TESTIMONY OF

PAUL CHERNICK

ON BEHALF OF

SIERRA CLUB AND PUBLIC CITIZEN

RESOURCE INSIGHT, INC.

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I. Identification and Qualifications

Q: Please state your name, occupation and business address.

A: I am Paul L. Chernick. I am the president of Resource Insight, Incorporated, located at 5 Water Street, Arlington, Massachusetts.

Q: Summarize your professional education and experience.

A: In June 1974, I received a Bachelor of Science degree from the Massachusetts Institute of Technology from the Civil Engineering Department. In February 1978 I received a Master of Science degree in Technology and Policy from the Massachusetts Institute of Technology.

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 worked as a consultant in utility regulation and planning. From 1981 to 1986 worked as a research associate at Analysis and Inference. In 1986, I founded and became president of PLC, Incorporated, which was renamed Resource Insight, Incorporated in 1990. In these capacities, I have advised a variety of clients on utility matters.

My work has considered, among other things, the cost-effectiveness of prospective new generation plants and transmission lines, retrospective review of generation-planning decisions, ratemaking for plants under construction, ratemaking for excess and/or uneconomical investments entering service, conservation program design, cost recovery for utility efficiency programs, the valuation of environmental externalities from energy production and use, allocation of costs of service between rate classes and jurisdictions, design of retail and wholesale rates, and performance-based ratemaking and cost recovery in restructured gas and electric industries. My professional qualifications are further described in Exhibit PLC-1.

Q: Have you testified previously in utility proceedings?

A: Yes. I have testified as an expert over three hundred times on utility issues before various regulatory, legislative, and judicial bodies, including utility regulators in thirty-three states, six Canadian provinces, and two U.S. Federal agencies. A large number of those cases involved power supply planning, cost allocation and rate design. My previous testimony before the Public Utilities Commission of Texas is listed in Exhibit PLC-2.

Q: Do you have any experience with Austin Energy?

A: Yes. I was the Consumer Advocate for the City Council's review of the Austin Energy rate proposal.

II. Introduction

Q: On whose behalf are you testifying in this rate case proceeding?

A: I am testifying on behalf of Public Citizen and Sierra Club.

Q: What issues do you cover?

A: I address four issues:

- The allocation of generation costs.
- The setting of fixed customer charges.
- Residential rate design, including the tiered energy rate and the form of the discount for customers outside the city.
- Preparation for the retirement of Austin Energy's portions of Fayette units 1 and 2.

III. Allocation of Generation Costs

Q: How does Austin Energy propose to allocate the fixed costs of its fossil generation plants?

A: Austin Energy proposes to allocate the fixed generation costs on the average of class contributions to 12 monthly coincident peaks (12CP).[1] In the past, parties have also suggested that those costs be allocated on the average-and-excess demand allocator (AED) using the average of four summer peaks (AED/4CP).

Q: Is either of these allocation approaches appropriate?

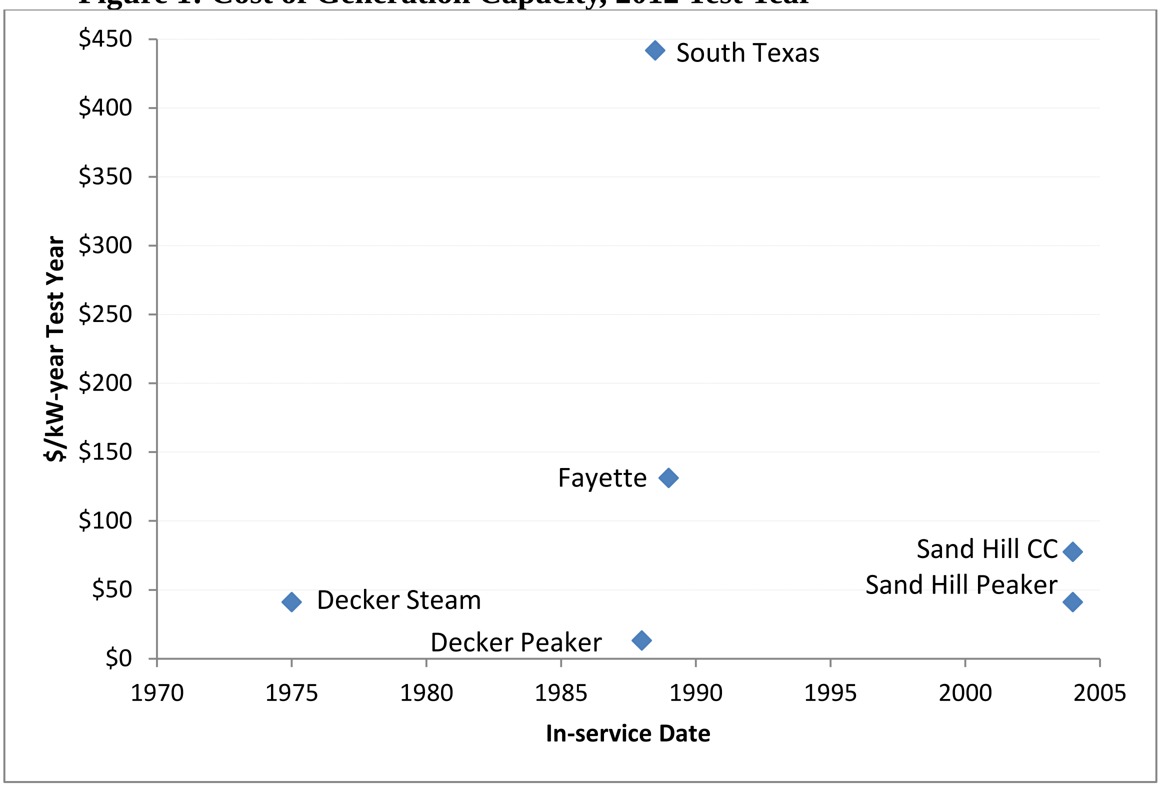
A: No. The 12CP method assumes that the fixed costs of Austin Energy's generators are exclusively driven by Austin Energy's monthly peak exposure. The AED/4CP approach goes further, assuming that only the four summer peaks matter in determining the fixed generation costs.

In reality, the *amount* of capacity needed for reliable supply depends on the highest loads, both in the high-load months (the summer, for ERCOT) and in lower-load months when tight power supply may arise from maintenance outages, weather-related malfunctions and random equipment failures. ERCOT has experienced Energy Emergency Alerts in the winter (I have found examples in January, February and March, and there may be more), as well as the summer.

[1] In this context, fixed costs are all the costs that do not vary with output during the year. The non-fixed generation costs include fuel and consumables, such as the limestone used in the Fayette scrubbers. Some O&M and interim capital replacements that vary with the usage of the plant should also be treated as energy-related (just as the cost of oil changes is a function of mileage driven), but these costs are not generally disaggregated in cost of service studies.

But the cost of the capacity is determined in large part by annual energy requirements. As shown in Figure 1, South Texas and Fayette were much more expensive than the contemporaneous Decker peakers, the Decker steam plants are more expensive than the Decker peakers (even though those were built over a decade later) and the Sand Hill combined-cycle cost about twice as much as the Sand Hill peakers.[2]

Figure 1: Cost of Generation Capacity, 2012 Test Year



Clearly, Austin Energy invested more for South Texas, Fayette and the combined-cycle plant to reap the benefits of their lower fuel costs, to serve Austin Energy's large annual energy requirement. Since the lower fuel cost is

[2] A similar pattern is apparent in the operating costs per kilowatt: nuclear O&M is very high, coal O&M is lower, and the costs of gas units are much lower, with combustion turbine peakers at the low end of the range.

allocated among classes on the basis of energy use, the higher capital costs should follow a similar allocator.

Q: How should this reality be reflected in cost allocation?

A: Several methodologies have been developed to recognize the contribution of energy requirements and non-peak hours to the cost of generation resources, including:

- Identification of the extra costs of each resource incurred for fuel-price reduction, and allocation of those costs on energy (the peaker method).
- Determination of which resources operate in each hour (or larger blocks of time) and allocation of the costs of the units operating in each hour in proportion to class loads in each period (the probability of dispatch method).
- Sub-functionalization of the generation resources into usage categories (typically, base, intermediate and peak) and allocation of each category on an appropriate allocator, such as energy for baseload plant, daily peak hours (e.g., 7 AM to 11 PM) for intermediate resources, and peak loads (e.g., 12CP) for peakers (the base-intermediate-peak or BIP method).

Proper application of any of these three methods reflects the cost causation for fixed generation costs.

Other jurisdictions recognize the reality of energy-driven power-plant capital investment and fixed operating costs in a more generic manner, by allocating a portion (frequently the system load factor) of total fixed costs on energy and the remainder on some demand allocator. The average-and-peak approach does not reflect the actual fuel-saving investment and thus typically understates the energy-related portion of generation systems with large shares of nuclear or coal capacity.

Any of these approaches is more equitable than the 12CP and AED approach.

Q: Have you estimated the portion of Austin Energy's generation investment that is driven by peak loads, rather than energy?

A: Yes. I compared the 2012 costs of the South Texas, Fayettte and Decker steam plant to the cost of the Decker peakers and the cost of the Sand Hill combined-cycle to the Sand Hill peakers, and produced the estimates of the shares of costs attributable to providing peak reliability shown in Table 1.

Table 1: Demand-Related Portion of Austin Energy Generation Rate Base

	ISD	MW	$/kW	Attributable to Demand
South Texas	1989	400	$442	3%
Fayette	1989	600	$131	10%
Decker Steam	1975	730	$41	32%
Sand Hill CC	2004	385	$78	53%
Decker Peakers	1988	200	$13	100%
Sand Hill Peakers	2004	270	$41	100%
Total		2,585	$127	16%

Those, 84% of total generation rate base is energy-related. The O&M fraction is probably even higher.

Q: How should the costs of renewable energy be classified?

A: The costs of wind and solar are almost all energy-driven, and Austin Energy classifies them to energy.[3]

Q: What is your recommendation on this issue?

[3] It is my understanding that Austin Energy recovers the costs of its renewable contracts through the Power Supply Adjustment, so those costs are not directly part of this proposed rate case.

A: The fixed costs of Austin Energy generation should be classified and/or allocated in a manner that recognizes that the vast majority of that investment is driven by energy, not peak demands.

IV. Residential Rate Design

A. Tiered Energy Rate

Q: Have you reviewed Austin Energy's proposal to flatten Austin Energy's five-tiered in-city rates?

A: Yes, I am aware that Austin Energy is proposing to make two major changes in Austin's five-tier rate design. First, Austin Energy proposes to eliminate the separate summer and winter energy rates.[4] Second, Austin Energy proposes to flatten the tiers by raising the first tier (0–500 kWh) 40% on an annual average basis, while substantially decreasing the highest three tiers.

Table 2: Proposed Change in Residential In-City Energy Tiers

	Existing Base Rates				
	Summer	Winter	Sales-Wtd.	Proposed	Change
0–500	$0.033	$0.018	$0.024	$0.033	40%
501–1,000	$0.080	$0.056	$0.068	$0.056	-17%
1,000–1,500	$0.091	$0.072	$0.083	$0.076	-9%
1,500–2,500	$0.110	$0.084	$0.100	$0.091	-9%
>2,500	$0.114	$0.096	$0.107	$0.106	-1%
Average 0–1,000			$0.039	$0.041	5%

The average energy rate for a customer using 1,000 kWh would rise 5%, but the rate for 500–1,000 kWh (the tailblock for these customers), which provides the incentive to conserve, would fall 17%. Bills would be higher, but the incentive to conserve would decline. The vast majority of

[4] The Power Supply Adjustment would retain very modest seasonality.

econometric analyses indicate that consumers respond to their tailblock energy rates.

Q: Are these changes warranted?

A: No. Elimination of the seasonal differentiation is counter-intuitive, since the majority of Austin Energy's transmission and distribution costs appear to be driven by summer loads, including peak loads on Austin Energy equipment and the day-long and multi-day loads that build up heat, requiring larger transformers and conductors and resulting in more failure.

The decrease in the revenue requirement should be spread more evenly through the tiers, to maintain conservation incentives.

Q: What are your recommendations on this issue?

A: Austin Energy should maintain some differential between summer and winter rates. In addition, the rates in each block (averaged across summer and winter) should be reduced by approximately the same percentage to reflect the overall reduction in target revenue.

B. Fixed Customer Charges

Q: What is Austin Energy's proposal for the fixed customer charge in the residential rate design?

A: Austin Energy proposes to retain the existing $10/month charge.

Q: Is this appropriate?

A: The $10 customer charge appears to be reasonable for most residential customers. The Austin Energy cost of service study (Schedule G-8) indicates that the allocated average customer-related cost for residential customers is $21.68/month, but this estimate is clearly overstated. This total includes the cost of the average residential meter, a number of costs allocated on among classes on unweighted customer number (Customer Accounting, Customer Service, Meter Reading), and uncollectible bills, all averaged across all residential customers. Several of these items are over-allocated to the residential class and/or to the customer charge, which should reflect only the costs imposed by the smallest customers.

Customer accounting, customer service and meter reading are probably all higher per customer for non-residential customers with more complex metering and billing.[5] Customers with higher bills are also more likely to contact Austin Energy more frequently, with more complex questions about their bills, service and other issues; this effect would both increase the non-residential share of customer service costs and reduce the customer-service costs attributable to the minimal customer. After all, a customer using 200 kWh monthly is not likely to spend as much time on the phone with Austin Energy as a customer using 2,000 kWh or 20,000 kWh.

Uncollectibles probably also vary with the size of the residential customer. A 200-kWh customer is unlikely to run up a bill as large as a 2,000 kWh customer; Austin Energy is exposed to larger bad debt from the larger customers.

All the size-related costs should be recovered through the energy charge.

Q: Is any disaggregation of the customer charge warranted within the residential class?

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[5] In addition, the distance between meters is likely to be greater for large commercial and industrial customers than for even single-family residential customers, requiring more meter-reader time per reading.

A: Yes. Customers in multi-family buildings probably require even less meter-reading time than single-family residential; the diversification of loads on services, transformers and some lines and the generally higher density of load would further reduce demand-related costs. A discount in the customer charge for apartments would reflect these cost differential. Until Austin Energy does a more complete analysis of the cost differentials, it would be reasonable to customers in multi-family buildings a customer charge a few dollars lower than the charge assessed on single-family residences**.**

V. Rate Discounts Outside the City

Q: What comments do you have on rate discounts for customers outside the city limits?

A: I have not reviewed the rationale for the magnitude of the discount as a percent of total bills, and will not comment on that issue. Regardless of the size of the discount, the design of the rates outside the city should maintain the conservation incentives.

Austin Energy's proposed rates would continue the existing practice of concentrating the out-of-city discount on the highest energy blocks, significantly reducing the conservation incentive for large residential customers. The magnitude of the discounts is shown in Table 2.

Table 3: Austin Energy Proposed Discounts for Out-of-City Residential Rates

	In City	Out of City	Discount
Customer charge	$10	$10	0%
0-500 kWh	$0.03300	$0.03800	15%
501-1,000 kWh	$0.05600	$0.05600	0%
1,000-1,500 kWh	$0.07595	$0.07815	3%
1,500-2,500 kWh	$0.09100	$0.07815	-14%
>2,500 kWh	$0.10595	$0.07815	-26%

Given Austin Energy’s projection of the pattern of out-of-city usage, the average discount is only 6.7%, but the tailblock rates that are most important in promoting conservation are discounted much more deeply.

Q: What would be a more sensible approach for determining the discounts for out-of-city residential customers?

A: If the 6.7% discount is determined to be appropriate, it should be spread more uniformly through the rate structure. Ideally, the customer charge and first 1,500 kWh would receive the average discount, and usage over 1,500 kWh should be priced higher that usage in the 1,000–1,500 kWh range, to retain the incentive structure.

VI. Fayette Costs

Q: What is your concern about the recovery of the costs of Austin Energy’s share of units 1 and 2 of the Fayette coal plant?

A: Austin Energy and the City Council have committed to ending Austin Energy’s involvement in the Fayette project “as soon as legally, economically and technologically possible.” (Austin Energy Resource, Generation and Climate Protection Plan to 2025: An Update of the 2020 Plan,” page 7). That Plan projects that Austin Energy would stop using 235 MW of Fayette 2020 and the remaining 367 MW would be retired in 2023.[6]

Before the City Council made this commitment, Austin Energy must have expected to continue using Fayette (and the scrubbers added about 2010, which comprise most of the net plant) for many years. At the current

[6] The Plan Update says it “establishes a process for ending the use of coal by starting the retirement of Austin Energy’s share of the Fayette Power Project by the end of 2022.”

depreciation rate, Austin Energy customers would continue paying for the capital costs of Fayette through about 2030. I have not been able to determine when the bonds issued to finance the scrubbers will be fully paid off.[7]

Unless something changes in the meantime, Austin Energy will stop receiving energy and capacity from Fayette in the early 2020s, but will continue paying for the plant for several more years. At the same time, Austin Energy will be paying for the replacement energy resources, either through purchased-power contracts or directly for the capital costs.

Austin Energy's response to Public Citizen/Sierra Club 2-1 indicates that Austin Energy expected in December 2014 that is would fund Fayette debt defeasement at a rate of about $47 million annually for 2019 through 2022. Unless Austin Energy is planning another rate review in 2018 to allow it to collect those funds, this is likely to be the last opportunity to accumulate those funds.

Q: How does Austin Energy propose to deal with this issue?

A: Oddly, Austin Energy seems to be ignoring its commitment (and that of the City) to the early termination of its use of Fayette.

[7] Austin Energy may be able to repurpose that debt to finance the renewables that will replace Fayette. I have not found any specific reference to any of Austin Energy's debt issuances as being contractually tied to ownership of Fayette; Austin Energy does not seem to provide much information about its bonds in its annual reports or on its web site; some information about call dates and final retirement schedules is provided in ALIC RFI Set 4.

> To date, City Council has not approved a definitive date for closing the FPP. Additionally, any decision on FPP would be subject to the City's affordability goals. Moreover, FPP Units 1 and 2 are jointly owned with the Lower Colorado River Authority ("LCRA") and operated by the LCRA. Therefore, neither AE, nor the City Council, has the authority to decommission the facility without cooperation from LCRA. For these reasons, it is premature to develop a defeasement fund at this time and the adjustment does not meet the known and measureable criteria. (Dombroski Rebuttal at 22–23)

Q: Is Austin Energy's position reasonable?

A: No. The Austin City Council has clearly created an expectation through approval of the 2025 Generation Plan that Austin Energy should plan to stop using the plant in 2022, though challenges do remain. The exact retirement date for a generator is rarely known until the last year or so of its life (and sometimes not until after it has stopped generating power). Despite this uncertainty, utilities attempt to recover the plant investments over the estimated remaining life of the equipment, and update the depreciation rates as new data on investments and retirement dates become available.

Similarly, it is not clear how Austin Energy will divest itself from Fayette. That divestiture could be effected through such mechanisms as the following:

- Agreement with LCRA to retire both units.
- Agreement to swap entitlements with LCRA and retire the unit then owned by Austin Energy.

Other arrangements may also be developed.

In any case, Austin Energy will no longer have a Fayette power-supply entitlement. Once that occurs, any remaining Fayette capital costs will be a deadweight burden on Austin Energy ratepayers.

Q: How do affordability goals affect the prudence of accelerating the recovery of the Fayette investment?

A: Delaying the write-down of the Fayette investment would exacerbate any affordability issues in the early 2020s, since Austin Energy would be recovering Fayette costs at the same time it would be acquiring new resources. Austin Energy might also need to recover the remaining Fayette costs over fewer years; recovering all the costs from Public Citizen/Sierra Club 2-1 in 2021 and 2022 would push Austin Energy's projected rate increases to the limits of its affordability guidelines. An overhang of undepreciated Fayette costs could create a poison pill preventing Austin Energy and the City from complying with its carbon-reduction goals. Reducing the rate decrease in this proceeding to start the recovery of excess Fayette costs would help preserve later affordability.

Q: What do you recommend with regard to this issue?

A: The Council should require Austin Energy to accelerate the recovery of Fayette's remaining capital cost, with the goal of fully paying off the capital investment by the end of 2022. Since this may well be the last rate review prior to the planned retirement of the first portion of Fayette in 2020, this may be the Council's last opportunity to mitigate this problem.

I have no recommendation regarding the accounting treatment of the accelerated cost recovery, which could take the form of increased depreciation, an unrestricted decommissioning reserve (which might be assigned between Fayette and Decker, as needed), a dedicated bond defeasement fund, or some other account. The important consideration is that the money be available to support the elimination of Austin's share of Fayette, when it is needed.

Q: Does this conclude your testimony?

A: Yes.