Submission to the
Mississippi Public Service Commission

Docket No. 2018-AD-64

In Re:
Order Establishing Docket to Investigate the Development and Implementation of an Integrated Resource Planning Rule

Written Testimony of
Erik Randolph
On Behalf of the Bigger Pie Forum

July 31, 2018

Q. Please state your name and address.

A. Erik Randolph, 925 Pennsylvania Avenue, Harrisburg, Pennsylvania 17112

Q. What is your formal education?

A. I have a Bachelor of Science degree majoring in mathematics, a Bachelor of Arts degree majoring in political science, and a certificate in science, technology, and society studies from The Pennsylvania State University (1984) and a Master of Science degree in science and technology studies from Rensselaer Polytechnic Institute (1988). My Master's degree is an interdisciplinary degree which focused on the economics and public policy of science and technology and included coursework in energy policy.

Q. What is your current occupation?

A. I provide public policy consulting services, and I am an economics lecturer at York College of Pennsylvania.

Q. What is your professional experience, especially as related to public policy concerning regulation of public utilities?

A. I have 33 years of experience in public policy, including 27 years for both legislative and executive branches of government. In 1986, I was trained as a government program evaluator for the U.S. General Accounting Office, later renamed the Government Accountability Office. I worked five years in the field of using technology policy to promote economic development for New York State and Pennsylvania.

For more than 19 years, I was an analyst with the Committee on Appropriations for the Pennsylvania House of Representatives. For all those years, I was the lead analyst for public utility issues. Not a single law was passed concerning public utilities that didn't come to my desk for analysis. I also had responsibility for all fiscal and budgetary issues concerning all regulatory agencies and offices dealing with public utilities. I was personally involved with the passage of legislation on the restructuring of the electricity industry in Pennsylvania and participated in the stakeholder process on natural gas restructuring legislation. I worked on numerous bills and amendments to legislation, including coauthoring bipartisan legislation relating to responsible utility consumer protection (Act 201 of 2004) and analyzing energy portfolio legislation. As legislative staff, I interacted regularly with stakeholders interested in utility policy. I also received a special tour by the operator of the Three Mile Island Nuclear Facility.

For two years, I was an advisor to the Secretary of Public Welfare.

In 2013, I began my consulting career. My clients have included state governments, public policy think tanks, professional organizations, and non-profit educational organizations interested in public policy, such as the Bigger Pie Forum ("BPF"). I authored the study *Improving Mississippi's Utility Regulatory Structure Review and Recommendations, especially from the Perspective of Regulating the Electric Industry,* sponsored by BPF.

Q. You said you are an economics lecturer. How long have you taught economics, and do you ever lecture on public utilities?

A. I have been teaching economics on a part-time basis since 1996, most recently for York College of Pennsylvania. Part of my microeconomics course includes a segment on natural monopolies and the regulation thereof.

Q. Do you have any interest in the outcome of this docket?

A. No, I do not. I have nothing to gain from the outcome no matter which way it is decided. I am not a customer of any electric utility in Mississippi, have no financial interests in the industry or parties in the case, and I do not provide services related to Integrated Resource Planning ("IRP").

Q. Have you ever testified before the Mississippi Public Service Commission ("PSC") or any other state utility regulatory commission?

A. No.

Q. Have you ever testified before any other public bodies or given expert opinions before governmental officials?

A. Yes. I testified before the Arkansas Legislature on November 18, 2013, on a report I coauthored that reviewed Arkansas's Medicaid and public welfare system. On January 14, 2014, I testified before the Maine Legislature on Medicaid expansion. On June 25, 2015, I testified on my research on economic disincentives before a joint hearing of the Subcommittee on Human Resources of the Ways and Means Committee and the Subcommittee on Nutrition of the Agriculture Committee of the U.S. House of Representatives. Earlier that week, on June 22, I gave a presentation on the same research before the Secretaries' Innovation Group, a professional membership organization of commissioners and secretaries of state government human service and workforce agencies, and the group contracted with me this year for quantitative analysis that I presented to them on June 13, 2018. Most recently, on July 11, 2018, I participated in facilitated discussion as part of a group of public policy experts to give feedback on a draft report pursuant to a Public Strategies contract with the Office of Family Assistance, Administration for Children and Families, U.S. Department of Health and Human Services.

Q. What is your relationship to the BPF?

A. They have engaged me to research issues relating to the regulation of electric utilities in Mississippi. I have no other relationship with them.

Q. For the record, who is the BPF?

A. The Bigger Pie Forum is a nonprofit, non-partisan educational foundation dedicated to improving public policy and the economy of Mississippi through research and sharing of educational materials.

Q. What exactly is Integrated Resource Planning (IRP)?

A. Integrated resource planning was developed in the 1980s and was also known as least-cost planning.[1] In 1988, the National Association of Regulatory Utility Commissioners ("NARUC") published a handbook on least-cost planning for state utility regulatory commissioners. Produced through the collaborative effort of several state regulatory commissions, NARUC, the Oak Ridge National Laboratory, Edison Electric Institute, and others, the handbook defined least-cost planning as "a planning process that can be used by utilities in forecasting needs, assessing uncertainties, and hedging risks. The planning process can then be reviewed and used by regulators to help judge the suitability of proposed changes in the utilities operations. … [It] is a strategy whose goal is to provide reliable electrical services at the lowest overall cost with a mix of supply-side and demand-side resources, a flexible system that helps utilities and regulators to respond to uncertainties and to cope with risks."[2]

Integrated resource planning is the preferred term used today, perhaps because it better describes the holistic and comprehensive goals that consider both the supply side and demand side in the broader societal context of safety and environmental stewardship.

When the handbook was published, nearly two-thirds of the states had some form of, or were considering implementing, integrated resource planning. The handbook also listed the following goals:

1. Satisfying demand for electricity "from the least costly mix of supply additions and energy-efficiency improvements, thus resulting in economic efficiency."

2. Developing "a flexible and diversified plan able to respond to uncertainty and to minimize risk by using both short- and long-lead-time responses to current needs and expected demands … [thus ensuring] adequate and reliable service."

3. Making it easier for commissions "to strike a balance among revenue contributors of the various customer classes" while achieving "perceived equity among the utility, its shareholders, its customers, and other involved parties."[3]

These points summarize the common parameters of integrated resource planning, but state utility regulatory commissions and state legislative bodies can more precisely define the goals of integrated resource planning for their own purposes and circumstances, and there is some variability among the states.

The other important point to keep in mind is that adoption of a rule establishing integrated resource planning is more about establishing a process. It takes advantage of the strengths of the American system of how we regulate utilities. The plans become working documents that can help the PSC fulfill

[1] Joseph H Eto, editor, *Least Cost Utility Planning: A Handbook for Public Utility Commissioners, Volume 1,* National Association of Regulatory Utility Commissioners, October 1988, p. 6. <http://eta-publications.lbl.gov/sites/default/files/least_cost_utility_handbook_vol_1.pdf>.
[2] Idem.
[3] Ibid, p. 7.

its mission in granting certificates of convenience and deciding rate cases. It takes advantage of the participatory nature of the regulatory system.

It should be mentioned that the federal Energy Policy Act of 1992 also defines integrated resource planning, but the definition does not add to the understanding of what I just described.

However, Rachel Wilson and Paul Peterson of Synapses Energy Economics, Inc., add a criterion to those discussed above. In order for a state to be listed as having a "full-featured" integrated resource planning requirement, it needs to be integrated with ratemaking and construction siting decisions.[4]

Eric Hirst of the Oak Ridge National Laboratory and Charles Goldman of the Lawrence Berkeley Laboratory coauthored an article in 1991 that included a table highlighting the difference between traditional planning and integrated resource planning.[5]

Traditional planning	**Integrated resource planning**
Focus on utility-owned central-station power plants	Diversity of resources, including utility-owned plans, purchases from other organizations, conservation and load-management programs, transmission and distribution improvements, and pricing
Planning internal to utility, primarily in system planning and financial planning departments	Planning spread among several departments within utility and often involves customers, public utility commission staff, and nonutility energy experts
All resources owned by utility	Some resources owned by other utilities, by small power producers, by independent power producers, and by customers
Resources selected primarily to minimize electricity prices and maintain system reliability	Diverse resource-selection criteria, including electricity prices, revenue requirements, energy-service costs, utility financial condition, risk reduction, fuel and technology diversity, environmental quality, and economic development

Note how Hirst and Goldman describe how much more comprehensive integrated resource planning is than traditional planning that was housed exclusively within electric utilities. The plans require looking for resources beyond those central stations owned by the electric utilities in search of the least-cost options. The planning is spread more widely within the corporate structure of the electric utility, involving more internal expertise. The plans are shared with state utility regulatory commissions and

[4] Rachel Wilson and Paul Peterson, "A Brief Survey of State Integrated Resource Planning Rules and Requirements," Synapse Energy Economics, Inc., Prepared for the American Clean Skies Foundation, April 28, 2011, p. 2. < http:// www.cleanskies.org/wp-content/uploads/2011/05/ACSF_IRP-Survey_Final_2011-04-28.pdf>.

[5] Eric Hirst and Charles Goldman, "Creating the Future: Integrated Resource Planning for Electric Utilities," *Annual Review of Energy and the Environment*, Vol. 16, 1991, p. 92. <https://emp.lbl.gov/sites/all/files/journal-annual-review-energy-1991.pdf>.

their staff and are opened up to other experts and the public. The plans are not confined to the resources of the electric utilities. The selection criteria expand beyond prices and reliability to consider risks, environmental quality, and other factors. In summary, the plans are more comprehensive, holistic, and take advantage of the participatory characteristic of the American regulatory system.

Q. Why did least cost planning, that is, integrated resource planning, develop at that time?

A. I see two fundamental reasons and a contributing factor. First, it was one response by state utility regulatory commissions to a pivotal change in the electric utility industry. Second, it was enabled by technological change in the field of forecasting.

The first fundamental reason is this: Investor-Owned Utilities (IOUs) began asking for rate increases. Prior to the 1970s, the norm was rate *decreases*. This led to important changes in the way state utility regulatory commissions govern, including the submission of these plans intended to manage risks to produce reliable service for the least cost.

There are two important reasons why IOUs began asking for rate increases. First, the IOUs ran into diseconomies of scale. From the debut of the industry at the turn of the twentieth century until the 1960s, the price for producing and delivering electricity was declining because of larger generating plants and better technologies. However, they began running into physical limits in the 1960s. The higher steam pressures and heat used to turn the turbines of large generators began causing failures of blades and valves, requiring the plants to shut down for repairs and making the generation of electricity costlier.[6]

This happenstance is consistent with microeconomic theory. At some point, a plant can become too big, leading to higher costs, or in the parlance of economists, *diseconomies of scale*.[7]

The timing was unfortunate. The economic events of the 1970s only compounded the problem. The energy crisis and stagflation further stressed the ability of electric utilities to contain costs. In 1973, the same year the Arab Oil Embargo began, 16.9% of electric power generated for resale used petroleum. The impact from coal strikes and regulatory restrictions on natural gas exacerbated pricing for these

[6] Erik Randolph, "Improving Mississippi's Utility Regulatory Structure: Review and Recommendations, especially from the Perspective of Regulating the Electric Industry," Paper Submitted to the Mississippi Bigger Pie Forum, October 17, 2017, pp. 3, 6, and 7 <https://biggerpieforum.org/wp-content/uploads/2018/03/Improving-MS-Utility-Reg-Struct-ERC-2017Oc17.pdf>; and also Richard. F. Hirsh, Technology and Transformation in the American Electric Utility Industry, Cambridge University Press, 2003, Chapter 6.

[7] F.M. Scherer, *Industrial Market Structure and Economic Performance*, Second Edition, Chicago: Rand McNally College Publishing Company, 1980, pp. 84-88.

commodities. These three energy sources—petroleum, natural gas, and coal—comprised 81% of the energy sources used to generate electricity in 1973.[8]

Average price data published by the Energy Information Administration highlight the challenge. The average residential price for electricity had fallen 15% from 1960 to 1970, consistent with long-run economies of scale witnessed since the earliest years of the industry. That all changed in the 1970s. The average residential price for electricity more than doubled—an increase of 145%—from 1970 to 1980. Although no decade since has matched the magnitude of that rate increase, the prior era of declining prices has not returned. Prices increased 45% in the 1980s, 5% in the 1990s, and 40% in the 2000s. Through 2017, the average price has increased 12%, which is on track for a 17% increase for the 2010s.[9]

This brief history demonstrates why least-cost planning, i.e., integrated resource planning, came into being. State utility regulatory commissions looked for ways to control the onslaught of triple-digit price increases over a single decade. The least-cost plans provided some level of assurance that the electric utilities were acting prudently, considering risks of various fuel sources, and had plans in place to handle volatility, all with the goal of delivering reliable service at the least cost to consumers.

It is worth stressing that the emphasis was on the *least cost,* which is aptly named. All energy sources used to turn the turbines were placed on an equal footing and the most important criterion was delivering the least cost option.

The 1979 nuclear accident at Unit 2 of Three Mile Island in Middletown, Pennsylvania, was an aggravating factor. Not the accident itself, but the economic consequence of the accident. I call it an aggravating factor because the pivotal change was already set in motion from the energy crisis that began earlier in the decade, evidenced by the exorbitant increases in electricity prices.

What the Three Mile Island accident essentially did was cause a massive abandonment of planned nuclear facilities. There were 20 nuclear plants under construction and another 40 being planned. Additional problems, such as construction mismanagement, high interest rates, and load forecast errors, exacerbated the problem.[10] This was a major shift in the nation's strategy for fulfilling future energy demand, a strategy that began with President Dwight Eisenhower's Atoms for Peace program. The

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[8] Randolph, p. 7; Hirsh, Chapter 6; and U.S. Energy Information Administration, "Table 7.2b, Electricity Net Generation: Electric Power Sector," *June 2018 Monthly Energy Review*, June 2018. <https://www.eia.gov/totalenergy/data/browser/xls.php?tbl=T07.02B>. Percentages calculated by the witness.

[9] U.S. Energy Information Administration, "Table 9.8, Average Retail Prices of Electricity," *June 2018 Monthly Energy Review*, June 2018. <https://www.eia.gov/totalenergy/data/monthly/pdf/sec9_11.pdf>. Percentages calculated by the witness.

[10] Cheryl Harrington, David Moskovitz, Tom Austin, Carl Weinberg, and Edward Holt, *Integrated Resource Planning for State Utility Regulators: A Compilation of Papers Prepared from the Workshop Presentations of The Regulatory Assistance Project*, The Regulatory Assistance Project, June 1, 1994, p. 5. <https://www.raponline.org/wp-content/uploads/2016/05/rap-harrington-integratedresourceplanning-1994-06.pdf>.

promise that nuclear power held to become America's dominant energy source was abandoned, and total nuclear-generated electricity would never exceed 21% of production by the electric power sector.

Another contributing factor to the price increases was new environmental regulations that delayed siting decisions and required electric utilities to adopt various abatement processes.[11]

The second fundamental reason that least cost planning developed at that time was the advancement of technology to do long-range planning. Advancements in computer technology made available computational power to do more sophisticated economic modeling and risk analyses. These advancements enhanced the ability to do long-range planning.

For example, the advancement of computation power (hardware) and computer programming (software) have come together to simplify the task of planning. Econometric modeling, sensitivity or risk analyses, financial analysis, and energy-use modeling are all examples of fields that have grown in sophistication that aid the task of forecasting and planning. Today, there are various software planning tools available to electric utilities.[12]

There is another factor that needs to be mentioned. Federal legislation and regulatory orders have promoted the idea of integrated resource planning. For example, the Public Utility Regulatory Policies Act of 1978 opened up generation of electricity to non-utility generator firms.[13]

Q. Prior to that time, didn't regulatory commissions simply entrust electric utilities to plan internally?

A. Yes, they did. And with falling electricity prices while the economy as a whole generally experienced inflation, there was little reason to second-guess electric utility managers. The industry at that time could be characterized as a unique culture striving to continuously improve output and efficiency with growing usage and declining prices, which Richard Hirsh described as the "one-upmanship" style of adopting the newest and best technologies.[14]

However, note that this is contrary to what economic theory predicts. In theory, monopolies are not supposed to be innovative because they lack intra-industry competition. However, the overriding factor at that time was a culture of interindustry competition, where IOUs strove to be the best technologically, driving down production costs and delivering better service at lower prices. Investors

[11] Hirsh, Chapter 6.
[12] For one list, see The Tellus Institute, *Best Practices Guide: Integrated Resource Planning for Electricity*. Boston: U.S. Agency for International Development, 2012. <http://www.blpc.com.bb/IRP/Images/bestprac.pdf>.
[13] Lisa Schwartz, Project Manager and Technical Editor; Fredrich Kahrl, Andrew Mills, Luke Lavin, Nancy Ryan, and Arne Olsen, *The Future of Electricity Resource Planning*, Energy and Environmental Economics, Inc., Lawrence Berkeley National Laboratory, Report No. 6, LBNL-1006269, September 2016, pp. 8-9. <https://emp.lbl.gov/sites/all /files/lbnl-1006269.pdf>.
[14] Hirsh, p. 75, and Randolph, p. 6.

benefited, and consumers benefited. Additionally, electrification caused many spinoff technologies and products that depended on electric power, causing the economy to expand even more.

Q. Why can't the PSC now entrust electric utilities to continue the practice of making the best decisions when it comes to long-range planning, without having to file plans with the PSC?

A. It is not so much a question of trust, but one of verification. Electric utilities have been given exclusive license to be the sole suppliers of electricity within their service territories in exchange for being regulated. In other words, they have been entrusted to deliver reliable and reasonably priced electricity.

At the same time, it is the duty of the PSC to verify that electric utilities are taking every precaution and acting prudently in fulfilling their end of the bargain. Based on comments and testimony submitted by both Entergy Mississippi, Inc., and Mississippi Power Company to Docket 2008-AD-477, both electric utilities already have internal planning processes that approximate what is required by integrated resource planning. Presumably, this is still the case and not in question. The important point is that adopting an integrated resource planning rule will give the PSC a tool utilized by most states that can help the PSC fulfill its mission in overseeing electric utilities and making sure they are acting prudently.

Because resource management has become more complicated, the need is now even greater. The presumption has been that IOUs are acting prudently in managing those resources and are planning for many of the complexities with the volatility of energy sources, demand-side management or conservation measurement, and other factors, such as complying with environmental laws and regulations. Requiring that electric utilities periodically file integrated resource plans avoids that presumption, giving the PSC the opportunity to verify that indeed each electric utility has adequate plans in place for various contingencies that will provide ratepayers with electricity for the least cost.

Furthermore, by filing these plans with the PSC, it gives the Public Utilities Staff and interested parties an opportunity to scrutinize them and make recommendations for improvement. A full vetting of the plans and exchange of ideas will work to strengthen them. Knowing that their plans will be revealed should incentivize electric utilities to do a good job in developing them. The feedback they receive can help electric utilities strengthen their plans and ultimately their operations. Finally, the transparency of the process can give the PSC and the public confidence that the electric utilities are acting in the public interest.

Q. Are you suggesting an IRP requirement will help promote the public interest?

A. Yes. Specifically, it will help the PSC in its duty to look after the public interest.

In the traditional view, the public interest meant reliable service, without discrimination at minimal standards of service and safety, at reasonable prices. In practice, this has meant that utility regulatory commissions balance the interest of consumers with those of investors. The lowest prices alone do not define the public interest. There must be sufficient investment to allow for service that can meet peak

demand without disruption, to restore power quickly when storms wreak havoc, to meet growing demand for power, and to guarantee the continuation of those standards into the foreseeable future. In the expansive view of the public interest, all those goals remain but others, such as environmental protection, promoting conservation and efficiency, and public health protection, have been added. [15]

Integrated resource planning works with both the traditional and expansionist views of the public interest. It is about making sure that electric utilities continue with proper planning to ensure that reliable service at reasonable prices can be achieved into the future, and it is about planning for the various additional responsibility that electric utilities must now consider.

Economists define the public interest differently, and integrated resource planning helps in addressing their concerns as well. Economists define the public interest as guarding against the abuses of monopoly power while maximizing the social welfare.[16] Because IOUs are monopolies, they do not have the same incentives as firms in competitive market structures to act prudently. Firms in competitive market structures—whether oligopolies, monopolistic competition, or perfect competition—can suffer losses and even go out of business if they misjudge future resources or misjudge how to utilize those resources cost-effectively. They do not have the ability to pass the costs of their misjudgments on to the consumers if their competitors guess better than they do. This is how competitive markets maximize the social welfare.

However, a monopolist can pass off the costs of imprudent decisions and misjudgments because it does not have to worry about intra-industry competition. Consumers have only one possible provider. From an economic view, the lack of market discipline from competitors introduces a moral hazard. A monopolist does not suffer the same consequences and can pass off its imprudent decisions on to its consumers. This moral hazard has the real potential to limit allocative efficiencies in a capitalist system and can result in deadweight losses for the overall economy.

For this economic reason, it makes sense that the PSC adopt integrated resource planning.

Q. What do you mean by allocative efficiency and deadweight loss? What do they have to do with integrated resource planning?

A. Integrated resource planning is one way to address the shortfall in allocative efficiencies by monopolies. Here is how one modern economics textbook defines allocative efficiency: “An efficient

[15] Randolph, p. 10, and Eric Filipink, “Serving the ‘Public Interest’–Traditional vs. Expansive Utility Regulation,” National Regulatory Research Institute, NRRI Report 10-01, December 30, 2009. Summary taken from Figure 1, p. 7.

[16] Randolph, p. 9, and Sanford V. Berg and John Tschirhart, *Natural Monopoly Regulation: Principles and Practices*, Cambridge: Cambridge University Press, 1988, p. 285.

economy is one that produces what people want at the least possible costs."[17] This describes the desired result from market economies that makes society wealthier.

However, monopolies reduce the allocative efficiencies of an economy, making the economy less efficient, which is what economists call deadweight loss. Because of the lack of competition, unregulated monopolists are not bound to charging the least costs. Here is how the same economics textbook defines in its glossary deadweight loss from a monopoly: "The social cost associated with the distortion in consumption from a monopoly price."[18]

When a monopolist does not adequately plan for the future, it is another inefficiency thrust on society. It is an irrevocable loss for the overall economy, and everyone is less wealthy for it. If the PSC adopts a rule requiring integrated resource planning, it will not guarantee that good decisions will be made 100% of the time, but it will provide another safeguard against this kind of deadweight loss. It provides the PSC and the public some level of assurance that they do not have now, assurance that electric utilities are adequately considering various resource utilization scenarios to help them deliver their electricity at the least cost over the long run in a comprehensive way.

Q. If I understand your testimony correctly, if our free-market system is functioning properly, consumers get products for the least costs, but monopolies do not provide their products for the least cost. Are you saying that an IRP rule would help the PSC approximate the least cost price for electric utility customers?

A. Yes, that is what I am saying. Integrated resource planning is a tool that can help the PSC bring the price of electricity closer to what it would be if it were a competitive market structure. It acts as a safeguard with regard to decisions being made on what resources to use in the generation of electricity, so consumers can receive electricity for the least cost.

Q. Isn't planning in the economy a bad thing? Don't we want to rely on market forces?

A. This is a common misunderstanding. In a free market system, such as ours, it is the firms in the economy who do the planning. It is difficult to run a successful business without planning. Colleges and universities across this country have entrepreneurial programs, and having a business plan is a critical component of what they teach. All businesses need to plan, *including* regulated monopolies.

This differs from command economies where a central committee plans the price and the levels of production. This assumes these committees can do better than the market system, which we know from

[17] Karl E. Case, Ray C. Fair, and Sharon M. Oster, *Principles of Microeconomics,* 12th Edition, Boston: Pearson Education, Inc., 2017, p. 468. Case is professor of economics emeritus at Wellesley College, and Fair and Oster are professors of economics at Yale University. The witness has taught from and reviewed dozens of principles of economics textbooks, and they all provide similar definitions of allocative efficiency. The only reason the Case *et al* textbook was chosen is because it is the textbook selected by the economics faculty at York College of Pennsylvania for teaching principle courses.

[18] Case et al, p. 467.

experience and empirical studies they cannot. There is also the danger that legislation and regulation can substitute for or encroach on planning by many firms, thinking that the judgment of legislators and bureaucrats are better than managers and owners of businesses.

Neither case—central planning or legislative and bureaucratic encroachments on planning in the marketplace—has bearing on whether the PSC should adopt integrated resource planning. The responsibility for integrated resource planning will reside with the electric utilities. The firms themselves develop the plans. If anything, they will benefit from the utility governing process that allows outside experts to review their plans.

The question at hand is whether requiring electric utilities to submit integrated resource plans will enhance the ability of the PSC to be diligent in its duty to oversee the public interest. The presumption is that electric utilities are acting prudently and that they are planning. However, without competition, electric utilities are not subject to market discipline if they fail to plan adequately. They do not suffer the same consequences as firms in competitive market structures who plan poorly. This is the moral hazard I spoke of earlier. What better way is there to compensate for this moral hazard than to require electric utilities to file these plans? It puts these plans before the PSC and the public, allows the Public Utilities Staff to analyze them, and gives the PSC an informational basis to exercise its authority.

Q. If we accept your testimony that it is necessary for regulated monopolies to do long-range planning and that they are developing these plans now, what would be the point in adopting an IRP rule? Can we not just mandate that the plans be done and trust that they will be?

A. Requiring the submission of integrated resource plans takes advantage of the American system of governing public utilities, which is considered the best in the world. This assertion was explored in my paper *Improving Mississippi's Utility Regulatory Structure*, which was referenced earlier.

By and large, America has the best electricity system in the world. It was invented here. It has performed better than Britain's nationalized model. We have out-innovated other European models. We have lower prices. Germany pays three times as much, and Britain 76 percent more.[19]

The core strength of our system has been investor-owned utilities who are regulated by state utility commissions. The Banking Panic of 1907 was the pivotal event that shifted the preference to IOUs away from municipally-owned utilities.[20] In my opinion, the system of regulated IOUs deserves all the credit for the growth, development, innovation, and success of the industry. As a matter of comparison, based on my personal observations and experience, more and worse problems come from municipally-owned utilities than from IOUs. For example, consider the recent debacle with the municipal water company in

[19] Randolph, pp. 3, 6, 7, and 11. See also Hirsh, Chapters 1 through 3; Greg Palast, Jerrold Oppenheim, and Theo MacGregor, *Democracy and Regulation: How the Public Can Govern Essential Services*, London: Pluto Press, 2003; and Energy Information Agency, U.S. Department of Energy, International Energy Statistics, data for 2014. <https://www.eia.gov/beta/international/rankings/#?prodact=2-12&cy=2014, accessed 08/25/2017>.
[20] Hirsh, p. 22.

Flint, Michigan. As another example, the Philadelphia Gas Works, owned by the city, has long been considered Pennsylvania's worst run utility. This assertion is not claiming that the regulated IOUs are without problems. It is simply stating that in my observations—and those of others as well—municipal-owned utilities have been more problematic.

The secret to the success of America's electric industry is not that the electric utilities have been regulated but *how* they have been regulated. The system utilizes a special legal process benefiting from hundreds of years of English law. Five critical principles of the American system are as follows:

1. Transparency and participation,
2. Prices must be just and reasonable,
3. Utility investments cannot be confiscated,
4. Conflicting interests must be balanced, and
5. Prices must relate to costs. [21]

The reason America has had such success is the combination of relying on private investment and relying on this specialized legal process. By requiring transparency and allowing for participation in an open process with the backdrop that the PSC will seek a just and reasonable solution, the results have outperformed all other systems.

Subjecting planning of resources to this process will take advantage of this specialized process. It is not just the transparency but also the participation that matters within the constraints of the current system.

It is noteworthy to mention that the National Association of Regulatory Utility Commissioners has partnered with the United States Agency for International Development to help other countries learn and benefit from the U.S. experience.[22] Workshops on integrated resource planning have been part of technology exchange.[23] The Agency for International Development also sponsored a Best Practices Guide in integrated resource planning that was produced by the Tellus Institute in Boston.[24] Likewise, the World Resources Institute and the Prayas Energy Group provide an "Electricity Governance Initiative

[21] Randolph, p. 12, see Palast *et al*, p. 66.
[22] "About NARUC International," National Association of Regulatory Utility Commissioners, webpage, accessed on July 20, 2018. <https://www.naruc.org/international/about-international>.
[23] For example, *Workshop on Integrated Resource Planning*, National Association of Regulatory Utility Commissioners, Bangkok, Thailand, March 2011. <https://www.naruc.org /international/where-we-work/asia/thailand/workshop >.
[24] The Tellus Institute, Best Practices Guide: Integrated Resource Planning for Electricity, Boston: U.S. Agency for International Development, 2012. <http://www.blpc.com.bb/IRP/Images/bestprac.pdf>.

Toolkit" to help other nations establish good governance of electric utilities, and one of their "tools" is integrated resource planning.[25]

Q. Aren't you overlooking some of the defects with the American system?

A. I am not saying that the American system is perfect. There are known problems with it. Comparatively, however, it is the best.

And the problems are well known, especially with the base rate/rate of return system. There is the Averch-Johnson effect, which rewards overbuilding capacity.[26] There is the "gold-plating of expenses" effect, that encourages electric utilities to spend more lavishly.

Importantly to this docket, integrated resource planning is being offered as one of the potential strategies to address these weaknesses. For example, the Regulatory Assistance Project's guide to electricity regulations lists integrated resource planning as one of eight responses to these known weaknesses in the way the American system regulates electricity.[27]

Q. If electric utilities are conducting long-range planning anyway, why is it still necessary to vet those plans?

A. While we may presume that electric utilities are acting prudently, the PSC has a statutory duty to verify that those plans are being developed using the best methods and standards. Requiring that the plans are filed and allowing public participation in reviewing those plans further incentivizes electric utilities to do a good job. If the electric utilities do not make those plans transparent, it puts the PSC and the public at a disadvantage.

Q. If I am hearing you correctly, a new requirement to file integrated resource plans is more than simply an issue of transparency. Is that correct?

A. Yes, that is correct.

Transparency is a critical component. However, the process that happens afterward is equally important. The filing formalizes a process where the Public Utilities Staff can inspect and analyze the plans, and it allows for public inspection and participation to help the PSC in fulfilling its statutory duties,

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[25] Shantanu Dixit, Ashwini Chitnis, Bharath Jairaj, Sarah Martin, Davida Wood, And Amrita Kund, "10 Questions To Ask About Integrated Resources Planning," Electricity Governance Initiative, Working Paper, Prayas, Energy Group and World Resources Institute, May 2014. <http://www.wri.org/sites/default/files/wri_10questions_integrated_resources_planning.pdf>.

[26] The incentive to overbuild is named after two economists who published a paper on the effect in 1962. Harvey Averch and Leland L. Johnson, "Behavior of the Firm Under Regulatory Constraint," *American Economic Review* 52, 1962, pp. 1052-69. Although the evidence for the relationship in economic studies prior to the 1970s is dubious, the potential is still there. See Randolph, pp. 29 and 30.

[27] Jim Lazar, *Electricity Regulation in the US: A Guide,* Second Edition, The Regulatory Assistance Project, July 12, 2016, pp. 86-92. <http://www.raponline.org/wp-content/uploads/2016/07/rap-lazar-electricity-regulation-US-june-2016.pdf>.

which is captured well in the order establishing this docket. The second page of the order establishing this docket quotes Mississippi statute that state policy is to be "fair" and "in the interest of the public" and "consistent with the long-term management and conservation of energy resources by avoiding wasteful, uneconomic and inefficient uses of energy." These words describe well the purpose of integrated resource plans.

There is great potential for long-term benefits from an IRP requirement. It can help build public confidence that every measure is being taken that reliable, safe, and environmentally responsible electric service will continue to be obtained at the lowest possible price into the future. Confidence in electric service is necessary for economic growth. It will allow industry to grow that has the potential to bring jobs to Mississippi. Without such confidence, it will have the opposite effect.

Q. Are there any examples in which states have adopted integrated resource planning and saw savings?

A. Absolutely, there are examples. Here are a few.

The First Power Plan by the Northwest Power and Conservation Council representing Washington, Oregon, Idaho, and Montana led to the termination of two partially completed nuclear plants and investments in energy efficiency programs that are estimated to have saved $3.7 billion per year.[28]

The Wisconsin Public Service Commission found an alternative to a utility-proposed new 352-mile transmission line with no loss in reliability that saved $80 million.[29]

The Nevada Public Service Commission rejected an electric utility plan for the purchase of a coal generation plant in Utah and transmission lines, and a year later the utility presented a significantly less expensive alternative. [30]

In a survey of state regulatory commissions, NARUC found that 28 state commissions indicated that integrated resource planning has caused electric utilities to change resource acquisition decisions.[31]

Q. In your opinion, had an IRP rule been adopted, would it have prevented the approval of the Kemper Project? More importantly, do you think an IRP process would prevent such a debacle in the future?

A. It is always difficult to turn the clock back and predict whether there would be a different outcome if one factor was different at the time. However, integrated resource planning is a tool that the PSC was missing in 2009 when Mississippi Power Company filed for a Certificate of Public Convenience and

[28] Ibid, p. 110.
[29] Eto, p. 13.
[30] Idem.
[31] Michael Foley and Jessica O'Connor-Petts, *Utility Regulatory Policy in the United States and Canada: Compilation 1995-96 of the National Association of Regulatory Utility Commissioners*, National Association of Regulatory Utility Commissioners, Washington, D.C., 1996, p. 516.

Necessity to build an electric generation facility in Kemper County. As a matter of general policy, it is important that we give the PSC all the tools that it needs to perform its duties.

There is one important detail with the Kemper Project that would have been different if integrated resource planning were required at the time. As part of the certificate proceeding, Mississippi Power Company ("MPC") had marked its natural gas price forecasts as confidential. The Bigger Pie Forum requested to see the document and won an order by the Hinds County Chancery Court on August 6, 2012, for MPC to produce the document. The Mississippi Supreme Court affirmed the lower court's decision on April 10, 2014.[32] If there had been an integrated resource planning requirement, this entire legal proceeding would have likely been avoided because natural gas forecasts are part of integrated resource plans and would have been disclosed. Having this critical piece of information before the public earlier may have made a difference in the process. Furthermore, the integrated resource plan would have been a critical component of the proceedings.

This is not to suggest that integrated resource planning is the only factor that would have made a difference then or could make a difference in the future. In my report sponsored by the Bigger Pie Forum, which was mentioned in the beginning of this testimony, I focused on the governing structure of how Mississippi regulates utilities and provided a list of recommendations to strengthen that structure, including establishing an office of a consumer advocate. That recommendation is especially likely to have made a difference.

Another idea that could have made a difference and could prevent such an occurrence in the future is if the PSC had adopted a modification to its procedure for considering issuing certificates of public convenience and necessity for the construction of electricity generating plants. Upon acceptance of evidence demonstrating need for new capacity, the PSC could require an electric utility to issue a Request for Proposals ("RFP") to fulfill that need. The utility would then choose among the proposals, including its own, and submit its choice, along with the other proposals and the criteria it used for making its choice, to the PSC for approval. Georgia currently has such a rule as part of its integrated resource planning requirement:

> For each block of required new supply-side resources identified in the IRP, the utility shall propose a schedule for conducting a RFP Process, including specifically the expected date upon which the RFP shall be issued that solicits each such new supply-side resource along with the

[32] *Mississippi Power Company v. Mississippi Public Service Commission and Bigger Pie Forum*, LLC, No. 2013-CC-00682-SCT.

amount of capacity required. This information shall be considered public information and made available to all potential bidders.[33]

The point is that integrated resource planning, along with other measures, is a tool that could have made a difference, and it is one that the PSC can adopt under its current statutory authority without the legislature passing legislation or granting it additional powers.

Q. What other state regulatory commissions require electric utilities to file integrated resource plans?

A. The exact number is in dispute, depending on how integrated resource planning is defined. According to Rachel Wilson and Bruce Biewald of Synapse Energy Economics, Inc., and Regulatory Assistance Project, twenty-eight states have the requirement,[34] including seven southern states. Most have established the rule or order by the state utility regulatory commission, just as the PSC is now considering. The table below lists the 28 states and highlights the southern states in bold font.

Mandated by state statute	Delaware, **Georgia**, Minnesota, Montana, Nebraska, Nevada, New Hampshire, **South Carolina**, South Dakota, Vermont, and **Virginia**
Established by rule or order	Arizona, **Arkansas**, Colorado, Hawaii, Idaho, Indiana, **Kentucky**, **Louisiana**, Missouri, New Mexico, **North Carolina**, North Dakota, Oklahoma, Oregon, Utah, Washington, and Wyoming

In addition, ten states have requirements that electric utilities file long-range plans. These states are California, Connecticut, Florida, Illinois, Massachusetts, Michigan, Ohio, Pennsylvania, Texas, and Wisconsin.[35]

Wilson and Biewald used a stricter definition of integrated resource planning than other experts. Under their definition, a state must be "full-featured," meaning it must be fully integrated into the proceedings for deciding rate base increases and certificate of convenience for new plant capacity. A paper by the Lawrence Berkeley National Laboratory that was managed and edited by Lisa Schwartz noted that the definition used by Wilson and Biewald did not include California and Texas, which rescinded the plans after adopting electric competition. Furthermore, the Lawrence report noted, the Tennessee Valley Authority, which covers portions of Tennessee, Alabama, and Mississippi, is required to file integrated resources plans under the Energy Policy Act of 1992.[36]

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[33] Georgia Rule 515-3-4 {Integrated Resource Planning} .04 {Identification of Capacity Resources} (3) {Request for Proposals Procedure for Long-Term New Supply-Side Options} (b) {Requirement to use an RFP Process}. <http://rules.sos.state.ga.us/gac/515-3-4?urlRedirected=yes&data=admin&lookingfor=515-3-4>.

[34] Count and table based on work by Rachel Wilson and Bruce Biewald, *Best Practices in Electric Utility Integrated Resource Planning: Examples of State Regulations and Recent Utility Plans,* Regulatory Assistance Project and Synapse Energy Economics, Inc., June 21, 2013. <https://www.raponline.org/wp-content/uploads/2016/05/rapsynapse-wilsonbiewald-bestpracticesinirp-2013-jun-21.pdf>.

[35] Idem.

[36] Schwartz, p. 9.

Therefore, it is not unreasonable to count states that require long-range planning in the tabulation, bringing the total to 38 states that have either integrated resource planning or long-range planning requirements. This approach was used by NARUC in its 1995-96 report when it tabulated the number of states that adopted integrated resource planning.[37] In some cases, these long-range plans can be extensive and are nearly indistinguishable from integrated resource planning requirements. For example, Pennsylvania requires electric utilities to file annually with the following requirements:

- Annual projections of electricity demand by residential, commercial, industrial and utility sectors, including alternative scenarios for demand growth, over twenty years.
- Annual projections of all sources of supply over twenty years.
- Annual examinations of all practical and economical energy conservation programs.
- Explanations of all integrated demand-side and supply-side options to derive a resource mix to meet consumer demand.
- Comparisons of the utility's plan to meet consumer demand with alternative plans over the next twenty years.
- Discussions of planned construction of any new generation or production facilities, including the types of fuels and generation methods, financial impacts, and the alternatives that were rejected.[38]

Pennsylvania still requires submission of annual long-range plans, but the requirements are less meaningful because of electric competition. Also, Pennsylvania enacted renewable energy portfolio standards that further adjusted integrated resource planning goals away from the concept that the least cost is the foremost goal.

Texas is another example. It has one of the most competitive electricity markets in the world.[39] Like Pennsylvania and California, Texas requires electric utilities to file long-range plans. Introducing competition is a direction that Mississippi could consider, but it would require legislation. The adoption of an integrated resource planning rule can be done immediately by the PSC.

Q. Could you summarize the relationship between electric competition and integrated resource planning?

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[37] Foley, p. 516.

[38] Title 66, Pennsylvania Consolidated Statutes, §524. < http://www.legis.state.pa.us/cfdocs/legis/LI/consCheck.cfm?txtType=HTM&ttl=66&div=0&chpt=5&sctn=24&subsctn=0>.

[39] Pat Wood III and Gürcan Gülen, "Chapter 2. Laying the Groundwork for Power Competition in Texas," in L. Lynne Kielsing and Andrew N. Kleit, editors, *Electricity Restructuring: The Texas Story*, Washington, D.C.: The AEI Press, 2009, p. 22.

A. Certainly. If a state restructured to allow for electric competition, integrated resource planning requirements are less meaningful. Competition provides very powerful market incentives to plan well, and market disincentives if they do not. Guessing wrong or poor planning can cause economic loss, and the cost is not automatically passed on to the consumers because of competition.

However, some states that have adopted competition still find it advantageous for electric utilities to submit long-range plans. California and Pennsylvania were the first two states to restructure and still require the filing of long-range plans.[40]

For states that have not restructured, such as Mississippi, the full scope of integrated resource planning is still relevant.

Q. Is there variation among IRP requirements among the states that have adopted it?

A. Yes. Not only is there variation among the requirements, there is variation in how frequently IRPs need to be filed—most require filing every 2 to 3 years. According to Wilson and Biewald, the filing requirements for the states that fulfill their definition of having an IRP process are as follows.[41] Southern states are written in bold text.

Every two years	Arizona, Delaware, Idaho, Indiana, Minnesota, Montana, New Hampshire, **North Carolina**, North Dakota, Oregon, South Dakota, Utah, **Virginia**, Washington
Every three years	**Arkansas**, **Georgia**, Hawaii, **Kentucky**, **Louisiana**, Montana, Missouri, Nevada, New Mexico, Oklahoma, **South Carolina**, Vermont
Every four years	Colorado
Every five years	Nebraska
Not specified	Wyoming

Fourteen states require electric utilities to file plans every two years, and twelve states require plans to be filed every three years. However, there are nuances that are not captured by the chart. For example, the Arkansas rule states that the plans need to be filed every 1 to 3 years as determined by each utility.[42] North Carolina makes it plain that each utility must "keep current" its integrated resource plan.[43] Georgia requires interim reports every six months,[44] and South Carolina requires utilities to file "short-term action plans" for each of the intervening years.[45]

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[40] See also Schwartz, pp. 10-14.
[41] Wilson and Biewald, p. 6.
[42] Arkansas Public Service Commission, "Resource Planning Guidelines for Electric Utilities," Docket 06-028-R, Order 6, Attachment 1, § 6.1, January 4, 2007. <http://www.apscservices.info/pdf/06/06-028-r_57_1.pdf>.
[43] North Carolina Utilities Commission, Rule R8-60: Integrated Resource Planning and Filings, § c <http://ncrules.state.nc.us/ncac/title%2004%20-%20commerce/chapter%2011%20-%20utilities%20commission/04%20ncac%2011%20r08-60.pdf>.

These nuances stress that these planning documents are *working* documents. A working document is one that is continually referred to and updated as new information and analysis become available. This realization argues in favor of more frequent filing requirements or some mechanism to verify that the plans are being updated, such as the interim reporting requirements in Georgia and South Carolina.

There is also variance in the length of time for which the utilities must plan. According to Wilson and Biewald, below are the planning horizons.[46] Again, southern states are written in bold text.

10 years	**Arkansas**, Delaware, Oklahoma, South Dakota, Wyoming
15 years	Arizona, **Kentucky**, Minnesota, **North Carolina**, **South Carolina**, **Virginia**
20 years	**Georgia**, Hawaii, Idaho, Indiana, **Louisiana**, Missouri, Nebraska, Nevada, New Mexico, North Dakota, Oregon, Utah, Vermont, Washington
Multiple periods	Montana
Utility determined	Colorado
Not specified	New Hampshire

Half the states have 20-year planning horizons. Six states have 15-year planning horizons, and five have 10-year planning horizons. Although longer horizons mean forecasts are less reliable, the planning documents need to cover enough time to allow for changes in fixed plants.

Only two states—Arizona and Georgia—require inclusion of decommissioning costs in electric utility plans, and five states—Colorado, New Mexico, North Carolina, South Carolina, and Utah—require the plans to provide information on the life expectancy of generating facilities. [47]

Q. Are there reasons why electric utilities might oppose integrated resource planning?

A. Yes. While electric utilities may come up with numerous reasons for not wanting the requirement, I see three basic reasons that deserve some attention.

First, they might see this as further interference into their internal decision-making process. The compact of regulating utilities goes back to the birth of the electric industry, and electric utilities were entrusted with these decisions. This is only a natural and understandable response.

A second reason might be that they are already planning, and when needed, the PSC can see those plans.

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[44] Georgia Public Service Commission, Rule 515-3-4-.05 Development of Integrated Resource Plan, § 5. <http://rules. sos.state.ga.us/gac/515-3-4?urlRedirected=yes&data=admin&lookingfor=515-3-4>.
[45] South Carolina Public Service Commission, Appendix A, Order No. 91-885, Docket No. 87-223-E, § A2, October 21, 1991. <https://www.scstatehouse.gov/code/t58c037.php>.
[46] Idem.
[47] Ibid, p. 8.

A third reason might be that they fear that integrated resource plans can be used to leverage other changes by imposing unwanted additional requirements, such as environmental regulations related to climate change.

Q. Do you see these as good reasons to justify the PSC not to adopt an IRP?

A. No, I do not. This is not to say these reasons are invalid, but rather the benefits of an IRP rule outweigh the concerns.

First, the question of interfering with the decision-making of electric utilities is misplaced and somewhat obsolete. If they are not doing so already, electric utilities need to be planning and using best-practice techniques in the planning process. An IRP rule is the best way to know for sure that they are. It falls squarely within the duty and mission of the PSC, and as explained, is consistent with the American system of regulating investor-owned utilities.

This first objection may be related to reluctance toward allowing the public into the planning process, although electric utilities may not directly testify as such. However, as already explained, this is part of the strength of the American system. The process has been generally managed well by state utility regulatory commissions, and the results are a testimony to that fact. There is no good reason not to allow resource planning to benefit from this time-tested process of allowing public review within this framework.

Moreover, we can all sympathize and wish for the time when electric utilities were entrusted to make these decisions internally. However, the reality today is different. The world is more complex, and electric utilities have been regularly asking for rate increases, not rate decreases. If circumstances change again and we begin to witness decreasing rates on a regular basis, then this first concern would hold more sway.

The answer to the second concern is similar to the answer to the first concern. The issue is not whether electric utilities have been planning and whether the PSC can see those plans when needed. The issue is formalizing the process, making those plans transparent to all interested parties, and helping the PSC more effectively fulfill its mission. Again, it takes advantage of the time-tested system of how IOUs are regulated in America.

On the third concern, integrated resource planning does not of itself impose other regulatory standards. These standards are imposed by separate processes, and often they are imposed by other regulatory agencies. The requirement under consideration today is about formalizing electric utility planning for the public interest. The concern that the IRP rule will be used to impose unwanted requirements can be minimized by crafting the IRP rule in accordance with a narrow set of goals, such as price and reliability, when the final order is adopted.

For example, the PSC rejected integrated resource planning in 2009 as part of four proposed standards pursuant to the Energy Independence and Security Act ("EISA") of 2007. However, the federal standards for integrated resource planning were complicated with specifications on how energy efficiency should be counted as a resource. More ink was devoted to object to the energy efficiency portion of the federal standard than to the concept of integrated resources planning. At the time, neither Entergy or Mississippi Power objected to the concept of planning, and both testified that they do that kind of planning internally. The current docket before us strips away those other federal standards and allows Mississippi to craft its own standards for integrated resource planning.

Q. Do you see it as burdensome for electric utilities?

A. No, I do not, and for some very simple reasons.

First, electric utilities have already testified that they are planning now and are required to provide planning information to the PSC upon request to help the commission analyze electricity needs. § 77-3-14 (2), Mississippi Code of 1972, states the following:

> The commission shall develop, publicize and keep current an analysis of the long-range needs for expansion of facilities for the generation of electricity in Mississippi, including its estimate of the probable future growth of the use of electricity, the probable needed generation reserves, the extent, size, mix and general location of generating plants and arrangements for pooling power to the extent not regulated by the Federal Energy Regulatory Commission and other arrangements with other utilities and energy suppliers to achieve maximum efficiencies for the benefit of the people of Mississippi, and shall consider such analysis in acting upon any petition by any utility for construction. *Each public utility engaged in the generation, transmission and distribution of electric energy shall, upon request of the commission, submit to the commission its forecasts and plans for the addition of generating capacity planned by the utility for an ensuing five-year period and shall furnish to the commission such documents and proof with respect to the need therefor as the commission may reasonably require.* … [emphasis added]

Second, Entergy also provides electric service to customers in Arkansas and Louisiana and currently files integrated resource plans with the Arkansas Public Service Commission and the Louisiana Public Service Commission. Georgia Power, also owned by Southern Company, like MPC, already files integrated resource plans with the Georgia Public Service Commission.[48]

[48] *2015 Integrated Resource Plan* for Entergy Arkansas, Inc., Docket 07-016-U-Doc. 49 <http://entergy-arkansas.com/content/transition_plan/07-016-U_49_1.pdf and http://entergy-arkansas.com/integrated_planning>; *2015 Integrated Resource Plan* for Entergy Gulf States Louisiana, LLC., and Entergy Louisiana, LPSC Docket No. I-33014, Final Report Filed August 3, 2015 <http://www.entergy-louisiana.com/content/irp/2015_0803_Louisiana_Final_IRP_Public.pdf and http://www.entergy-louisiana.com/irp/2015_irp.aspx>; *2016 Integrated Resource Plan for Georgia Power Company*, O.C.G.A. § 46-3A-1 <http://mediad.publicbroadcasting.net/p/wabe/files/201602/2016_irp_main_doc__pdf_.pdf>.

What needs to be kept in mind is that the fundamental purpose of integrated resource planning is to provide electricity over the long run for the least cost, meaning that any additional administrative costs should be more than offset by the savings. Once electric utilities file their first plans, the administrative costs of modifying the plans for subsequent submissions should be less.

Additionally, these are working documents intended to aid the decision-making process on a continual basis. The IRP process benefits the electric utility by fostering cooperation and communications within the organizational structure of the electric utility. It helps the electric utility with its long-term goals and to communicate its plans.[49]

Q. Can you summarize your opinion on the adoption of an IRP rule?

A. Yes.

1. An IRP rule is totally consistent with the mission of the PSC and falls squarely within its statutory authority.
2. It is a tool to help the PSC fulfill its duty in making sure the public interest is being served and will better ensure the continuation of reliable electric service at the lowest possible cost.
3. It takes advantage of the American system of regulating investor-owned utilities, which is considered the best in the world. Part of this system includes transparency and public review within the context utility regulatory procedures.
4. It provides a check on monopoly power and helps address the weaknesses of the American system.
5. Other states that have adopted the process have claimed savings.
6. It can help the PSC in analyzing applications for certificates to build new plants and may help avoid making mistakes, such as with the Kemper County project.
7. Electric utilities have testified already in prior dockets that they conduct similar planning efforts. Therefore, it should not be burdensome for them.

Q. If the PSC would adopt rules requiring IOUs to file IRPs, do you have recommendations on what should be included in that rule?

A. Yes.

It is important to stress that the plans are to be kept current by the utility. It would make sense to follow Georgia's and South Carolina's examples by having some interim reporting requirement for the intervening years.

Requiring biennial filings make senses because it will take advantage of more frequent review by Public Utilities Staff and public comments. Keep in mind that the first filing will likely be the most difficult but

[49] Eric Hirst, Martin Schweitzer, Evelin Yourstone, and Joseph Eto, "Assessing Integrated Resource Plans Prepared by Electric Utilities," Energy Division, Oak Ridge National Laboratory, ORN/CON-298, February 1990, p. 1 <http://eta-publications.lbl.gov/sites/default/files/ornl_con-298.pdf>.

future filings should go smoother as the process is learned and kinks are worked out. Triennial filings are also reasonable, but then it becomes even more important to have an interim filing requirement for the intervening years.

There must be an opportunity for the public to review the plans and make comments and suggestions, and the electric utilities must be given an opportunity to modify or defend their plans. Obviously, for this to happen, all components of the plan cannot be concealed from review and must be open to public inspection.

Here are two ways public review can be accomplished. The two methods are not mutually exclusive of each other. Arkansas requires each electric utility to "organize and facilitate meetings" of stakeholder committees with a "good faith effort to properly inform and respond" to the committee, and then include with its filing a report on the results of the stakeholder committee process.[50] One advantage of requiring a stakeholder process before the plans are submitted is that it may resolve issues, which theoretically gives the PSC confidence that many issues have already been worked out and would reduce the time required for PSC review.

Another way would be for the PSC to open dockets on each utility's submitted plan based on a schedule, such as within sixty days after a filing, allowing for comments from the Public Utilities Staff and the public.

In either case, the plans must be reviewed and approved by the PSC. Conversely, the PSC should be able to reject or order modifications to the plans, requiring electric utilities to resubmit new or modified plans, whatever the case may be.

Longer planning horizons are not unreasonable. It is understood that the outyear forecasts are the least reliable, but the purpose of the plans is to think about the long-run. Longer planning horizons can capture more of the life cycles of the capital used in any phase of delivering the service, whether it be distribution, transmission, or generation. Longer planning horizons can also capture the depletion of energy sources used, providing more time to develop alternatives. A twenty-year planning horizon is the most popular among state requirements, and it would be a good starting point for Mississippi.

Energy efficiency is an important component, but the EISA standard that was rejected in 2009 wanted energy efficiency to be counted as a "priority resource."[51] I am not suggesting that the rejection was a mistake. My own preference is to keep energy efficiency separate from supply issues. As a matter of economic analysis, it is never good to attribute demand factors to supply, and energy efficiency is about reducing demand. Therefore, I recommend making energy efficiency its own category and reflecting its impact on the demand side of the equation, which will keep the analysis cleaner.

[50] Arkansas Public Service Commission, "Docket 06-028-R, Order 6, Attachment 1, § 4.8.
[51] Public Law 110-140, § 532, December 19, 2007.

The plans need to include information on any new generating facilities that may be needed. For each new planned facility, the information must include a discussion of the life cycle of the facility, including any decommissioning costs. Also, the discussion needs to include an analysis of alternatives, including purchasing power. I recommend that the PSC goes further and opts for a standard like Georgia's standard, requiring electric utilities to issue RFPs for new generating capacity.

The plans must include sensitivity or risk analysis and a discussion of how alternative plans compare and why the current plan is the best option.

Q. Does this conclude your testimony at the time?

A. Yes, it does.

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