.

Each utility would use this technical and programmatic information to improve its least cost resources plan.

Finally, we would all strive to have the plans follow a common methodology. This approach will permit the transfer of the tools and portions of the data to other utilities, and will be particularly useful for smaller utilities with limited resources. With ten plans available, we could assess the national implications for conservation and load management, and the needs for filling gaps in information.

This is an ambitious program that will take several years. Data bases are not established overnight. But these resource plans will reduce the risk that we have too few or too many power plants and natural gas facilities. The U.S. conservation potential is about $250 billion/year in reduced costs of energy to the consumer, accounting for investments in efficiency improvements, the American consumer can realize a net saving of more than $100 billion/year. If the Least Cost Initiative can promote programs which lead to the capture of an additional 1 percent of that potential, it will save us $1 billion/year--an amazing payback for a $1 million/year investment.

VIII. Field Monitoring and Calibration of Engineering Calculations

The BECA Data Bases

For simplicity, we have discussed CCE (the cost of conserved energy) as if it can be simply calculated from engineering and price data. In fact, we calibrate our calculations with field performance measurements and typically have to degrade our potential savings, and raise the CCE, by 20%.

Eric Hirst and his excellent group at Oak Ridge have monitored many utility programs; Pacific Northwest Laboratory is monitoring conservation programs sponsored by BPA; and in 1979 at LBL we started the BECA (Building Energy Use Compilation and

Analysis) data bases. By now we have two residential data bases (new and existing) and two commercial bases (new and existing) which we publish regularly, and additional specialized data bases on thermal storage and load management, building energy simulation validation, etc. Every two years we hold a conference at Santa Cruz on "what works" to improve building energy efficiency.

Figures 8 and 9 illustrate the need for calibration. Figure 8 is a 45-year perspective of office building energy intensity [9]. Energy use rises to a peak at the time of the OPEC embargo, then falls over a cliff towards the voluntary standards series of ASHRAE (American Society of Heating, Refrigerating, and Air-Conditioning Engineers), or the mandatory series of California Title 24.

But Figure 9 shows our collection of 83 new office buildings, most of which have won awards for energy efficiency. They are a lot better than the average (30 year-old) building, labelled NBECS (Non-Residential Building Energy Consumption Survey) at 264 kBtu/sq ft., but many fail to comply with the new standards whose range (over weather) is pictured at the top of the Figure. We are currently trying to sort our these failures. How much is because the building was not built as designed, or operated as planned, and how much is poor quality control? Clearly, these are questions which must be addressed by utility planners.

We at the National Laboratories believe that data bases like these, the experience that goes with them, and the incorporation of the data into the development of least cost plans are our most valuable contributions to Least Cost planning. We would like to work with utilities to share data and analysis tools, to make their and our data more reliable and accessible.

Finally, we should remark that the discontinuity in Figure 8 sheds light on why potential calculations have usually been closer to the mark than conventional utility projections. We see that sudden price changes and energy awareness are causing very rapid

improvements in technology, and indeed in whole buildings. Detailed engineering models, used for potentials, can handle discontinuities, but conventional elasticity models simply cannot.

Figures 10, 11, and 12 are a trilogy illustrating how we rank measures for retrofitting a home. Figure 10 is called a technology cost curve, and is generated by computer simulation. It shows energy use decreasing as efficiency improvements are made in the home. Nine measures reduce annual space heat from 120 to 50 million Btu. The next four measures reduce energy requirements for water heating by 50 percent. Next, we address cooling which is reduced from 3600 to 1000 kwh per year at low cost. Appliances and lighting are then dropped to about 50 percent. The theoretical overall reduction is to about 35 percent of the initial energy requirements of the home, for an investment of $3000.

Figure 11 displays space heat savings versus pre-retrofit energy use for real homes that have been weatherized [10]. The large X's represent "optimal weatherization" of about 100 homes in 10 cities. These retrofits were performed by the Community Services Administration (CSA) with assistance from the National Bureau of Standards (NBS). "Optimum" means that furnaces and ducts were retrofit, as compared with the then prevalent practice of merely fixing the shell of the home. The median savings for these retrofits was an encouraging 47 percent, at a median cost of $3000. This is good agreement with the computer calculations. But we must be careful: most auditors and contractors are not as well-trained and supervised as those carrying out the retrofits, even though the NBS experiment was done with CETA labor. The black dots in the Figure represent samples of homes that were retrofit under the DOE weatherization program, which unfortunately concentrated on the shell. The median savings are about 15 percent.

We thus use the computer simulations as the basis for our supply curves, but we recognize that the conservation programs will only achieve the predicted savings if they are carried out properly. In particular, we believe that it is useful to publicize the importance of furnace and duct retrofits in homes and measures to improve air conditioning and other building equipment efficiency in commercial buildings, as such activities often yield large benefits.

Figure 12 recasts the data of the technology cost curve of Figure 10 into a supply curve, with the measures ranked (lowest CCE first). Note that the first envelope measure--attic insulation--does not appear until measure 9.

IX. Results of Least Cost Analyses

Figure 13 shows the results of an analysis we have performed using detailed information about efficiency measures, residential load shapes, customer rate classes, and marginal electricity and power costs for the Pacific Gas and Electric Company [11]. This Figure is only for one of a very large number of efficiency improvements that can be applied to homes. We have chosen to illustrate the impact of a program that resulted in the adoption of very efficient central air conditioners in new homes. Efficiency improvements in air conditioners are of particular interest, because they lead to a large decrease in peak power and a relatively small decrease in baseload electricity sales.

Three primary economic impacts result from sales of highly efficient air conditioners: (1) revenue is lost from reduced sales of electricity, (2) costs are reduced because of lower fuel requirements, and (3) investment in new peaking capacity is reduced because of the slower growth of peak power demand. In this case, the dominant term is the reduction in investment for new peaking units. The utility or the ratepayers in the PG&E service area stand to gain some $30 to $40 million per year--a very large benefit

even for a service area the size of PG&E--from the introduction of this one efficiency improvement in new and replacement central air conditioners.

An important point, not illustrated in the Figure, is that results of demand-side programs will vary enormously among different utilities. The economics depends critically on not only the impact of the specific efficiency improvement but also on the load shape, rate structures, marginal cost during peak and off-peak times, and demand growth of the utility. It is this complexity that requires that least cost planning be undertaken for a range of utilities throughout the nation. The enormous richness of conservation and load management options requires that a very extensive data base describing these options be developed and made widely available among utilities, if the real benefits of this new initiative are to be realized.

X. Conclusions

We believe the Least Cost Initiative is a well-conceived idea that can yield significant benefits to the Nation. We recognize that the undertaking will require much effort, and that it needs several years before its fruits can be realized. However, we anticipate that the relatively small federal contribution to the least cost planning effort, when carried out in concert with utilities, will play a critical role in increasing the economic efficiency of very large investments by the utility sector, leading to economic benefits to ratepayers and utilities. As we previously noted, if the Least Cost Initiative promotes programs which can lead to the capture of an additional 1 percent of the potential benefits of cost-effective efficiency improvements in the Nation, it will save us $1 billion per year--an amazing payback for a $1 million per year investment.

References

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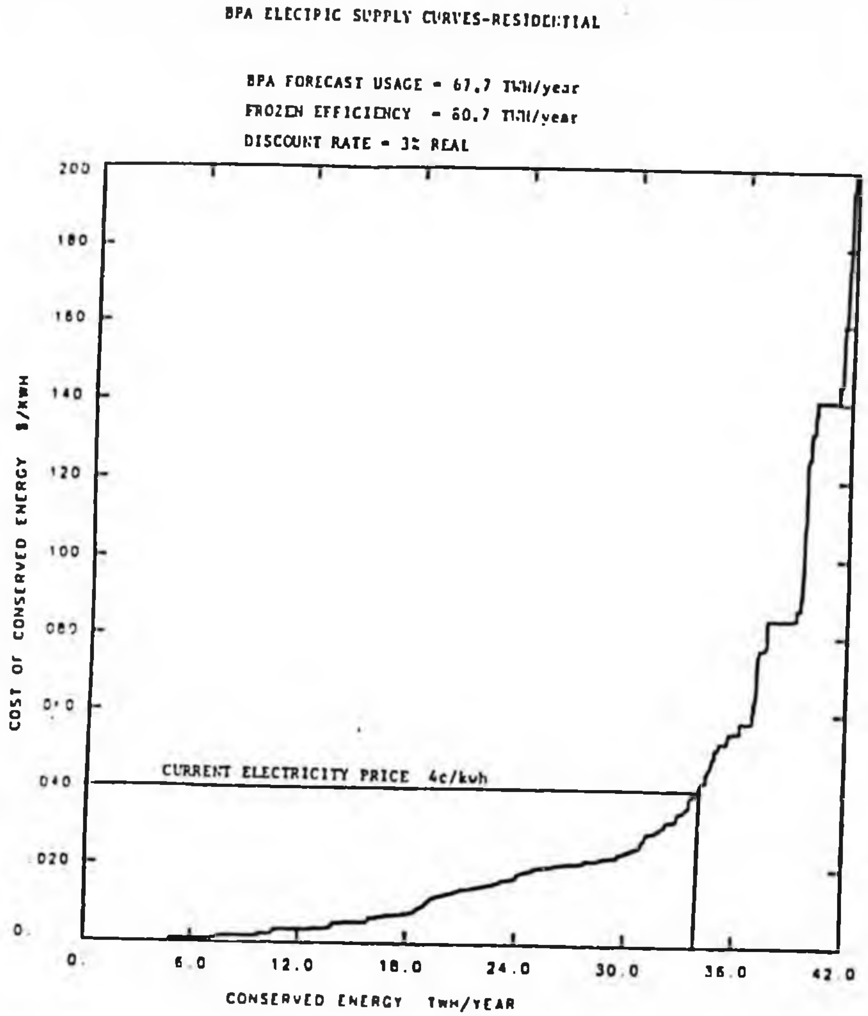
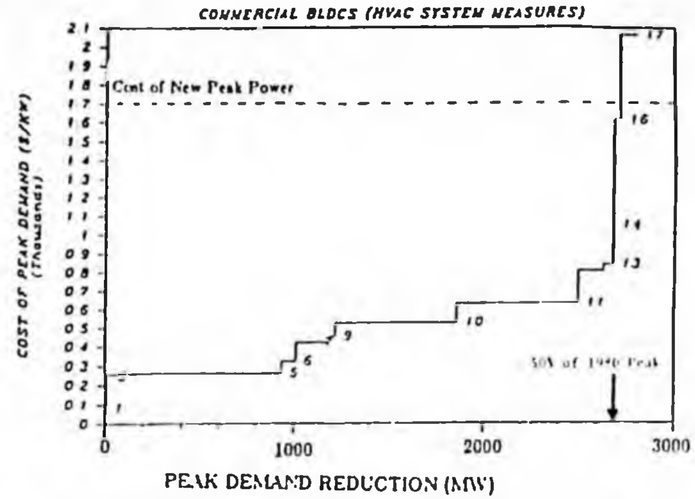


Fig 1 Grand Residential Conservation Supply Curve for 2000 Source reference [4]



						[illegible]		[illegible]	
			COST ($)		LIFE	SAVINGS	CCE	SAVINGS	CCE
ID CODE	LABEL	DESCRIPTION	[illegible]	[illegible]	(YRS)	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	1	Reduce system size	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	2	Controls package	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
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[illegible]	4	Reduce system size	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	5	High COP cooling	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
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[illegible]	10	Evaporative cooling	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
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[illegible]	17	Higher COP cooling equip	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	18	Fan motor speed control	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

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Fig 2 Supply curve for avoided peak power for 18 HVAC measures for commercial buildings in Texas Source Hunn et al, University of Texas (Austin)/ LBL study for PUC of Texas (1985)

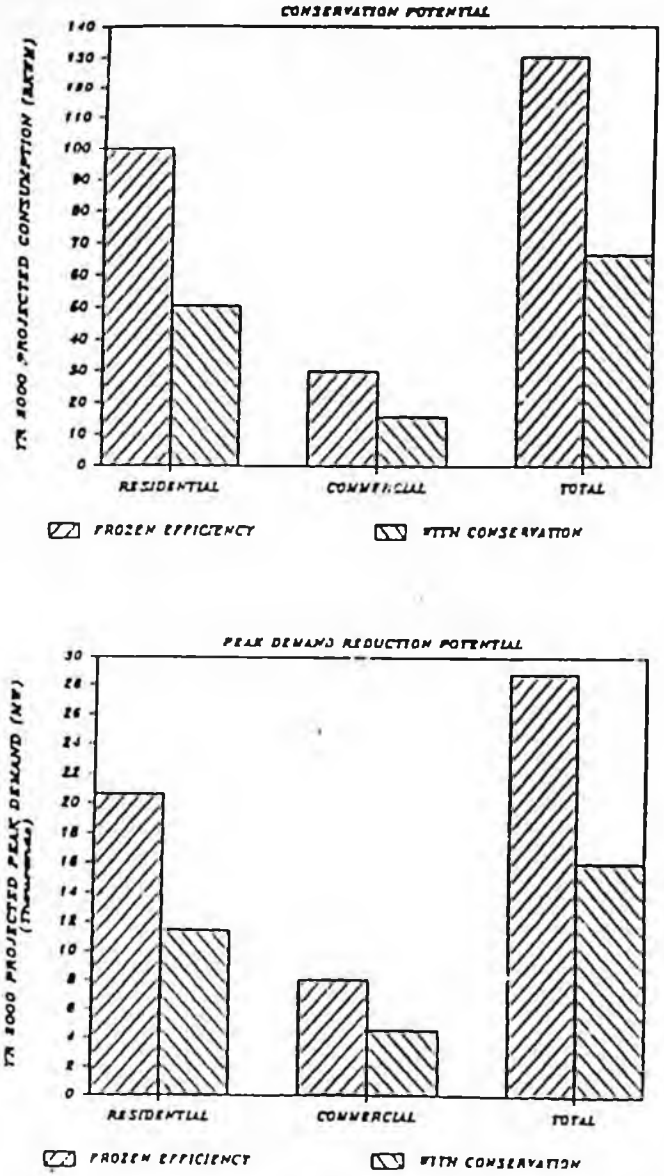

Fig. 3. Conservation Potential in 2000 A.D. vs. Frozen Efficiency Projections for Texas. Source: reference [5].

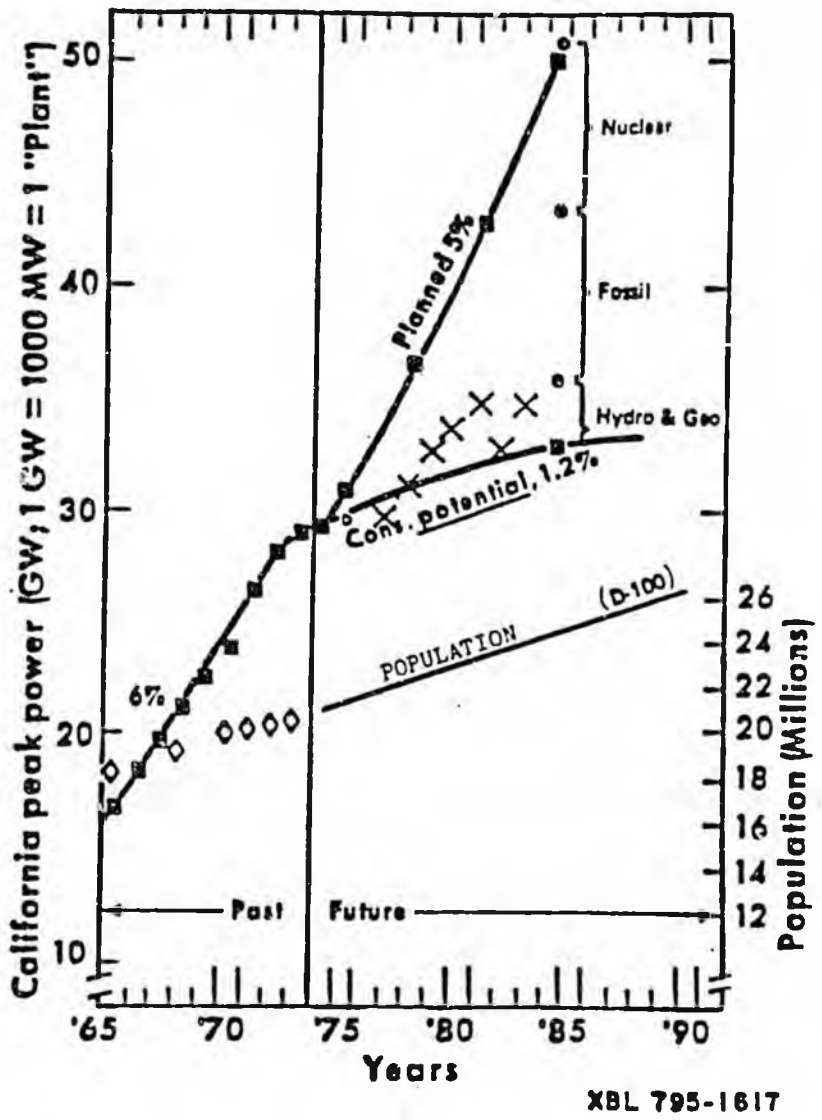

Fig. 4. Coincident Peak Power in California. Utility projections vs. conservation potential as calculated by A.H. Rosenfeld for Warren Committee Hearings, California Assembly, December 4, 1975. Actual subsequent demand is plotted as X's. Source: reference [6].

Long-Term Utility Planning: Traditional and Least-Cost

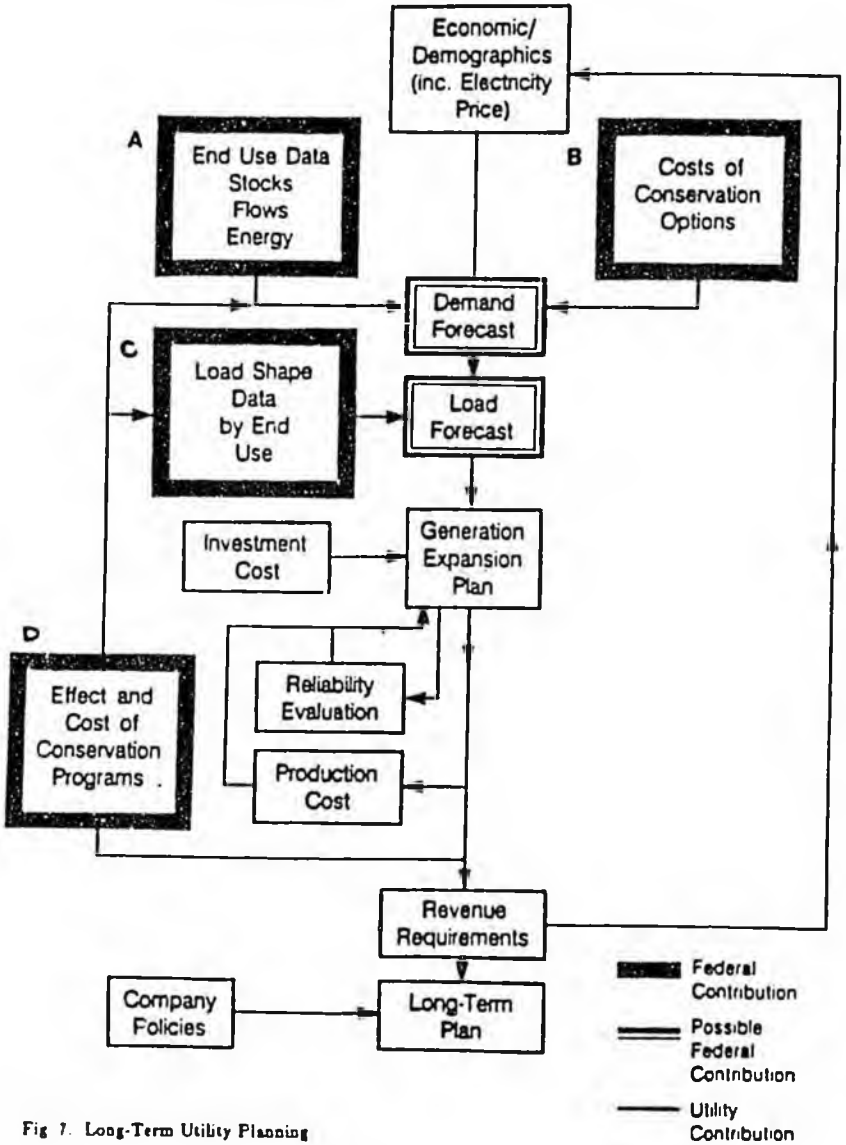

Fig 7. Long-Term Utility Planning

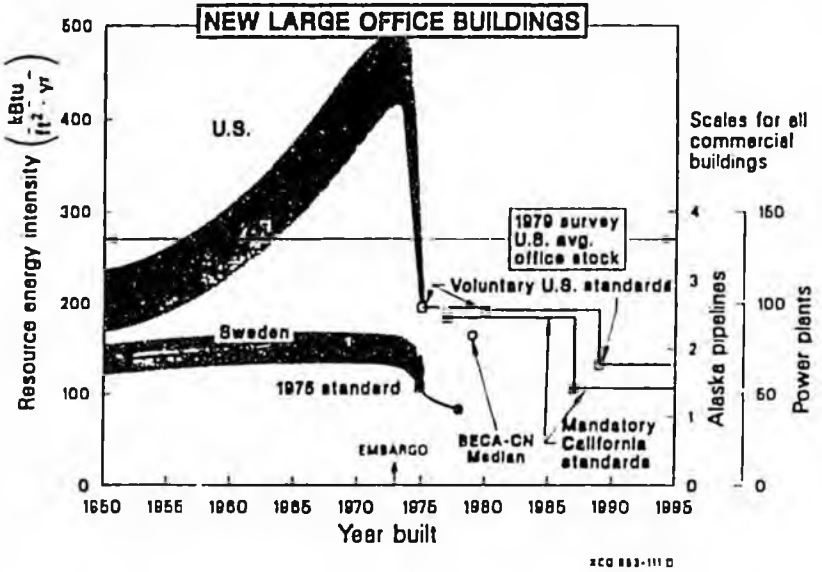

Fig 8. Trends in Resource Energy Use in New Large Office Buildings. The scales on the right apply to all 50 Bft² of U.S. commercial buildings, assuming they follow the same trend as office buildings. Source: reference [8].

CORRECTION

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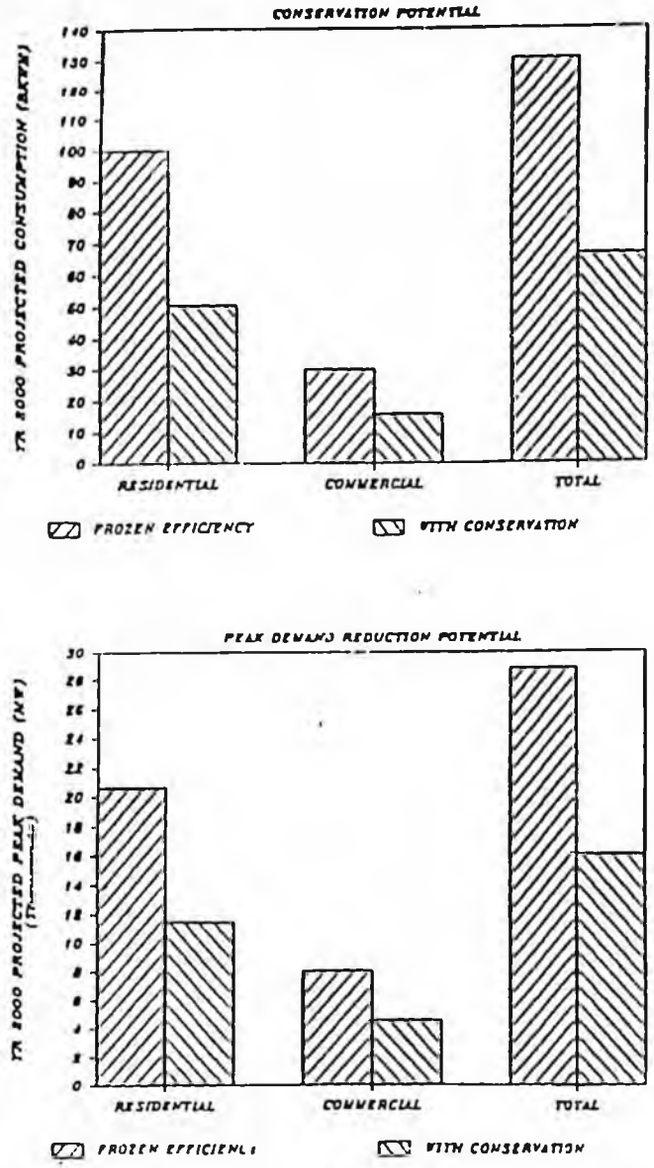
HAS BEEN REPHOTOGRAPHED
TO ASSURE LEGIBILITY



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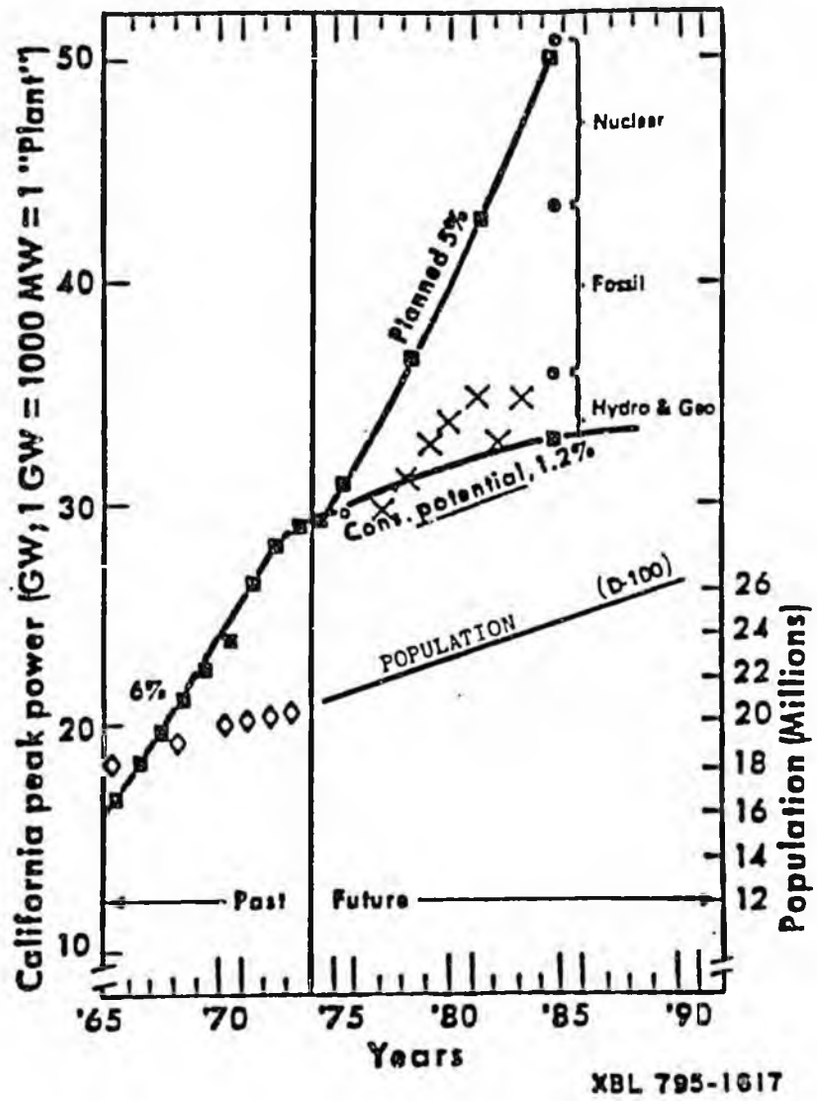

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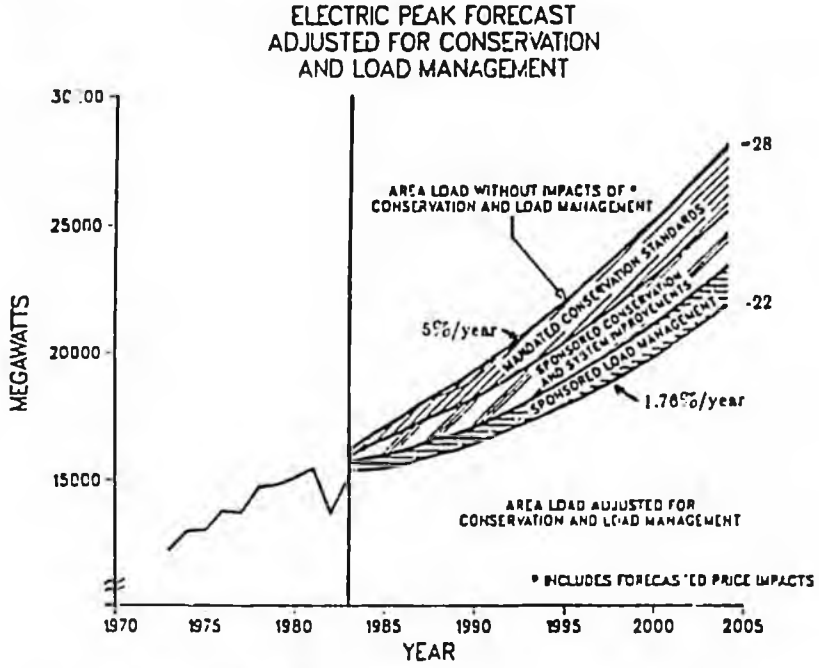


Fig 5. Long-Term Planning Results, 1985-2004 Pacific Gas and Electric 20-year plan. Source: reference [7]

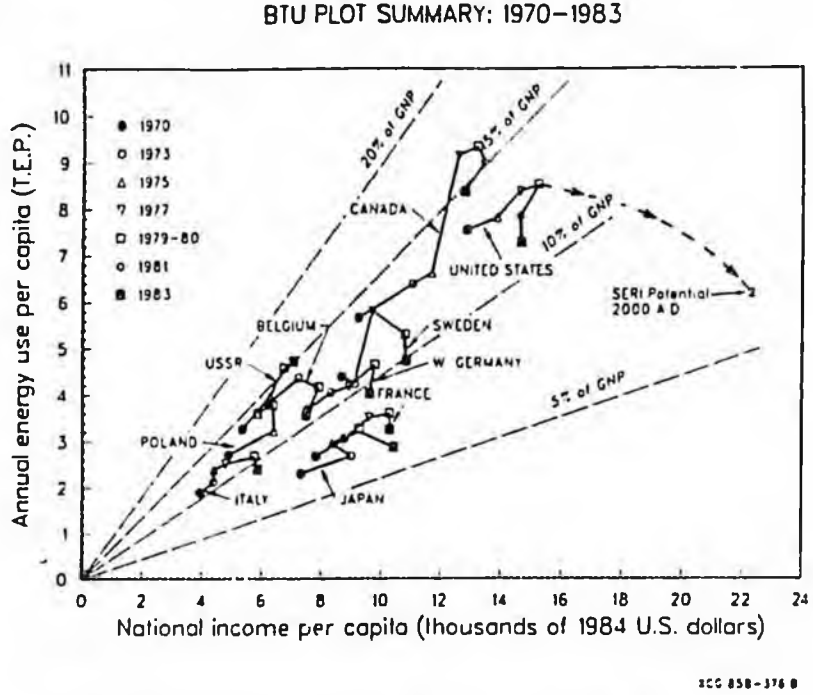
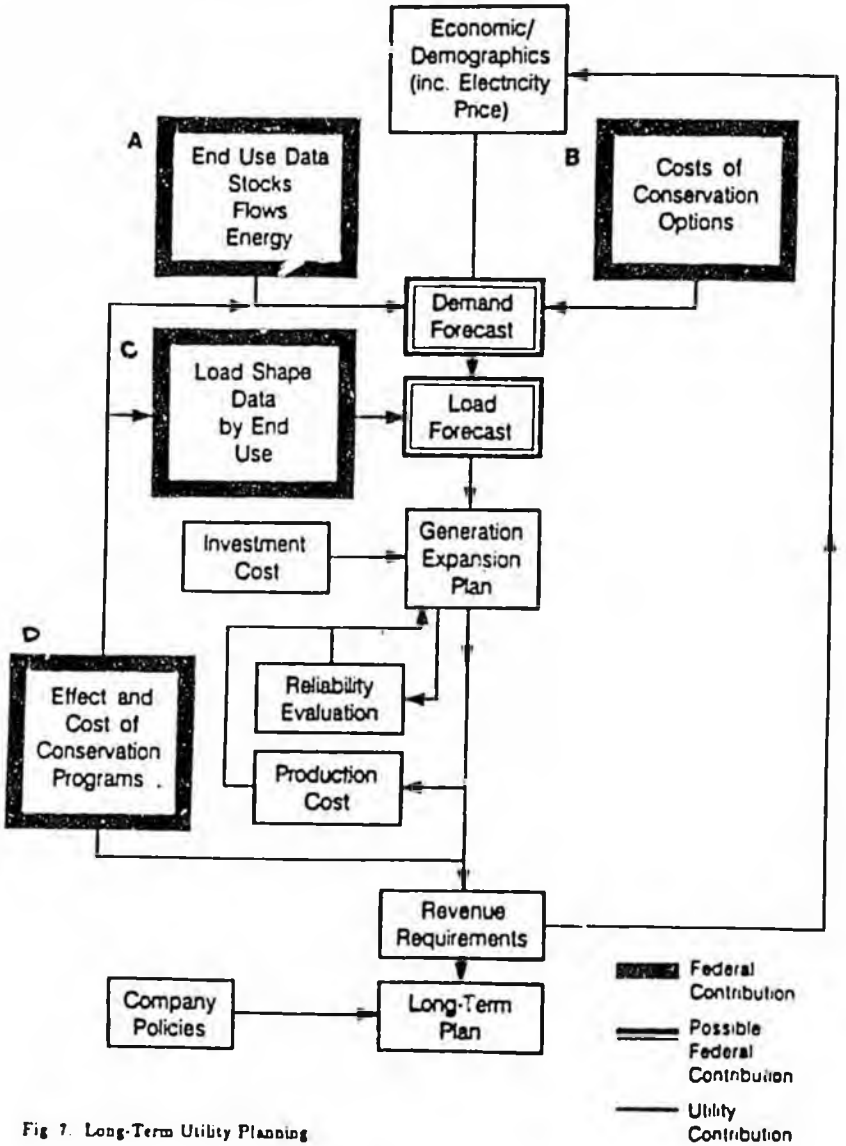


Fig 6. Resource Energy Use vs GDP (both per capita) For 11 Industrial Countries
Each country is a sequence of 7 or fewer points joined by straight lines. The conversion from local GDP to dollars depends only on the 1984 exchange rate; earlier points are plotted using individual national deflators. The energy data comes from the OECD/IEA volume "Energy Balances". In the case of income data, there are two different series (before and after 1980), so we scaled the incomes to match at 1980. We convert electricity to resource (primary) energy using the national heat rate (e.g., U.S. efficiency = 33%), except Japan, which uses a nominal efficiency of 35.1%, and 3 "hydro" countries, which use an OECD average efficiency of 37%. For the lines labeled 10%, 15%, and 20% of GNP, we use an average 1984 price of resource energy of $5.68/Mbtu or about $220 per TEP. Conversion: 1 TEP (Tonne equivalent of petroleum) = 40 Mbtu. Source for price: DOE/EIA-0376 (1983).

Long-Term Utility Planning: Traditional and Least-Cost



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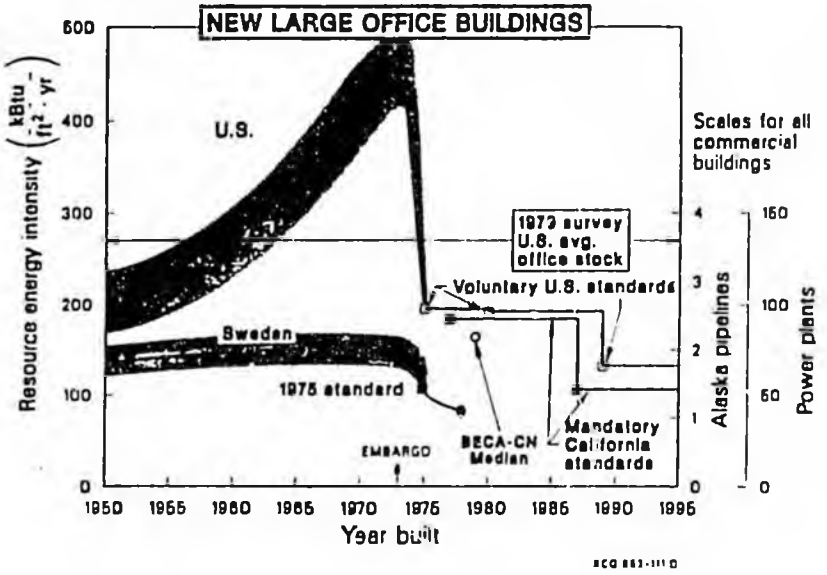

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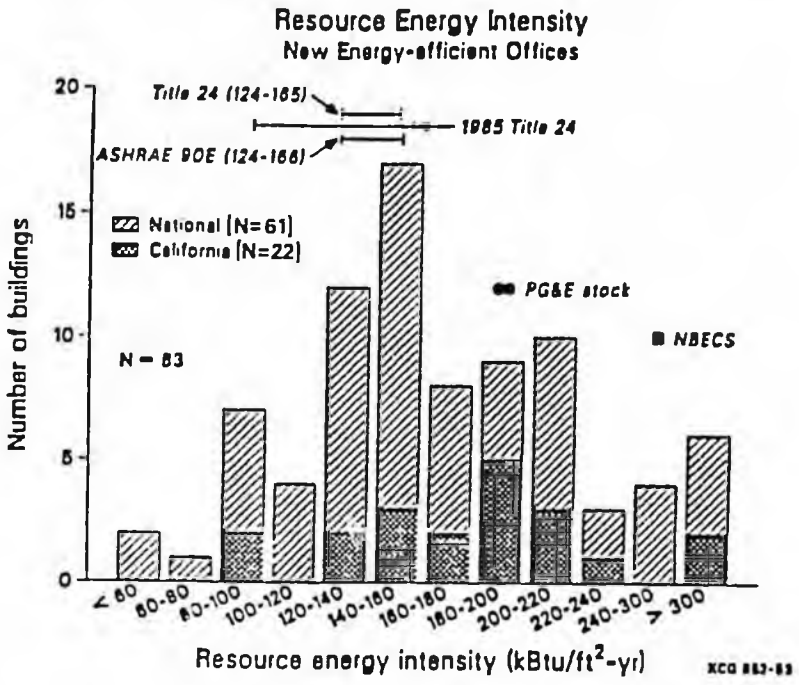


Fig 9 22 California offices compared to 61 other offices and to various standards and measures of stock Source LBL

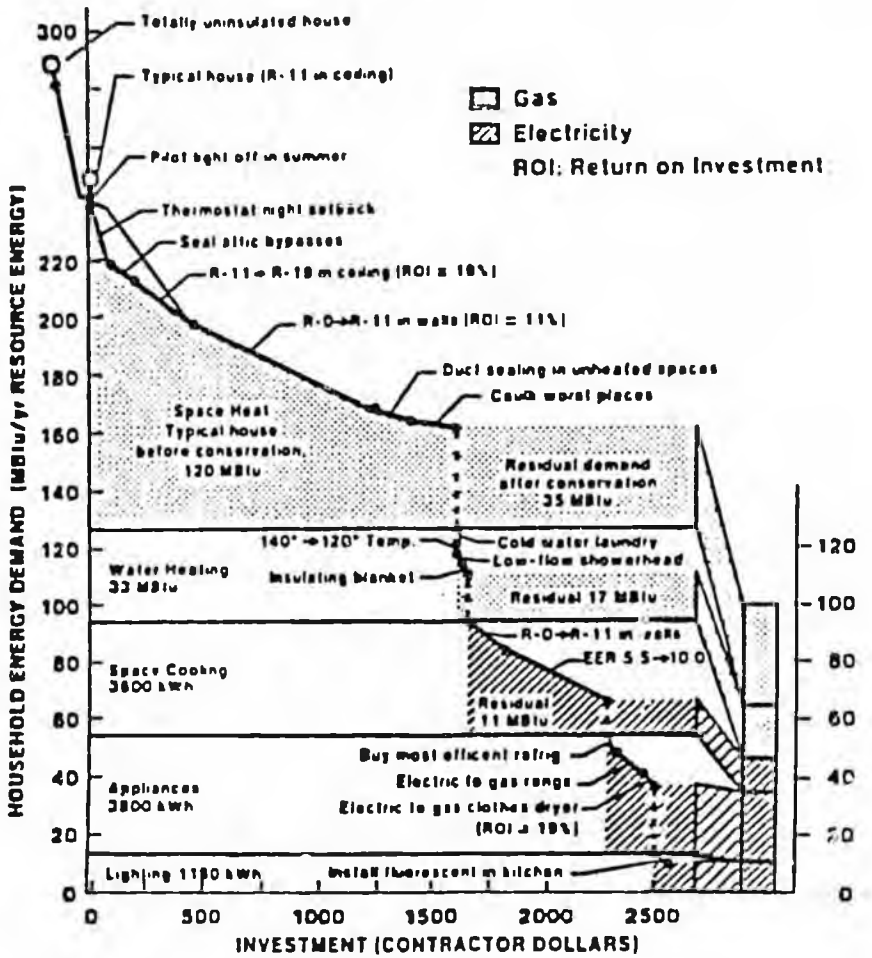


Fig. 10. Retrofit Conservation Potential in a Northern California Single Family Home, Gas Heat (1200 sq ft., 3000 Heating Degree-Days) XBL 812-7946

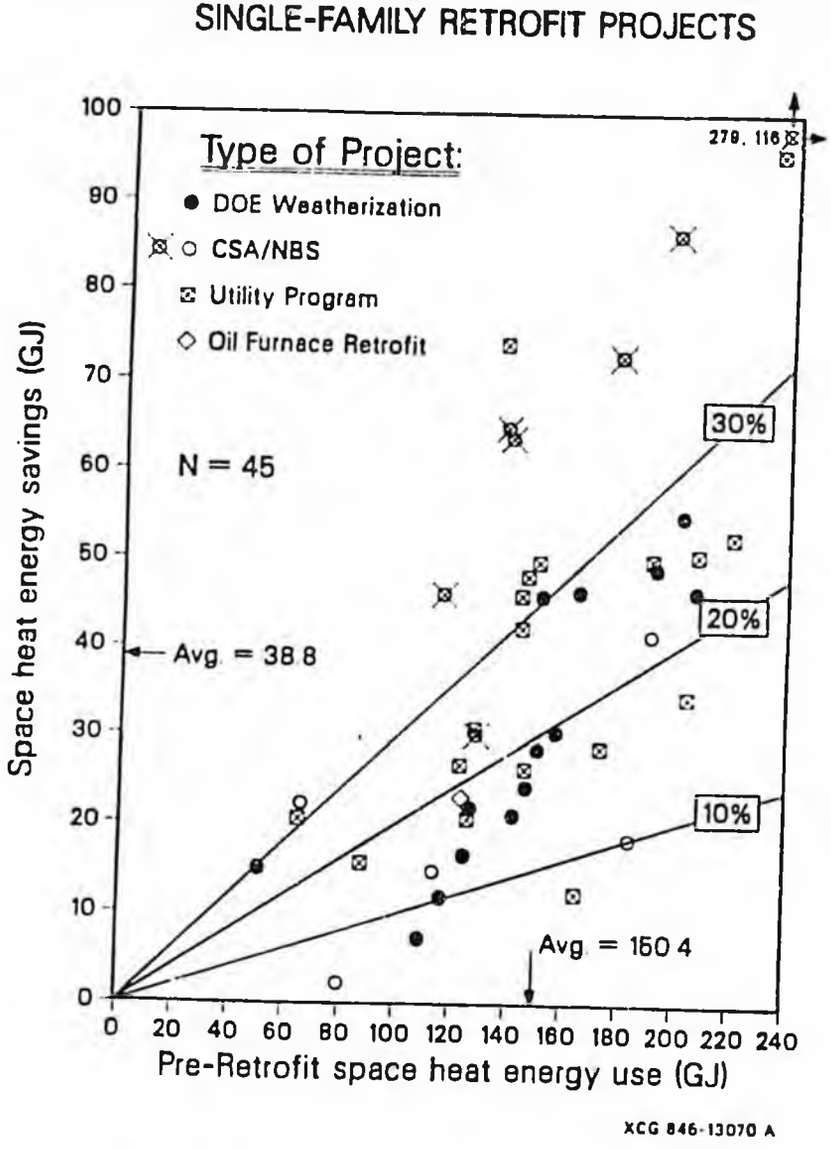


Fig. 11. The median point is the middle, or 50th percentile, point. One GJ = 1 MBtu (million Btu). Source: Reference [9]

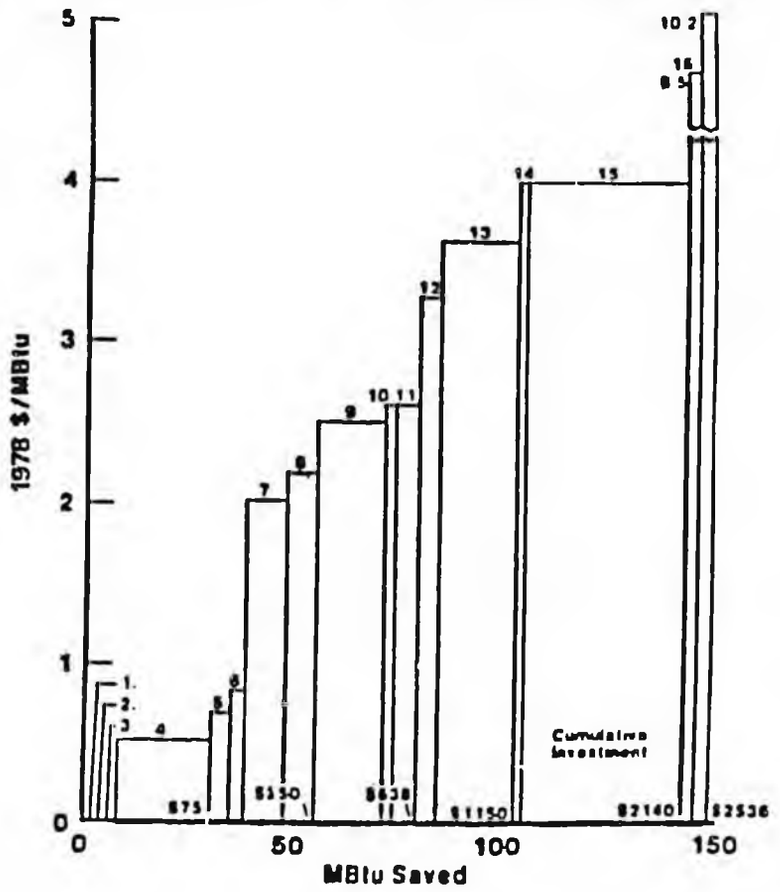


Fig. 12. Retrofit Conservation Potential in the Northern California Single Family Home, replotted as a conservation supply curve. Cost of conserved energy in $/MBtu of resource energy, calculated using 10% cost of money, plus depreciation, with all installation done by a contractor. Total annual energy consumption of the house before retrofit was 250 MBtu/year.

1. Turn furn. pilot off in summer.
2. Reduce hot water temperature, 140 to 120 degree-F.
3. Cold laundry rinse.
4. Thermostat night setback to 60 degree-F.
5. Buy most efficient refrig.
6. Install low-flow shower head.
7. Furnace tune-up (biennial).
8. Change from electric to gas range.
9. Increase ceiling insulation, from R-11 to R-19.
10. Install fluorescent lighting in kitchen.
11. Change from electric to gas clothes dryer.
12. Seal attic bypasses.
13. Change to high-efficiency air conditioner, EER 5.5 to 10.0.
14. Install water heater insulating blanket.
15. Insulate walls, R-0 to R-11.
16. Seal and insulate ducts in unheated spaces.
17. Caulk building shell (in worst places).

XBL 812-7947

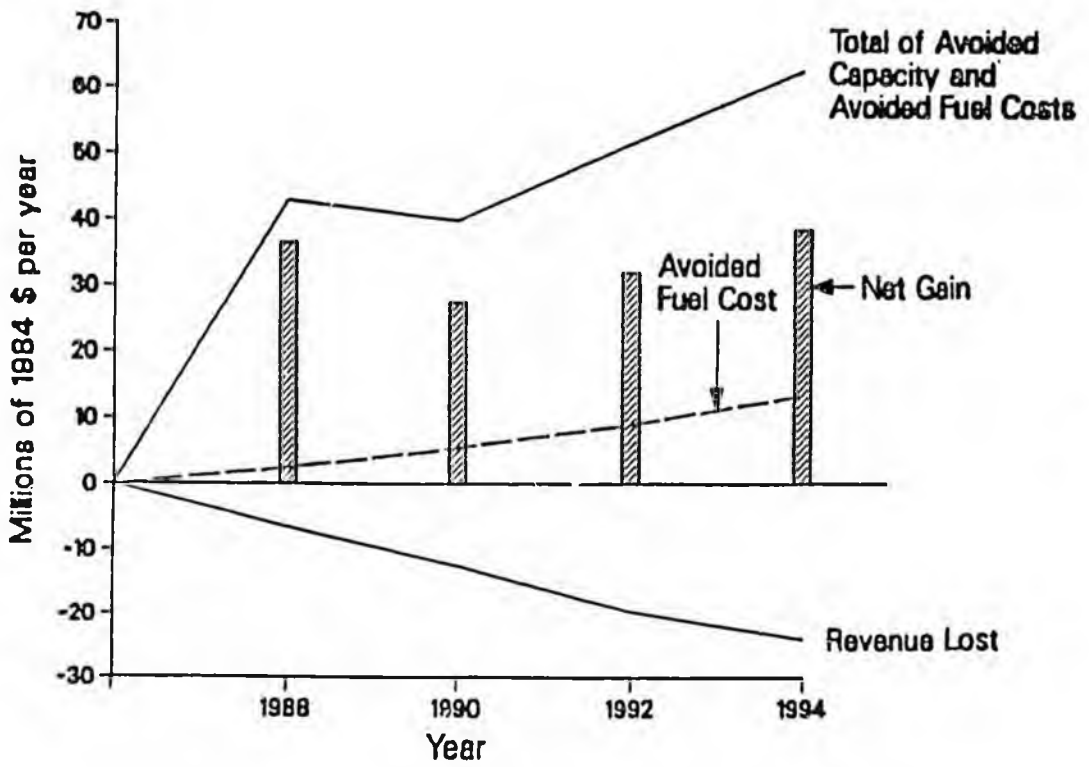


Fig. 13. Economic Impacts of Highly Efficient (SEER = 12) Central Air Conditioners on Pacific Gas and Electric Company and its Ratepayers. Source: reference [10].

5/6/87

Sectional Analysis: HB 238 and 239

by

Representative Kay Brown

House Bill 238

This bill amends Title 42 statutes of the Alaska Public Utilities Commission to establish least cost energy planning requirements for Alaska's larger regulated utilities. The bill would establish requirements for the preparation of "advance resource plans" and more detailed "load management reports" for approval by the Commission. The development of new power facilities would require approval from the Commission and would be subject to a determination that future demand cannot be met by cost-effective efficiency and conservation improvements. Approval of rate increases would also be subject to a determination that the increase would be consistent with the development or maintenance of a least cost energy supply system. This bill also grants the APUC authority to compensate participants in commission proceedings under certain circumstances.

Section 1: Advance Resource Plans and New Facility Development

Regulated electric utilities with annual sales that exceed 300 million kilowatt hours are required to prepare and submit "advance resource plans" to the APUC for approval. The first advance resource plan would be due january 1, 1989 and every four years thereafter. Affected utilities include Chugach Electric Association, Anchorage Municipal Light and Power, Matanuska Electric Association, Golden Valley Electric Association, and Homer Electric Association. The required elements of the advance resource plans include:

- a long-term (20-year) demand forecast;
- description of existing system facilities and future facility requirements;
- description of factors affecting demand for electrical energy (such as population, urban development, industrial expansion);
- description of additional system capacity which could be achieved through energy conservation and end-use efficiency improvements;
- description of the utility's relationship to other energy systems and power suppliers;
- summary of efforts relating to load management and end-use analysis;

- a recommended electrical energy resource supply plan with projected plant retirement/additions, load management efforts, energy conservation and efficiency improvements.

The Commission shall establish consistent reporting methodology for the advance resource plans. The plans are subject to Commission approval.

For utilities with annual sales above 300 million kilowatts hours, the Commission must permit new facilities larger than 5 megawatts. This permit is subject to a determination by the Commission that any new facilities are necessary to meet future demand that cannot be met through cost-effective load management, conservation, and energy end-use improvments.

Section 2: Rate Increases Consistent with Load Management Reports

New or revised tariffs must be consistent with development or maintenance of the lowest cost electrical energy supply system for the utility under the utility's most recent load management report.

Section 3: Load Management Reports

Regulated electric utilities with annual sales that exceed 300 million kilowatt hours are required to prepare and submit "load management reports" to the APUC for approval every two years. The APUC shall establish guidelines for these reports. The reports shall:

- include the cost of service for specific classes of customers;
- assess opportunities for improved load management;
- evaluate potential for reduced system costs by reducing demand through end-use efficiency improvements;
- include current and projected load for the next 10 years;
- provide an analysis of energy end-use in the service area;
- review current and anticipated load research activities; and
- provide a comprehensive analysis of opportunities to lower total system costs.

The Commission has responsibility to coordinate preparation of the reports.

Sections 4: Authorization to Provide Intervenor Compensation

This section gives the Commission authority to compensate, through allocated costs, parties other than utilities.

Section 5: Eligibility for Intervenor Compensation

This section defines the circumstances under which parties other than utilities may be compensated. As a discretionary authority, the Commission may, during a proceeding, compensate an interested party other than a public utility for some or all costs if the Commission determines that such compensation is necessary to enable adequate participation and presentation of a significant position in which the party has a substantial interest.

The Commission may, after a proceeding, compensate an interested party other than a utility if the Commission finds that the participation was significant and has caused a substantial financial hardship.

House Bill 239

This companion measure would appropriate funds from the Railbelt Energy Fund to the Alaska Power Authority and the Alaska Public Utilities Commission to assist with the implementation of HB 238.

Section 1: Grants to Railbelt Utilities

$500,000 would be appropriated to the Alaska Power Authority for payment as grants to Railbelt utilities for the cost of preparing the end-use studies, load management reports, and advance resource plans required by HB 238.

Section 2: Least Cost Staff Position at the APUC

$55,000 would be appropriated to the Alaska Public Utilities Commission for a new position to assist in the preparation and review of load management and advance resource plans required by HB 238.

Section 3: Lapse Date

Unexpended funds as of June 30, 1988 lapse into the general fund.

Section 4: Effective Date

The effective date is tied to the effective date of HB 238.

5/5/87

SELECTED LEAST COST ENERGY MATERIALS

Markowitz, P. "The Least Cost Alternative to New Power Plant Construction," Critical Mass Energy Project (October 1985).

Markowitz, P. "Is Your State Charting A Least Cost Electrical Strategy", Critical Mass Energy Project (August 1986).

House Research Agency, Least Cost Energy Programs and States Energy Agencies (February 16, 1987).

TO: Ned Farquhar

FROM: Eric Myers

DATE: October 17, 1987

SUBJ: October 26 House Resources Work Session on HB 238

As we discussed on the phone, I have contacted the following individuals regarding their participation in the evening work session:

Paul Markowitz
Energy Conservation Coalition
tel: at AkPIRG on Monday AM 278-3661 about 9am-12noon

Mark Levine
Lawrence Berkley Laboratory
tel: (415) 486-5238

Steven Weil, Commissioner
Nevada PSC
tel: (702) 883-3087

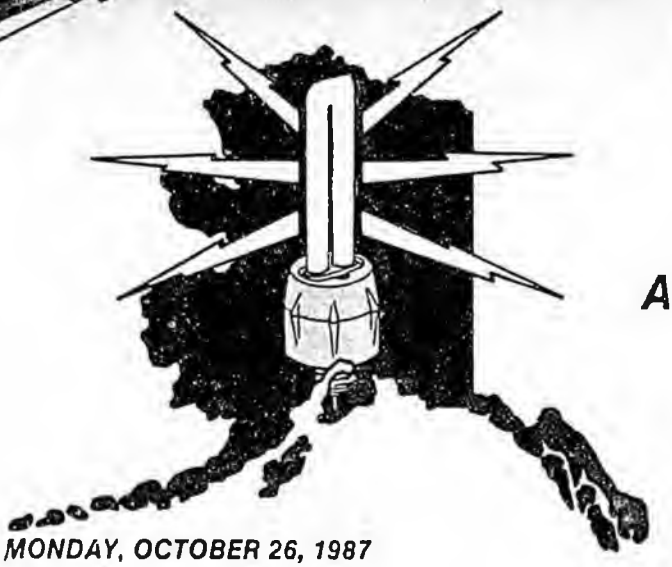
A copy of the conference agenda which gives a description of each of these individuals is attached.

I indicated that you would probably call to confirm their participation.

The concept, as I described it to them was to have each of them give about 10-15 minutes worth of comments to the Committee with the balance of the time left for Committee discussion. The objective would be to review "least cost" planning efforts in general without necessarily getting into detail on HB 238.

I would propose to have Kay start off with some general remarks to the committee about HB 238 followed by Markowitz with an overview of L-C efforts around the country, then Levine talking about denmand side technologies and applications used by utilities, and then Weil describing the situation in Nevada.

I'll be back in the office on Thursday (actually upstairs at the Energy Policy Task Force meeting).



Least-Cost Planning

October 26-27, 1987
Egan Convention Center
Anchorage, Alaska

A CONFERENCE FOR ALASKA

MONDAY, OCTOBER 26, 1987

7:45 a.m. **OPEN REGISTRATION**

8:15 a.m. **WELCOME & OPENING REMARKS**
David G. Hoffman, Commissioner
Department of Community & Regional Affairs

8:30 a.m. ***Larry Lewis: "Perspectives on Utility Planning — Issues and New Directions."*** Mr. Lewis is a Senior Project Manager for the Energy Management and Utilization Division at Electric Power Research Institute in Palo Alto California. EPRI was founded in 1972 by the nation's electric utilities to develop and manage a technology program for improving electric power production, distribution and utilization. Mr. Lewis has experience and expertise in demand side and market planning programs in both the private and the public sector. He will give a historical perspective on utility planning, and define least-cost planning.

9:00 a.m. **KEYNOTE ADDRESSES**
"DIFFERENT PATHS TOWARDS IMPLEMENTATION OF LEAST-COST PLANNING"
Larry Hobart: "Utility Initiated Least-Cost Planning Programs." Mr. Hobart is Executive Director of the American Public Power Association, an organization of publicly owned electric utilities throughout the U.S. He has spoken on the concept of least-cost planning before Congress and at utility conferences nationwide.

Paul Markowitz: "State-Chartered Least-Cost Planning Strategies." Mr. Markowitz is State Program Coordinator with the Energy Conservation Coalition in Washington, D.C. In this capacity, he promotes least-cost electrical planning at the state level, as well as strong federal conservation policies.

10:00 a.m. **BREAK**

10:15 a.m. **"LOOKING AT LEAST-COST PLANNING FROM A UTILITY PERSPECTIVE"**
Panel discussion involving utility managers and analysts who are actively dealing with least-cost planning strategies, either through their own initiation or because of state legislation.

MODERATOR:
David Hutchens, Executive Director, Alaska Rural Electric Cooperative Association (ARECA)

SPEAKERS:
Matt Dillon: Board Member, Snohomish Public Utility District, Everett, Washington. Snohomish is a publicly owned, winter-peaking utility that is currently integrating least-cost strategies into their planning process. Mr. Dillon is chairman of a committee, composed of utility staff, board members, and consumers, that is addressing the implementation of these strategies.

C. Mac Eddy: Manager, Navopache Electric Cooperative, Lakeside, Arizona. Mr. Eddy has been responsible for many innovative load management programs including budget-billing, off-peak rates, weatherization and heat-pump loans. Navopache Electric Cooperative is participating in the Western Area Power Association "utility matching" program, sharing its experiences with other similar utilities.

SPEAKERS (continued)

Mark Levine: Deputy Program Leader, Energy Analysis Program, Lawrence Berkeley Laboratory. Mr. Levine represents a program which is funded by the Department of Energy to create a national data base on the cost-effectiveness of demand-side options, and to disseminate this information. This program is responsible for the development of analytical tools for evaluating demand-side and supply-side programs and for integrating them to find least-cost solutions to future electric needs.

Eric Hirst: Energy Analyst, Oak Ridge National Laboratory. Mr. Hirst has worked with utilities to integrate supply and demand-side programs. He was most recently a consultant to Puget Power and Light in Washington.

Larry Hobart: American Public Power Association

Larry Lewis: Electric Power Research Association

12:00 a.m. **LUNCH**

1:00 p.m. **"LEAST-COST PLANNING FROM THE REGULATORY PERSPECTIVE"**
Panel discussion involving members of public utility commissions from several states that have developed different styles of least-cost planning regulation.

MODERATOR:
Susan Knowles: Commissioner, Alaska Public Utilities Commission

SPEAKERS:
Steven Wiel: Commissioner, Nevada Public Service Commission. In 1983, the State of Nevada enacted a Utility Resource Planning Act which requires major electric utilities to submit fully-integrated, long-range resource plans every two years to the PSC, demonstrating that all aspects of their future energy needs have been considered. Mr. Wiel, as one of three commissioners responsible for plan evaluation and enforcement, is in great demand as a speaker who will realistically present the "highs and lows" of this law from the regulatory p[illegible]

Paul Galen: Manager, Policy Analysis and Research Division, Illinois Commerce Commission. In 1985, the Illinois General Assembly revised the Illinois Public Utilities Act to require least-cost energy planning by electric and natural gas utilities. The ICC was given the authority to determine the precise form, scope and content of the plans. Mr. Galen has been responsible for conducting hearings and workshops to identify the issues of greatest importance in the design and implementation of the least-cost planning process. His final report includes conceptual, methodological content, procedural and policy considerations.

Jerry Mendl, Director, Systems Planning, Wisconsin Public Service Commission. Mr. Mendl has been involved in the regulatory aspect of Wisconsin's long range utility resource planning legislation since its adoption in 1975. He has drafted a least-cost planning primer for state regulatory agencies, soon to be published by the National Association of Regulatory Utility Commissioners.

Jim Lazar, Consulting Economist, Olympia, Washington. Mr. Lazar has completed studies on utility rate reform, resource allocation and energy conservation program design. He has appeared as an expert witness before numerous utility regulatory commissions in the Pacific Northwest. Of particular interest is his work on the role of utility conservation programs during a period of surplus capacity.

We finally get some straight talk from someone in Juneau

satch carlson

Hell, Ben, don't sugar-coat it; tell it to her *straight*!

At last, some good news out of Juneau, something even better than a boatload of lawyers hitting an Iranian mine. House Speaker Ben Grussendorf has taken off the gloves. In fact, once he took them off, he slapped Senate President Jan Faiks right across the kisser with 'em.

Good show.

This all started with the self-serving Senate newsletter that you got in your mailbox a week or so ago. You know, the one that Faiks commissioned because she was distressed that the press, in particular this very fishwrapper, had done very little to polish the reputation of the Senate, which in our opinion had done very little, period.

I hope you didn't just throw out this particular mailing, since it cost some Thirty Large of your money. It isn't exactly a stirring read, I'll admit, but I was curious to see whether it would convince me that the last session of the legislature had been useful and productive, especially on the Senate side, where the Dragon Lady rules with an autocratic fist.

Sure enough, the Alaska State Senate Public Report, as this thing is called, painted the Senate as a dedicated group of hard-working saints committed to saving the Permanent Fund from the encroaching hordes of Visigothic raiders, namely the House and the governor. And there are listings of bills and resolutions passed during the session. You know, important stuff, like the resolution condemning not only *Armenian* genocide, but genocide in general, and I say it's about time.

But when Ben Grussendorf got his copy of this novel exercise in creative writing — I haven't seen anything this creative since I received a financial statement from a mutual fund company explaining how marvelous it was that my investment had fallen to about half its original worth — he got mad. Seems the House members, usually cast as the clowns in the legislative circus, were feeling pretty good about their own activities, and I suspect they were secretly pleased that this year it's the Senate that has proved such an embarrassment to the very notion of representative government.

So when Ben reads this thinly veiled put-down of the House, he loads up his typewriter and fires off a blast at Faiks. Comes near to calling her everything but clean. Calls the Alaska State Senate Public Report a "bear scat newsletter." Points out that while we're reading these Senators' noble self-evaluations, they're toiling away on the beaches of Waikiki. Calls Faiks' personal political ambitions "an expensive embarrassment to many of us in public office in Alaska."

I love it.

See, usually what we get for public consumption is this mamby-pamby politeness, in which members of the legislative club say things like, "I'm afraid my esteemed colleague may be in error," and such, even when they really hate each other's guts, if they have any. Part of this is a clannish protection against Outsiders, which means us; the other part is the tendency to get along by going along, to hope some crumbs of power might fall from the Dragon Queen's table if one tugs his forelock properly.

Me, I prefer honesty, even when it means blood feuds and political suicide. While it is the duty and delight of us in the Observer Corps to point out what we see as reality, to note the Emperor's apparent coating of goose pimples and wonder why everybody else is marvelling at his taste in duds, it is refreshing to hear such a voice from the inside.

Hell, I'm the one who wants to bring back the duel as a forum for political debate.

Meanwhile, lest you think the entire House was lined up behind Grussendorf, let me remind you that several representatives of that body leaped to Faiks' defense, especially in regard to the now-famous Hawaii trip, of which the Dragon Queen herself said, "Waikiki is no picnic." Rep. Ramona "Boom Boom" Barnes defended the trip, saying, "We worked our behinds off over there."

If this is true, given the average size of legislative fannies, I will admit they must have worked very hard, indeed. I look forward to reviewing the results.

☐ Satch Carlson is an Anchorage columnist.

REPRESENTATIVE
BEN GRUSSENDORF

P O Box 828
SITKA ALASKA 99835
(907) 747-8458

RULES COMMITTEE
LEGISLATIVE COUNCIL

DISTRICT 3
ELFIN COVE
PELICAN
PORT ALEXANDER
SITKA
TENAKEE

Alaska State Legislature

WHILE IN JUNEAU
P O Box V
JUNEAU, ALASKA 99811

(907) 465-3824
(907) 465-3720

House of Representatives
SPEAKER OF THE HOUSE

September 30, 1987

Senator Jan Faiks
President of the Senate
3111 C Street, Suite 525
Anchorage, Alaska 99503

Madam President:

My colleagues know the high level of tolerance that I possess in trying to seek out that last bit of public good that may be hidden from the logic of the moment. It has also been said that patience is one of my strong virtues. However, your excessive politics has pushed my patience and tolerance to the breaking point; and I can no longer view your political antics as an entertained bystander.

It is now the general feeling that the President of the Senate has crossed the line of public trust with blatant partisan politics that do not serve the public interest. Even more alarming is your use of public monies to accomplish those ends.

The only consolation I can hope for is that the public who paid for the Faiks Newsletter does not feel obligated to believe it! It's no wonder that the Alaska media in the last session labeled the House as the shakers and movers on the issues before us. You spent the session making campaign promises and electioneering, and you haven't stopped. I would like to say talk is cheap but, observing your expenditures of public funds for such rhetoric, it is expensive. Even more ironic was that bear scat newsletter being mailed out while you were in Hawaii on the public nickel. (Yes, I know you justified it by stating "Waikiki is no picnic.")

Now, Madam President, comes the main reason for this letter. The most questionable action of all is your determination to use state

CORRECTION

THIS DOCUMENT
HAS BEEN REPHOTOGRAPHED
TO ASSURE LEGIBILITY

REPRESENTATIVE
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funds to pay airfare and other travel expenses to have fund raises in Houston, Los Angeles and Seattle. Those fundraisers undoubtedly will be cloaked under the guise of "Oil Seminars". Believe me, Madam President, many oil company executives are privately amused at your petty political extortion--and your greed in trying to label the House Majority as anti-oil industry. The House Majority encourages and respects the industry's economic efforts in Alaska. As Speaker, all I want from them is respect for the State and its people. I believe that respect exists.

You're so busy preparing for the next campaign that it appears the upcoming session is going to be a political nightmare, especially since it's reported your Senate fundraisers will target Outside monies to influence House races as well. (This on the heels of your recent "gift" of public funds to the House Minority Leader so that he could hire a campaign consultant). Would you consider an electioneering truce until at least May so we can accomplish something other than campaigning? One house alone can do nothing despite all its noble efforts.

At this time, Madam President, your personal political ambitions are an expensive embarrassment to many of us in public office in Alaska, and I ask you to reconsider your windmill strategy. Our working relationship is on the brink of no return. If all you plan to do this session is campaign, the second year of the 15th Legislature will be unproductive and brutal.

I patiently await your reply and, with great tolerance, will try to understand your thoughts.

Respectfully yours,

Rep. Ben Grussendorf
Speaker of the House

cc: House Majority Leader
Senate Majority members

HB
239

(9)

HOUSE COMMITTEE REPORT

Date referred: 7/2/87 FURTHER REFERRALS: Finance

DATE: 4-20-88

The Resources Committee has considered HB 239

"An Act making special appropriations to the Alaska Power Authority for payment as grants to certain public utilities for preparing certain end-use studies, load management reports, and advance resource plans and to the Alaska Public Utilities Commission for certain costs; and providing for an effective date."

RECOMMENDS:

[X] replace with CS HB 239 (Res) [ ] the same title [X] a new title

[ ] attached amendment(s)

[X] do pass

[ ] do not pass

[ ] no recommendation

[ ] individual recommendations

[ ] additional referral to the _____ Committee

ADOPTS: [ ] _____ letter of intent

ATTACHES NEW FISCAL NOTE(s):

[ ] fiscal impact

[ ] zero fiscal note

[X] zero with analysis

[ ] same as previous fiscal note published _____

[ ] same as previous zero fiscal note published _____

SIGNING DO PASS:

Sam Cotten

Fletcher Sprague

Cliff Davidson

SIGNING OTHER RECOMMENDATIONS:

Adelbert Herrman

Dick Shultz No Rec

Sam Cotten

Chairman's signature

5-0637L

Original sponsors: Brown, Ellis, Davis, et al.

Funding Information	
General Fund	$ -0-
Other Funds	1,170,000
	$1,170,000

IN THE HOUSE BY THE RESOURCES COMMITTEE

CS FOR HOUSE BILL NO. 239 (Resources)

IN THE LEGISLATURE OF THE STATE OF ALASKA

FIFTEENTH LEGISLATURE - SECOND SESSION

A BILL

For an Act entitled: "An Act making special appropriations to the Alaska Public Utilities Commission for certain operating expenses and to the Alaska Power Authority for payment as grants to certain public utilities for preparing integrated resource plans; and providing for an effective date."

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF ALASKA:

* Section 1. The sum of $1,000,000 is appropriated from the Railbelt energy fund (AS 37.05.153) to the Alaska Power Authority for payment as grants to Railbelt public utilities for the cost of preparing integrated resource plans required by law.

* Sec. 2. The sum of $170,000 is appropriated from the Railbelt energy fund (AS 37.05.153) to the Alaska Public Utilities Commission for three positions whose responsibilities will be to assist public utilities in the preparation and review of integrated resource plans required by law.

* Sec. 3. The unexpended and unobligated portions of the appropriations made by this Act lapse into the Railbelt energy fund (AS 37.05.153) June 30, 1989.

* Sec. 4. This Act takes effect on the effective date of an Act enacted by the Fifteenth Alaska State Legislature that requires certain electric public utilities to prepare integrated resource plans.

5-0637L
Cramer
3/28/88

Original sponsors: Brown, Ellis,
Davis, et al.

Funding Information
General Fund $ -0-
Other Funds 1,170,000
$1,170,000

IN THE HOUSE

CS FOR HOUSE BILL NO. 239 ( )

IN THE LEGISLATURE OF THE STATE OF ALASKA

FIFTEENTH LEGISLATURE - SECOND SESSION

A BILL

For an Act entitled: "An Act making special appropriations to the Alaska Public Utilities Commission for certain operating expenses and to the Alaska Power Authority for payment as grants to certain public utilities for preparing integrated resource plans; and providing for an effective date."

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LEAST-COST PLANNING

Least-cost planning is a process that allows utilities to evaluate and consider supply and demand side options on an equivalent basis. It presents a "level playing field" approach to objectively evaluating energy conservation, power plant construction, improved performance of existing systems, use of alternative energy services and purchased power based upon their cost and reliability. Least-cost planning is also known as integrated resource planning and value-based integrated resource planning.

Whatever it is called, the process expands a utility frame of reference to include providing energy services: the heat, the light, the power needed to operate homes and buildings. This strategy enables utilities to consider programs which promote energy efficiency on an equal basis with increased capacity. Thus utility conservation programs can be viewed as new electrical sources just as new power plants are.

Interest in least-cost planning is the result of the uncertainties in the utility market and the increased penetration into the market of demand-side management technologies. Utilities understand how to evaluate and rank supply-side options. Demand-side options have, however, developed rather recently and there is not a lot of experience in incorporating these considerations into utility plans. One of the goals of least-cost planning is to expand the historically supply oriented utility by encouraging the development of a demand-side analytical and experience base.

Utilities from Alabama to Wisconsin have undertaken demand side strategies through a least-cost planning process. The American Public Power Association supports the concept of this process, calling it "energy services planning", and stating that it helps "reduce the adverse impact of long lead-times and costly construction of large generating facilities... and encourages optimum utilization of existing equipment." Examples of utility programs include the Snohomish Public Utility in Everett, Washington that has incorporated least-cost strategies into its planning process, and Navopache Electric Cooperative in Arizona that is involved in innovative load management programs including budget billing, off-peak rates, and heat pump and weatherization loans.

State governments have also been actively involved in least cost planning. In 1984 the National Association of Regulatory Utility Commissioners unanimously passed a resolution urging all state and federal regulatory commissioners to adopt a "policy mandating electric and gas utilities to develop and submit for approval least-cost plans." The two states that are recognized as playing leading roles in least-cost planning are Nevada and

Wisconsin. Nevada requires regulated utilities to consider demand and supply options in developing an integrated resource plan. In order for a utility to receive approval for a new generation or transmission facility, the proposed must be included in the utility's least-cost plan. Wisconsin mandates that utilities submit biennial plans for new power projects, and that least-cost analyses of both supply and demand-side options be included as part of the framework of the plan.

This issue has also grabbed the attention of national and state legislatures. Congress has appropriated funds to the U.S. Department of Energy for research, technology transfer, and analytical activities to promote least-cost planning. State legislatures in California, Wisconsin, Florida and Iowa have passed legislation mandating some form of least-cost planning regulation. In the last session of the Alaska Legislature, H.B. 238 was introduced by Representative Kay Brown. This bill would incorporate least-cost planning into the planning process of Alaskan utilities regulated by the Alaska Public Utilities Commission.

Least-cost planning is not a panacea for all of the current uncertainties in electrical planning but it does offer a process that allows demand-side options to compete equally with supply side options. As more utilities and states begin to look at this type of planning strategy they find they must grapple with several important questions: How will they define and determine least-cost? Least-cost to whom, and at what point in the planning strategy? What are the most effective methods of implementing least-cost planning - through voluntary utility initiative or state mandate? There is also a question of what aspects of least-cost planning are applicable to Alaska, with its relatively small utilities, unique distribution system, and currently, in many places, a surplus of power.

In order to explore these issues, the Department of Community and Regional Affairs, in conjunction with the Alaska Rural Electric Cooperative Association, Alaska Public Interest Research Group, Alaska Public Utility Commission, and Chugach Electric Association, is sponsoring a conference on least-cost planning in Anchorage on October 26-27, 1987. Representatives of utilities and regulatory agencies as well as nationally recognized energy analysts who have been involved in least-cost planning have been invited to share their experiences and concerns. In addition their Alaskan counterparts will discuss what applications there could be for Alaska.

PUBLIC CITIZEN
Critical Mass Energy Project
215 Pennsylvania Ave., S.E. • Washington, D.C. 20003 • (202) 546-4996

THE LEAST-COST ALTERNATIVE TO NEW POWER PLANT CONSTRUCTION

A Strategy for Ensuring Utility Investments in Conservation and Renewable Energy Resources

OCTOBER 1985

BY PAUL MARKOWITZ

AN INTRODUCTION

In the past decade, energy price shocks, supply disruptions, and a major nuclear accident have made it increasingly clear that America depends upon an unnecessarily high-cost and high-risk energy system. The sweeping changes affecting the energy field over the past ten years have perhaps been most profound in the electrical utility industry. Since 1973, electrical demand has declined drastically, fuel prices have escalated, and power plant construction costs have increased exponentially. Rate increases caused by power plant cost overruns have significantly raised electric rates and threaten to add thousands of people to the ranks of the poor and unemployed.

The concept of a "least cost energy strategy" is emerging among consumer advocates, regulatory commissions, and utilities in response to the radical changes affecting the economics of electricity production. The first step towards implementing such a strategy requires that utilities shift their focus from selling electricity to providing electrical services: the heat, light and power needed to operate the buildings and industries in their service area.[1] This strategy enables utilities to consider programs which promote electrical efficiency on an equal basis with the construction of new electrical generating facilities. Thus, utility conservation programs (such as providing low-interest loans for home weatherization or cash rebates for the purchase of energy-efficient appliances) can be viewed as new electrical sources just as assuredly as a new nuclear or coal-fired power plant.

Since 1973, electricity prices have tripled and utilities have cancelled 180 proposed or partially constructed power plants that have cost consumers over $16 billion dollars to date.

While energy efficiency (or conservation) measures are the most cost-effective of all resource options, and therefore the cornerstone of a least-cost investment strategy, the concept really involves utilizing *all* resources which provide the least-cost means of meeting future electrical demand. Thus, *load management*, the shifting of energy consumption from peak periods of the day into slack demand periods; *cogeneration*, the simultaneous production of electricity from industrial heat processes; and *renewable energy resources* such as solar, wind, biomass, and water become integral components of utilities' least-cost energy investment strategies.

For varying reasons, many electric utilities are reluctant to consider many of the investments which are part of a least-cost investment strategy, particularly conservation, and it is left to legislatures and regulatory commissions to enact least-cost energy planning laws and regulations. These require utilities to comprehensively assess the potential of *all resources options* available for meeting new electrical demand, and to invest in these options based upon their cost-effectiveness.

ELECTRICAL UTILITIES: AN INDUSTRY IN TRANSITION

The changes affecting electric utilities have been dramatic and swift. From 1945 to 1970, the demand for electricity grew at an average annual rate of 8 percent, and utilities met new demand by constructing new fossil and nuclear-fueled power plants. Economies of scale achieved in power plant size, improvements in power plant productivity, and decreasing fuel costs resulted in declining electrical rates and contributed to electric utilities becoming one of the most sound financial investments in the marketplace.

Then the 1973 oil embargo struck, and the world of the electric utility planner turned upside down. With the astronomical increases in oil prices (and their consequent price effect on oil-fired electrical generation), demand growth for electricity slumped to near zero and continued to grow only a modest two percent annually for the next ten years. At the same time, the long term trend of declining marginal costs associated with larger power plants came to an abrupt halt. From 1971-1981, the real costs (above inflation) for constructing nuclear and coal power plants increased *each year* by 14 percent and 8 percent, respectively.[2]

A myriad of factors contributed to the escalation of power plant construction costs, including: higher interest rates, new safety and environmental regulations, mismanagement, and technological difficulties resulting from the rapid escalation in power plant size. As a result, since 1973, electricity prices have tripled and utilities have cancelled 180 proposed or partially constructed power plants that have cost consumers over $16 billion dollars to date.[3] Utilities across the country are struggling to pay for power plants whose electricity is neither needed nor affordable.

The impact on utility ratepayers from these power plant cost escalations is devasting. Many of the power plants ordered in the early 1970's have recently started (or soon will

be) producing power. The rate shock resulting from the inclusion of these power plant construction costs in electrical rates (construction costs are generally not passed on to ratepayers until plants are completed or officially cancelled) is expected to increase consumers' rates 50—180 percent in many utility service areas, and impact 35 million families in 25 states.[4] The employment and economic repercussions resulting from these rate shocks threaten to be equally disastrous. In a report commissioned by Suffolk County in Long Island, New York, rate increases necessary to pay for the Shoreham Nuclear Power Plant are expected to eliminate 35,000 jobs, disqualify 37,000 families from the mortgage market, increase foreclosures and home abandonment by up to 2000 per year, and push 11,000 households below the poverty line.[5]

LEAST-COST ENERGY OPTIONS

A quiet revolution in the energy field has been manifested in the rapid movement toward least-cost energy efficiency and renewable energy investments. According to energy conservation advocate Amory Lovins, since 1979, the United States has obtained more than one hundred times as much new energy from efficiency improvements as from all net expansions of energy supply. Technological developments have spurred extensive design improvements in America's electricity consuming buildings and devices. As a result, the efficiency of the best available commercially-available motors has doubled, lighting systems tripled, major appliances quadrupled, and the efficiency of building space conditioning (heating and cooling) has improved by a factor of ten.[6]

For example, Norelco has developed its SL-18 light bulb which uses only 18 watts of electricity, yet produces the same amount of light as a 75-watt incandescent bulb. The bulb lasts more than 13 times longer, provides light of better quality, and uses a high-frequency solid-state ballast which eliminates flicker and hum. By replacing 75 watts with 18 watts, an individual is essentially installing a 57-watt power plant in their home. The SL-18 repays its high retail cost ($15-$20) two-three times over by saving $40 worth of electricity plus $10 for a dozen replacement bulbs. When universally used, SL light bulbs and other equally efficient bulbs, will displace (at one-to-two cents/kilo-watt hour (KW-h)) the need for thirty 1000 mega-watt power plants (at seven cents/KW-h.). Savings of similar magnitude exist for appliances, industrial processes, and other electrical end-uses, as well.[7]

In an era of uncertain demand, utilities find that conservation and load management investments offer a unique opportunity to reduce high capital costs and the financial risks associated with excess generating capacity.

Renewable energy technologies such as photovoltaics (solar electric cells), wind energy systems, passive solar applications, solar flat plate collectors (for hot water and space heating), and biomass conversion (wood, alcohol fuels, etc.) have also become increasingly cost-competitive. The Public Utilities Regulatory Policy Act (PURPA) has played a significant role in this recent transition towards renewable energy resources. PURPA requires electric utilities to purchase electricity from small-power (renewables and cogeneration) producers up to the utility's cost of producing electricity from conventional most dramatic example of this shift toward renewables is found in California, where by mid-1984 over 10,000 megawatts of small, independent sources were planned or under construction, enough to supply over 20 percent of the state's power by 1990.[8]

In addition to their cost-effectiveness, energy efficient and renewable energy technologies create several times as many jobs per dollar as their conventional counterparts. They also represent the best energy supplies for abating the long-term problems of acid rain, carbon-dioxide build-up, and the proliferation of fissionable materials that are posed by continued dependence on conventional energy sources.

UTILITY SUPPORT FOR LEAST-COST OPTIONS

A few utilities have heeded the changing economics of electrical generation, and begun developing programs which promote least-cost electrical investments. Utilities, such as Pacific Power and Light, Northern States Power Co., and New England Electric Systems are finding that least-cost investment options are not only much cheaper than conventional generating sources, but also improve their own financial well-being. South California Edison, one of the nation's largest utilities, announced a change in its 1981 corporate policy which involved "devoting corporate resources to the accelerated development of a wide variety of renewable resources, cogeneration, conservation, and load management."[9]

Demand-side options (efficiency and load management), cogeneration, and renewable energy resources reduce utility planning uncertainty and risk. These investment options are small, modular, and incremental in nature. Compared to conventional coal and nuclear-fired power plants, they have shorter production lead times, low capital requirements, and

MODEL CONSERVATION PROGRAMS

Pacific Gas and Electric Company (California), the nation's largest private utility, recently embarked on its Great Energy Rebate Program. As part of this program, commercial, industrial and agricultural electric customers are paid up to $150,000 per customer account to convert to energy-saving equipment and products. Rebates are offered for such equipment as lighting conversions, air conditioners, industrial motors, refrigerators and freezers, heating system conversions and modifications, and load management controls. Customers can obtain rebates which defray 25% to 40% of the purchase and conversion costs for efficient products, and rebates are paid on the basis of up to $250/KW for saved electrical capacity and $.06/KW-h for saved energy. Similar rebates are also available for residential customers.[10]

General Public Utilities (of Pennsylvania and New Jersey) has developed an alternative financing program for home weatherization through its Residential Energy Conservation Action Program (RECAP). Under RECAP, contractors install cost-effective conservation measures free of charge to individual residences. The utility pays the contractor for the actual, measured long-term reductions in energy consumption over a period of years at an agreed upon rate. Energy savings from the program are expected to exceed costs by a ratio of five to one over a 10 year period, and General Public Utilities has already completed weatherization for over 5,000 homes.[11]

offer the utility a quick return on its investment. In an era of highly uncertain demand, utilities are finding that conservation and load management investments offer a unique opportunity to improve load factors, increase velocity of cash flow, reduce high capital costs, and reduce the financial risks associated with excess generating capacity.

Untapped investments in energy efficiency and load management offer enormous potential for meeting new electrical demand and remain the most cost-effective of all resource options. Utilities, regulators, and consumer advocates have developed programs designed to increase the efficiency of America's electrical consumption.

Most utilities offer some type of program promoting efficiency investments, ranging from simple bill inserts on conservation tips and school education programs to innovative financing programs like those cited above. However, very few utilities have begun to comprehensively investigate the full potential for improving the efficiency of their customers' energy consumption or to implement incentive programs which are designed to promote efficiency investments.

UTILITY OPPOSITION TO LEAST-COST OPTIONS

The majority of utilities are still planning for high electrical demand growth in the future, despite the drastic decline in the rate of electrical demand growth over the past decade. And they are planning on meeting this demand primarily by building large coal-fired electrical generating plants (and to a lesser extent nuclear power), despite the radical changes in the economics of central power generation. Most utilities are reluctant to shift to a least-cost investment strategy for a variety of reasons, including:

- Utilities have traditionally seen themselves as suppliers of a commodity (electricity), and like most other private enterprises, strive toward increasing profits by increasing sales of their commodity. This has been historically accomplished by constructing large power plants.
- Most utility executives wait for positive signs from their commissioners that least-cost investments will receive preferential rate treatment.
- The revenue formulas established by public utility commissions, which are used to determine return on investment, are often based on total capital investment. Utilities have a built-in incentive to overinvest in capital-intensive plant and equipment.
- Efficiency measures, programs, and technologies for saving energy and electricity are still relatively unfamiliar to the utility industry, and are viewed as risky until proven over a long period.[12]

Because of this reluctance, a few state legislators and regulators have begun to adopt statutes and regulations which assure that utilities will comprehensively examine all resource options, and invest in these on a cost-effective basis.

STATE REGULATORY COMMISSIONS CAN ENSURE LEAST-COST INVESTMENTS

The least-cost concept has garnered strong support from some impressive official bodies, including the American Public Power Association, the American Gas Association, and the National Association of Regulatory Utility Commissioners (NARUC). At its 1984 annual convention, NARUC unanimously passed a resolution urging all state and federal regulatory commissions to adopt a "policy mandating electric and gas utilities to develop and submit for approval least-cost resource plans".[13]

Legislators and commissioners have begun to develop laws and regulations to compel utility investment in demand-side options and renewables due to many utilities' reluctance to pursue least-cost planning on their own initiative. Several states, including California, Wisconsin, Florida, Iowa, and Nevada have now adopted some form of least-cost electrical planning regulations.

The state of Nevada has developed one of the most comprehensive least-cost planning regulations in the country. The

Citizen-based organizations and public interest intervenors have been the primary motivating force behind the adoption of many current least-cost planning laws and regulations.

Nevada Utility Resource Planning Act of 1983, authored by the state's Office of Consumer Advocate, requires electric utilities to submit to the Nevada Public Service Commission a fully integrated, long-range resource plan every two years. These plans must demonstrate that *all* aspects of a utility's future energy needs and resource options have been considered.

Nevada utilities are required to conduct assessments of the cost-effective potential for each resource option, including efficiency, load management, cogeneration, and renewables, and then integrate and prioritize those options according to their cost-effectiveness. Perhaps most importantly, utilities cannot receive approval for a new power plant unless the plant has been previously approved as part of the utility's least-cost resource mix. The Nevada model includes provisions which assure that:

- Demand forecasts are based upon inventories of electrical end-uses such as lighting, heating, and cooling.
- Utilities must also submit a two-year implementation plan that specifies which least-cost resources will be utilized over the next two years.
- Standardized planning methodologies and models are used by all utilities to assure long-term consistency.
- Utilities are held responsible for the creation and coordination of all plan components.
- Enforcement mechanisms are developed to assure utility compliance with their resource plans.[14]

Most states have adopted only individual components of comprehensive least-cost planning regulations, and consequently lack the ability to ensure utility investments on a least-cost basis. For example, many public utility commissions have specific statutory authority to require utility investments in conservation and load management but lack the capability to adequately evaluate utility assessments of conservation potential or program proposals. Other commissions require utilities to file conservation plans which must evaluate all resource options available for meeting new electrical demand yet lack the authority (or initiative) to deny approval of the plan or to require that utilities invest in all cost-effective conservation investments prior to new supply resources.

Unfortunately, very few commissions have adopted comprehensive least-cost regulations which ensure that utilities

invest in the most cost-effective resources to meet new electrical demand.[15] This is due to a variety of reasons. Some state commissions lack adequate information and analytic planning tools, while others are awaiting the results of those states which have enthusiastically promoted conservation. Still, other commissions believe that utilities should decide how to meet demand for electricity or that existing regulations are sufficient in promoting utility conservation investments. However, a truly integrated and comprehensive least-cost planning model, such as Nevada's, is vital to assure utility investments in least-cost energy resources.

A FRAMEWORK FOR CITIZEN ACTION

A well-informed and organized consumer-based coalition can significantly influence its state regulatory and legislative bodies to adopt least-cost planning laws and regulations. Citizen-based organizations and public interest intervenors have been the primary motivating force behind the adoption of many current least-cost planning laws and regulations. The following are specific actions that public policy organizations and citizen-based groups can take to promote least-cost energy planning in their state:

1. Review Existing Statutes and Regulations Regarding Utility Investments in Least-Cost Energy Resources. Utility statutes and regulations vary from state to state. Thus, a crucial first step involves reviewing existing statutes and regulations to reveal possible gaps in a comprehensive least-cost planning process. Some of the more pertinent questions to pursue, include:

- Does your public utility commission have the regulatory authority to require utility investments in customer efficiency improvements?
- Are utilities required to undertake a comprehensive assessment of the conservation potential in their service districts?
- Are utilities required to file long-range resource or conservation plans? If yes, do these plans include assessments of demand-side and supply-side options and do they require these options to be integrated according to their cost-effective?
- Does your commission have an adequate enforcement mechanism which ensures that utilities invest on a least-cost basis, i.e. denial of a power plant permit due to lack of consideration of alternatives?
- Has the state adopted favorable buyback regulations to require utilities to purchase electricity from small-power producers, including cogeneration and renewables?

2. Develop an Independent Conservation Potential Assessment. Universities offer an ideal base for the development of independent assessments of the potential for energy conservation in a utility service district or the state as a whole. For example, the Center for Energy Studies at the University of Texas, in conjunction with Lawrence Berkeley Laboratories, has recently developed an assessment of the conservation supply potential for residential and commercial buildings in the state of Texas.[16]

University departments with experience in quantitative analysis, computer modeling, or electrical planning issues can be solicited to develop specific information:

- An inventory of available efficiency measures, methods, and technologies capable of cheaply and reliably supplying or saving energy and power.
- A detailed inventory of energy use, indicating how much electricity is consumed for what purposes within the state.
- An assessment of the potential for efficiency improvements in the residential, commercial, and industrial sectors.
- A survey of information on state commission orders, regulations, rate treatments and case histories of efficiency programs.

3. Form a Coalition. A successful strategy will be based on linking least-cost planning with other utility issues that are affecting ratepayers. Least-cost planning offers a long-term, comprehensive process for assuring the most cost-effective implementation of electrical resources as well as an ideal complement to shorter-term and single focus, and sometimes adversarial, utility issues.

For instance, "rate shock" (the rate impacts from the cost of new power plants) is an excellent organizing issue because the inclusion of expensive, new power plants costs in the rate base directly result in higher utility bills. While citizen groups argue against the inclusion of imprudent power plant construction costs in the rate base, rate shock also presents an excellent opportunity for consumers to press their regulators with the question of, "How are you going to prevent these astronomical rate increases from occurring in the future?"

Least-cost planning can be used to address other utility issues, such as utility proposals for the construction of new coal or nuclear plants, the inclusion of construction work-in-progress (CWIP) costs in the rate base, and the impacts of rate increases on low-income households. Least-cost electrical planning offers an ideal issue for forging statewide coalitions which can bring together diverse organizations, including low-income, senior citizen, safe energy, and consumer groups.

FOOTNOTES

[1] *The Least-Cost Energy Strategy: Minimizing Consumer Costs Through Competition*. 1979. Roger Sant. Carnegie Mellon University Press, Pittsburgh, PA.

[2] *Power Plant Cost Escalation: Nuclear and Coal Costs, Regulation and Economics*. 1981. Charles Komanoff. Van Nostrand Reinhold, NY.

[3] *Electricity: New Consumer Choices*. 1985. Dick Munson, Center for Renewable Resources, Washington, DC.

[4] *Rate Shock: Confronting the Cost of Nuclear Power*. 1984. Alan Nogee, Environmental Action, Washington, DC.

[5] *Operation Vs. Abandonment of the Shoreham Nuclear Plant: The Effect on Long Island Unemployment*. 1984. Greg Palast, Union Associates, New York, NY.

[6] "Saving Gigabucks with Negawatts". 1985. Amory Lovins. *Public Utilities Fortnightly*, March 21, 1985.

[7] *Ibid*

[8] *Electricity's Future: The Shift to Efficiency and Small-Scale Power*. 1984. Chris Flavin, Worldwatch Institute, Washington, DC.

[9] *1981 Conservation and Load Management Program*. 1981. South California Edison Co, Rosemead, CA.

[10] "The Great PG & E Rebate Program". 1984. Pacific Gas and Electric Co, San Francisco, CA.

[11] "Don't Pay for Insulation . . . Buy Conservation." 1983. Slide show presentation explaining General Public Utilities RECAP Progam. Richard Esteves, Manager of Conservation Communications, General Public Utilities, Parsippany, NJ.

[12] "Questions and Answers" from Nevada Public Service Commissioner Stephen Wiel at March 5, 1985 hearings before the Energy Development and Applications Subcommittee hearings on Department of Energy 1986 budget.

[13] Resolution on gas and electric utility least-cost resource plans. 1984. Proposed by the Ad Hoc Committee on Energy Conservation of the National Association of Regulatory Utility Commissions (NARUC). Adopted by NARUC at their 1984 Annual National Convention, NARUC, Washington, DC.

[14] "Utility Resource Planning: The State of Nevada Adopts an Integrated Planning Model". 1984. Jon Wellinghoff and Cynthia Mitchell, Nevada Office of Consumer Advocate, Carson City, NV.

[15] "Results of Survey of Regulatory Utility Commission's Electric Resource Planning and Conservation Activities", November 1985. Conducted by Congresswoman Claudine Schneider's office for hearings on the Least-Cost Planning Initiative. Hearings held before the House Energy Development and Applications Subcommittee, September 26, 1985.

[16] *Electrical Energy Conservation Supply Potential in the Texas Building Sector*, December 1985 (expected date). Center for Energy Studies, University of Texas, Austin, TX, and Energy Efficient Buildings Program, Lawrence Berkeley Labs, Berkeley, CA. Commissioned by the Texas Public Utility Commission, Austin, TX.

HB

244

Feb. 8, 1988

MEMO:

TO: Ned

FROM: Pat

SUBJECT: HB244 amendments for new CS

Attached are amendments for the 2/9/88 Resources CS of HB244, cast in order of appearance.

The following language is to protect Aurora Lagoon management from Habitat Division's point of view, since we're putting the lagoon back into park status. It seemed to appease Roland when I read it to him over the phone...although he hasn't officially signed off on it yet. I ran the language by Jack Wiles, & it's O.K. by him. Here it is:

"Aurora Lagoon shall be managed jointly by the Department of Natural Resources and the Department of Fish and Game, to preserve its value as scenic park as well as its value as part of the Kachemak Bay Critical Habitat Area."

I'm not sure where it should go in the bill.. I was thinking in the legislative findings... what do you think?

Technical changes:

Page 2:

Line 13, after NW1/4 SE1/4, add: " , SW1/4 SE1/4,"

Line 15, after W1/2 NW1/4, add: " , N1/2 NE1/4 SE1/4, SW1/4 NE1/4 SW1/4, excepting Lot 6,"

Line 19, after Section 18:, delete "Lot 1,", replace it with "Lot 4,".

the above are corrections to the legal description to add lands that were inadvertantly omitted or in error on the original draft. These revised legals are all from DPOR.

Lines 26 - 27, delete "excluding tide and submerged land within the Kachemak Bay Critical Habitat Area".

This clarifies Aurora Lagoon's park status.

Page 3:

Line 23: delete "(general grant land only)".

According to Jack Wiles, language is unnecessary. This is the McDonald Spit land. I think we put the "(general grant land only)" in there because it was mental health land status at the time... did the settlement eliminate that problem? Wiles seemed to think so.

Feb. 8, 1988

TO: Ned
FROM: Pat

continued...

Language to protect the University's interest's on Nuka Island (from DNR): Should be at the end of the bill, I think.

"Nothing in this act prevents the department from conveying to the University of Alaska 50 acres more or less, on Nuka Island, as approved in the commissioner's final finding issued December 4, 1987, or its amendments. This act is inapplicable to any land conveyed to the University of Alaska, pursuant to the commissioner's December 4, 1987 decision."

This is Gus Gustafson language. I ran it by Nancy & she seemed to think it was O.K., so I guess we'll use it.

STATE OF ALASKA
1988 LEGISLATIVE SESSION

BILL VERSION: HB244
PUBLISH DATE: _____

FISCAL NOTE

REQUEST:

Revision Date: 2/5/88
Title: Addition to Kachemak Bay State Park
Sponsor: Navarre/Swackhammer
Requestor: House Resource Committee

Agency Affected: DNR--Div. Parks & Outdoor Rec.
BRU: Park Management
Components: _____

EXPENDITURES/REVENUES: (Thousands of Dollars)

OPERATING	FY 88	FY 89	FY 90	FY 91	FY 92	FY 93
PERSONAL SERVICES		16.5	16.5	16.5	16.5	16.5
TRAVEL		.5	.5	.5	.5	.5
CONTRACTUAL		1.0	1.0	1.0	1.0	1.0
SUPPLIES		1.0	1.0	1.0	1.0	1.0
EQUIPMENT		1.0				
LAND & STRUCTURES						
GRANTS, CLAIMS						
MISCELLANEOUS						
TOTAL OPERATING		20.0	19.0	19.0	19.0	19.0
CAPITAL						
REVENUE						

FUNDING: (Thousands of Dollars)

GENERAL FUND		20.0	19.0	19.0	19.0	19.0
FEDERAL FUNDS						
OTHER						
TOTAL		20.0	19.0	19.0	19.0	19.0

POSITIONS:

FULL-TIME		19	19	19	19	19
PART-TIME						
TEMPORARY						

ANALYSIS: (Attach a separate page if necessary) (See Attachment)
HB244 provides for additions to Kachemak Bay State Park and Wilderness Park of important public access points, scenic and recreational values, marine and upland habitat and areas which will enhance the tourism potential of the area.

Prepared by: Neil C. Johannsen
Phone: 762-2600
Division: Parks & Outdoor Recreation
Date: 2/5/88

Approved by Commissioner: _____
Date: 2-9-88
Agency: Department of Natural Resources

Distribution (by preparer):
Legislative Finance
Legislative Sponsor
Requestor
Office of Management and Budget
Impacted Agency(ies)

BILL ANALYSIS

HOUSE BILL 244

ADDITIONS TO KACHEMAK BAY STATE PARK

HB244 adds three parcels totaling 4,816 acres to Kachemak Bay State Park and one parcel of 42,000 acres to Kachemak Bay State Wilderness Park.

The Department of Natural Resources supports HB244 as amended. The completion of the University of Alaska land settlement and the Mental Health lands agreement remove any actively competing interests in these lands.

HB244 has enjoyed wide support from the community of Homer with resolutions of support expected from the City of Homer, the Kenai Peninsula Borough, Homer Businessmen's Association, Chamber of Commerce and Visitor's Association, and from Commercial Fishing Groups.

Lands included in HB244 include,

Aurora Lagoon : A 2,500 acre marine tidal estuary and rich habitat with associated uplands immediately adjacent to Kachemak Bay State Park. The lagoon is the site of several nesting eagles, and an important inter-tidal area. The area has a significant cultural history and is the location of the DeLaguna early man discovery. The lagoon is a major access point to the park and one of the very few safe boat anchorages along the parks' coastline.

McDonald Spit : A 16 acre parcel of land at the tip of McDonald Spit which is the only public access to the 1.5 mile long spit. The area is a popular site for recreational boats to land and for clamming.

Cottonwood/Eastland Creek : This 2,300 acre coastal bluff uplands on the Homer side of Kachemak Bay is the only public land along the entire coastline from Homer to the head of the Bay. The area is accessible by East End Road and offers excellent potential for outstanding scenic vistas, trails, camping and natural history interpretation. There is no other comparable parcel of land near Homer which offers such recreational opportunities for the local community and visitors.

Nuka Island & Uplands : Nuka Island and uplands associated with Petrof glacier are truely wilderness in character and make a logical addition to adjacent Kachemak Bay State Wilderness Park. The island is located along the outer Gulf Coast which experiences a rugged landscape and high energy beaches exposed to wind and waves. The island is largely mountainous but the west side has a number of attractive bays which offer good opportunities for recreational boat anchorages. The University land settlement provides the University with two 25 acre parcels in two bays for development of a wilderness lodge and recreational facilities associated with glacier trips, sealife tours, flight seeing and excursions. The island is home to several nesting bald eagles and is

a haul out area for the Stellar sea lion. Large concentrations of harbor seals and otters are common to the area. The island is an important seabird rookery with concentrations of kittiwakes, tufted and horned puffins, comorants, murres, murrelets and petrels. A survey conducted by the USFWS found Nuka Island to be one of the most heavily used bald eagle nesting areas along the entire south Kenai coast.

Timber resources on the island are marginal due to the exposed coast, rugged terrain and a tree line ending at 500 feet elevation. The primary commercial tree stands are located on the mainland and are not included in this legislation.

Mineral potential on Nuka Island is considered poor for either minerals or sand, gravel, or construction materials. The geologic formation consists primarily of slates, greywacke and easily eroded thinly bedded phyllites which are not known for their mineral potential. The island is unusual in that it is not a granite rock island like others in the region which contain gold in lode deposits. There are no mining claims on the island.

Position Title	Park Ranger I	No. of Positions	Range/Step	Barg. Unit
		1	14A	GGU
Time Status	Staff Months	Location	Election District	
PPT	5	Homer	D, 5-A	

Type of Expenditure		Amount
1	2	3
Salary	12.6	
Benefits	4.3	
Premium Pay		
Other		
Total Personal Services		16.9
Travel		.5
Contractual		1.0
Commodities		1.0
Equipment		1.0
Other		
Total Cost		20.9

Funding Source for Total Cost		
Federal Receipts	1002	
G. F. Match	1003	
General Fund	1004	20.9
GF Program Receipts	1005	
Other		

Justification HB244

Funding for a five month seasonal Park Ranger I to be stationed in Homer. The ranger will be responsible for visitor services, resource protection, recruiting and supervising volunteers, park development and emergency services. Access to the park is primarily by water and visitors often encounter difficult tidal and weather conditions. The ranger provides essential public safety services and visitor information.

Request For New Position

Agency Natural Resources

BRU Parks & Outdoor Recreation

Component Parks Management

Revised Date 2/5/88

FY 89

(9)

HOUSE COMMITTEE REPORT

Date referred: 1/29/88 FURTHER REFERRALS:

(Returned from Rules)

DATE: 2-9-88

The Resources Committee has considered HB 244

"An Act relating to the addition of land to Kachemak Bay State Park and Kachemak Bay State Wilderness Park."

RECOMMENDS:

[X] replace with CS HB 244 (2d Res) [X] the same title

[ ] attached amendment(s) [ ] a new title

- [X] do pass
- [ ] do not pass
- [ ] no recommendation
- [ ] individual recommendations
- [ ] additional referral to the _____ Committee

ADOPTS: [ ] _____ letter of intent

ATTACHES NEW FISCAL NOTE(s):

- [X] fiscal impact
- [ ] zero fiscal note
- [ ] zero with analysis
- [ ] same as previous fiscal note published _____
- [ ] same as previous zero fiscal note published _____

SIGNING DO PASS:

Sam Cotten

Mike Hanson

Dale Kramer

Adelheid Herrman

Dick Shultz

Cliff Davidson

SIGNING OTHER RECOMMENDATIONS:

Sam Cotten

Chairman's signature

Original sponsors: Navarre and Swackhammer

IN THE HOUSE BY THE RESOURCES COMMITTEE

CS FOR HOUSE BILL NO. 244 (2d Resources)

IN THE LEGISLATURE OF THE STATE OF ALASKA

FIFTEENTH LEGISLATURE - SECOND SESSION

A BILL

For an Act entitled: "An Act relating to the addition of land to Kachemak Bay State Park and Kachemak Bay State Wilderness Park."

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF ALASKA:

* Section 1. LEGISLATIVE FINDINGS. The legislature, in its designation of additional land to the Kachemak Bay State Wilderness Park, intends that the land within the park be managed for its primitive recreational values without preventing reasonable access to inholdings in the Petrof View subdivision. On Nuka Island, in recognition of planning conducted by the commissioner of natural resources under AS 38.04.065, the legislature intends that the island support

(1) a commercial lodge in a suitable place;

(2) renovation of existing facilities at Herring Pete's Cove;

(3) the construction and operation of one or two public use cabins;

(4) docks, trails, and moorings necessary to provide for recreational use; and

(5) maintenance of Berger Bay in an undeveloped state.

* Sec. 2. AS 41.21.131(a) is amended to read:

(a) The presently state-owned land and water, and all that acquired in the future by the state, lying within the parcels described in this section are designated as the Kachemak Bay State Park. In order to protect and preserve this land and water for its unique and exceptional scenic value, the park is established and shall be managed

as a scenic park. The land and water lying within the following described parcels is reserved from all uses incompatible with its primary function as a scenic park and is assigned to the department for control, development and maintenance:

(1) Township 5 South, Range 10 West, Seward Meridian
Chugachik Island
Sections 31 - 32

(2) Township 5 South, Range 11 West, Seward Meridian
Section 2: Lot 1, excluding Tract A
Section 3: Lots 1 - 8, SW1/4NE1/4, S1/2NW1/4, N1/2SW1/4
Section 4: Lots 1 - 4, S1/2N1/2, SE1/4, E1/2SW1/4
Section 8: E1/2NE1/4, E1/2SE1/4, NW1/4SE1/4, SW1/4SE1/4
Section 9: Lots 1 and 2, NW1/4NE1/4, NE1/4NW1/4, W1/2NW1/4, N1/2NE1/4SE1/4, SW1/4NE1/4SW1/4, excluding Lot 6
Section 10: Lot 1
Section 16: Lot 1
Section 17: Lots 1, 3, 4, NW1/4SW1/4, S1/2NW1/4
Section 18: Lot 4, SE1/4, E1/2NE1/4
Section 19: Lots 1-6, NW1/4NE1/4, NE1/4NW1/4
Section 20: Lot 1
Sections 24 - 25, excluding tide and submerged land within the Kachemak Bay Critical Habitat Area
Section 26: SE1/4, excluding tide and submerged land within the Kachemak Bay Critical Habitat Area
Sections 35 - 36

(3) [(2)] Township 6 South, Range 11 West, Seward Meridian

(4) [(3)] Township 7 South, Range 11 West, Seward Meridian

Sections 1 - 4

Section 5: N1/2

Sections 7 - 36

(5) [(4)] Township 7 South, Range 12 West, Seward Meridian

Section 12, except N1/2 NE1/4

Section 13

Sections 19 - 36

(6) [(5)] Township 7 South, Range 13 West, Seward Meridian

Sections 25 - 26

Sections 35 - 36 [25, 26, 35 AND 36]

(7) [(6)] Township 8 South, Range 11 West, Seward Meridian

Sections 1 - 8

Section 9: N1/2

Section 10: N1/2

Section 11: N1/2

Section 12: N1/2

Sections 17 - 18 [17 AND 18]

(8) [(7)] Township 8 South, Range 12 West, Seward Meridian

(9) [(8)] Township 8 South, Range 13 West, Seward Meridian

Sections 1 - 2 [1 AND 2]

Sections 10 - 14

Section 15: E1/2

Section 18: Lot 10

Section 23: N1/2 and SE1/4

Sections 24 - 25 [24 AND 25]

Section 26: E1/2

Section 35: E1/2

Section 36

(10) Township 9 South, Range 8 West, Seward Meridian

Sections 7 - 10

Sections 15 - 22

Sections 27 - 34

(11) Township 9 South, Range 9 West, Seward Meridian

Section 13

Sections 24 - 25

Sections 35 - 36

(12) [(9)] Township 9 South, Range 12 West, Seward Meridian

Sections 1 - 6

Section 8: NE1/4

Sections 9 - 12

Section 13: N1/2

Section 14: N1/2

(13) [(10)] Township 9 South, Range 13 West, Seward Meridian

Sections 1 - 2 [1 AND 2]

(14) Township 10 South, Range 8 West, Seward Meridian

Sections 4 - 8

Sections 17 - 19

(15) Township 10 South, Range 9 West, Seward Meridian

Sections 1 - 4

Sections 10 - 15

Sections 22 - 24

* Sec. 3. AS 41.21.140(a) is amended to read:

(a) The presently state-owned land and water, and all that acquired in the future by the state, lying within the parcels described in this section are designated as the Kachemak Bay State Wilderness Park. In order to protect and preserve this land and water for its unique and exceptional wilderness value, the park is established and

shall be managed as a wilderness park. The land and water lying within the following described parcels is reserved from all uses incompatible with its primary function as a wilderness park and is assigned to the department for control and maintenance:

(1) Township 8 South, Range 11 West, Seward Meridian

Section 9: S 1/2

Section 10: S 1/2

Section 11: S 1/2

Section 12: S 1/2

Sections 13 - 16

Sections 19 - 36

(2) Township 9 South, Range 8 West, Seward Meridian

Section 2: W1/2

Sections 3 - 6

(3) Township 9 South, Range 9 West, Seward Meridian

Sections 1 - 12

Sections 14 - 23

Sections 26 - 34

(4) Township 9 South, Range 10 West, Seward Meridian

Sections 1 - 3

Sections 10 - 15

Sections 22 - 27

Sections 34 - 36

(5) [(2)] Township 9 South, Range 12 West, Seward Meridian

Section 7

Section 8: S 1/2 and NW 1/4

Section 13: S 1/2

Section 14: S 1/2

Sections 15 - 36

(6) [(3)] Township 9 South, Range 13 West, Seward Meridian

Section 11: NE 1/4

Sections 12 - 13

(7) [(4)] Township 10 South, Range 9 West, Seward Meridian

Sections 5 - 7

(8) [(5)] Township 10 South, Range 10 West, Seward Meridian

(9) [(6)] Township 10 South, Range 11 West, Seward Meridian

(10) [(7)] Township 10 South, Range 12 West, Seward Meridian

(11) [(8)] Township 11 South, Range 10 West, Seward Meridian

(12) [(9)] Township 11 South, Range 11 West, Seward Meridian

(13) [(10)] Township 11 South, Range 12 West, Seward Meridian

Sections 1 - 10

Section 11: W 1/2 and E 1/2

Sections 12 - 17

Sections 21 - 24.

* Sec. 4. AS 41.21.140 is amended by adding a new subsection to read:

(c) The tide and submerged land within the Aurora Lagoon is assigned to the Department of Natural Resources to preserve its value as a scenic park and to the Department of Fish and Game to preserve its value as critical habitat.

* Sec. 5. This Act does not prohibit the commissioner of natural resources from conveying 50 acres, more or less, on Nuka Island to the University of Alaska in accordance with the final finding of the commissioner of natural resources issued December 4, 1987, or its amendments. This Act does not apply to land conveyed to the University of Alaska under the commissioner's decision dated December 4, 1987.

Alaska State Legislature
HOUSE OF REPRESENTATIVES
COMMITTEE ON RESOURCES

POUCH V
JUNEAU, ALASKA 99811
(907) 465-3715

M E M O R A N D U M

TO: Rep. Sam Cotten, Co-Chair
Rep. Adelheid Herrmann, Co-Chair
Resources Committee members
FROM: Ned Farquhar, staff
SUBJECT: Proposed 2nd CS HB 244 (Res)
DATE: February 9, 1988

The amended CS contains changes recommended by the sponsor's office after discussion with agencies.

The first change is that some language is removed from the findings. This language would have implemented some of the results of the Nuka Island plan adopted by DNR last year; with the conveyance of some acreage to the University last summer, most of the language became unnecessary, and is embodied in the plan anyway.

Second, the legal descriptions have been slightly revised. Apparently they were not perfect last year, and now they are.

Third, Sec. 4 of the proposed 2nd CS is new. It establishes that Aurora Lagoon will be part of both the critical habitat area (existing) and the state park (new), under the administrative jurisdiction of both DNR and ADF&G.

Last, Sec. 5 of the proposed 2nd CS is new, and allows the commissioner of DNR to make a conveyance to the University in accordance with the final agreement and decision last year. Sec. 5 also exempts the University land from inclusion in the state park or application of the park law.

5-0976X
Bradley
2/8/88

Original sponsors: Navarre and Swackhammer

IN THE HOUSE BY THE RESOURCES COMMITTEE

CS FOR HOUSE BILL NO. 244 (2d Resources)

IN THE LEGISLATURE OF THE STATE OF ALASKA

FIFTEENTH LEGISLATURE - SECOND SESSION

A BILL

For an Act entitled: "An Act relating to the addition of land to Kachemak Bay State Park and Kachemak Bay State Wilderness Park."

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Section 8: E1/2NE1/4, E1/2SE1/4, NW1/4SE1/4, SW1/4SE1/4

Section 9: Lots 1 and 2, NW1/4NE1/4, NE1/4NW1/4, W1/2NW1/4, N1/2NE1/4SE1/4, SW1/4NE1/4SW1/4, excluding Lot 6

Section 10: Lot 1

Section 16: Lot 1

Section 17: Lots 1, 3, 4, NW1/4SW1/4, S1/2NW1/4

Section 18: Lot 4, SE1/4, E1/2NE1/4

Section 19: Lots 1-6, NW1/4NE1/4, NE1/4NW1/4

Section 20: Lot 1

Sections 24 - 25, excluding tide and submerged land within the Kachemak Bay Critical Habitat Area

Section 26: SE1/4, excluding tide and submerged land within the Kachemak Bay Critical Habitat Area

Sections 35 - 36

(3) [(2)] Township 6 South, Range 11 West, Seward Meridian

(4) [(3)] Township 7 South, Range 11 West, Seward Meridian

Sections 1 - 4

Section 5: N1/2

Sections 7 - 36

(5) [(4)] Township 7 South, Range 12 West, Seward Meridian

Section 12, except N1/2 NE1/4

Section 13

Sections 19 - 36

(6) [(5)] Township 7 South, Range 13 West, Seward Meridian