

ORDER NO. 89-507  
ENTERED APR 20 1989

BEFORE THE PUBLIC UTILITY COMMISSION  
OF OREGON  
UM 180

In the Matter of the Investigation )  
into Least-Cost Planning for ) ORDER  
Resource Acquisitions by Energy )  
Utilities in Oregon. )

The Oregon Public Utility Commission ordered an investigation into Least-Cost Planning (LCP) in January 1988 pursuant to ORS 756.515. Notice was provided to all affected utilities as well as to other potentially interested parties. Several petitions to intervene were filed and granted. Parties and appearances are listed in Appendix "A."

Following a prehearing conference, the parties submitted briefs and reply briefs. Two participating utilities, Portland General Electric Company (PGE) and Pacific Power & Light Company (Pacific), conducted workshops at which they presented explanations of their planning practices. The staff of the Public Utility Commission also explained its position at a workshop.

The Commission held public hearings on the matter on June 28, 1988, and November 21, 1988, at which parties and members of the public offered oral and written statements. The Commission also issued a draft order in this matter and received written and oral responses from the parties and public.

Summary of the Commission's Decision

This order adopts Least-Cost Planning (LCP) for all energy utilities in Oregon. The order sets out conclusions on some major policy matters and procedural issues. It directs all energy utilities to undertake such planning and establishes a schedule for the filing and review of the plans. It requests that each utility file with the Commission a detailed proposed schedule for development of its initial plan.

Definition of Least-Cost Planning

Least-Cost Planning is an approach to utility planning which requires consideration of all known resources for meeting the utility's load, including those which focus on the generation and purchase of power, or the "supply side," and those which focus on conservation and load management, the "demand side." The term also includes the review and eventual acknowledgment of a least-cost plan by the Commission.

The result of the process is the selection of that mix of options which yields, for society over the long run, the best combination of expected costs and variance of costs. The variance reflects the risk of bad outcomes, such as energy shortage or substantial excess capacity. A resource strategy that offers the lowest expected costs may not be best if it results in unacceptably high costs when very high or very low load growth occurs. If no resource strategy offers the lowest expected costs and lowest variance of costs, then the utility should explain its balancing of those two characteristics in selecting the best strategy.

The Commission believes that LCP provides a well organized, thorough, and flexible method of utility planning. It also provides for a cooperative approach to the planning process, and, as set out in this order, will offer a significant opportunity for public participation.

Reason for Adoption of Least-Cost Planning

The goal of utility planning is to assure an adequate and reliable supply of energy at the least cost to the utility and its customers consistent with the long-run public interest. Long-run public interest is included as part of the goal because not all costs of a supply- or demand-side resource are necessarily borne by the utility and ratepayers. Nor are all costs readily quantifiable. However, it is the Commission's intent that all costs should be considered in the planning process and that their effect on the public interest should be a factor in determining a plan's resource mix.

The goal of least-cost planning is most likely to be attained if all of the options available for providing service are considered and if all the costs are considered. Least-cost planning, as envisioned in this order, requires that broad examination of all the choices. Accordingly, the Commission concludes that the traditional responsibility of utilities for prudent management now explicitly includes the least-cost planning process and the timely acquisition of the

least-cost resources. Utilities are expected to carry out the actions proposed in their least-cost plans, or when circumstances dictate other actions, in accordance with least-cost planning principles.

Least-cost planning differs from traditional planning in three major respects. It requires integration of supply and demand side options. It requires consideration of other than internal costs to the utility in determining what is "least-cost." And it involves the Commission, the customers and the public prior to the making of resource decisions rather than after the fact. The Commission believes that such an approach is necessary and consistent with its statutory obligation to represent customers and the public generally in matters over which it has jurisdiction and to obtain for customers and the public adequate service at fair and reasonable rates.

The changes in procedure will be salutary. The decisions made by a utility in meeting its service requirements may have enormous economic and environmental effects. The traditional decision-making process has, however, provided limited opportunity for public participation. Furthermore, the process has tended to restrict the Commission's participation to an after-the-fact review.

Least-Cost Planning as mandated by this order will allow the public as well as the Commission to participate in the planning process at its earliest stages. Both may provide information as well as receive information. This broad participation at the beginning and at each decisive step of the planning process should enhance the quality of the information available to the decision-making utility and thus lead to better resource planning. In addition, although a decision made in the LCP process does not guarantee favorable rate-making treatment, the process should provide some guidance to a utility. The diversity of opinion presented during the process and the biennial updating of reports should reduce the likelihood of inaccurate estimations of new resource requirements. The openness of the process and participation in it by the public and the Commission should reduce the uncertainty regarding the rate-making treatment of a utility's acquisition of new resources. Furthermore, the open and collaborative character of Least-Cost Planning may foster elevated confidence among those affected by the decisions and may make the process more responsive to demonstrated needs.

An additional benefit of LCP is that it will provide the Commission with more consistent information about a utility's plans and activities over a period of time and will allow more accurate comparisons among utilities in Oregon and throughout the Pacific Northwest. Least-Cost Planning will also make available to the Commission information which will be useful in other proceedings, such as the review of avoided cost and special contract filings.

Implementation of LCP in Oregon

All energy utilities in Oregon will be required to undertake LCP. However, the newness of the process and staffing limitations make it impracticable to require all utilities to file their plans simultaneously. Filings will therefore be spaced to permit proper review of each plan.

Pacific

Pacific is presently developing a least-cost plan in the State of Washington. It is expected that the plan will be filed in July 1989. The information gathered and the experience gained during the development of that plan will be of significant use to Pacific in developing its Oregon plan. Pacific will therefore be the first of the electric utilities to file in Oregon. It is the Commission's intention that the Pacific plan be filed shortly after its Washington filing, but in any event before the end of 1989. Pacific should file a proposed schedule for its filing within 45 days of the issuance of this order.

PGE

PGE's plan should be submitted early in 1990. PGE shall also submit a proposed schedule within 45 days following the issuance of this order.

Idaho Power

Idaho Power has submitted a resource plan to the Idaho Public Utility Commission. The Oregon Commission will attempt to coordinate the filing of Idaho Power's plans in Oregon with its future filings in Idaho. Idaho Power should submit a proposed schedule for its Oregon filing within 45 days of the issuance of this order.

Natural Gas Utilities

Least-cost planning is applicable to gas utilities, despite their differences from electric utilities. Northwest Natural Gas and Cascade Natural Gas have filed least-cost plans in the State of Washington. The Commission concludes that those utilities as well as CP National should file their Oregon least-cost plans by the end of 1989. That filing schedule will permit the public in Oregon to fully participate in the process. It will also allow the best use of the resources of the PUC staff, which is presently involved in several other complex and time-consuming projects. All three companies should file proposed schedules within 45 days of the issuance of this order.

Proposed Schedules

The schedules submitted shall include such elements as the time for information requests by the public, public hearings, and, to the extent practicable, the dates when the utility anticipates making the key decisions identified in this order. The proposed schedule shall suggest the means to implement the formal participation discussed above. Utilities shall serve the proposed schedule on all other utilities and others who have requested notice within 45 days of the issuance of this order. Any interested person shall have 15 days to suggest changes to the schedule. The Commission shall approve a final schedule. The Commission will be flexible in considering changes in an approved schedule.

Key Procedural Elements of Least-Cost Planning

1. The public and other utilities should be allowed significant involvement in the preparation of the plan. That participation must include opportunities to contribute information and ideas as well as to receive information. It must also include the opportunity to make relevant inquiries of the utility formulating the plan. Any disputes which arise about whether information requests are relevant or unreasonably burdensome or whether a utility is being properly responsive may be submitted to the Commission for resolution.

2. Competitive secrets must be protected, either through the procedures presently used by the Commission, such as protective orders, or through some other mechanism.

3. So that the Commission is apprised of the costs associated with this approach to planning, the utility should also submit an itemized estimate of the amount by which the costs of preparing a LCP differ from the costs of current planning efforts. The cost estimate shall be filed within 45 days of this order.

4. The utility must file interim reports outlining its progress on development of the plan. The first will be due six months after approval of the schedule.

5. Parties may request supplemental orders at any time for the purpose of clarifying or modifying the Commission's directives. The Commission does not, however, want a utility's planning process delayed unnecessarily because of such requests and may choose to defer its consideration of some requests until the utility's plan is filed. When LCP is well-established, all parties should be able to proceed with only occasional instruction from the Commission.

6. The utility and the Commission staff should work closely together on this project. The staff may also, of course, request additional orders.

#### Possible Development of Administrative Rules

Following consideration of the first least-cost plans submitted, the Commission will decide whether to promulgate administrative rules or to rely on orders as the mechanism for developing and announcing policy.

#### Role of Commission and Utility

The establishment of Least-Cost Planning in Oregon is not intended to alter the basic roles of the Commission and the utility in the regulatory process. The Commission does not intend to usurp the role of utility decision-maker. Utility management will retain full responsibility for making decisions and for accepting the consequences of the decisions. Thus, the utilities will retain their autonomy while having the benefit of the information and opinion contributed by the public and the Commission.

Rate-making decisions will not be made in the Least-Cost Planning process. Decisions on whether to include in rates the costs associated with new resources can only be made in a rate filing under ORS 757.205, et seq. When a utility requests approval of expenditures or inclusion of a plant in rate base, the utility must demonstrate the justness and reasonableness of its rates at the time the resource comes on line. Under ORS 757.355, the cost of a resource may be included in rates only if the resource is "used and useful."

If a resource is used and useful, the resource itself must be included in rate base. However, the full cost of the resource is not necessarily includable in rate base.

For example, if a used and useful resource was constructed at unnecessarily high cost, only the cost deemed appropriate would be placed in rate base. Thus, the prudence of the utility's decisions regarding a resource are not relevant to the question of inclusion in rate base, but are relevant in determining the valuation of the facility to be placed in rate base. Portland General Electric, Order No. 87-1017, at 10.

Least-Cost Planning is therefore relevant to the question of rate-making treatment. Consistency of resource investments with least-cost planning principles will be an additional factor that the Commission will consider in judging prudence. When a plan is acknowledged by the Commission, it will become a working document for use by the utility, the Commission, and any other interested party in a rate case or other proceeding before the Commission, such as the review of avoided costs. Consistency with the plan may be evidence in support of favorable rate-making treatment of the action, although it is not a guarantee of favorable treatment. Similarly, inconsistency with the plan will not necessarily lead to unfavorable rate-making treatment, although the utility will need to explain and justify why it took an action inconsistent with the plan.

#### Substantive Elements of Least-Cost Planning

The Commission believes that certain features are integral to the LCP process. Any plan must have these basic elements:

1. All resources must be evaluated on a consistent and comparable basis.
2. Uncertainty must be considered.
3. The primary goal must be least cost to the utility and its ratepayers consistent with the long-run public interest.
4. The plan must be consistent with the energy policy of the state of Oregon as expressed in ORS 469.010.

The Northwest Power Planning Council's plan may be a useful model for utilities making their initial filings. The following detailed list of elements, taken in large part from the draft handbook on Least-Cost Planning published by the National Association of Regulatory Utility Commissioners, may also be of value:

1. Statement of objectives.
2. Development of high, medium, and low load forecasts for the utility's system and assignment of some probabilities to each.
3. Determination of the levels of peaking capacity and energy capability expected for each year of the plan.
4. Identification of resources needed to bridge the gap between expected loads and resources.
5. Evaluation of all resources, including conservation, in a consistent and comparable manner.
6. Analysis of reliability standards, recognizing that higher reliability carries a higher cost.
7. Selection of the most promising options for fashioning an effective, flexible, and responsive plan.
8. Integration of methods of supplying power with methods for controlling and moderating demand, such as conservation.
9. Construction of scenarios pitting the selected mixes of options against possible economic, environmental, and social circumstances.
10. Evaluation of the economic and technical success of each mix of options under the circumstances of the various scenarios.
11. Analysis of the uncertainties associated with each possible plan of action.
12. Screening of the alternatives to eliminate those that are not suitable.
13. Rank ordering of the alternative courses of action.
14. Identification and explanation of possible inconsistencies with the plan of the Northwest Power Planning Council or the energy plan of the Oregon Department of Energy.

15. Testing of each alternative for cost-effectiveness from a variety of viewpoints (the utility, rate-payers of different classes, the state, and the region).
16. Reevaluation of the alternatives considering relevant factors.
17. Selection of a plan which minimizes costs while meeting reliability and other objectives.
18. Development of a short term plan of action.
19. Implementation of the plan of action to bring about the least-cost provision of power.
20. Monitoring and evaluation of the operation of the utility under the plan and revision of the plan as necessary.

#### Other Issues

What follows is a discussion of certain policy matters important to the LCP process. As the list is obviously not a complete list of all issues which may ultimately come up in this matter, parties may request the resolution of issues not treated here.

1. Utilities Affected. All energy producing and all energy distributing utilities are required to implement LCP.

Northwest Natural Gas (NNG) has asserted that "demand-side" planning may result in unfair treatment of natural gas distribution utilities. NNG argues that certain conservation measures would unfairly favor electric utilities over gas utilities.

The Commission recognizes that the industry structure, resource portfolios and action plans of natural gas utilities may differ from those of electric utilities in the least-cost planning process. However, the same underlying objectives and principles of least-cost planning will apply to all utilities.

2. Minimizing Costs Versus Rates. The primary criterion for determining whether an item is least cost is whether it involves the least cost for the utility and its ratepayers consistent with the long-run public interest.

Rates are relevant to the planning process. For example, rates affect loads, and the overall level of rates associated with a utility's least-cost plan must be consistent with the overall level assumed in the underlying load forecasts. Furthermore, rate design should be treated as a potential demand-side resource.

The least-cost standard should not be narrowly construed to suggest that utilities should promote switching to other fuels or otherwise discourage service. If a utility is the lowest cost provider of a customer's needs, then it should attempt to serve that customer. This approach should be consistent with the policies expressed in Order No. 85-010 (regarding utility marketing in competition with regulated and unregulated fuels), and Order No. 87-402 (stating standards for special contracts).

3. Types of Costs. It is the Commission's decision that, with the exceptions noted below, external costs are to be considered in the development of a plan.

The Commission recognizes that such costs may not be easily quantifiable and that different decision makers will reach different conclusions as to the costs and their applicability. However, the Commission believes that a cost-effectiveness evaluation of resource options should include, to the fullest extent practical and quantifiable, costs and benefits external to any resource transaction. The Commission also realizes that the projection of some costs may be highly uncertain. That uncertainty should be taken into account in applying external costs. In general, the Commission agrees with comments made during the public hearings on this matter that when the certainty of external costs is known, but the amount of the costs is not, zero is the least desirable and least accurate cost to apply. The Commission also agrees with the comments of the utilities that the application of external costs will be subjective and will need to be addressed both quantitatively and qualitatively through general discussion. To the extent that price tags are not easily assigned to identifiable damages, those costs should be separated from conventional accounting costs and ranges of values should be presented to permit decision-makers some notion of their relative importance.

In preparing its plan, a utility should include in the cost of a resource all costs that will or may be internalized, *i.e.*, those costs, such as the costs of pollution control and wildlife mitigation, which will be

charged to the utility and its customers. If there is some uncertainty about the cost of mitigation of environmental effects or the likelihood that mitigation will be required, then a range of costs and associated probabilities of occurrence should be used in evaluating resource strategies.

Other external costs may be includable to the extent they are in furtherance of and consistent with the energy policy of the State of Oregon expressed in ORS 469.010 or the provisions of the Northwest Power Plan endorsed by the Commission.

Factors such as economic development and job creation will not be weighed by the Commission in determining whether a resource is "least cost." The Commission does not expect utilities to include consideration of these factors in their plans.

4. Review of Plans by PUC. Plans submitted by utilities will be reviewed by the Commission for adherence to the principles enunciated in this order and any supplemental orders. If further work on a plan is needed, the Commission will return it to the utility with comments. This process should eventually lead to acknowledgment of the plan.

Acknowledgment of a plan means only that the plan seems reasonable to the Commission at the time the acknowledgment is given. As is noted elsewhere in this order, favorable rate-making treatment is not guaranteed by acknowledgment of a plan.

5. Time Frame. A utility's LCP should provide planning for a 20-year period and account for end effects. When the process is fully implemented, the plans will be updated by the utilities no less frequently than every two years. The plan should include a two-year action plan.

6. Competitive Bidding. The Commission believes that competitive bidding may play an important role in LCP. A utility's least-cost plan must consider the role of competitive bidding in planning for and acquiring new resources. Each utility should identify in its plan how and to what extent competitive bidding may be employed in its acquisition of resources.

7. Conservation Efforts. The Commission recognizes that some cost-effective methods of conservation may be lost if not undertaken at this time. Nothing in this order is intended to relieve a utility of its current obligation to pursue these steps.

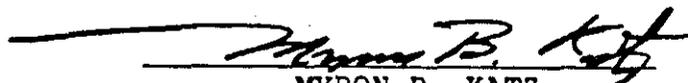
Coordination with Other States

Other states in the Pacific Northwest have undertaken least-cost planning processes. The Commission believes that attainment of the goals of least-cost planning will be furthered through cooperation and coordination among the states, the Northwest Power Planning Council, and the Bonneville Power Administration. The Commission intends to take steps to foster cooperation and coordination.

Made, entered, and effective APR 20 1989.



RON EACHUS  
Commissioner, Chair



MYRON B. KATZ  
Commissioner




NANCY RYLES  
Commissioner

COMMISSIONER MYRON B. KATZ CONCURRING:

I concur with the Commission's unanimous order.  
A few observations may elucidate an underlying theory.

A central issue arises in least-cost planning about whether the Commission should concern itself with overall costs to society or only costs to a utility and its rate-payers. In effect, the decision rule the Commission adopts is as follows: In judging resources with one another and investigating their eligibility for acquisition (*i.e.*, for inclusion in a utility's resource portfolio), a utility should seek to establish approximate costs that would obtain if the marketplace were operating without imperfections. A resource should be deemed cost-effective and thus eligible for selection if its costs are lower than the costs of alternative resources assuming a market in which all costs, including environmental costs, are reflected in resource price tags.

What would be the characteristics of such a simulated market? Among other things, external costs (or benefits) would all be internalized. Without hidden subsidies and the distortions they create, all social costs would be embedded in the price a utility would pay for each resource. No portion of costs would escape being borne entirely by the acquiring utility and its ratepayers. For example, fishers at a remote mountain lake would not have their opportunities for a catch diminished by acid rain from a coal-fired power plant. Either the emissions from the power plant would be abated or the fishers would be somehow or other recompensed.

A utility and its ratepayers might be advantaged were the utility to acquire a resource which had lower private costs but higher social costs than an alternative resource. But society at large might then be paying more to get the job done than is necessary.

The objective is to find ways to get utilities' and ratepayers' private interest to converge towards society's public interest. Judging cost-effectiveness only by out-of-pocket or private costs to a utility encourages divergence, not convergence.

However, once a resource is judged eligible for inclusion in a utility's least-cost portfolio, and once acquisition activity is launched, the utility should seek to acquire the resource at the lowest cost to itself and its customers. In other words, while a utility should only acquire resources that are determined to be eligible, it should pay no more than necessary.

Traditionally, utility regulators have sought to minimize costs to consumers. That objective, encompassed within a public interest context, remains intact with adoption of this order.

As a practical matter, utility revenue requirements will probably not be significantly altered from what they would otherwise be. The Commission has noted that many costs which were once external (i.e., borne by others) are now being internalized (i.e., borne by utilities). Mitigation of hydro-electric damage to fish and wildlife, installation of expensive stack scrubbers at coal-fired power plants to reduce emissions, a boost in the liability ceiling for a single nuclear power accident from \$710 million to \$7 billion, and inclusion of power plant decommissioning costs in rates are all examples of internalized costs that push the price of energy to more nearly reflect social costs.

Moreover, it is likely that the trend toward internalization of social costs will continue; that private costs and social costs will converge further. Hence, differences between costs to ratepayers and costs to society should become progressively less consequential over time.

Even if the trend toward internalizing social costs does not continue (and that seems very unlikely), there are benefits to including external costs in resource planning. First, there is a benefit to deferring deployment of environmentally damaging resources further into the future. Second, it is possible that in the interim technological advances may make more benign power production technologies (such as photovoltaic cells) cost-effective.

At the extreme, the Commission's order might mean that more environmentally benign resources, such as conservation, at somewhat higher cost to ratepayers will be included in a utility's least-cost resource mix and thus be eligible for acquisition than would otherwise be the case were only conventional accounting costs considered. This is not a new idea. In effect it is what the 10 percent cost differential in favor of conservation found in Oregon's Residential Energy Conservation Act (ORS 469.631) and in the Northwest Power Act (P.L. 96-501) already does to some extent. By taking external costs into account, this order goes further. It requires explicit recognition and analysis of all costs in power planning.

Commission decisions should promote the public interest. The Commission should strive to pilot Oregon toward socially appropriate conduct and away from socially wasteful conduct. That is precisely what this order does.



MYRON B. KATZ  
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