BEFORE THE

COUNCIL OF THE CITY OF NEW ORLEANS

EX PARTE APPLICATION OF
NEW ORLEANS PUBLIC SERVICE INC.
CONCERNING A LEAST COST INTEGRATED
RESOURCE PLAN FOR NEW ORLEANS PUBLIC
SERVICE INC.

DOCKET NO. UD-92-2A

and

EX PARTE APPLICATION
OF LOUISIANA POWER & LIGHT COMPANY
CONCERNING A LEAST COST INTEGRATED
RESOURCE PLAN FOR LOUISIANA POWER &
LIGHT COMPANY

DOCKET NO. UD-92-2B

TESTIMONY

OF

PAUL L. CHERNICK

ON BEHALF OF

THE ALLIANCE FOR AFFORDABLE ENERGY

RESOURCE INSIGHT, INC.

FEBRUARY 10, 1995

EXPERT TESTIMONY

BY

PAUL L. CHERNICK

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THE ALLIANCE FOR AFFORDABLE ENERGY

February 10, 1995

I. Identification and Qualifications

Q: Mr. Chernick, please state your name, occupation, and business address.

A: I am Paul L. Chernick. I am president of Resource Insight, Inc., 18 Tremont Street, Suite 1000, Boston, Massachusetts.

Q: Summarize your professional education and experience.

A: I received a SB degree from the Massachusetts Institute of Technology in June 1974 from the Civil Engineering Department, and a SM degree from the Massachusetts Institute of Technology in February 1978 in Technology and Policy. I have been elected to membership in the civil engineering honorary society Chi Epsilon, and the engineering honor society Tau Beta Pi, and to associate membership in the research honorary society Sigma Xi.

I was a Utility Analyst for the Massachusetts Attorney General for more than three years, and was involved in numerous aspects of utility rate design, costing, load forecasting, and the evaluation of power supply options. Since 1981, I have been a consultant in utility regulation and planning: first as a Research Associate at Analysis and Inference, after 1986 as President of PLC, Inc., and since August 1990 in my current position at Resource Insight. In those capacities, I have advised a variety of clients on utility matters, including, among other things, the need for, cost of, and cost-effectiveness of prospective new generation plants and transmission lines; retrospective review of generation planning decisions; ratemaking for plant under construction; ratemaking for excess and/or uneconomical plant entering service; conservation program design; cost recovery for utility efficiency

programs; and the valuation of environmental externalities from energy production and use. My resume is attached as Exhibit I-____ (PLC-1).

Q: Have you testified previously in utility proceedings?

A: Yes. I have testified over one hundred times on utility issues before various regulatory, legislative, and judicial bodies, including the Massachusetts Department of Public Utilities, the Massachusetts Energy Facilities Siting Council, the Vermont Public Service Board, the Texas Public Utilities Commission, the New Mexico Public Service Commission, the District of Columbia Public Service Commission, the New Hampshire Public Utilities Commission, the Connecticut Department of Public Utility Control, the Maine Public Utilities Commission, the Minnesota Public Utilities Commission, the South Carolina Public Service Commission, the Federal Energy Regulatory Commission, and the Atomic Safety and Licensing Board of the U.S. Nuclear Regulatory Commission. A detailed list of my previous testimony is contained in my resume.

Q: Have you been involved in least-cost utility resource planning?

A: Yes. I have been involved in utility planning issues since 1978, including load forecasting, the economic evaluation of proposed and existing power plants, and the establishment of rate for qualifying facilities. Most recently, I have been a consultant to various energy conservation design collaboratives in New England, New York, and Maryland; to the Conservation Law Foundation's conservation design project in Jamaica; to CLF interventions in a number of New England rulemaking and adjudicatory proceedings; to the Boston Gas Company on avoided costs and conservation program design; to the City of Chicago in reviewing the Least Cost Plan of Commonwealth Edison; to the South Carolina Consumer Advocate on least-cost planning; to

environmental groups in North Carolina, Florida, Ohio and Michigan on DSM planning; and to several parties on incorporating externalities in utility planning and resource acquisition. I also assisted the DC PSC in drafting order 8974 in Formal Case 834 Phase II, which established least-cost planning requirements for the electric and gas utilities serving the District.

II. Introduction

Q: What is the purpose of your testimony?

A: The purpose of my testimony is to respond to the November 17, 1994 filing of Louisiana Power and Light (LP&L) and New Orleans Public Service Inc. (NOPSI), both subsidiaries of Entergy. I will discuss Entergy's proposal to delay its IRP filing and to make fundamental changes to the City's established IRP process.

Q: Please summarize Entergy's proposal.

A: Entergy proposes to change the IRP process that was approved by the Council on June 20, 1991 in Ordinance No. 14629. This includes abandoning use of the Total Resource Cost (TRC) test in favor of the Rate Impact Measure (RIM) test to screen for demand-side-management programs. In addition, the Company proposes to eliminate the collaborative process in establishing its IRP.

In support of the proposed changes to the IRP process, Entergy asserts the following:

- Entergy's business environment is increasingly competitive.
- In the competitive environment, rates are very important, particularly for industrial customers.

- Use of the Total Resource Cost (TRC) test increases rates for all customers while lowering bills for some.
- A competitive environment thus requires abandonment of the TRC in favor of the RIM.
- The current IRP would require the Company to disclose operating information, which would put the Company at a competitive disadvantage.
- The timing of the IRP filing is incompatible with the planning cycle for the Entergy system.

Q: Please summarize your evaluation of the Company's proposal.

A: Entergy's proposal is simply without merit. In response to some ill-defined threat of retail competition, and without any analytical basis, Entergy proposes wholesale abandonment of its obligation to provide least-cost energy services to its customers. Entergy has apparently concluded that the only feasible response to potential competition for some unidentified large customers is to forego DSM efforts that can provide cost, environmental, risk-reduction, and employment benefits to all ratepayers.[1]

Entergy's proposal to suspend future DSM with a delayed IRP, while awaiting preliminary results from approved DSM programs is ill-advised, given the broad customer support for these programs.

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[1] Also, the Company removes itself from responsibility for the delays in both the filing process of the first IRP and in the implementation of DSM programs even though it was instrumental in causing the delays. The Company has also changed its opinion about the impact of the GSU merger with Entergy. In its 1992 IRP Executive Summary, Entergy said that the merger would have minimal impact on the IRP submitted, but now the Company advocates a delay in filing the IRP so that effects of the merger can be investigated.

Based on the 1992 IRP, the Entergy system faces a capacity shortage in 1999 or 2002, (depending on whether or not the effects of the merger with GSU are considered) even accounting for some modest DSM efforts. If these efforts are abandoned, ratepayers will face higher costs as Entergy substitutes more-expensive supply for the foregone DSM. The increase in bills (and perhaps rates) and the reduction in customer service would tend to reduce the competitiveness of Entergy and its business customers. In addition, given the nature of the Entergy Systems Agreement of April 16, 1973, even if terminating NOPSI DSM programs would temporarily reduce average rates across the Entergy system, the loss of those programs is likely to increase rates in New Orleans.[2]

Q: Has Entergy presented a reasonable assessment of the likely role of DSM in a competitive market?

A: No. Entergy has not presented a credible evaluation of the likelihood or nature of retail competition, or of the role of DSM in a competitive market. Entergy simply asserts that competition renders its current IRP filing process obsolete. In particular, Entergy has failed to provide any evidence to support its position that competition will be primarily on the basis of commodity price, or that DSM-related rate effects will be a major consideration in price competition. Instead, Entergy simply asserts that price concerns will be paramount, and that DSM-related rate increases will undermine Entergy's and its customers' competitiveness.

Like a kid telling ghost stories around the camp fire, Entergy cannot tell the Council what the competition ghost looks like, or what harm it can do, or

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[2] I discuss this point further in § II.C.

why it should come to New Orleans to make trouble in the first place. All Entergy can claim is that there is something scary out there in the dark, which will come and get us all unless the Council appeases the ghost by throwing the IRP Ordinance into the fire. Unfortunately, massive savings are attached to the Ordinance, and to IRP; if Entergy has its way, millions of dollars of ratepayer money will go up in smoke.

Q: What's wrong with Entergy's concern with rates in light of competition?

A: Entergy's focus on price competition ignores the fact that a customer's viability depends in part on its ability to minimize the *total cost* of the energy service input to its production process, not necessarily the *per-unit price* of the electricity purchased. In short, competitiveness depends on bills (or bills per unit of output), not rates (or bills per kWh of input). Customer bills, in turn, depend on both rates and the efficiency with which electricity is converted to provide energy services. Demand-side-management-related rate increases should not reduce a firm's competitive position, or the economic attractiveness of the service territory, if the DSM activities allow the firm to reap proportionately larger process efficiency improvements.

A well-designed DSM portfolio can increase the attractiveness of Entergy's service territory to its current and prospective new customers. In fact, one of the first lines of defense against the threat of self-generation should be to identify cost-effective opportunities for energy savings that provide better economic returns than the competitive alternative to Entergy's electric service. Yet, in this proceeding, Entergy is proposing to dismantle the very tools required to address these savings opportunities and mitigate the competitive threat.

Q: Has Entergy reasonably characterized the threat of price competition for customers that cannot or will not take advantage of its DSM opportunities?

A: No. Entergy has not provided sufficient evidence of the size or timing of a rate impact associated with its current spending. Even if they had, Entergy has failed to identify the level of rate increase that would undermine its competitiveness. Witness Kenney attempts to quantify the rate effects by claiming current DSM programs increase rates by approximately two percent, but he overstates the rate effects by not considering the cost savings to Entergy or NOPSI. Entergy therefore has no idea how much rates will increase with its current DSM plans, or whether its proposed strategy will in any way improve the attractiveness of its service to those customers who are most price-sensitive.

Instead, Entergy proposes to suspend its existing DSM programs and reduce the scope of eligible programs. Entergy's strategy represents a losing proposition for all parties. Primary service customers willing to participate in a DSM program will be barred from doing so. Other customers, who are unlikely to participate in or gain from the competitive market, will no longer be able to reduce costs through DSM programs. And price-sensitive customers may look to alternative sources of power if the rate effects of supply replacements for the foregone DSM are too severe in the near term.

Q: What is Entergy's basis for requesting a delay in the IRP filing to November 15, 1995?

A: Entergy bases the delay request on a number of timing issues, including Entergy's desire to wait until preliminary results from April 7, 1994 approved DSM programs could be included in the IRP.

Q: Was this request reasonable?

A: No. Entergy is attempting in this docket to negate its responsibility to file any reasonable semblance of an IRP. While Entergy is, of course, free to request a change in the Council's rules, it should proceed in the meantime under the existing rules, and should have filed a new resource plan.

While Entergy claims to want the results of the approved DSM programs to improve its next IRP, this is hardly plausible in light of Entergy's position in this case is that it wants to terminate virtually all its energy efficiency efforts.[3]

Entergy's self-imposed postponement of the IRP filing will become an irreversible fact by the time this case can be decided. In future rate cases and fuel adjustment proceedings, NOPSI should be held accountable for the extra costs to its ratepayers from any delays in DSM program implementation caused by its foot-dragging.

Q: Please summarize your recommendations.

A: The Council should deny Entergy's request to change the fundamental structure of its IRP process. In addition, the Council should deny Entergy's request to rely on the RIM as its primary screening test. The Council should remind Entergy of its directives in Ordinance No. 14629 (June 20, 1991) which states, at Section 52-354B.4:

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[3] Entergy's excuse that the delay would allow the IRP to reflect more extensive experience with the merger of Gulf States Utilities into the Entergy system is hardly credible. Entergy modeled the joint operation of the combined generation and transmission assets as part of the merger proceedings, and is unlikely to learn much relevant to IRP from a few more months of joint operation.

> The Utility shall screen all Demand-Side Resources utilizing the Screening Test as defined at Section 52-351R.

Section 52-351R states:

> The Societal Cost Test and Total Resource Cost Test shall be applied to each resource option in the Screening Test. Resource options passing either the Societal Cost Test or the Total Resource Cost Test shall be eligible for inclusion in resource plans.

In addition, each resource that individually passed the screening test will be subject to program screening, again using the screening test (Section 52-3444E).

Finally, Entergy should required to maintain and make better use of the existing Collaborative design process.

Q: How do you recommend addressing concerns about the effect of DSM on Entergy's competitive position?

A: The Council should require Entergy to undertake a systematic evaluation of the system-cost implications of its proposal within an integrated-resource-planning context. The Company should be reminded of its least-cost planning obligation

> in which an integrated combination of Demand-Side and Supply-Side Resources are selected to satisfy future energy service demands at the least cost to society, balancing the interests of utility customers, utility shareholders and society-at-large. (City of New Orleans Ordinance No. 14629 M.C.S. at 5)

In addition, Entergy should be required to estimate the rate levels or increases that trigger competitive pressures, the rate effects of the Council approved DSM spending levels, and the effects of cost-allocation and program-delivery strategies for moderating DSM rate effects.

Finally, both the system cost and rate-impact analyses should be based on a comprehensive assessment of available strategies for reducing supply and administrative costs and improving competitiveness.

III. DSM, Competition, and Utility Resource Planning

A. Perspective on Competition

Q: What is Entergy's rationale for proposing to discard its current DSM spending plans?

A: Entergy sees the utility environment as ever more competitive and price-sensitive, with large customers able to turn to alternative energy suppliers, self-generation, or cogeneration. Entergy contends that increasing rates due to DSM would drive away large, price-sensitive customers, and that the resulting reduction in sales would hurt all ratepayers. In this more competitive market, Entergy claims that minimization of rates, not bills, as the appropriate objective of utility planning.

Q: Has Entergy presented a credible characterization of emerging competitive forces at the retail level?

A: No. Entergy's discusses economic and regulatory conditions, such as the Energy Policy Act of 1992, that are changing the landscape of *wholesale* competition. Kenney asserts that self- and co-generation are becoming more attractive due to improved technologies, low interest rates, low-priced and abundant fuels, which make it more practical to install, finance and operate cogeneration facilities for large industrial and commercial customers. Kenney also offers anecdotes about cogeneration in Entergy's service territory outside

New Orleans. Chamberlin refers to California's current debates about retail wheeling, but does not explain how California's tentative movement toward a new utility industry structure affects New Orleans.

Q: Has Entergy presented the analysis of competition that Dr. Chamberlin says is a prerequisite to revising the Council's IRP rules?

A: No. Entergy has not presented the analysis described in CNO 16-36.

Q: Does Entergy clearly describe the changes it expects in the competitive threat?

A: No. At times, Entergy appears to be worried about retail wheeling. At other times, Entergy appears to be worried about the loss of large customers to more traditional competition from relocation, fuel choice, cogeneration and self-generation. Entergy cannot specify the nature or magnitude of the competitive threat (IR AAE9-31)

Q: From the customer's perspective, is competition based primarily on commodity price?

A: No. Entergy's argument for a least-rates, not least-cost, strategy fails to consider that competition may be on the basis of more than just commodity price.[4] Instead, customers may be looking for a bundle of services that

[4] Indeed, a New Hampshire company is planning to compete for Public Service Company of New Hampshire's industrial load by offering a bundle of power-supply and efficiency services, and believes that PSNH's lack of DSM makes PSNH more vulnerable to competition. Northeast Power Report. 1994. "N.H. Lawyer Wants to Become a Utility Underselling PSNH," *Northeast Power Report* (September 2, 1994):1–2. Similarly, IBM recently selected power supply from Central Hudson Gas and Electric, rather than equal-cost power from the New York Power Authority, due to CHG&E's offering DSM and other services.

provide reliable power at minimum costs with minimum cost uncertainty. These services could include:

- enhanced or guaranteed reliability levels;
- power-quality services for increased power factor and reduced harmonic distortion;
- detailed end-use load data for load management and real-time pricing;
- increased energy-service efficiency, including DSM, end-use renewables, cogeneration services, and backup power;
- contract pricing that minimizes price volatility.[5]

Competition should spur increased attention to development of services that increase customer value, not necessarily price:

> Increased competition holds the potential for breeding numerous innovations in consumer services, products, and packaging. Competition for customers may spur the development of value-added bundling of services and product features that are tailored more closely to the needs of particular consumer segments. (Connecticut DPUC Draft Decision in Docket No. 93-09-29 at 42)

1. Traditional competition

Q: Is the competition that Entergy faces from other utilities, cogeneration, and self-generation a new phenomenon?

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[5] Pennsylvania Electric Company has taken this concept one step forward by offering a full array of technical services to help firms modernize and expand. In addition to assistance with efficiency upgrades, these services include plant operations reviews, assistance with environmental compliance, product testing of manufacturing methods, and accounting and marketing assistance. Tremel, Charles. 1993. "Customer Partnerships: The Magic of Successful Industrial DSM," *Proceedings: Sixth Annual Demand-Side Management Conference: Making a Difference* 165–173. Palo Alto, Cal.: Electric Power Research Institute.

A: No. Contrary to Entergy's vague assertions, competition is nothing new. Utilities routinely compete in wholesale markets for off-system sales and purchases, against both other utilities and independent power producers. Utilities have also faced competitive pressure at the retail level for many years, with the ever-present threat of inter-fuel switching, self-generation or relocation by their large customers.[6] Utilities also actively compete for retail load by offering economic development rates and other incentives for industrial facility construction or expansion.[7] The list of potential competitors in IR CNO 16-80 (gas marketers, energy-service companies, manufacturers and engineers) includes no new entries.[8]

Q: Has Entergy presented any evidence of an increased threat of competition in its New Orleans operations?

A: No. Mr. Kenney describes Arkansas Power and Light's decision to reduce rates to large industrial customers, and asserts that this decision was driven by competitive pressures. He also describes a single hotel in Mississippi that

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[6] See IR AAE8-2 for evidence that self-generation has been a small, gradually growing, portion of total generation from 1985–91, with no sign of any acceleration of the trend. This self generation includes industrial loads well-suited to cogeneration, with large heat loads and waste fuels (such as chemical plants and refineries); large facilities in areas served by small utilities; internal usage of the steam host for large cogeneration projects developed to sell power to utilities; and other special cases not applicable to NOPSI. While IR AAE8-2 claims that a "trend of increasing self-generation continues in the 1990s," the data presented cannot support that claim, since most recent cogeneration has been developed for sale to utilities, rather than internal use, as shown in IR AAE8-14.

[7] What has changed in the nature of competitive pressures is an apparently renewed vigor on the part of large industrials to wield the threat of leaving the system to extract price concessions.

[8] It is distressing that Entergy views energy service companies' efficiency offering as competition. In IR AAE8-33, Entergy praises these services.

switched from Mississippi Power and Light to cogeneration. He does not identify any NOPSI customers for which NOPSI is proposing discounted rates to fight competition, nor does he identify any hotels in New Orleans that are currently planning cogeneration projects.

Entergy refused to provide any information on the amount or type of "on-site generation technologies" (a term Entergy uses to describe cogeneration and self-generation), or the types of customers using such technology, either historically or projected (IR AAE 8-3). Entergy (IR AAE8-1) simply has not established that it is in greater peril now than in the 1980s, or that it has even been at any substantial risk of competition from on-site generation.

Q: Does NOPSI's customer profile affect the relevance of traditional competitive pressures?

A: Yes. Entergy concedes that the proportion of NOPSI load attributable to industrial customers is small. According to the 1992 IRP, industrials comprise only 10% of NOPSI sales, while over half of NOPSI sales are in the commercial sector. These large commercial customers include hotels, hospitals, government offices, universities, and other facilities that generally do not have the option or inclination to relocate to lower their energy rates (see IR NOIEUG 9-2). While some large commercial customers may be suitable candidates for cogeneration facilities, they typically are less suitable than large industries for these reasons:

- Few commercial customers have large and constant heat loads necessary for efficient cogeneration.

- Commercial customers rarely have electric loads as large as the largest industrial facilities, and therefore do not capture the same economies of scale.
- Commercial customers are often much less tolerant of service interruptions than are industrial customers.[9] Commercial cogeneration projects typically require back-up capacity from additional generation or the utility, increasing the cost of cogeneration and (for utility back-up) reducing the utility's revenue loss.

Q: What is the overall effect on NOPSI and New Orleans if a customer cogenerates?

A: Most of the customers that NOPSI loses to cogeneration will become new (or larger) customers of NOPSI's gas division, increasing NOPSI's revenues and (most likely) reducing rates. Furthermore, the customer will continue to do business in New Orleans, paying taxes and employing residents.

Q: Does environmental regulation affect the attractiveness of cogeneration projects?

A: New regulations stemming from the 1990 Clean Air Act Amendments and the threat of additional future regulations may reduce the attractiveness of on-site generation by customers. J. E. Dean, senior engineer at Entergy Services, Inc., has outlined some of the issues that may affect a customer's decision to chose cogeneration. Contrary to his company's position in this hearing, Mr. Dean does not paint a picture of a marketplace conducive to new cogeneration projects. He makes the following points:

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[9] A one-hour power outage for a hotel can be very serious.

- Currently, permitting time for new projects is about 18 to 24 months, although the process may take longer due to Title V1990 CAA regulations requiring companies to register all possible emission sources.
- There is increasing regulatory pressure to have cleaner burning power generation. An internal new source review will be required for all new and modified units and most will need a PSD (prevention of significant deterioration) permit from state and federal regulators. In non-attainment areas, new projects must meet LAER (lowest achievable emission rate) standards and obtain emissions offsets from another source.[10] Complying with these standards (or neglecting to do so) can increase costs significantly. One Louisiana firm failed to get a PSD permit before construction. The company was fined $625,000; as a result, the project was canceled.
- Additional future regulatory changes, including global-warming programs and reauthorization of the Clean Water Act, also may increase compliance costs.[11]

Q: Are Mr. Kenney's representations about the costs of gas turbine relevant to the attractiveness of cogeneration in New Orleans?

A: Not very. Such turbines are generally too large for New Orleans businesses.

While Mr. Kenney was unable to provide documentation (for example, at IR 8-37) supporting the specific costs and heat rates he cites (at 10–11,

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[10] Parts of Louisiana are in non-attainment for ozone.

[11] Dean, J. E. 1994. "Cogeneration Effects of Environmental Laws and Regulations," *Cogeneration and Competitive Power Journal* 9(3):60–62.

Exh JFK-1),[12] I am sure that turbine heat rates have improved and their costs have declined at least modestly in recent years. That does not imply that such turbines are about to replace utility-supplied power for a large share of the commercial market.

Mr. Kenney's historical review is primarily focused on the costs of the GE Frame-7 gas turbine. Curiously, considering his reliance on this particular piece of equipment, Mr. Kenney claims not to know, and so far has been unable to determine, the capacity of a GE Frame-7 turbine (IR AAE8-34). Yet Entergy (IR CNO16-53 at 16, 17) indicates that the Frame-7 is rated at 160 MW in simple-cycle operation and 250 MW in combined-cycle operation. Mr. Kenney does not know how many customers in the city of New Orleans, or in the territory of any other Entergy subsidiary, have loads large enough to use so large a generator.

Q: Would a NOPSI customer with a 160-MW peak load be suitable for a 160-MW turbine for self-generation or cogeneration?

A: Not likely. Commercial customers generally cannot tolerate lengthy interruptions of electric service. A customer using a single generator matched to its peak load would suffer total loss of power unless it had essentially full back-up capacity from extra generation (the cost of which Mr. Kenney cannot estimate, IR AAE8-39) or from Entergy (which negates much of the point of self-generation). Using three 80-MW generators, or even five 40-MW units, would generally be more practical, but more expensive.

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[12] Page 3 of Exhibit JFK-1 is incomprehensible, as it purports to present capacity costs and fuel prices on a single axis.

Q: Are gas turbines well matched to the load shapes of typical large commercial customers, of the type you would expect to find in New Orleans?

A: Again, not very well. One gas turbine, or even a couple of similar-sized units, would also not be well suited to the load shape of typical commercial customers. Gas turbines generally have poor part-load efficiencies, and most commercial establishments spend most of their time well below their peak loads. On a large utility system, this is not a substantial problem, since each turbine can spend most of its time either shut down or near full load. For a stand-alone system with only one or a few turbines, and with a highly variable commercial load, part-load operation is apt to be substantial and expensive.

In addition, New Orleans is a particularly poor location for gas turbine cogeneration. Hot and humid air reduce gas-turbine output and efficiency, as Entergy explains in IR CN016-53 at 7–8. Standard turbine ratings are determined at 59° F, which is not typical of New Orleans weather. Of course, most commercial customers would most need high output and efficiency to cover air conditioning loads.[13]

Q: What is the significance of Mr. Kenney's summary of estimated energy costs in Exhibit JFK-1, page 4?

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[13] Mr. Kenney's fixation on competition from large gas turbines is particularly hard to understand, since the one commercial customer Entergy identifies as having been lost to cogeneration uses two small engines to meet its load, rather than a large gas turbine (IR AAE8-42). Engines perform well at part load, and are not as sensitive to environmental conditions as are combustion turbines. Mr. Kenney has not even attempted to show that any technological changes have made engines more competitive with NOPSI power than they have been for the last several years of high rates.

A: It is hard to tell, since Mr. Kenney again failed to provide any details of the assumptions used in deriving the estimates. However, the costs are likely to be estimated for conditions that are not at all representative of conditions faced by large commercial loads in New Orleans, such as no need for back-up capacity, constant loads, 59° air temperature, and low humidity. For a real NOPSI commercial load, the costs are likely to be much higher.

2. *Retail Wheeling*

Q: Has Entergy established that retail wheeling is likely in New Orleans?

A: No. Nothing in Entergy's filing explains why or how retail wheeling would occur in New Orleans. In IR AAE8-40, Entergy declined to "state whether any of the regulatory changes [Mr. Kenney] discussed on p. 12 allow retail electric customers in Orleans Parish to purchase power from entities other than the locally franchised utility, and if so, explain how this would occur." Entergy declined to explain whether retail wheeling could occur "inside the City without approval of the City Council, and if so, how this would occur" (IR AAE 8-4) or who would set rates for such service (IR AAE 8-5).

Entergy asserts that the retail-wheeling ghost is lurking in the shadows, but cannot tell the Council where the ghost is, or how it got there, or how it could harm anyone.

Q: Has Entergy demonstrated that retail wheeling is imminent anywhere on its system?

A: No.

Q: Is the California's retail wheeling proposal, cited by Dr. Chamberlin, relevant to New Orleans?

A: Not particularly. Many regulatory (and other) trends that are important in California are not accepted in New Orleans. For example, California utilities have had rate-adjustment mechanisms for more than 15 years, but NOPSI does not.[14]

Q: Is the retail competition model outlined by the California PUC inevitable for New Orleans?

A: No. Entergy's concerns about changes in retail competition in New Orleans are at least premature and probably unwarranted. Entergy has not explained how any form of retail wheeling would occur without Council approval.[15]

In addition, there is growing doubt about the rate or inevitability of retail wheeling on the national level. For example, a recent report by Duff & Phelps Investment Research found that:[16]

- "A competitive environment has existed within the electric utility industry for many years." The report identifies the passage of PURPA in 1978 as important in the development of competition, and discusses utility responses to competition in the 1980s.
- "Many states have no incentives to enact retail wheeling."
- "Competition has been overblown as the industry's main problem."

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[14] These mechanisms compare actual revenues to revenues allowed in the previous rate case; utilities refund any surplus collections and add in any shortfalls in the next rate case.

[15] Entergy refused to explain how retail electric customers in the City would be able to purchase electricity directly from sources other than NOPSI without Council approval "...on the grounds that it calls for a legal opinion or conclusion by NOPSI/LP&L" (IR AAE 8-4; IR AAE 8-40). It offered the same objection when asked to explain who would set rates for any such direct purchases of electricity within the City (IR AAE 8-5).

[16] Smith, R. L., "Striking Down Competitive Myths," *Industry Focus: Electric Utilities*, Duff & Phelps Investment Research Co., Chicago IL, December 1994.

- "Widespread retail wheeling" is not "imminent."

Q: Has Entergy analyzed the impact of competition on its loads?

A: Entergy offers no coherent projection of competition on its loads (IR AAE 8-3).

B. DSM in the Competitive Context

Q: Please describe Entergy's characterization of the role of DSM in a competitive market.

A: Chamberlin discusses regulatory changes in three other jurisdictions which are eliminating or reducing DSM programs.

Q: Is Entergy's assessment of the role of DSM in a competitive retail market reasonable?

A: Entergy's speculations on the role of DSM are flawed in four respects. First, Entergy assumes that least-cost planning and DSM are fundamentally in conflict with competition, and therefore have no role in a future competitive market.[17] This view of least-cost planning's untimely demise is inconsistent with many of the retail competition scenarios currently under consideration throughout the industry. These scenarios assume a continued monopoly on distribution services with attendant cost-of-service regulation and least-cost planning obligations.

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[17] Interestingly, this does not seem to be the general conclusion of gas utilities, which have long faced as much competition (from other fuels and from transportation) as electric utilities are likely to face in the foreseeable future, and face even more competition in the wake of FERC Order 636. Many gas utilities (e.g., in Massachusetts, California, Maryland, and Wisconsin) have run extensive DSM programs for several years, and other states (e.g., New York, Connecticut, Minnesota) are moving to expand gas DSM even as competition has increased.

Since market barriers to customer adoption of DSM would persist in a competitive world, distribution utilities would continue to seek to minimize total costs by offering DSM programs tied to distribution service.[18] Demand-side-management costs would be recovered from all customers through distribution charges, regardless of the customer's source of generation.[19] Priced in this fashion, DSM would no longer be a significant factor in retail competition; DSM costs could not be avoided simply by seeking out alternative sources of generation.[20]

Second, as noted above, Entergy is not accounting for the competitive value of DSM as part of a bundle of pricing, reliability, and efficiency services. As discussed below, DSM can be and has been used to assist firms in economic distress and to generally improve the attractiveness of the service territory to new business.

Third, Entergy has not demonstrated that DSM is a significant contributor to average system price levels. Entergy's proposal to abandon DSM and increase energy-service costs is likely to reduce rates little, if at all, compared to alternative cost-cutting measures that provide real economic gains.

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[18] Dr. Chamberlin (at AAE 8-15) cannot explain how NOPSI or LP&L would face competition in the distribution function, other than from the traditional alternatives of self-generation or relocation.

[19] Dr. Chamberlin (at AEE 8-16) acknowledges that this approach would be "conceivable," and then proceeds to question the cost-effectiveness of DSM by ignoring benefits to customers.

[20] Such a pricing regime is discussed in Hogan, William. 1994. "A Competitive Electricity Market Model." Cambridge, Mass.: John F. Kennedy School of Government Center for Business and Government.

Fourth, regardless of Entergy-wide rate effects, DSM is likely to reduce NOPSI rates. Thus, if the Council is concerned that a few of NOPSI's large customers might not be directly served by DSM programs, and might be tempted to relocate or self-generate, the Council can best retain these customers by aggressively pursuing energy-efficiency DSM for all of NOPSI's customers.

Q: How can economical DSM raise rates more than the supply alternative?

A: Utility expenditures, whether for DSM or supply resources, directly increase revenue requirements and rates. However, unlike supply, many DSM measures reduce sales.[21] This reduction in sales further increases rates because the sunk costs of the existing system are spread over a smaller sales base; reduced revenues from program participants translates into higher rates for all customers. This revenue loss is not an economic cost—total revenue requirements are unaffected—but a redistribution of the burden of sunk costs.

The effect of DSM lost revenues is illustrated in Exhibit I-____ (PLC-2). If DSM costs 3¢/kWh and supply costs 4¢/kWh (Columns A and B), the increase in revenue requirements to serve additional load are 25% lower with DSM than with supply. In contrast, rates with DSM increase 0.4%, while rates with supply *decrease* only 0.4%.[22]

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[21] This is the direct effect. By increasing discretionary income and reducing the costs of doing business, energy efficiency may result in increased economic activity, industrial production, and electricity sales in Entergy's service territory.

[22] In addition to generating supply, DSM avoids investments in reserves and load-related upgrades to the transmission and distribution system. In this example, "supply cost" can be considered to include costs for all avoided components.

Exhibit I-____ (PLC-2) also illustrates how seriously the RIM Test and Entergy's pursuit of rate minimization would frustrate least-cost planning objectives. Assuming the same level of DSM savings at no cost to the utility, revenue requirements will be 0.6% lower when selecting DSM over the more-expensive supply. However, since rates with DSM exceed rates with supply, the RIM Test would reject the no-cost DSM, in favor of supply.

Q: Would RIM-failing DSM impose a "tax paid by all to subsidize energy conservation programs for a few" as Mr. Kenney asserts at page 15, lines 3–4?

A: No. The vast majority of customers, in all classes, can benefit from DSM programs that increase energy efficiency. Even Mr. Kenney backed off of this assertion on discovery (IR AAE 8-43).[23]

Q: Can most large customers benefit from DSM programs?

A: Yes. Most industrial and large commercial enterprises severely restrict access to capital for energy-conservation investments, by requiring projects to offer very rapid paybacks, on the order of one or two years. In addition, while some firms are very sophisticated at analyzing their efficiency options, others lack in-house expertise.

A recent survey found that 70% of industrial firms believed they were in the top 10% of their industry, in terms of efficiency;[24] clearly, most of the respondents were incorrect. Commercial customers, in particular, are often

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[23] Oddly, IR AAE 8-43 actually asserts that Mr. Kenney did not say what I quote him as saying.

[24] Bartsch, Charles and Dianne DeVaul. "Utilities and Manufacturers: Pioneering Partnerships and Their Lessons for the 21st Century." *Northeast-Midwest Report.* Northeast-Midwest Institute.

constrained by split incentives between builders, designers, landlords, and tenants.[25] Thus, large amounts of cost-effective conservation are typically available from lighting, motors, drives, HVAC and refrigeration equipment, and process improvements.

Q: How can Entergy position itself to thrive in a competitive market?

A: There are several actions Entergy can take to enhance its competitiveness and improve the viability of its customers' businesses. First, Entergy should change its view of competition. Rather than seeing all competition as a threat to its continued survival, Entergy should approach competition as an opportunity to develop new profit centers while strengthening relationships with its customers. The former perspective leads to a defensive posture, where Entergy fails to position itself to profit from changes. The latter approach could include the provision of a broad array of (profitable) services for maintaining existing customers and attracting new load.

Entergy should identify business opportunities in each market niche and develop robust and flexible business strategies for profitably servicing these markets. In addition, Entergy should take advantage of opportunities to reduce short- and long-term system costs, to minimize cost uncertainty, and improve system reliability.

Q: What strategies might Entergy undertake to protect shareholders and any customers who are not able to take advantage of retail competition?

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[25] Builders do not want to pay designers more to develop efficient designs, the designers will not benefit and may actually be harmed by energy savings (especially those that reduce the cost of the building and equipment, and hence design fees), landlords have little incentive to upgrade efficiency of equipment for which tenants pay the bill, and tenants have little incentive to upgrade the efficiency of space they may occupy for only a few years.

A: It is difficult to be very specific about responses to competition, since Entergy is vague about the nature of the competitive threat. However, I can identify several approaches that would benefit customers and help Entergy from potential competition.

First, Entergy can *increase the attractiveness of its product* by reducing the amount of electricity needed to provide a particular service, increasing power quality (protecting valuable equipment), increasing the reliability of energy delivery, improving the quality of energy service (improved quality of lighting, better temperature and humidity control, etc.), and reducing discretionary spending throughout the Entergy system. In addition, Entergy should consider writing down any investment in uneconomic plant and buying out or renegotiating uneconomic purchase contracts. Entergy should also evaluate the cost-effectiveness of continued operation of aging plants in need of significant maintenance or environmental-compliance expenditures.

Second, Entergy can *reduce the volatility in its costs* (and hence in its customers' rates and bills) and maintain the reliability of power supply. Most customers will prefer predictable, stable electric bills.

Third, Entergy *can prepare itself to react to changes in its operating environment* (new environmental regulations, fuel-price spikes, loss of capacity) by creating contingency resources for cost management (which requires resources that supply significant amount of energy at prices that are not tied to Entergy's other supplies), as well as reliability. Retrofit DSM, distributed generation, renewable generation, and high-efficiency cogeneration can provide fully diversified contingency resources, while options on existing and new conventional generation can provide insurance against some outcomes.

Fourth, Entergy can *concentrate on new resource options tied to the distribution system* and recoverable through distribution charges. This category would include DSM and distributed generation.

Q: Would there be a need for utility-sponsored DSM in a more competitive environment?

A: According to Witness Kenney, private energy service companies will offer customers DSM services. He cites an article by James Newcomb as evidence of the decreasing role of utilities in regulatory mandated efficiency programs. Kenney is correct in describing the potential for private energy-service companies to provide a host of efficiency, technological, performance verification, and other operations and maintenance services to customers. However, he neglects to mention that Newcomb, in the same article, also recognizes that utilities may play a role in offering these services, and that keeping rates low is not necessarily in the utility's best interest:

> ...the development of integrated energy services packages, adapted to the industry's newly emerging competitive structure, must become the centerpiece of the utility's strategy, since the companies who master these capabilities will ultimately command a dominant position in relation to the customer. For the companies undertaking this approach, becoming a low cost supplier is a necessary *but not sufficient* element of their competitive strategy. Companies that aim to "do better by doing less' may appear to succeed in the early phases of the industry's transition, but will soon be overtaken by competitors whose reintegration of service capabilities delivers superior customer value.[26]

Entergy acknowledges (at IR AAE-32) that some customers will not be well-served by energy-service companies.

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[26] Newcomb, James. 1994. "The Future of Energy Efficiency Services in a Competitive Environment" Strategic Issues Paper (May 1994):2.

Q: What role can DSM play in keeping Entergy's large customers on its system?

A: A comprehensive commercial-and-industrial conservation program will reduce the cost of doing business in Entergy's service territory, keeping customers viable and attracting new loads. Furthermore, Entergy can focus its DSM program to support economic development, for example, by

- Targeting early DSM treatment at vulnerable facilities, or at those that agree to expand employment;
- Tying utility funding of DSM to a multi-year commitment by the customer to remain on system.
- Tying rate discounts for commercial and industrial customers to DSM.[27]

Q: Has Entergy been able to explain why large customers would prefer high bills with low rates to low bills with higher rates?

A: No. In IR AAE8-11, Entergy is unable to offer any explanation for this claim. The Company essentially claims that large customers are unable to save energy with DSM programs—an unsupported, unsupportable assertion.

Q: Have other utilities designed DSM programs that aid in economic development?

A: Demand-side management has been used by utilities as an effective marketing tool for attracting or retaining industrial load. For example, Boston

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[27] An opinion (November 1994) by the New York Public Service Commission has reaffirmed its July 1994 Order to require utilities to perform energy-efficiency audits before granting rate discounts to commercial and industrial customers. The audit results are used by the utilities to create a mix of efficiency programs and discounts to reduce the bills of participating customers. Connecticut Light & Power (a division of Northeast Utilities) also offers "flex-rates" that are often linked to participation in DSM programs.

Edison Company's Energy Efficiency Partnership program saved a Sealtest ice-cream plant and 180 jobs from likely elimination. A company spokesperson credited energy savings paid for by Boston Edison with giving the plant "a major competitive edge."[28]

Northeast Utilities has had numerous successes retaining load by improving the competitiveness of its large customers. One of NU's success stories involves Fortune Plastics, a plastics manufacturing plant. Located in Connecticut and Tennessee, Fortune had been shifting production to Tennessee to lower its operating costs. By taking advantage of the DSM services offered by NU's retail subsidiary, Connecticut Light and Power, Fortune was able to decrease energy costs by 17% and to maintain, and possibly expand, operations in Connecticut. According to Fortune Plastics President John Duhlig,

> This package allows our Tennessee and Old Saybrook [Connecticut] plants to operate on a much more equal footing. While electric rates will continue to be lower in Tennessee, our Old Saybrook operations will be made so much more efficient that the energy costs of the two facilities will be roughly similar.
>
> Now, instead of transferring the manufacturing capacity of our Old Saybrook plant to Tennessee, we're considering expanding our operations here because this plant is so much more efficient.[29]

Northeast Utilities' successes in improving efficiency at its customers' facilities provide tangible benefits beyond retaining load, jobs, and the local tax base. The lighting, motor, and process upgrades installed as a result of

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[28] Boston Globe. 1991 "At Sealtest, Sweet Smell Of Success With Energy," *Boston Globe* (October 9, 1991):39.

[29] Quoted in Connecticut Light and Power. Undated. "Incentives Spell Good Fortune: Fortune Plastics, Inc., Old Saybrook, Connecticut." Hartford, Conn.: Northeast Utilities.

participation in NU's industrial program reduce water consumption, improve working conditions, and mitigate environmental hazards.

Similarly, Central Hudson Gas and Electric recently convinced Micrus, a joint venture of IBM and Cirrus Logic, to take power from CHG&E, rather than equal-cost power from the New York Power Authority, by offering the 15 MW customer DSM and other services.[30]

Even Detroit Edison, which was never a leader in DSM or IRP and is currently attempting to scale back its modest programs, recognizes that DSM can be important in attracting and retaining customers. Detroit Edison hopes to retain the Big Three auto makers as customers by providing "on-site engineering expertise to implement better service, identify energy conservation efficiency improvement possibilities and achieve valuable energy savings for each customer." The Company justifies this expenditure on the grounds that it will "provide substantial customer value" (Detroit Edison Company Application in Case No. U-10646). Detroit Edison has also proposed spending over $2 million in DSM services in conjunction with special manufacturing contracts to retain large customers.

Q: Has Entergy used DSM to attract or retain load?

A: I do not know. Entergy is not willing to discuss whether it used DSM in either of the competitive situations discussed by Kenney, either to reduce the level of rate concessions required in Arkansas, or to attempt to retain the Ramada Plaza Hotel in Jackson, Mississippi that installed a cogeneration

[30] Northeast Power Report. 1994. "IBM/Cirrus Plant Takes CHG&E Power; NYPA Wheeling Dispute Never Resolved." *Northeast Power Report* (January 20, 1995):10.

system.[31] A telephone inquiry to the hotel indicated that Mississippi Power and Light failed to offer the hotel any efficiency or other services, or to design a competitive rate.[32] It is not clear that Entergy has ever attempted to apply the experience of other utilities in using energy efficiency to retain load while maximizing benefits for the service territory.

Q: Have NOPSI or LP&L used flexible or discounted rates to retain large customers?

A: Despite the repeated assertion that they are threatened by the loss of large customers, and the use of special rate contracts by AP&L, Entergy claims that neither LP&L nor NOPSI has implemented even one "special rate" contract to aid in customer retention (IR AAE 7-7). This would seem to indicate that these companies see no urgent need to compete for load on the basis of price. Actually, NOPSI does have some experience with designing competitive discounted rates, in the form of its LIS rate.

Q: Will the selection of DSM resources based on the TRC test hurt NOPSI's competitive position, if they happened to increase rates?

A: No. Bills are more important to customers than are rates.[33] If only rates mattered, all customers would select gas on a dollars-per-MMBtu basis. However, customers often prefer electricity for good reasons such as higher

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[31] Entergy objected to these requests on the grounds that they seek "confidential, proprietary and commercially sensitive information..." (IR AAE 8-41a-c and IR AAE 8-42a).

[32] Stockett, Robert; Ramada Plaza Hotel, Jackson, MS; telephone conversation; February 1995.

[33] Entergy (at IR AAE 8-15) disagrees with this obvious fact, but cannot explain why.

efficiency and cleanliness.[34] Bills, not rates, determine whether an industrial plant or (more important for NOPSI) a convention center is competitive with others in its industry. Therefore, bills determine the competitive position of the utility.

Q: Do Entergy's concerns about competition justify making minimization of rates its major planning objective?

A: No. Entergy's outlook is clearly inconsistent with the interests of all customer classes and contrary to the economic interests of the region. Failure to acquire cost-effective DSM savings will needlessly raise total energy-service costs for both small, less-price-responsive customers and for large industrial customers alike. Reliance on the RIM Test to screen individual programs would have similarly detrimental effects by eliminating many efficiency measures that reduce total energy-service costs.

Entergy proposes to repudiate its fundamental obligation to provide energy services at least cost. Least-cost planning dictates that Entergy select DSM resources whenever they are less expensive than the supply alternatives for meeting customer demand. In contrast, a rate-minimization strategy would reject the low-cost DSM resource in favor of the more-expensive supply, if DSM raised rates more than supply.

Q: Besides cost savings, are other benefits sacrificed under least-rates planning?

A: Yes. In addition to reducing direct costs to ratepayers, DSM can also reduce cost uncertainty, reduce environmental impacts, and create jobs. Although

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[34] Other times, the choice to use electricity is influenced by market barriers (i.e. capital cost, split incentives) which override the option of using less costly energy sources.

not explicitly reflected in revenue requirements, these are tangible benefits that improve the welfare of Entergy's customers, including large industrials, and the attractiveness of the service territory.

In Louisiana, an energy efficiency program providing 1,000 MW of savings has been estimated to save ratepayers more than $1.1 billion (1991 dollars) and create an additional 12,600 jobs over the next 20 years.[35] DSM's employment, risk-mitigating, and environmental benefits, have been extensively documented. [36]

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[35] Citizens Fund. 1991. "Energy Investments for a Stronger Louisiana Economy: The Benefits of a Least-Cost Energy Policy." Washington, D C. (May 1991).

[36] There have been numerous analyses of the job-creation benefits of DSM. These include (1) Laitner, Skip, John DeCicco, Neal Elliot, Howard Geller, and Marshall Goldberg. 1994. "Energy Efficiency as an Investment in Ohio's Economic Future." Columbus, Ohio: Campaign for an Energy-Efficient Ohio. (2) Jaccard, Mark, and David Sims. 1991. "Employment Effects of Electricity Conservation: The Case of British Columbia" *Energy Studies Review* 3(1):35–44. (3) Geller, Howard, John DeCicco, and Skip Laitner. 1992. "Energy Efficiency and Job Creation: The Employment and Income benefits from Investing in Energy-Conserving Technologies." Washington: American Council for an Energy Efficient Economy. (4). Tennis, Michael, Ian Goodman, and Matthew Clark. "Employment Impacts of New York State Energy Options." Boston: The Goodman Group. A study of the employment impacts of DSM in Michigan is forthcoming from ACEEE.

For a survey of analyses of the risk-mitigating benefits of DSM, see Chernick, Paul. 1993. "Risk and Other Nonprice Factors in Valuing DM," *From Here to Efficiency: Securing Demand-Management Resources* 5:99–138. Harrisburg, Penn.: Pennsylvania Energy Office. In addition, see Xenergy, Inc. 1994. "Exploration of Diversity and DSM Flexibility in Integrated Resource Planning" ORNL/41X-03373V. Oak Ridge, Tenn.: Oak Ridge national Laboratory.

For a detailed discussion of the environmental benefits of DSM, see (1) Ottinger, Richard, et al. 1990. *Environmental Costs of Electricity*. Dobbs Ferry, New York: Oceana. (2) Vine, Edward, Drury Crawley, and Paul Centolella (Eds.). 1991. *Energy Efficiency and the Environment: Forging the Link*. Washington: American Council for an Energy Efficient Economy.

C. *DSM and Rates*

1. *DSM and NOPSI Rates*

Q: Has Entergy demonstrated that implementing energy-efficiency measures that pass the TRC test (but not the RIM test) would significantly increase rates for electric customers in New Orleans?

A: No. The summary graph in Kenney's Exhibit JFK-3 fails to demonstrate anything of the sort, for the following four reasons:

- Entergy rate effects are not NOPSI rate effects.
- The cost analysis underlying Exhibit JFK-3 does not include all avoided costs.
- The costs and benefits are reported for a mix of energy efficiency, load management, and NOPSI's fiber-optic project.
- Even Exhibit JFK-3 does not show substantial rate effects.

Q: Please explain why Entergy rate effects are not NOPSI rate effects.

A: Entergy has steadfastly refused to provide analyses of jurisdictional rate effects, or the distribution of lost margins between companies (for example see IR AAE 8-53)..[37] Exhibit JFK-3 and the discovery responses show only an approximation of the rate effects for the Entergy system, assuming Entergy's avoidable supply costs, which are quite low for several years into the future. The NOPSI rate effects are apt to be very different.

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[37] Even though Entergy states that "the Companies intend to analyze all programs on a jurisdictional basis, using jurisdictional rates" (IR CNO16-71) and it repeatedly claims that RIM screening uses jurisdictional rates (IR CNO16-47, IR CNO16-48, IR CNO16-61, and IR CNO16-71), it does not provide jurisdictional avoided costs.

The power-supply costs avoided by NOPSI are determined by the Entergy system agreement. Under that agreement, reductions in NOPSI load increase the portion of NOPSI's last unit re-allocated to other Entergy companies, or reduce the portions of other companies' last units assigned to NOPSI. Since the most recent addition to the Entergy system is Waterford 3, the benefits of DSM for NOPSI are much greater than the benefits for the system as a whole.

Q: Has Entergy made that point itself?

A: Yes. Entergy pointed out in Exhibit 7 (from the 10/28/93 Least Cost Planning Public Evidentiary Hearing) that increasing DSM on the NOPSI system would shift costs to other Entergy companies.

Q: Has Entergy acknowledged in this phase of the proceeding that NOPSI's DSM allows New Orleans to transfer costs to the rest of the Entergy system?

A: No. In fact, Mr. Kenney asserts just the opposite. He claims that, if NOPSI is required to implement least-cost planning, including DSM, while the rest of the Entergy system abandons energy efficiency and promotes load growth, "NOPSI's rates relative to the surrounding area will increase" (page 29). No evidence has been offered in support of this position (IR CNO 16-82).

Q: Please explain how the revenue requirements analysis underlying Exhibit JFK-3 does not include all avoided costs.

A: Exhibit JFK-3 is the result of dividing incremental revenue requirements (or costs) by sales forecasts in the 1992 IRP .[38] As I read the IRP, the revenue-requirements analysis ignores the effect of DSM in reducing transmission-

[38] From the 1992 IRP at 8-15, 8-16, and 8-19.

and-distribution costs, which are often greater than avoided generation-capacity costs. The IRP also does not appear to credit DSM for reducing the costs of environmental compliance. These savings may also be quite substantial, including future effects of existing rules (SO_2 limits for acid rain, NOx limits for ozone control), proposed rules (such as short-term SO_2 limits), mandated rules (such as requirements to install "best technology" for cooling-water intakes), other rules in the regulatory process (for mercury, other heavy metals, fine particulates), and potential requirements (especially greenhouse gas limits).

Q: Why does it matter that the costs and benefits in Exhibit JFK-3 are reported for a mix of energy efficiency, load management, and Entergy's fiber-optic project?

A: The results are dominated by the fiber-optic "customer-controlled load management" system, which Entergy proposed as 60% of the investment. This option barely passed the TRC test (with benefits just 1.07 times costs) and failed the RIM test (with costs over twice the benefits).[39] Entergy has withdrawn its application for a fiber-optic franchise, so this option is now moot. Had Entergy performed the analysis without the fiber-optics system, the rate effects for the efficiency portion of the DSM portfolio (which generally had much better TRC and RIM results) might well have been much more favorable; energy efficiency might well reduce rates in more years.

Q: Why do you say that Exhibit JFK-3 does not show substantial rate effects?

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[39] It is not clear to me that the CCLM was primarily proposed as DSM option, as opposed to a foray into the competitive world of telecommunications.

A: Over a period of 19 years (1994–2012), Exhibit JFK-3 shows rates with the mixed portfolio of DSM and fiber optics to be

- less than rates with supply only in three years (by up to 0.2¢/kWh),
- greater than the supply-only case, but by less than 0.1¢/kWh in seven years,
- about 0.1¢/kWh higher in three years,
- about 0.2¢/kWh higher in five years, and
- all of 0.4¢/kWh higher in one year.[40]

The average of the nineteen years looks to be about 0.1¢/kWh higher rates with the IRP-proposed DSM portfolio than without.

These are differences in annual rates, not rate increases. In other words, the differences do not add up over time. The differences in rates reported by Entergy, even if they were relevant to NOPSI, even if they included all avoided costs, and even if they were properly computed for energy efficiency alone, are almost imperceptible. For example, the typical customer Mr. Kenney describes on page 17, using 1,000 kWh per month, would see an increase of only $1/month. Once that customer participated in the DSM program, his bill would fall.

Q: How do these 0.1¢/kWh rate increases compare to the rate increases Mr. Kenney reports on pages 16 and 17?

A: On pages 16 and 17 of his testimony, Mr. Kenney claims that spending $25 million on DSM would result in a 2% rate increase, or about 0.12¢/kWh for an average 6¢/kWh rate.[41] He misstates his results. Mr. Kenney only

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[40] This year is 2012, and the rate spike may be due to the fact that it is the end of the planning horizon.

[41] I do not know why he uses a 6¢/kWh rate, since NOPSI rates are higher than this.

computed the value of the DSM surcharge, ignoring all savings associated with the DSM: reallocation of NOPSI capacity costs, resales of capacity and energy, avoidance of transmission and distribution, or even the fuel savings included in Exhibit JFK-3 (IR AAE 8-47, AAE 7-10). Even so, Mr. Kenney estimates a rate effect for his typical non-participant of only $1.20/month.

Mr. Kenney also compares benefits to participants from the first three years of DSM implementation to the size of the surcharge in the first three years. If the program ran for only three years, the savings to participants would continue for decades to come, while the surcharge would plummet in year 4, and disappear after the next rate case.

Q: How do these rate differences compare to past NOPSI rate increases?

A: Entergy's concern about these small rate increases is interesting in light of charges for Grand Gulf over the past several years. From 1986 to 1991, NOPSI's rates increased about 5% annually, or many times the difference in rates Entergy projects from the IRP DSM portfolio.

Q: How do these rate differences compare to the differences between NOPSI's costs of service and the rates it has charged in recent years?

A: In a recent settlement agreement, the Council found that NOPSI rates had been too high, resulting in excess earnings from combined electric and gas operations of about $25 million annually during 1993 and 1994, or about 6.5% of electric rates and about 0.5¢/kWh. This overcollection was several times larger than the overstated DSM rate effects Mr. Kenney finds so troublesome, yet it produced no obvious crisis in NOPSI's competitive position.

Q: Would captive customers face higher rates and bills if load is lost, for any reason?

A: For the Entergy system, this is likely to be the case. Average rates on the Entergy system are fairly high, compared to current marginal costs, due to the expensive nuclear additions of the 1980s. When rates are above marginal costs, sales reductions will reduce revenues more than costs, increasing rates.[42] This effect may be fairly short-lived; in the future, marginal costs will rise (as the market value of capacity rises, for example), and revenue requirements may fall as uneconomic investments are depreciated away.

While Entergy's avoided costs are likely to be lower than revenues, at least in the short term, the same is not necessarily true for NOPSI. The power-supply costs avoided by NOPSI is determined by the Entergy system agreement. As explained above, NOPSI DSM is likely to reduce NOPSI rates, even if it increases average Entergy rates.

2. Other Jurisdictions' DSM Responses to Rate Concerns

Q: Have utilities in other states proposed DSM cutbacks due to competitiveness concerns?

A: Several utilities have proposed cutbacks explicitly due to *rate* concerns, without necessarily specifying what the underlying concerns are. It is thus difficult to determine whether competitiveness is a motivating factor. In many

[42] The rate effect will depend on how stranded investment costs are shared between ratepayers and shareholders, the extent to which revenue losses from departing industrial load are offset by revenue gains from load growth on the system, and the costs of the avoided supply resources. As long as prices exceed the marginal cost of serving new load, load growth will moderate the rate effects from loss of industrial load.

of these cases, the utilities have faced surplus capacity, low avoided costs, and depressed regional economies.

Even with cutbacks, it is still possible for utilities to have effective DSM programs. To moderate short-run bill and rate effects, some of the leading utilities with aggressive and comprehensive DSM programs have stretched out spending on discretionary retrofits, continuing to capture lost opportunities and preserving the option to accelerate the retrofits as need or economics change.[43].

Q: How have commissions in other states responded to proposed DSM cutbacks due to competitiveness concerns?

A: Commissions in New York and Oregon have reaffirmed their commitment to DSM and broader least-cost planning goals in the face of proposed cutbacks. The New York Public Service Commission rejected DSM cutbacks proposed by the Long Island Lighting Company, which expressed competitiveness concerns. The Commission based its decision on its staff's finding that "substantial value will be lost to customers, in terms of bill savings and net resource savings, if all of the proposed program reductions are carried out" (New York PSC Case 93-E-1045, Staff Memorandum at 16). The staff of the Oregon Public Utilities Commission recommended in a draft decision denial of PacifiCorp's proposal to restrict DSM rate impacts, citing the utility's continuing obligation to minimize total resource costs.

[43] Few of these utilities have been spooked by competition.

> [T]he Commission has not wavered in the least-cost planning principles adopted by Order No. 89-507 and restated in Order No. 93-206: Minimizing total resource cost is the key standard by which to assess alternative resource acquisitions. Minimizing rates is a secondary consideration. (Oregon PUC Staff Proposed Order Regarding PacifiCorp's Third Resource and Market Planning Program [October 18 1994] at 17)

In addition, the Connecticut Department of Public Utility Control has reaffirmed its commitment to DSM in a generic inquiry on retail wheeling. The DPUC asserted that its "commitment to cost effective conservation will not wane" (Connecticut DPUC, Draft Decision in Docket No. 93-09-29, at 52). The Department also noted the load-retention and load-building attributes of DSM:

> In a narrow sense, conservation lowers load but the primary purpose of much of the current conservation expenditures are to retain load and attract new business.... UI has recognized the importance of customer service and has aggressively pursued conservation despite or perhaps because of its high retail rates. Such emphasis on customer service should increase with competition. (Connecticut DPUC at 53)

IV. DSM Cost-Effectiveness Tests

A. The TRC and the RIM

Q: What is the appropriate test of the cost-effectiveness of utility DSM options?

A: Utilities are publicly regulated entities with fundamental obligations to maximize benefits to their customers and to the wider community that constitutes the public interest. The purpose of utility DSM programs, like that of many other utility activities (supply acquisition, the design of distribution systems, rate design), is to maximize the net value of the energy services that

the utility normally provides, or (almost equivalently) to minimize the costs of providing service. Hence, the basic test of cost-effectiveness is a measure of total costs.

Q: What role should the Ratepayer Impact Measure Test have in determining the cost-effectiveness of a demand-side option?

A: It should have no role in the economic screening of demand-side programs or the technologies incorporated in such programs. Screening with the RIM will lead to the rejection of economical DSM.[44]

Q: How does use of the RIM Test lead utilities to reject cost-effective DSM?

A: Demand-side management is cost-effective if its total benefits exceed its total costs under the Total Resource Cost Test. The present-value RIM Test is not a measure of total costs; nor is it a useful measure of equity or rate impact. The RIM Test varies from the TRC Test primarily in its treatment of the participant. Rather than including the participant's costs and benefits, along with those of all other customers, the RIM treats participant impacts as if they were of no concern to the Council. The RIM ignores

- the costs the participant incurs in participating in the program,
- the benefit to the participant from any rebate or other incentives,
- the benefit to the participant of reduced bills.

The treatment of the latter two items is particularly inconsistent, since the RIM includes both the incentives and lost revenues as costs.

Revenue shifts involve a loss to one group of customers, but a gain to another. The RIM effectively adds the losses to the costs of DSM (subtracts

[44] In addition, setting incentives based on the RIM Test will result in unnecessarily low participation, excessive administrative costs per installation, and the loss of cost-effective DSM.

them from its benefits), but does not account for the gain. If this same principle were applied to rate design, no rate would ever be decreased, because a rate change creates benefits for some customers but net costs to others.[45]

Q: In Exhibit PLC-2, you demonstrated that even no-cost energy efficiency measures could fail the RIM under some circumstances. Does Entergy oppose energy efficiency measures that cost it nothing?

A: Entergy is of two minds about no-cost DSM. On the one hand, Entergy supports the RIM test, or Dr. Chamberlin's more radical Restricted RIM, which would reject free energy efficiency whenever rates exceed avoided costs.[46] On the other hand, Entergy believes that "private energy service companies," which install energy efficiency measures at no cost to Entergy, are beneficial to customers (IR AAE8-33).[47] Yet the measures that these companies install may well fail the RIM test. So the same rate effect, and the same cost, sometimes meets Entergy's arbitrary standards and sometimes fails.

Q: Is the RIM Test a meaningful test of rate effects?

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[45] Unlike DSM, rate design and cost allocation shift costs between customers without directly reducing total costs.

[46] The RIM, and especially the Restricted RIM, would even some reject measures with negative costs, leading the amazing conclusion that utilities should encourage customers to buy equipment that was both inefficient and expensive. As I noted elsewhere, cost-effective DSM is unlikely to fail the RIM test for NOPSI, although it may fail the RIM test for Entergy.

[47] Indeed, Entergy argues that the existence of such companies excuses it from assisting its customers in reducing their energy use.

A: No. The RIM Test does not assess the rate effects of DSM among and within classes. The RIM looks at rate effects on a measure-by-measure or program-by-program basis, and estimates only the average system rate effect of a particular utility DSM program or measure. Estimating rate impacts of any one program is not meaningful, unless considered in the context of the number of participants in that program, the number of participants in other DSM programs, and that pattern of cost recovery between classes and over time.

The RIM Test may screen out programs and measures vital for the economic health of the city. A measure that fails the RIM might be the one that saves an industry in LP&L's and NOPSI's service territory. For example, an industrial-process design program may be the only program in which many industrial customers can participate.

The RIM Test also does not properly determine the pattern of rates and bills over time. A program failing the RIM Test may increase rates in the near term but reduce them in the long run, while a program passing the RIM may well raise rates in the near term even as it reduces them in the longer term. The RIM Test is typically calculated using estimates of avoided costs as a measure of the reduction in revenue requirements from DSM. Avoided costs are usually estimated on the deferral basis, which states avoided capacity costs as the change in the present value of costs due to a year's delay in construction. Avoided costs computed in this way will start low and rise with inflation. Revenue requirements and rate effects will actually be determined by the Commission's ratemaking procedures, which allow recovery of a return (and associated income taxes) on the unamortized investment. Ratemaking costs start at a high level, and decline over time, as the initial

investment is depreciated. Thus, avoided costs will usually understate DSM's effect on reducing revenue requirements in the early years, when rate effects are most likely to be most pronounced.

Q: Do utilities apply the equivalent of the RIM Test to decisions other than DSM?

A: No. A wide range of utility actions have rate implications. As noted above, rate design and cost allocation would be impossible if utilities refused to increase bills to some customers. Neither rate design nor cost allocation are generally reviewed with the RIM Test.[48] The RIM Test, for example, would indicate that utilities could reduce rates by requiring customers to purchase their own services and meters, and, for larger customers, transformers and secondary lines. This change in policy would pass the RIM Test, but probably increase total energy service costs; utilities recognize that such a change would be counter-productive, since customers ultimately care about energy service costs, not rates.

Any supply-acquisition decision will affect the pattern of rates and bills over time and the allocation of costs to rate classes. Utilities do not simply stop building power plants because they make some customers better off, and others worse off, than they would have been otherwise. Rate impacts and equity considerations are not usually considered in selecting supply resources; where these factors are considered at all, they are secondary concerns, and do not dominate resource selection. The utility should design a

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[48] Applying the RIM Test to rate design would result in incentives to increase usage (such as declining block rates, requiring master-metering, providing rebates for wasteful energy usage) so long as marginal costs were less than average rates (including customer charges), even if marginal costs were greater than marginal rates.

resource plan that minimizes total costs, *then* decide how to allocate costs and benefits between and among customer classes: this principle should apply to DSM and supply alike.

Q: Does primary reliance on the TRC Test for screening DSM options mean that the ratepayer impacts should be ignored?

A: Not at all. The effects of the DSM and supply options on rates and bills should be determined for each customer class annually, but only after an initial DSM portfolio is constructed. I discuss this further in §V.B.

Q: If DSM results in rates higher than they might be otherwise, does this imply that the rates are excessive, or that they endanger the state or regional economy or the competitive position of the utility?

A: No. The economic attractiveness of the state for business, and the disposable income of households, depends on bills, not rates. As long as DSM is cost-effective, it will decrease the costs of energy services, and bolster the local economy.[49] Whether a difference in rates between the base case and an aggressive DSM plan is a matter for concern depends on how much average bills are reduced, how widely the benefits of DSM are distributed, how rates would otherwise be moving, and how much risk is reduced, as well as the magnitude of the rate difference.

Q: If the portfolio as a whole fails the RIM Test, should the DSM plan be rejected?

A: No. The fact that the portfolio fails the RIM Test does not imply that rate effects are distributed unfairly, or that rate increases are too large compared to bill reductions. Equity problems should be addressed by changing cost-

[49] This general relationship is in addition to the positive direct employment effects of DSM.

recovery patterns, altering the allocation of expenditures among and within rate classes, increasing the penetration of programs to groups that would otherwise face higher bills, and changing the timing of particular programs. A DSM plan should not be rejected because it fails the RIM Test.

B. Chamberlin's Critique of the TRC

1. Chamberlin's Inconsistent Positions on TRC, RIM, and Other Tests

Q: What is Chamberlin's position in this case on the appropriate screening test for energy-efficiency programs in IRP?

A: In his testimony in this case, Chamberlin attacks the TRC test for promoting "cross-subsidies" (p. 10),[50] and declares the TRC test as "likely to...lead to incorrect resource decisions" and "incompatible with competition" (p. 22).[51] He identifies the RIM test as a superior test, and endorses the even more extreme "Restricted RIM" proposed by Potomac Electric Power Co. (PEPCo), which ignores even the modest RIM benefits beyond 10 years (p. 23-24).

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[50] "Cross-subsidy" is a pejorative term used to describe any cost allocation or rate design feature of which the author disapproves. Chamberlin applies the term only to the rate effects of DSM, and refuses to even consider the magnitude of "cross-subsidies" in other aspects of cost allocation (including FERC's Grand Gulf order) or rate design (IR AAE 8-7, 8-8, 8-9).

[51] While his testimony asserts that utilities "guided largely by TRC may be steered to DSM options that actually reduce net economic welfare" (p. 21), Entergy asserted that he did not mean that any utility "guided largely by TRC" had actually "been steered to DSM options that actually reduce net economic welfare." (IR AAE 8-26) Hence, his objections to the TRC appear to be totally hypothetical. Dr. Chamberlin seems to have confused Mr. Keeney, who believes that the TRC is "likely to lead to incorrect resource decisions" (IR CNO 16-28)

In discovery, Chamberlin states that he "is not aware of a cost-benefit test formulation that addresses" competition, and that "as competition increases...cost-benefit tests should become less important than price in resource decisions." (IR AAE 8-22)

Q: Has this been his position in recent testimony and publications?

A: No. Dr. Chamberlin's testimony in this case represents an almost complete reversal of his previous position. In March 1993, he co-authored a paper entitled "Why all 'Good' Economists Reject the RIM Test," which correctly explained that the RIM test did not measure net benefits. In that paper, he proposed some minor clarifications and modifications to the TRC test, to produce a "Value" test that he represented as the best available test for DSM.

Chamberlin and his subordinates have since advocated and endorsed the Value test in several publications and in Chamberlin's sworn testimony before the Vermont PSB and the Florida PSC.[52]

While Chamberlin admits that he does not know how to estimate the inputs needed for his modifications to the Value test (IR AAE 8-27, 8-28), work by Chamberlin and his subordinates have shown that the Value test usually selects the same energy-efficiency DSM options as does the TRC test; some energy-efficiency measures look better with the Value test than the

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[52] Chamberlin, John H. 1994. Rebuttal Testimony. on behalf of Central Vermont Public Service Corp. State of Vermont Public Service Board. Docket Nos. 5270-CV-1 and CV-3 and Docket No. 5686. June 1, 1994. Chamberlin, John H. 1994. Rebuttal Testimony on behalf of Florida Power Corp. Florida Public Service Commission. Docket No. 930549-EG. May 19, 1994. Chamberlin, John H., Patricia Herman and Melanie Mauldin. 1993. "The Value-Test: Economic Efficiency and Demand-Side Management." Barakat & Chamberlin, Inc. March 1993.

TRC test.[53] The Value test results have no relationship to the RIM or the Restricted RIM, and the Value test does not reject measures simply because they increase rates.

Thus, in the past six months, Chamberlin has reversed his position on cost-effectiveness tests, from endorsing a version of the TRC and rejecting the RIM, to embracing the RIM (or worse) and rejecting the TRC.

Q: What is Chamberlin's rationale for rejecting his own Value-test variant on the TRC?

A: In discovery, Chamberlin states that "The Value Test is the proper test to apply only if there is no bypass of any kind.... If there is any type of utility bypass, the Value Test as well as [other standard tests] may be incorrect and therefore lead to harmful results." (IR AAE 8-22)

Q: Did Chamberlin warn the Vermont and Florida regulators that his "Value test ... may be incorrect and therefore lead to harmful results"?

A: No.

Q: Are Vermont and Florida utilities subject to "bypass of any kind"?

A: Yes. All of the traditional forms of competition—with other fuels, for location of industrial loads, with cogeneration and self-generation—exist in Vermont and Florida, and have existed for many years. Vermont utility rates are much higher than NOPSI's, which should make competition more of an

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[53] Entergy refused to provide these comparisons (IR AAE 8-21), but I have Chamberlin's work from other cases, in which he proposed and supported the Value Test as the best test for DSM. Entergy has not attempted to apply the Value Test to rescreen its own DSM programs (IR CNO 16-14).

issue there than here. Yet Dr. Chamberlin did not claim that bypass invalidated the Value test in Vermont in June of 1994.

Q: Does the Value Test reflect bypass?

A: Yes. This is one of the strangest aspects of Chamberlin's sudden conversion from the modified TRC test to the RIM test. His Value Test includes the change in sales, including bypass due to changes in rates. I discuss this aspect of the Value Test in §4.B.

Q: Has any dramatic change occurred in competition since Chamberlin last championed the modified TRC test?

A: No. The Energy Policy Act was enacted in October 1992. No dramatic changes affecting competition have occurred in the last few months, other than an increase in the number of analyses that are predicting that retail wheeling will not amount to as much as was widely thought at the time Dr. Chamberlin testified in Vermont and Florida.[54]

Q: Have other jurisdictions been rushing to repudiate that TRC test, and embrace the RIM test, as Chamberlin suggests?

A: No. As I discussed above, many utilities and commissions are concerned about rate levels, especially in areas with high rates and slow economies. Some of the most vigorous DSM programs have been revised, to concentrate on lost opportunities and market transformation,[55] stretch out retrofit programs, and otherwise reduce rate effects. Most of the jurisdictions that have been highly active in promoting energy efficiency have used, and

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[54] For example, see the Duff and Phelps reported discussed above.

[55] Entergy has not focused on either of these program areas.

continue to use the TRC to guide DSM portfolio design, with rate effects considered in pace, timing, and the setting of priorities.

Dr. Chamberlin cites four jurisdictions as "adjusting their regulation of utility planning along the lines" he suggested: California, the District of Columbia, Ohio, and Florida. His examples do not support his conclusions of great changes away for the TRC towards the RIM, or dismantling of DSM programs in the IRP context.

- *California:* Chamberlin notes that the PUC has suspended the Biennial Resource Plan Update, which includes a large supply-side bidding component. That action makes sense, in light of the PUC's efforts to deregulate the utilities' generation function. However, the PUC appears to be committed to preserving other aspects of IRP, including energy efficiency and accounting for environmental effects.
- *The District of Columbia:* Both Dr. Chamberlin and my partner, John Plunkett, testified on behalf of PEPCo in the docket Chamberlin cites. The emphasis on rate effects (and other punitive actions) in that order were certainly ominous signs regarding the PSC's intentions regarding DSM. However, this order did not endorse the RIM or reject the TRC, calling instead for concentration on the "most cost-effective programs," and reconsideration of residential programs "marginal energy conservation programs" that do not "appear to significantly impact energy and demand." On reconsideration of the order, the PSC concurred with the interpretation of People's Counsel that it was not abandoning the TRC, and clarified that

> These rulings should not be interpreted as a signal that the Commission is no longer interested in the pursuit of cost-effective DSM programs. In fact, the Commission is as committed to cost-effective DSM programs as ever....The Commission is not abandoning least-cost planning or the aggressive pursuit of energy conservation in the District of Columbia.

While the DC PSC is definitely concerned about rate impacts, its view of the planning process is closer to mine than to Dr. Chamberlin's: maximize TRC benefits while avoiding unnecessary rate effects, all under close supervision by the regulators.

- *Ohio:* The Ohio PUC's decision cited by Dr. Chamberlin is not a real change from past practice. While the PUC's rules have favored the TRC, it has also allowed the use of the RIM test, and has not vigorously pursued energy savings. Only a concurring opinion of a single Commissioner explicitly favors the RIM test.
- *Florida:* The Florida PSC has never required utilities to pursue particular DSM programs, and has never adopted the TRC as a primary test, so the order Dr. Chamberlin cites again is not a change or trend. The PSC adopts conservation goals and requires utilities to meet them. The PSC order cited by Dr. Chamberlin was apparently based on the belief that the TRC benefits of goals set with the RIM test would not be much different than the TRC benefits of goals set with the TRC test. In any case, utilities are free to pursue measures that pass the TRC but fail the RIM.

2. Chamberlin's Proposed Modest Changes to The TRC

Q: How does Dr. Chamberlin propose to modify the TRC test?

A: Dr. Chamberlin's testimony in this docket on problems with the TRC is somewhat vague, but his position is clearly stated in other testimony and

publications.[56] Dr. Chamberlin proposes that the societal test (as he understands it) should be modified to reflect the following:

- *The benefits of rebound, or snapback.* If DSM decreases the costs of additional energy service (e.g., a cooler home, or a more hours of lighting), participants are likely to increase their consumption of energy services. Some applications of the TRC have subtracted the rebound in energy usage from the savings, as if the increase in services were of no value. Dr. Chamberlin (following Hobbs and others) notes that rebound actually increases the total benefit. Rebound implies that the participants value the increase in service more than the increase in the bill (at the low post-DSM cost per unit of service). If rates are at least as high as marginal costs (as Entergy apparently assumes), the cost of the rebound is less than the bill increase, and hence less than the benefits. The net benefits of a measure that reduces usage from A to B, but then results in rebound to C, are thus

  a: avoided costs (A→C)

  b: + customer rebound benefits (B→C)

  c: - avoided costs due to rebound (B→C)

  d: - measure costs

  Since (b) > (c), this net benefit is greater than the simple societal benefit estimate of (a)—(d).

- *Reductions in social costs of DSM measures for free riders.*[57]

Chamberlin, John, and Patricia Herman. 1993. "Why All 'Good' Economists Reject the RIM Test." *Proceedings of the 6th National DSM Conference*. Dr. Chamberlin's computation for the most part simply repeats the analysis of various authors who have developed "new" DSM tests, starting with Hobbs, who seems to be the seminal source in this field.

Customers who would have implemented the DSM measure without the program benefit in several ways by participating in the program. Utilities are likely to get significantly lower prices for services and equipment than are individuals, due to bulk ordering and reductions in transaction costs for vendors. The utility's involvement in selecting, certifying, managing, inspecting and paying contractors would tend to reduce free riders' costs in time commitment and risk. Utility design of measures, selection of technology, supervision, inspection, and training of contractors and other trade allies are also likely to increase the quality of installations over what individual customers would receive.

- *Residual "market barrier costs."*

  Dr. Chamberlin uses this term to refer to non-cash costs (or benefits) of the DSM or its implementation, such as time required to select or facilitate an installation (such as letting installers into a home), or the change in lighting quality (color rendering, distribution, flicker) with more efficient lighting.

- *Rate feedback.*

  DSM programs can increase rates, at least in the short term. All else equal, higher rates imply lower consumption. If rates are already above long-run marginal cost, higher rates may encourage customers to undertake actions that are not socially cost-effective. If rates are lower than long-run marginal cost, higher rates encourage more cost-effective conservation. Both the estimation and interpretation of this effect are complicated, as I will explain below.

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[57] Dr. Chamberlin does not mention this clear benefit of DSM in his testimony, but admits to it on discovery (IR AEE 8-24).

It is arguable whether the first three components belong in the traditional definition of the societal test (I would argue that they are). Chamberlin calls his particular combination of enhancements the "Value" test.

Q: How would these modifications affect the cost-effectiveness of DSM, compared to the restrictive form of the TRC that excludes them?

A: The first two points—rebound by participants and reduced costs to free riders—both increase the cost-effectiveness of energy efficiency measures. This is Dr. Chamberlin's position in previous publications. On discovery, Dr. Chamberlin (at IR AAE 8-25) admits that rebound is a clear benefit and misstates the reduced costs to free riders, claiming that they can either increase or decrease cost-effectiveness.[58]

The third point—residual costs and benefits—can cut either way, but DSM often results in improved service, such as

- lighting with better color rendering, less flicker, cooler lamps (posing less fire and burn risk);
- reduced noise from lighting, appliances, and equipment;[59]
- reduced drafts and noise in tighter buildings; and
- better control of temperature and humidity with better controls and more efficient dehumidification.

Q: Is it possible that residual costs would outweigh these benefits, so that these residual effects would decrease the net benefits of DSM?

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[58] Dr. Chamberlin asserts that costs borne by the free riders with or without the program should be charged to the program.

[59] Noise is usually a symptom of wasted energy.

A: That is one possible outcome for a particular DSM measure, at least for some participants. However, the net cost of participation cannot go negative, or customers will simply decline those measures.

There may be a few people in between, who feel that they are giving up something in the DSM program, but are still willing to participate, due to the large bill savings. Some customers might even accept measures that would not really pass the societal test, if the customer cost could be included.

The question is, How does any customer cost that slips through compare to net benefit, averaged over the program? Any DSM program design is stuck with some occasional outliers in cost-effectiveness, including houses that burn down soon after treatment. Nor do other utility activities exactly match every customer's situation: rate design, cost allocation, transformer sizing, all deal with averages.

Q: What about Dr. Chamberlin's fourth modification—the social cost (or benefit) of change in consumption due to changes in rates?

A: This is the only modification that Dr. Chamberlin discusses at any length in his testimony in this case.

The characterization of reduced consumption as a "social cost," as well as the magnitude of the effect, are open to serious question:

- Entergy's estimate of rate effects, summarized in a graph in Mr. Kenney's testimony, has not been subject to any significant review. The documentation provided in IR AAE 7-8 is not very illuminating, but it suggests that Entergy has overstated the rate effects of DSM. It appears that Entergy's projection ignores (1) any reduction in jurisdictional revenue requirements due to increased off-system sales permitted by

DSM; and (2) reductions in load-related transmission and distribution costs, due to DSM.

- Entergy has not demonstrated that its rates are above LRMC. For those rates that are lower than LRMC, including externalities, rate feedback is a windfall gain, not a dead-weight loss.
- Price effects occur slowly, due to the role of long-lived capital stocks in determining energy use.
- Customers may react to higher bills in many ways that are difficult to classify as "sacrifice" or "social cost," including increased responsibility, education, and participation in DSM programs.
- The Chamberlin view of price elasticity is based on pre-DSM concepts. Without DSM, a rate increase implied a bill increase; customers had less money for other purposes; and if any efficiency improvements occurred, the customer had to undertake those efforts on their own. A rate increase that results from DSM is associated with bill decreases, customers who are better off, and who can implement efficiency through utility programs.

The question is not just how much customers conserve, but when and how they do so, and what else they are doing at the same time.

It is also important to recall that the direction of this effect hangs on the relationship of marginal costs and rates. If marginal costs plus externalities exceed tail-block energy rates, as they well may, rate increases move prices towards marginal costs.

Q: Are Entergy rates above marginal costs?

A: Entergy does not provide any information on that topic in the current filing. Since Entergy has not even estimated the externalities of operating its system,

it is hardly in a position to express an opinion about the relationship of rates to marginal costs.

If rates are not above long-run marginal costs, argument reverses. The dead-weight loss becomes a windfall gain.

Q: Over what time period do rate increases affect energy consumption?

A: Some effects of the price increase would be nearly instantaneous: the increase will encourage consumers to turn off unneeded lights, use less hot water, let soup cool more before putting it in the refrigerator. Others phase in over time: the increase may influence decisions about the efficiency, size, and features of appliances they purchase, homes they buy, and retrofit projects, including fuel switching and insulation. Some of those decisions may be made within a year or two of the increase, but others will not occur until ten or twenty years have elapsed. Some of the short-run effects may be replaced with long-run effects, as customers replace an inefficient system they were reluctant to use, with an efficient one they can use more.

Q: What effect does the timing have on the value of customer response to the rate increase?

A: By the time the full potential sales reduction in sales takes place, the discounted value will be small, and many other events will have obscured the effect.

Even this estimate overstates the long-run effect of the initial rate increase. The peak rate effect of the implementation period will decline over time, as the DSM costs are amortized, the uneconomic investments that make rates higher than marginal cost are depreciated, Entergy's current excess costs (especially Grand Gulf) become more competitive, and avoided costs

rise. As the rate differential between the base case and the DSM case declines over time, the effect on load declines and may reverse.

Q: Does Chamberlin properly value the sales reduction due to increased rates?

A: No. Dr. Chamberlin assumes that, if rates are above marginal costs, all incremental price-induced conservation is economically inefficient. Not all reductions in loads are costs.

In the past, the costs represented by the demand curve, and hence the reduction in load due to a price increase, would be comprised of different costs that come into play at different times:

1: The implicit cost to ratepayers of better housekeeping: being more aware of energy usage, remembering to turn off lights as they leave the room, fixing leaking hot-water faucets sooner rather than later, teaching their children to use electricity carefully;

2: The inconvenience of becoming more knowledgeable about energy use and efficient appliances, so as to make investment and purchasing decisions;

3: The lost amenity value of accommodating to a lower level of energy use, such as wearing a warmer sweater in the house;

4: The implicit cost of a lower quality of energy services, such as being cooler, using a smaller refrigerator (or one without an icemaker), or getting up in the middle of the night to turn off a light;

5: Any direct damages from reduced energy services, such as health problems from very low thermostat settings;

6: The inconvenience of purchasing and installing energy-efficient equipment (such as CFLs);

7: The incremental cost of an efficient appliance or insulation; and

8: The inconvenience of selecting contractors, and specifying and schedule the installation of energy-efficiency measures and fuel switching.

Some of these items are costs in the economic sense, but are actually activities that are socially encouraged, such as responsibility (#1) and education (#2). Other items are real costs, but do not impose a burden on the state's economy; this category includes responses that involve lower levels of comfort (#3 and #4) or require a little extra work (#6 and #8).[60] Only items such as #5 and #7 impose the sort of cash costs that would be reflected in state income accounts.[61] Foregoing energy-using appliances and extra features (part of item #4) will usually reduce the household's capital expenditures, as well as its electric bill.

DSM programs further reduce the costs of items #2, #6, #7, and #8. For example, the inconvenience of selecting contractors and specifying and scheduling retrofit work is reducible through well-designed utility DSM programs that reduce participant effort and risk. Thus, one of the effects of a rate increase may be increased (and more enthusiastic) participation in utility DSM programs. Another effect may be that the same level of participation can be maintained with smaller utility incentives. Thus, what might have been a cost without DSM programs becomes a benefit with DSM.

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[60] The customers who react in this way incur costs only to the extent that they do additional work. The extra work and the extra cost negate one another, leaving no change in New Orleans economic activity or disposable income.

[61] Item #5 also imposes health costs that are quite real, even if they are small and are not captured in income accounts.

In sum, only a portion of the elasticity response reflects real costs in any sense, and even a fraction of those costs are simply nuisances and inconveniences, even in the pre-DSM era.[62] The small portion of the elasticity response that corresponds to real reductions in New Orleans' disposable income or productivity is further reduced by the existence of DSM programs. Exhibit ___ (PLC-2) illustrates the way these effects might change over time, and indicates which of them are cash costs.

Q: Is Chamberlin consistent in treating these reducible costs as though they were costs of DSM?

A: No. Dr. Chamberlin recognizes that there are significant market barriers to cost-effective DSM. Reducible costs are exactly those market barriers; the reducibility of costs demonstrates the existence of market barriers.

In fact, a rate increase may inspire a customer to go looking for a more efficient appliance, but an effective DSM program may result in the customer bearing little additional cost to reduce his energy use.

Q: Are rate effects the most important effects of DSM?

A: No. The dominant effect is the increased attractiveness of New Orleans with DSM than without. Using electricity more efficiently will reduce the cost of living and doing business in New Orleans. The increase in disposable income and in business activity would be beneficial to the economy, and may even increase demand for electricity, through increased prosperity rather than through the inefficient use of electricity. This broader regional rebound effect

[62] Dr. Chamberlin (IR AAE 8-27) cannot estimate the mix of these effects.

will tend to reduce electric rates, offsetting any undesirable effects that might actually occur as a result of slightly higher rates.[63]

Q: What is the net social effect of a rate increase due to DSM?

A: Depending on the relationship between marginal costs (including externalities) and tailblock rates, there may be a small social cost or benefit due to increased rates. If there is a net cost of the rate increase itself, it is likely to be largely or entirely offset by rebound, free-rider benefits, increased economic prosperity, and (for fuel switching) beneficial effects on gas rates.

C. The Role of Externalities

Q: What is Entergy's criticism of the requirement in the IRP rules that externalities—as defined in Section 52-351K—be considered in planning?

A: Entergy's entire case on externalities is contained in a paragraph of Dr. Chamberlin's testimony that asserts:

- There is some evidence that externality requirements will have negligible effects of environmental quality.
- Any positive effect [of considering externalities] will be severely diluted under competition.
- Decisions about resources...are increasingly being made outside the jurisdiction of local externality requirements.

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[63] Dr. Chamberlin also ignores the effect of electric DSM on gas rates. If electric rates increase, some of the consumer price response will consist of selecting NOPSI gas rather than NOPSI electricity for serving end-use requirements. Some electric DSM measures may also directly switch end uses to gas. Rising gas sales would decrease gas rates and increase economic efficiency, if those currently exceed marginal costs.

- Regulated utilities are becoming responsible for a smaller proportion of resource decisions.

These vague complaints are almost equivalent to praising by faint damns. Dr. Chamberlin's discovery responses further dilute these already tepid comments.

Q: What evidence does Chamberlin cite to support his claim that "externality requirements will have negligible effects of environmental quality"?

A: Chamberlin actually does not assert that "externality requirements will have negligible effects of environmental quality," only that there is "some evidence" to this effect. The only evidence Chamberlin cites is a paper by Haites and Hashem, his subordinates at the Toronto office of Barakat and Chamberlin.[64] Haites and Hashem claim that "National caps on utility emissions of SO_2, NOx, and CO_2 will go into effect over the next few years" in the United States, due to the Clean Air Act Amendments (CAAA) and DOE's voluntary agreements with some utilities on reducing CO_2 emissions. The CAAA does establish a cap for utility emissions of SO_2, but the claim that the modest technology-based NOx reductions required by the CAAA constitute a "cap" is absurd. Even more absurd is the assertion that non-binding voluntary commitments to reduce or moderate CO_2 emissions

[64] Chamberlin also cited (but failed to provide) an unpublished paper that he characterizes as concluding that externalities have had no effect on resource acquisition. (IR AAE8-12). Since serious estimates of externalities have been in place for only a few years in a few jurisdictions, and since those years coincided with a national economic slowdown, externalities have not had large effects on supply acquisitions, but they have contributed to energy efficiency acquisitions.

(mostly consisting of actions the utilities were taking for other reasons) caps utility emissions.

Even if Haites and Hashem were correct that the Federal government might be about to impose binding national emission caps, the effect would be to convert at least a portion of the externality adder values for these emissions to hard dollar values based on the value of tradable NOx and CO_2 credits, as has occurred for SO_2, and as is occurring in some high-ozone area for NOx.[65] Neither Chamberlin nor Entergy has proposed to include NOx and CO_2 emission credits in computing the TRC or RIM tests.

Q: What about Dr. Chamberlin's other assertions about externalities?

A: He provides no support whatever for the claim that "Any positive effect will be severely diluted under competition." In IR AAE8-13 and AAE8-14, he clarifies that his claims

- Decisions about resources...are increasingly being made outside the jurisdiction of local externality requirements.
- Regulated utilities are becoming responsible for a smaller proportion of resource decisions.

only refer to the location and ownership of the resources. A new plant may be owned by a non-utility generator, and located in another state (hardly exotic for Entergy's far-flung system), but NOPSI's decisions to acquire resources will still be made by NOPSI under the direction of the Council, including any externality values the Council may adopt.

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[65] For many scenic or heavily-populated areas, the environmental costs of SO_2 emissions exceed the value of the national emission cap.

In short, Dr. Chamberlin was unable to support any of his sweeping generalizations about the role and value of externality valuation.

V. Integrated Resource Planning within the Current Ordinance

A. Entergy Complaints

Q: Please summarize Entergy's complaints about the current IRP Ordinance.

A: Entergy claims that the current IRP Ordinance is outdated and too restrictive in the changing and more competitive environment in which it now operates, and so must be changed. Witness Chamberlin recommends that the current IRP framework be dismantled and re-worked from the bottom up. He suggests that "it may be preferable to frame the new approach as 'guidelines' rather than 'rules,' because the former connotes flexibility while the latter connotes rigidity." A new IRP Ordinance would:

- Replace the TRC with the RIM test to keep rate increases in check.
- Create a less prescriptive planning and regulatory process. Within each retail jurisdiction Entergy operates, different regulatory requirements exist, resulting in a system-wide IRP process which lacks consistency. Entergy claims disparate plans across the system violate the notion of an integrated resource plan across a multi-jurisdictional company like itself.
- Increase flexibility in the IRP Ordinance so that Company responses to competition and the marketplace will not be limited to those pre-approved in the IRP. They claim that the two year resource plan does

not allow them to respond to customer needs in a changing newly competitive environment.

- Streamline the IRP process to reduce the level of detail required in the reporting process. This will allow New Orleans customers to take advantage of the economies of scale from a uniform system filing, and avoid incurring the costs of a separate filing.

Q: Are Entergy's complaints valid?

A: No. The current IRP framework is sound and Entergy's complaints about it are faulty for a number reasons:

- As discussed in Section IV.A., the TRC, not the RIM, is the appropriate test for DSM screening.
- If Entergy perceives the timing of its filings to be a problem, it should change its planning cycle to accommodate the filing requirements for the IRP, rather than suggesting the opposite.
- The current IRP process includes flexibility as a central tenet and defines a planning process for comprehensively and fairly evaluating energy resource options without dictating the result. Section V.D. describes this in more depth.
- Entergy has not performed an analysis (IR CNO16-79) to determine the level of work and detail required to meet specific Ordinance requirements, so no comparisons with the value of the Ordinance should be made.

B. IRP and Rates

Q: Does primary reliance on the TRC Test for screening DSM options mean that the ratepayer impacts should be ignored?

A: Not at all. The effects of the DSM and supply options on rates and bills should be determined for each customer class annually, but only after an initial DSM portfolio is constructed.

Q: How should Entergy determine the potential rate impacts of a cost-minimizing DSM portfolio?

A: Entergy should determine the revenue requirements for each operating company for each year in the least-cost resource plan and compare it with the revenue requirements for the supply-only plan.[66] Dividing the annual cost by sales produces annual average rates for each plan. Both revenue requirements and rates can be estimated by rate class, if the incidence of costs by class is of immediate interest.[67]

Q: Is this approach preferable to the present-value RIM test?

A: Yes. The timing of rate effects is important. The California Standard Practice Manual (SPM, pp. 18–19), the source of the standard RIM test, notes:

> The results of this test can be presented in several forms: the lifecycle revenue impact (cents or dollars) per kWh, kW,...or customer; annual or first-year revenue impacts (cents or dollars per kWh, kW,...or customer); benefit-cost ratio; and net present value. The primary units of measurement are the lifecycle impact...and the net present value. Secondary test results are the lifecycle revenue impact per customer, first-year and annual revenue impacts, and the benefit-cost ratio....

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[66] DSM-related rate effects are usually of greatest concern in the relatively short term. In later years, avoided costs rise and savings accumulate, reducing both rates and bills.

[67] Alternatively, the utility may conclude that average system rate effects are reasonable, and leave to rate cases or other cost-recovery proceedings the determination of inter-class allocations of cost sand benefits.

> The annual revenue impact (ARI) is the series of differences between revenues and revenue requirements in each year of the program. This shows the cumulative rate change or bill change in a year....

Thus, a full rate-impact analysis must consider annual effects, as well as long-run present values, in terms of both rates and revenue requirements.

The SPM (p. 20) also notes that any long-term projection of RIM effects is problematic:

> Results of the RIM test are probably less certain than those of other tests because the test is sensitive to the differences between long-term projections of marginal costs and long-term projections of rates, two cost streams that are difficult to quantify with certainty.

Q: Are there any issues that require particular care in the determination of annual rate effects?

A: Yes. It is important not to simply add up the program costs and avoided costs from the screening analyses, for four reasons. First, avoided costs are usually estimated on the deferral basis, which states avoided capacity costs as the change in the present value of costs due to a year's delay in construction. Avoided costs computed in this way will start low and rise with inflation. Revenue requirements and rate effects will actually be determined by the Council's ratemaking procedures, which allow recovery of a return (and associated income taxes) on the unamortized investment. Ratemaking costs start at a high level, and decline over time, as the initial investment is depreciated. Thus, avoided costs will usually understate DSM's effect on reducing revenue requirements in the early years, when rate effects are most likely to be troublesome. Hence, it is essential that rate and bill analyses be based on ratemaking costs, not the avoided costs of deferral.

Second, avoided costs are estimated for a set of units projected to be avoidable at the beginning of the analysis. These projections often reflect an

assumption that DSM will avoid mostly peaking units. The actual units avoided by the DSM plan will often differ from those assumed in the avoided-cost computation, and will often be more capital-intensive than the supply resources assumed for avoided-cost determination. The actual avoided supply may be more expensive than the avoided costs; but even if the costs are comparable over 20 or 30 years, avoiding capital-intensive plants will reduce costs the most in the crucial early years.

Third, screening is usually conducted for fairly arbitrary timing of installations, but rate effects will vary with the actual pattern of measure installations. The estimates of rate effects should reflect the lead time required to design, implement, and ramp-up full-scale programs; DSM implementation should not be assumed to proceed faster than is feasible, or even faster than is cost-effective.

Fourth, and perhaps most important, revenue requirements by operating company should include the effects of the system operating agreement on the allocation of the costs of existing units.

Q: How should the Council determine whether rate or bill effects are excessive?

A: There is no simple answer to this question. Acceptable levels of rate increases due to DSM depend on

- the starting level of rates,
- base-case rate increases without DSM,
- the distribution of DSM offerings (what percentage of customers can participate),
- the distribution of DSM savings (such as the percentage of customers with declining bills),

- provisions to aid vulnerable customers (low-income, at-risk businesses),
- the average level of customer bills.

Q: What options would be available to the Council to minimize any identified rate impacts and bill inequities?

A: Several mechanisms are available for minimizing rate or bill problems, such as the following:

- One of the best solutions is to expand the portfolio of DSM programs so that all customers have an opportunity to reduce their electricity usage.
- Removing market barriers, minimizing cash requirements, and targeting marketing efforts will increase the ability of vulnerable customers (low income residentials, marginally viable commercial and industrial firms) to participate and reduce their bills.[68]
- Near-term rate effects can be reduced by amortizing of DSM costs over the measures' lives (as is done for supply), instead of fully expensing the costs each year.
- Problems with excessive rate or bill effects on particular classes can be ameliorated by changing the allocation of DSM costs across classes.
- For some market segments, careful program design can overcome market barriers while still allowing participants to pay a substantial portion of measure costs, either at the time of installation or through energy-service charges.
- If rate effects are excessive in early years, with low avoided costs, the timing of retrofit programs can be stretched to coincide with higher

[68] In Docket 920606, FPL asserted that low-income and elderly customers would never be able to participate in DSM programs, due to cash constraints. This belief betrays a lack of understanding of DSM program design.

avoided costs due to more expensive fuel and/or the planned construction of baseload plants.

The last two options should be undertaken only with great caution, since sloppy exercise of these options may reduce DSM savings and increase the cost of energy services.

Q: If DSM results in rates higher than they might be otherwise, does this imply that the rates are excessive, or that they endanger the local economy or NOPSI's competitive position?

A: No. The economic attractiveness of the state for business, and the disposable income of households, depends on bills, not rates. As long as DSM is cost-effective, it will decrease the costs of energy services, and bolster the local economy.[69] Whether a difference in rates between the base case and an aggressive DSM plan is a matter for concern depends on how much average bills are reduced, how widely the benefits of DSM are distributed, how rates would otherwise be moving, and how much risk is reduced, as well as the magnitude of the rate difference.

1. Rates in the Least Cost Ordinance

Q: Does the IRP ordinance allow Entergy to consider rate effects?

A: Certainly. In fact, Section 52-352D requires:

> 2. The Plan shall include at a minimum the following financial information, together with supporting documentation and justification:
>
> . . .c: Average rates per kilowatt-hour by year;

[69] This general relationship is in addition to the positive direct employment effects of DSM.

Q: Does the IRP ordinance allow Entergy to design a resource plan to mitigate any unacceptable rate effects?

A: Yes. Section 52-356B.3 provides:

b: Rate Impact Analysis. The Utility shall conduct a Rate Impact Analysis to determine probable rate impacts that would result from the implementation of resource plans. If significant rate impacts for non-participating customers are likely to result, the Utility may refine the Demand-Side Program designs to mitigate the impact on non-participating customers. The Utility shall provide thorough and detailed documentation of its analysis.

In addition, Section 52-356B requires the development of multiple plans, to achieve alternative objectives "identified by the Collaborative Working Group," and cites "minimizing rates" as an example of an objective that might be used.

From my reading, the Ordinance requires just the type of rate and bill analysis I described above, and provides all the flexibility needed to mitigate excess effects. Contrary to Entergy's claims, the Least Cost Ordinance provides ample opportunity for Entergy to develop a rate-mitigating version of the least-cost plan, present that to the Council, and argue for its adoption.

C. IRP and Competition

Q: Please summarize Entergy's concern about competition within the current IRP Ordinance.

A: Entergy claims that the current IRP Ordinance places it at a competitive disadvantage because it requires them to disclose customer and operating information which can be used by non-regulated businesses. Entergy (at IR

AEE 8-51) won't precisely describe the type of information it is concerned about, but identifies three types of "strategically sensitive information" that it believes should remain confidential (IR CNO16-33):

> Cost information—including information pertaining to the utility's resource mix, marginal costs, assets, overhead, expenses, and discount rates.
>
> Customer information—including contractual arrangements between the utility and customers, customer-specific information provided to the utility that the customer would want to be kept confidential, and any customer demographic information.
>
> Strategic information—including strategic plans under consideration by the utility to respond to potentially increasing competition, deregulation, open access, and retail wheeling.

Q: Are Entergy's concerns about competition within the IRP Ordinance valid?

A: The claims by Entergy are vague. The Company is unable to explain why it believes that information about its business activities is confidential, beyond claiming that the information should be kept confidential "...because no other entities (including potential competitors) are required to disseminate or provide access to such information (IR CNO16-33). Entergy has not been able to explain what information (other than load data on specific customers, which would be available directly from the customers) would be valuable t what competitors, or how it would be misused (IR AAE 8-51).

Despite the fact that Entergy would like to make all information the exclusive property of itself and its shareholders, the fact remains that much of this information is about and financed by its ratepayers. Most of the data Dr. Chamberlin would let Entergy withhold would be of more benefit in the regulatory process than in competition (IA CNO 16-33).

D. IRP and Flexibility

Q: Please summarize Entergy's concern about flexibility within the IRP process.

A: Entergy claims that the current Ordinance is a static document that quickly becomes outdated as the assumptions and circumstances defining the IRP continue to change. Limiting Entergy to these pre-approved plans undermines its ability to respond to customer needs and changes in the marketplace. Increased flexibility in the Ordinance would allow Entergy to effectively respond to business needs and encourage the development of new services and innovations.[70]

Q: Are regulations within the Ordinance inflexible?

A: No. A careful examination reveals that flexibility is a central tenet of the Ordinance. The Ordinance provides the Council and Entergy with consistently prepared information in order to allow a fair judgment as to which combination of resource options are in the public interest. The Ordinance defines a planing process for comprehensively and fairly evaluating energy resource options without dictating the result.

While the Ordinance requires use of a long-range (20-year) planning horizon, each filing includes a short range (3-year) action plan, and plans are

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[70] Dr. Chamberlin (at IR CNO 16-29) says that the Council should "clearly establish principles" and leave the selection of methods and mechanics to utilities." Yet Entergy and Dr. Chamberlin are resisting the Council's announced principle of minimizing costs. Nor is it clear how Dr. Chamberlin's proposed regulatory framework would permit the Council to asses "how successful the Companies are in satisfying the energy-service needs of their customers" (IR CNO 16-30), unless the Council is able to determine whether Entergy could have done better, for which the Council would need the data Entergy proposes to deny it.

revised and resubmitted every two years. While this alone builds flexibility with respect to the ability to adapt to changing circumstances, the Ordinance specifically provides that plans can and should be amended as needed between bi-annual filings to respond to changing events (Section 52-357C).

Chamberlin (at 26) overlooks this provision in arguing that "between updates, LCPs are static documents." Nevertheless, his solution, "an easing of requirements that each utility action must be consistent with its most recent plan," would essentially take the teeth out of the Ordinance. Section 52-350C of the Ordinance only requires that utility action be consistent with its most recently approved plan to the extent that the action exceeds 2 percent of the rate-making value of the utility, thus providing flexibility even without the necessity of amending plans.

Q: Does the planning process allow for flexibility before the IRP is approved?

A: Properly following the provisions of the Ordinance should build flexibility directly into the planning process so that the resulting plans are able to respond to changing circumstances. First, the utility must evaluate the whole range of existing and potential resources on a consistent basis. Thus, information will be available in a form which can be used to determine which resources should be deployed under varying circumstances. Secondly, the Ordinance makes specific requirements with regard to sensitivity analyses and contingency planning

Q: How are sensitivity analyses and contingency planning incorporated in the planning process?

A: Section 52-353D of the Ordinance provides as follows:

1: Sensitivity to Major Assumptions. Each energy and demand forecast shall include an analysis of the sensitivity of results to the major assumptions and estimates used in preparing the forecast. The major assumptions to be tested should include end-use efficiencies and saturation rates, electricity prices, prices of competing fuels, demographic projections, economic projections, and any other major determinant of energy use or demand. Sensitivity analyses shall assess the uncertainty ranges and the consequences of uncertainty for each of the major assumptions and combination of assumptions.

2: Contingency Planning. Each Plan must contain a series of demand forecasts which represents a reasonable range of electricity sales and demand which it may be required to serve. The contingency planning forecasts must be sufficiently different to meaningfully test the flexibility and robustness of the preferred and alternative resource plans. As a minimum, the sensitivity to alternative assumptions of demand determinants should be used to set the range of the contingency planning forecasts. If that range is insufficient to test the resource plans, a sufficient range may be selected. The contingency planning forecasts should include...a base case scenario, a high growth scenario, and a low growth scenario.

Q: Does the Council have flexibility in the approval of Entergy plans?

A: The ordinance gives the City Council flexibility with regard to whether and how it approves plans. Section 52-350B provides:

> The City Council may approve the Utility's Least-Cost Resource Plan as filed, approve it subject to stated conditions, approve it with modifications, approve it in part and reject it in part, or reject it as filed, pursuant to these regulations, only upon finding, after a hearing is conducted in accordance with Article VI of this chapter, that such action is in the public interest and substantially complies with these regulations.

The process which Entergy now proposes would take away flexibility and deprive the public and the regulator of reliable, comprehensive, and verifiable information necessary to intelligently make public policy.

E. Public Input to IRP

Q: What is Entergy's position on public input into the IRP process?

A: Entergy proposes to eliminate the collaborative process as it was intended to be used. Entergy proposes to replace collaboration with a combination of marketing research and public comments on the completed plan, which would only be a brief informational filing (Kenney, pp. 33-34).

Q: Is this position reasonable?

A: No. Entergy understates the value of truly collaborative DSM design efforts with representatives of its customers, and confuses collaboration with marketing.

Q: How does Entergy confuse collaboration with marketing?

A: In suggesting that public input can be obtained from "market research, customer focus groups and perhaps tailored customer advisory groups," Entergy treats customers as individuals to be marketed to, rather than sources of technical information. A focus group be very useful in helping Entergy select the name of a program, make its brochures more appealing, identify important decision makers, and even understand market barriers more fully. That focus group will not help Entergy find out about program design innovations in progress by the utilities most experienced in DSM, or errors in Entergy's avoided costs or screening procedures. Nor will the focus group work out program designs, implementation protocols, funding levels, and cost-recovery strategies that all parties can agree are reasonably fair, efficient, and effective.

The focus groups and other public-relations approaches may actually identify the least appropriate DSM measures, since customers are likely to

respond positively to measures with which they are most familiar. These familiar measures generally face lower market barriers than more comprehensive and less widely understood options. Hence, relying on public opinion polls would tend to lead Entergy to measures that least require utility incentives, carry the highest rates of free ridership, and deliver only mediocre system power benefits.

Q: How can Entergy maximize the effectiveness of collaborative DSM efforts?

A: First, Entergy should treat the collaborative process as an opportunity to improve its planning process by learning from other parties with valuable information, to share what Entergy know with the other parties, and to help other parties understand the limits of Entergy's resources and information.[71] This collaboration will help Entergy learn more about areas in which it appears quite naive (such as DSM program design, use of energy efficiency to retain load, and the valuation of externalities), help Entergy understand the real concerns of other parties, help other parties understand Entergy's concerns and limitations, overcome the distrust of plans developed in secret, and produce a better plan that will result in less litigation. Unfortunately, Mr. Kenney (at 28) describes Entergy's role as "defend[ing] vigorously each and every challenge" to an "entire plan" prepared by Entergy alone.

Making the collaborative process work usually requires providing funding to the parties that need it, to bring in consultants, with fresh ideas

[71] In the adversarial process, other parties tend to view the utility as omniscient, and to interpret any failure to solve problems as evidence of bad intent. In the collaborative process, the parties often come to be more sympathetic to the limits on the utility's information and other resources.

and perspectives, expanding Entergy's horizons and improving review of internal products and Entergy contractors. Active participation with consultants also reduces subsequent litigation, by reaching *ex ante* agreement on ratemaking, prudence, sales reductions, and lost margins (or mechanisms for estimating and determining these factors), and by allowing parties to be convinced that they are getting as much as is cost-effective or feasible, in terms of measures, programs, funding, implementation rates, and cost allocations.

Q: Does this conclude your testimony?

A: Yes.

Exhibit__(PLC-2)
Illustrative Calculation of Rate Impacts and Revenue Requirements For Competing Demand and Supply Resources

		New Resource Options		
		A Additional Supply at 4¢/kWh	B Additional DSM at 3¢/kWh	C Additional zero-cost DSM
[1]	Initial Sales (GWh)	30,000	30,000	30,000
[2]	New Resource Requirement (GWh)	300	300	300
[3]	New DSM (GWh)		300	300
[4]	Final Sales (GWh)	30,300	30,000	30,000
[5]	Initial Revenue Requirement ($million)	2,000	2,000	2,000
[6]	New Resource Revenue Requirements ($million)	12	9	0
[7]	Final Revenue Requirement ($million)	2,012	2,009	2,000
[8]	Rates (¢/kWh)	6.64	6.70	6.67

Row Notes:

[1]: Sales prior to load growth are the same under all options.

[2]: Without additional DSM, load would grow 1% in Year 2.

[3]: Additional DSM is assumed to cover all new load growth.

[4]: [1] + [2] - [3]

[5]: Revenue requirements prior to load growth and new resource selection are the same under all options.

[6]: Based on the new resource requirement (300 GWh) and on a cost of 4¢/kWh for Options A and B; Option C is free.

[7]: [5] × [6]

[8]: [7] ÷ [4] × 100