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MISSOURI PUBLIC SERVICE COMMISSION

FILE NO. ER-2022-0337

REBUTTAL TESTIMONY

OF

JOHN J. REED

ON BEHALF OF

UNION ELECTRIC COMPANY

D/B/A AMEREN MISSOURI

February, 2023

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REBUTTAL TESTIMONY

OF

JOHN J. REED

1

2

I. INTRODUCTION AND SUMMARY

3

Q. Please state your name and business address.

4

A. My name is John J. Reed. I am President and Chief Executive Officer of Concentric Energy Advisors, Inc. ("Concentric") and CE Capital Advisors, Inc. ("CE Capital"), which has its headquarters at 293 Boston Post Road West, Suite 500, Marlborough, Massachusetts 01752.

5

6

Q. On whose behalf are you submitting this testimony?

7

A. I am testifying on behalf of Union Electric Company d/b/a Ameren Missouri ("Ameren Missouri" or the "Company").

8

9

Q. Did you previously submit testimony in this case?

10

A. Yes, I submitted Direct Testimony on August 1, 2022.

11

Q. What is the purpose of your rebuttal testimony?

12

A. The purpose of my rebuttal testimony is to reply to the direct testimony filed by Office of the Public Counsel ("OPC") witness Dr. Geoffrey Marke and Missouri Public Service Commission ("Commission") Staff witness Claire M. Eubanks, PE regarding their proposed revenue requirement reductions associated with the Company's High Prairie Energy Center ("High Prairie") wind generation facility and its Rush Island Energy Center ("Rush Island") coal-fired generation facility.^{1,2}

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¹ High Prairie is a 400 MW wind generation facility consisting of 175 wind turbines in Schuyler and Adair Counties, MO.

² Rush Island Energy Center is a coal-fired generation station near Festus, MO.

1 **Q. What does the OPC recommend in its Direct Testimony?**

2 A. The OPC recommends “that 29% of Ameren Missouri’s costs related to the High Prairie
3 Wind Farm in this test year be removed from Ameren Missouri’s revenue requirement to
4 account for the fact that High Prairie is only operational 71% of the year.”³ The OPC also
5 states that “[a]dditional analysis needs to be conducted to determine what the impact on
6 foregone Production Tax Credits would be to ratepayers.”⁴

7 **Q. What does Staff recommend in its Direct Testimony?**

8 A. Staff recommends that because of lost production at High Prairie, the Commission should
9 make adjustments for lost off-system sales revenue, lost production tax credits (“PTCs”),
10 and the value of lost renewable energy credits (“RECs”) in the amounts below:⁵

11 Lost off-system sales revenue: \$11,663,658

12 Lost PTCs: \$14,754,013

13 Lost RECS: \$2,890,841

14
15 In addition, Staff recommends that an adjustment be made to rate base to reflect a projected
16 reduction in Rush Island’s capacity factor as a result of a change in its operation.

17 **Q. Do you agree with the recommendations of the OPC and Staff?**

18 A. No, I do not. My testimony will focus on the regulatory constructs that would form the
19 basis for a disallowance. I will discuss the prudence standard, the used and useful standard
20 and how it is applied in Missouri, and the economic used and useful standard and why it
21 should never be used, certainly not in this case. I will discuss my assumption regarding
22 the regulatory construct on which the OPC and Staff are relying in recommending a
23 disallowance, and why the Commission should reject their recommendations.

³ Direct Testimony of Geoff Marke at 17.

⁴ Ibid, at 17.

⁵ Direct Testimony of Claire M. Eubanks at 5.

1 In my view, both High Prairie and Rush Island meet Missouri's used and useful standard
2 and the Commission should reject the recommended disallowances. The Company should
3 be allowed the opportunity to recover all of the costs associated with the operation of High
4 Prairie, and no revenues beyond those actually achieved should be imputed into the
5 Company's revenue requirement. Similarly, the Company's rate base should include its
6 full investment in Rush Island. It should be noted that not only is there no basis for any
7 adverse ratemaking adjustments to the Company's revenue requirement relating to High
8 Prairie or Rush Island, the combined positions taken by Staff and OPC with respect to High
9 Prairie, if they were both adopted, would result in a double-penalty to the Company. Staff's
10 proposed imputed revenues adjustment is necessarily premised on the assumption that the
11 facility is operating at some claimed, expected capacity factor that is higher than its actual
12 capacity factor. Under Staff's proposal, the entire facility is in rate base, but merely because
13 it is producing less than Staff desires, the Company's rates would be set as though the plant
14 is operating at the expected capacity factor. OPC's proposed rate base disallowance is
15 premised on the notion that facility actually has less operable capacity than it actually does,
16 but if that were true (it is not) then it would be incapable of producing the revenues Staff
17 seeks to impute.⁶

18 II. THE PRUDENCE STANDARD

19 **Q. Please generally describe the regulatory standard for prudence.**

20 A. Under traditional cost-based ratemaking, a utility is permitted to include prudently-
21 incurred costs in the revenue requirement used to set its rates. The standard for the

⁶ This also means that given OPC's position, seeking a rate base disallowance, OPC is wrong that further analysis regarding so-called lost PTCs needs to be done.

1 evaluation of whether costs are, or are not, prudently incurred is well understood in
2 Missouri and has been recently confirmed by the Commission.

3 **Q. What is the recent Commission decision that you are referring to that confirms its use**
4 **of the Prudence Standard?**

5 A. In 2022, the Empire District Electric Company d/b/a Liberty (“Liberty”) sought to
6 securitize “energy transition costs” associated with the retirement of its Asbury coal-fired
7 electric generating plant and extraordinary costs incurred during the weather event of
8 February 2021, known as Winter Storm Uri. In that case, the Commission was clear about
9 the prudence standard it follows:

10 Liberty’s witness, John J. Reed, provides a succinct description of
11 the regulatory prudence standard in his surrebuttal testimony. The
12 Commission will adopt that description:

13 “The standard for the evaluation of whether costs are, or are
14 not, prudently incurred is built on four principles. First,
15 prudence relates to actions and decisions. Costs themselves
16 are neither prudent nor imprudent. It is the decision or action
17 that led to cost incurrence that must be reviewed and
18 assessed, not the results of those decisions. In other words,
19 prudence is a measure of the quality of decision-making, and
20 does not reflect how the decisions turned out. The second
21 feature is a presumption of prudence, which is often referred
22 to as a rebuttable presumption. The burden of showing that
23 a decision is outside of the reasonable bounds falls, at least
24 initially, on the party challenging the utility’s actions. The
25 third feature is the total exclusion of hindsight from a
26 properly constructed prudence review. A utility’s decisions
27 must be judged based upon what was known or reasonably
28 knowable at the time of the decision being made by the
29 utility.

30 Information that was not known or reasonably knowable at
31 the time of the decision being made cannot be considered in
32 evaluating the reasonableness of a decision and subsequent
33 information on “how things turned out” cannot influence the
34 evaluation of the prudence of a decision. The final feature is
35 that decisions being reviewed need to be compared to a range

1 of reasonable behavior; prudence does not require
2 perfection, nor does prudence require achieving the lowest
3 possible cost. This standard recognizes that reasonable
4 people can differ and that there is a range of reasonable
5 actions and decisions that is consistent with prudence.
6 Simply put, a decision can only be labelled as imprudent if
7 it can be shown that such a decision was outside the bounds
8 of what a reasonable person would have done under those
9 circumstances.”⁷

10 The Commission adopted an earlier but very similar prudence standard in a 1985 case
11 involving the costs incurred by Union Electric Company in its construction of the Callaway
12 Nuclear Plant.⁸ The Commission adopted a standard established by the Court of Appeals,
13 District of Columbia in 1981 to determine the costs to be included in that case. Under this
14 standard, the Commission recognizes that “a utility’s costs are presumed to be prudently
15 incurred” and that a utility need not “demonstrate in its case-in-chief that all expenditures
16 are prudent. . . However, where some other participant in the proceeding creates a serious
17 doubt as to the prudence of an expenditure, then the applicant has the burden of dispelling
18 those doubts and proving the questioned expenditure to have been prudent.”⁹ The
19 Commission, in the case involving the Callaway Nuclear plant, further recognized that the
20 prudence standard is not based on hindsight, but upon a reasonableness standard. The
21 Commission cited with approval a statement of the New York Public Service Commission
22 that: “...the company's conduct should be judged by asking whether the conduct was
23 reasonable at the time, under all the circumstances, considering that the company had to

⁷ File No. EO-2022-0040 and File No. EO-2022-0193, Report and Order, Issue Date: August 18, 2022, at 28-29.

⁸ In the Matter of the Determination of In-Service Criteria for the Union Electric Company's Callaway Nuclear Plant and Callaway Rate Base and Related Issues. In the Matter of Union Electric Company of St. Louis, Missouri, for Authority to File Tariffs Increasing Rates for Electric Service Provided to Customers in the Missouri Service Area of the Company, 66 P.U.R.4th 202, 27 Mo. P.S.C. (N.S.) 183, 192-193 (1985), quoting City of Anaheim v. Fed. Energy Regulatory Comm'n, 669 F.2d 779 (D.C. Cir. 1981).

⁹ Union Electric, 27 Mo. P.S.C. (N.S.) 183, 193 (1985).

1 solve its problem prospectively rather than in reliance on hindsight. In effect, our
2 responsibility is to determine how reasonable people would have performed the tasks that
3 confronted the company.”¹⁰ The Missouri courts have adopted this standard.¹¹

4 **Q. What happens when a utility’s action or inaction is deemed imprudent?**

5 A. Generally, when an action or inaction is deemed imprudent, the investments or costs
6 associated with the imprudent action are disallowed from cost recovery. In the case of
7 capital investments, a prudence disallowance would reduce rate base, meaning: 1) no return
8 on the disallowed amount; 2) no depreciation expense on the disallowed amount; 3) a lower
9 overall revenue requirement; and 4) a lower rate overall. If an action is ruled imprudent, a
10 regulator should: 1) define the range of reasonable behavior; 2) consider what the costs
11 would have been if a “minimally prudent” course of action had been followed; and 3)
12 disallow only the amount of costs above that “minimally imprudent” level.¹²

13 **Q. Is there other precedent for the definition of the prudence standard in the United**
14 **States?**

15 A. Yes. The original standard of prudence in ratemaking was expressed by United States
16 Supreme Court Justice Louis Brandeis in 1923 as a means of guiding regulators conducting
17 reviews of utility capital investments. As originally proffered, the test provides a basis for
18 establishing a utility’s investment or rate base based on the cost of such investment:

19 There should not be excluded from the finding of the base,
20 investments which, under ordinary circumstances, would be deemed
21 reasonable. The term is applied for the purpose of excluding what
22 might be found to be dishonest or obviously wasteful or imprudent

¹⁰ Union Electric 27 MO P.S.C at 194 quoting Consolidated Edison Company of New York, Inc., 45 P.U.R. 4th 331 (1982).

¹¹ *State ex rel. Associated Natural Gas v. Pub. Serv. Comm’n*, 954 S.W.2d 520, 528-29 (Mo. App. W.D. 1997) (quoting with approval the Commission’s adoption of the standard quoted in the Union Electric case involving Callaway).

¹² Sometimes the “disallowance” takes the form of imputed revenues, which has the same effect but which, as noted earlier, cannot be coupled with a rate base disallowance arising from the same alleged imprudence.

1 expenditures. Every investment may be assumed to have been made
2 in the exercise of reasonable judgment, unless the contrary is
3 shown... adoption of the amount prudently invested as the rate base
4 and the amount of the capital charge as the measure of the rate of
5 return ... [would provide] a basis for decision which is certain and
6 stable. The rate base would be ascertained as a fact, not determined
7 as a matter of opinion. (Separate, concurring opinion of Justice
8 Louis Brandeis, Missouri ex. Rel. Southwestern Bell Telephone Co.
9 v. Public Service Commission, 262 U.S. 276 (1923)); (clarification
10 added).

11 The position of Justice Brandeis was endorsed in 1935 when Supreme Court Justice
12 Benjamin N. Cardozo stated:

13 Good faith is to be presumed on the part of managers of a business.
14 In the absence of a showing of inefficiency or improvidence, a court
15 will not substitute its judgment for theirs as to the measure of a
16 prudent outlay. (West Ohio Gas Co. v. Public Utilities Commission
17 of Ohio (No.1), 294 U.S. 63, (1935), Opinion).

18 The prudent investment test offered by Justice Brandeis was applied sparingly for the first
19 four decades following its pronouncement. It was not until the nuclear power construction
20 projects of the 1970s and 1980s that the prudent investment test, at least in name, was
21 applied frequently in various electric utility rate cases. The Federal Energy Regulatory
22 Commission (“FERC”) offered its view of the prudent investment test in 1984 by stating
23 the following:

24 We note that while in hindsight it may be clear that a management
25 decision was wrong, our task is to review the prudence of the
26 utility’s actions and the cost resulting therefrom based on the
27 particular circumstances existing either at the time the challenged
28 costs were actually incurred, or the time the utility became
29 committed to incur those expenses. (New England Power Company,
30 31 FERC ¶ 61,047 (1985).

31 The National Regulatory Research Institute (“NRRI”) advocated for similar principles in a
32 1985 research paper entitled, “The Prudent Investment Test in the 1980s.” In this paper,

1 the NRRI stated that the prudent investment standard should include the following four
2 guidelines:

- 3 •...a presumption that the investment decisions of the utilities are
4 prudent...
- 5 •...the standard of reasonableness under the circumstances...
- 6 •...a proscription against the use of hindsight in determining
7 prudence...
- 8 •...determine prudence in a retrospective, factual inquiry.
9 Testimony must present facts, not merely opinion, about the
10 elements that did or could have entered into the decision at the
11 time.” (National Regulatory Research Institute, The Prudent
12 Investment Test in the 1980s; (April 1985)).

13 III. USED AND USEFUL PRINCIPLE

14 **Q. Please generally explain the regulatory ratemaking principle of used and useful.**

15 A. The used and useful principle is a ratemaking concept that relates to one element of
16 establishing the revenue requirement of a public utility, i.e., the valuation of the rate base
17 upon which a return will be granted. In essence, it provides that the rate base should only
18 include those assets that are used to provide the regulated service, and that are useful in the
19 provision of that service. While simple in concept, this principle, in application, has been
20 one of the most disputed and contentious issues in rate proceedings over its 150 years of
21 application in North America.

22 **Q. Is the used and useful principle defined in the Missouri Revised Statutes?**

23 A. Yes. The Revised Statutes of Missouri, Section 393.135 states the following:

24 “Any charge made or demanded by an electrical corporation for
25 service, or in connection therewith, which is based on the costs of
26 construction in progress upon any existing or new facility of the
27 electrical corporation, or any other cost associated with owning,
28 operating, maintaining, or financing any property before it is fully
29 operational and used for service, is unjust and unreasonable, and is
30 prohibited.”

1 The law is clear that utility property is properly includable in rates when it
2 is “fully operational and used for service.”

3 **Q. Has the Commission applied this principle in the past?**

4 A. Yes, the Commission has cited this statute as being Missouri’s application of the “used and
5 useful” concept.¹³

6 **IV. ECONOMIC USED AND USEFUL**

7 **Q. Please explain the economic used and useful concept.**

8 A. The economic used and useful concept is an after-the-fact, hindsight-based economics test,
9 that has almost never been used, and that when used was applied by regulators in addition
10 to the prudence standard principle, before investors were able to recover their costs. Those
11 who advocate for this approach contend that even if it has been determined that an asset’s
12 costs were prudently incurred and the asset is used and useful, a determination should
13 nevertheless be made to determine if the asset is fully or partially uneconomic based on the
14 current market values.

15 **Q. Is the economic used and useful approach used in any state currently?**

16 A. No, this is no longer the cost recovery standard in any state, nor has it been in quite a long
17 time.

18 **Q. Has this approach been used by regulators in the past?**

19 A. This approach has almost never been used. Unfortunately, there have been a few times that
20 regulators have been asked to change the rules for cost recovery after the fact, and this
21 concept of an “economic” used and useful standard was proposed. However, it is far

¹³ Public Service Commission, File No. ER-2010-0355, April 12, 2011, at 17.

1 outside the norm for public utility regulation. Over the past 50 years, it has been adopted
2 in an individual case by only three of 52 regulatory jurisdictions in the U.S., of which two
3 have now effectively reversed their precedent and the third has repealed it for all “public
4 interest” projects, such as renewable energy generation. Thus, today no jurisdiction
5 endorses it as a generally applicable cost recovery standard, and it has been widely
6 criticized as an inequitable, unworkable, and economically inefficient approach to
7 ratemaking.

8 **Q. Please expand on how the development and application of the economic used and**
9 **useful approach has been criticized.**

10 A. I have written about this standard since it was first created in the Wolf Creek Nuclear
11 Generating Station (“Wolf Creek”) case by the Kansas Corporation Commission (“KCC”) in the 1980s, but I will not refer the Commission to my prior work. What I believe to be
12 the most comprehensive research and analysis on this topic was presented in the Energy
13 Law Journal law review article (Volume 23:349) prepared by Dr. Jonathan Lesser and
14 published in 2002. Dr. Lesser concluded that the use of this approach “creates an untenable
15 regulatory and economic situation. Utilities can never fully know whether their actions are
16 reasonable or whether their shareholders may be exposed to asymmetric risks.”¹⁴ He
17 further concludes that:
18

19 “The electric utility industry has changed dramatically over time. In
20 its current state, it is more important than ever to address economic
21 concepts, not only to promote greater efficiency in the provision of
22 electric services to ratepayers, but also to promote equity. An
23 economic used and useful test promotes neither. Instead, it allows
24 regulators a “second bite of the apple” that combines the “end
25 results” standard of Hope and the fair-value approach of Smyth v.

¹⁴ The Used and Useful Test: Implications for a Restructured Electric Industry, by Jonathan Lesser, 2002, at 351.

1 Ames, while relegating economic, legal, and established regulatory
2 principles to the dustbin.”¹⁵
3

4 If the Commission wishes to provide any consideration to the adoption of an after-the-fact
5 economic review, such as the economic-used-and-useful approach, I would urge it to fully
6 read Dr. Lesser’s law review article, which is attached to my rebuttal testimony as Schedule
7 JJR-R1.

8 **Q. Where has the concept of economic used and useful been applied?**

9 A. As noted, the concept of economic used and useful was argued in utility cases starting in
10 the mid-1980s, amid prudence reviews for nuclear power plants where the ultimate costs
11 for the facilities had dramatically exceeded forecasted costs. In many nuclear power plant
12 cost recovery cases, traditional prudence reviews were used to determine which costs
13 utilities could put into rate base and which were determined to be based on poor
14 management decisions and therefore disallowed. In a very few stand-out cases, public
15 utility commissions determined that additional costs should be disallowed because the
16 investment had turned out to be uneconomic, rather than imprudent, and therefore an
17 asymmetrical risk sharing between ratepayers and shareholders was imposed after-the-fact.
18 The states that have used this approach in the past are Kansas, Massachusetts, and Vermont.

19 In a case involving the recovery of costs related to the Wolf Creek plant, the KCC
20 determined that “no return should be allowed on the portion of Wolf Creek which was not
21 used and required to be used and represents unreasonably high capital costs. By allowing
22 a return of the costs through depreciation but no return on the costs, we are dividing the
23 economic consequences between ratepayers and shareholders in an equitable manner.”¹⁶

¹⁵ *Ibid.*, at 378.

¹⁶ 70 P.U.R. 4th 475, at 43.

1 This approach was labeled as the “economic” used and useful test and relied on a hindsight-
2 based economic review for disallowances of prudently incurred costs. This unprecedented
3 approach led to the owners of Wolf Creek experiencing severe financial distress, and in
4 subsequent rate cases, the KCC effectively eliminated the disallowances that its new risk-
5 sharing approach had imposed.¹⁷

6 **Q. Were there other states which carefully considered the economic used and useful**
7 **approach and rejected it?**

8 A. Yes, there were quite a few that did that, including Illinois. Because of cost overruns of
9 nuclear facilities in Illinois, the legislature revised its state’s Public Utility Act to include
10 the following language for determining used and useful: “A generation or production
11 facility is used and useful only if, and only to the extent that, it is necessary to meet
12 customer demand or economically beneficial in meeting such demand.”¹⁸ The law was
13 tested in 1993 when the Illinois Commerce Commission (“ICC) allowed Byron Unit 2 and
14 Braidwood Units 1 and 2 costs into rate base. Subsequently, the decision was appealed,
15 remanded, reconsidered, and re--reconsidered. Ultimately, the ICC ruled that all three units
16 were 100 percent used and useful. The ICC rejected the economic used and useful approach
17 concluding that:

18 “This test is a radical departure from the commission’s needs and
19 economic benefits test since it requires a needed unit to also be
20 economically beneficial in order to be deemed used and useful.”¹⁹

21 With this decision, the ICC ended a circuitous decision-making process ending up right
22 where it started, by applying the conventional used and useful principle.

¹⁷ 82 P.U.R. 4th 539, at 11.

¹⁸ 220 ILCS 5 / 9-212, from Ch 111 2/3, paragraph 9-212.

¹⁹ 158 P.U.R. 4th 458, at 16

1 **Q. What is your conclusion regarding the economic used and useful principle?**

2 A. Regulators that have considered the appropriateness of the economic used and useful
3 standard have either rejected it or replaced it with a pre-approval process that provides
4 greater certainty with regard to the recoverability of the return on and of capital
5 investments. The Commission relies on a pre-approval approach today because it requires
6 prior approval, via obtaining a certificate of convenience and necessity (CCN), before new
7 generation can be built, including for High Prairie. The Missouri statute also makes clear
8 what is required to pass the used and useful standard. To adopt any form of a hindsight-
9 based economic review in Missouri would represent a retreat from what the Commission
10 and other regulators have worked to build as a more effective approach to utility
11 ratemaking and would not be consistent with Missouri's used and useful statute.

12 The adoption of an economic used and useful standard by the Commission could even go
13 so far as to inappropriately permit cost disallowances whenever load unexpectedly
14 changed, or fuel prices unexpectedly changed, or even when environmental or tax policies
15 unexpectedly changed (e.g., a change in the renewable energy standards, or imposition of
16 a carbon tax, or stricter environmental requirements), if these changes resulted in an
17 investment ending up being less attractive than when first undertaken. Such a review could
18 occur after an asset was fully built, or even years after it was built, without any opportunity
19 for the utility to earn an above-cost return when more favorable circumstances arise. This
20 imposition of asymmetrical, unpredictable, and unquantifiable risks on investors is
21 inefficient and highly inequitable. The risk premium that would have to be built into debt
22 and equity costs to accommodate such an asymmetrical risk profile would be very high and

1 would significantly increase costs to consumers. For these reasons, the use of such a
2 hindsight-based economic standard should be firmly rejected.

3 **Q. Please elaborate on why you refer to such an approach as being asymmetrical.**

4 A. While regulated utilities have a natural monopoly to provide service within their
5 service territories, their rates reflect their costs of providing service, not the economic
6 benefit provided by that service. If, as an example, a new generating resource is installed
7 and ultimately has a materially lower cost to customers than expected, the utility does not
8 earn a higher profit on any sustained basis. That lower cost to customers, whether generated
9 from higher revenues, lower costs, or a combination of the two, goes to benefit customers
10 through cost-based rates, which are reset to reflect actual results." There is, in effect, little
11 or no upside for investments that turn out better than expected. But if an economic used
12 and useful test is applied, the risk of outcomes being less beneficial than expected are
13 imposed on the utility. This in effect would result in a requirement for the utility to absorb
14 the "losses" on investments and hand over to customers the "gains" on investments.
15 Nothing could be much more asymmetric than that, and finding investors that would be
16 willing to invest in such a distorted framework would be almost impossible.

17 **V. HIGH PRAIRIE**

18 **Q. Please briefly describe the High Prairie generating facility.**

19 A. High Prairie is a 400 MW wind generation facility located in Adair and Schuyler counties
20 in Missouri. The facility was acquired by Ameren Missouri in December 2020 and consists
21 of 175 wind turbines that are among the most technologically advanced in the state.

22 **Q. Did Ameren Missouri receive approval from the Commission to construct and**
23 **operate High Prairie?**

1 A. Yes. As detailed in Company witness Ajay Arora’s rebuttal testimony, the Company did
2 obtain a CCN to construct and operate High Prairie in Commission File No. EA-2018-0202
3 (“CCN Docket”). As Mr. Arora also discusses, the case was resolved by a Commission-
4 approved stipulation in which the signatories agreed that “[t]hey shall not challenge the
5 prudence of the decision to acquire the facility under the terms of the BTA...” The Missouri
6 Public Service Commission (“Commission”) approved the CCN Stipulation on October
7 24, 2018, and ordered the Signatories to comply with it.

8 **Q. At the time that the CCN Stipulation was signed, did the Signatories know that there**
9 **would be some level of production curtailment at High Prairie related to the presence**
10 **of endangered Indiana bats?**

11 A. Yes. According to Mr. Arora’s rebuttal testimony, they did. Mr. Arora discusses that the
12 evidence in the CCN Docket was that production would be less than the design capability
13 of the facility in order to mitigate wildlife issues.

14 **Q. Has the Company had to curtail production at night during the warmer months to a**
15 **greater extent than what was originally believed to be the case at the time High Prairie**
16 **was constructed?**

17 A. Yes, this is how conditions have turned out, at least for now. Mr. Arora provides details
18 on the curtailments that have occurred due to the unexpected take of Indiana bats at the
19 facility.

20 **Q. Are the stipulation signatories from the CCN Docket challenging the prudence of the**
21 **decision?**

1 A. No, not as presented in their direct testimony, or at least not directly.²⁰ In challenging the
2 costs associated with High Prairie, OPC Witness Marke recommends a disallowance of
3 29% of the rate base and all other costs associated with High Prairie based on the used and
4 useful standard. Witness Eubanks does not identify the basis for Staff’s recommended
5 disallowance for High Prairie. Her recommendation appears to focus exclusively on the
6 observation that High Prairie turned out to not be as productive as originally planned. This
7 certainly cannot be justified on the basis of the prudent investment standard. The only other
8 bases that exist for such a disallowance are the economic used and useful standard (which
9 would lead to a rate base disallowance) and the prudence standard applied to how Ameren
10 Missouri has operated the plant. However, neither she nor any other Staff witness has
11 undertaken a prudence review regarding how Ameren Missouri has operated the facility,
12 nor have they presented any evidence at all that those operations have not been prudent.
13 To the contrary, Staff has commented favorably on the progress Ameren Missouri has
14 made on bat mitigation measures. Because Staff’s recommended disallowance is based on
15 “lost production,” which uses a comparison of actual production to originally expected
16 production, I can only reasonably conclude that Staff is basing its challenge to the costs
17 associated with High Prairie on the economic used and useful principle.

18 **Q. What are Staff and OPC proposing for High Prairie?**

19 A. Both are proposing adjustments to the revenue requirement for allowed rates in this
20 proceeding. OPC proposes a 29% reduction in rate base and all associated costs based on

²⁰ OPC witness Marke seems to imply that there was imprudence when he recounts history of the events that led up to decision to go forward with the High Prairie project, which included OPC's decision to join a Stipulation and Agreement recommending approval of the CCN and waiving its rights to question the prudence of the decision; his comparison of High Prairie to “properly sited” wind farms is a prudence challenge in all but the name of the standard.

1 the reduced operation of High Prairie, while Staff proposes adjustments to Ameren’s
2 revenue requirement for lost off-system sales revenue, lost production tax credits (“PTCs”),
3 and the value of lost renewable energy credits (“RECs”), totaling \$32.73 million. These
4 proposals are based on the flawed application of Missouri’s used and useful standard and
5 an apparent attempt to reintroduce the economic used and useful standard, which has no
6 proper use in the ratemaking process. Staff and OPC’s proposals reflect nothing more than
7 a conclusion that the current operation of the High Prairie facilities are not as beneficial as
8 the parties had expected when the facilities were granted their CCNs.

9 **Q. Is that a reasonable basis for a disallowance?**

10 A. No. As Staff witness Luebbert recently noted in testimony in File No. EA-2022-0245,
11 involving a CCN request for another renewable generating facility, that’s not the way cost-
12 based regulation works, nor is it the way it should work. Staff witness Luebbert directly
13 testified that “When supply-side investments, such as the Boomtown Solar project, of an
14 IOU are included in the company’s base rates, the risk of cost recovery shifts from the
15 shareholders of the IOU to the captive ratepayers. . . .If the assumptions relied upon to make
16 the decision to build or purchase the resource prove to be incorrect or inaccurate, ratepayers
17 will continue to pay for the resource through the useful life of the asset through
18 Commission approved rates...”²¹

19 When the Commission approved the CCN for High Prairie, it by definition determined that
20 that the public convenience and necessity justified that it be built to serve customer needs,
21 in the case of High Prairie, to meet the requirements of Missouri’s Renewable Energy
22 Standard (“RES”). Staff testified itself in the CCN Docket that “Ameren Missouri has

²¹ Rebuttal Testimony of J Luebbert, Case No. EA-2022-0245, December 21, 2022, p. 9.

1 shown a need for the project, and should be granted a CCN . . .”²² As Company witness
2 Luebbert also testified, “Once the need is established and the project is determined to
3 promote the public interest based upon the best information available at the time, it is
4 reasonable for the ratepayers to assume the risk that the project selected is uneconomic.
5 This assumption of risk is justified because absent load of the ratepayers, the utility would
6 not be obligated to invest in additional resources.”²³ The Company’s RES obligation is
7 created by the “load of the ratepayers” since the RES percentages the Company must meet
8 are based on its sales to its retail customers, i.e., on their load.

9 **Q. Does High Prairie meet the standard of being used and useful?**

10 A. Yes. Although production is currently curtailed during certain hours in part of the year,
11 High Prairie is still being used to meet customer demand and is useful in providing that
12 service each and every day of the year and using each and every turbine and support
13 system.²⁴ The Company is doing everything possible to increase production while
14 mitigating wildlife issues. As detailed in Company witness Andrew Meyer’s direct
15 testimony in this docket, all 175 turbines are operational and High Prairie is consistently
16 producing energy and associated PTCs. In addition, High Prairie is providing 1.25 RECs
17 for each megawatt-hour of energy produced, which are being retired to comply with the
18 Missouri RES.²⁵ While it is indisputable that the production levels for the past two years
19 are lower than originally anticipated, based upon at the modeled P50 generation level,
20 having outcomes that are worse than expected, or conversely, outcomes that are better than
21 expected, are not a proper basis for resetting rates under cost-based ratemaking. As Staff

²² Rebuttal Testimony of Staff witness Cedric Cunigan, File No. EA-2018-0202, p. 3, ll. 15-16.

²³ Luebbert Rebuttal, supra, p. 10.

²⁴ Subject only to normal maintenance outages

²⁵ Direct Testimony of Andrew M. Meyer, File No. ER-2022-0337, at 36.

1 itself concedes, that risk is properly borne by customers, who would benefit from any
2 performance that was better than expected since all such benefits would flow to them
3 through the Company's RESRAM.²⁶

4 **Q. Please summarize why you disagree with the recommendations of the OPC and Staff**
5 **with regard to High Prairie.**

6 A. The plant is operating and used and useful. No evidence of imprudence exists. As
7 discussed above, to assert that a rate base disallowance be applied to reflect a change in
8 operating profile would encompass a wide range of changed circumstances from year to
9 year that would affect the output of a generating facility, including but not limited to
10 weather, fuel prices, generating resource mix, wholesale market design, etc. An application
11 of the used and useful principle which uses a generating facility's actual capacity factor as
12 the basis for determining rate base or revenue requirement disallowances amounts to an
13 attempt to reintroduce the economic used and useful concept and introduces significant
14 cost recovery uncertainty and asymmetric risks for utilities. Such a policy would
15 unquestionably increase costs for utilities, would represent a retreat from what the
16 Commission and other regulators have worked to build as a more effective approach to
17 utility ratemaking, and would not be consistent with Missouri statute.²⁷

²⁶ Renewable Energy Standard Rate Adjustment Mechanism.

²⁷ As I discuss later in connection with Staff's proposed adjustment relating to the Rush Island plant, tying cost recovery to variations in capacity factor from those anticipated is completely inconsistent with sound regulatory principles and common regulatory practice.

1 **VI. RUSH ISLAND**

2 **Q. Please briefly describe the Rush Island Energy Center.**

3 A. Rush Island is a coal-fired generating facility built in 1977 and located in Jefferson County
4 near Festus, Missouri. Unit 1 has a capacity of approximately 597.2 MW and Unit 2 has a
5 capacity of approximately 597.8 MW for a combined capacity of approximately 1,195
6 MW.

7 **Q. What is the operational status of Rush Island?**

8 A. Ameren Missouri announced its intention to retire Rush Island in December of 2021, with
9 a specific retirement date to be determined upon completion of a reliability assessment by
10 the Midcontinent Independent System Operator (“MISO”).

11 **Q. Why does MISO need to conduct a reliability assessment in order for Ameren
12 Missouri to be able to retire Rush Island?**

13 A. MISO has an established process for reviewing and approving the retirement of a
14 generating source. The retirement of a large generating unit such as Rush Island has the
15 potential to introduce reliability and stability issues on the transmission network. A
16 reliability assessment is required by MISO prior to the approval of a request to retire a
17 generating facility to assess whether the facility is needed to ensure system reliability.

18 Based on this analysis, MISO determined that Rush Island was needed for reliability and
19 designated the facility as a system support resource (“SSR”). SSR provisions in the MISO
20 Tariff permit MISO to negotiate terms and conditions for extended service from generating
21 facilities where a market participant desires to suspend or retire operation of a facility, but
22 MISO determines that the facility is needed to maintain system reliability.

1 On August 19, 2022, MISO submitted a System Support Resource Agreement (“SSR
2 Agreement”) for approval with the FERC between Ameren Missouri and MISO. On
3 October 24, 2022, the FERC approved the agreement with an effective date of September
4 1, 2022, expiring at the end of a one-year term, except in exigent circumstances.²⁸

5 **Q. What are the operational obligations of Rush Island under the SSR Agreement?**

6 A. Under the SSR Agreement, MISO does not commit and dispatch the unit(s) based on
7 economics. Rather, MISO only dispatches the unit for reliability reasons, including: i)
8 forecasted reliability conditions based on forecasted weather conditions and daily demand
9 levels; ii) in the event MISO declares an Energy Emergency or MISO determines that
10 commitment of the Rush Island Units would respond to unstable conditions on the
11 transmission system; and iii) for freeze protection, in coordination with Ameren Missouri,
12 to maintain the integrity of the units so that they continue to be available for providing
13 reliability service.²⁹

14 **Q. How is Rush Island compensated under the SSR Agreement?**

15 A. Rush Island is paid a fixed monthly payment regardless of dispatch of the SSR Unit(s)
16 during that month. The fixed monthly payment is subject to downward adjustment should
17 the unit be unavailable to provide reliability services. In addition, when one or both of the
18 units are dispatched to provide reliability services, Rush Island will be compensated hourly
19 in accordance with MISO’s Open Access Transmission Tariff (“OATT”). These payments
20 are reflected as offsets to costs in the Company’s fuel adjustment clause, and thus benefit
21 customers.

²⁸ FERC Order approving the SSR Agreement between Ameren and MISO, Docket Er22-2691, October 24, 2022.

²⁹ SSR Agreement between Ameren Missouri and MISO, August 18, 2022, Exhibit 3.

1 **Q. Is Rush Island’s compensation dependent on how the unit is dispatched?**

2 A. Not for the most part. Rush Island is paid a fixed monthly amount to be available to MISO
3 to address reliability needs. In this way, it acts as an insurance policy for MISO to address
4 system reliability needs as they arise. However, Rush Island has shown that this is a very
5 valuable insurance policy. As provided in recent Ameren testimony in another docket, the
6 availability of Rush Island saved Ameren’s customers \$5.3 million in only four days over
7 the 2022 Christmas season.³⁰ Moreover, for the five months since it began operating as an
8 SSR, it has produced \$69.3 million in revenues overall, as addressed in Company witness
9 Meyer's rebuttal testimony.

10 **Q. What is Staff witness Eubanks’ recommendation regarding Rush Island?**

11 A. Witness Eubanks recommends that rates in this case reflect a reduced rate base for Rush
12 Island.

13 **Q. What is the basis for this recommendation?**

14 A. There isn’t one. Witness Eubanks simply asserts that because Rush Island will only operate
15 for reliability purposes, it will operate less frequently than in the past. She then concludes
16 that due to this reduced level of usage, it is not just and reasonable for the Commission to
17 include the entire rate base of Rush Island in rates.³¹ Witness Eubanks makes clear that she
18 is not proposing this disallowance on the grounds of prudence. She claims that because of
19 the lower level of expected dispatch of the plant, it is “not fully available to serve
20 customers.”³² She also claims that the basis for the disallowance is that only “a portion of
21 Rush Island Units 1 and 2 are necessary to serve Ameren Missouri’s customers and support

³⁰ Surrebuttal testimony of Ajay Arora, File No. EA-2022-0245, January 18, 2023, p. 13.

³¹ Direct Testimony of Claire M. Eubanks, PE, File No ER-2022-0337, pg. 11, lines 16 and 17.

³² Direct Testimony of Claire M. Eubanks, PE, supra, pg. 13.

1 the MISO system. As such, [she claims that] Ameren Missouri should only receive
2 recovery of and on a portion of its revenue requirement associated with Rush Island.”³³

3 This basis for a multimillion-dollar disallowance is neither consistent with Missouri’s used
4 and useful standard, nor with any other established ratemaking principle. Remarkably, the
5 two bases offered by Ms. Eubanks are also factually incorrect.

6 **Q. Which statements made by Ms. Eubanks are factually incorrect?**

7 A. She states that only a portion of the units are needed to serve Ameren Missouri and support
8 MISO. This is entirely incorrect. As Company witness Meyer testifies in his rebuttal
9 testimony in this docket, the SSR agreement with MISO requires that all of the capacity of
10 both Rush Island Units be fully operational and used each and every time they are called
11 upon. She also states that Rush Island is not fully available to serve customers. This is also
12 entirely incorrect. Both units are fully available to serve customers and are required to be
13 by the terms of the MISO SSR contract. There is no evidence whatsoever that these
14 obligations have not been met by Ameren Missouri. Therefore, both of the bases witness
15 Eubanks cites for her disallowance are not supportable.

16 **Q. What adjustment is Witness Eubanks recommending?**

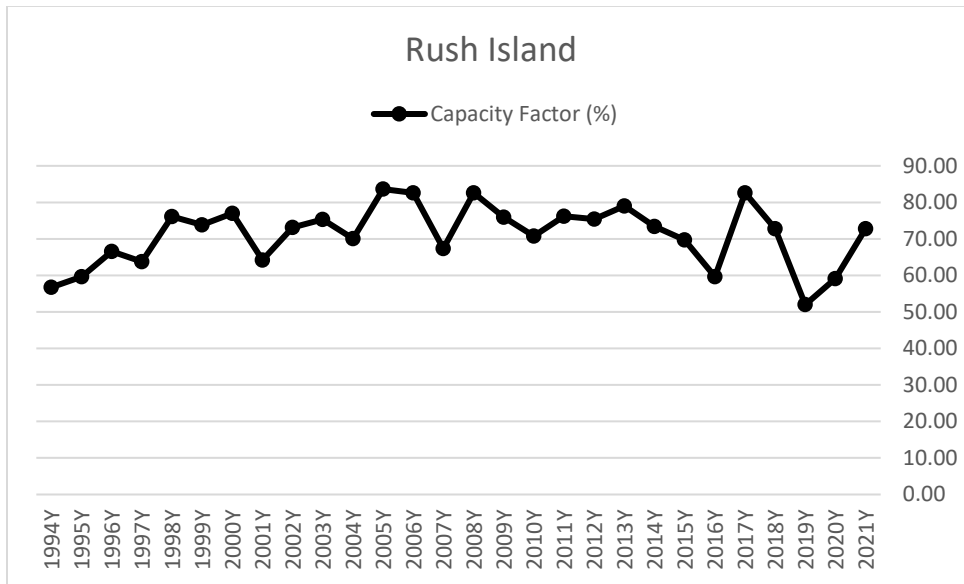
17 A. Based on the use of a production cost model, Staff modeled the Rush Island units operating
18 as normal and with Rush Island operating as a SSR. Based on the modeling results, Staff
19 calculated a net capacity factor for each unit under each scenario and proposes reducing
20 the rate base associated with Rush Island by the forecasted reduction in the two units’ actual
21 capacity factor as compared to its capacity factor for a historical period.

³³ Direct Testimony of Claire M. Eubanks, PE, pp. 11-12.

1 **Q. Do you agree with this recommendation?**

2 A. Absolutely not. There is no ratemaking basis for disallowing plant costs for a plant that
3 fully satisfies the used and useful standard, is still fully available to meet system needs, and
4 has not been shown to have had any imprudently incurred costs. The nature of operating
5 generating facilities is that the frequency with which they run will change from hour to
6 hour and from day to day, sometimes dramatically. In fact, a review of the operation of the
7 Rush Island units, as shown below, reveals that the capacity factor of the facility has varied
8 from approximately 50% to over 80% over a four-year period. Between 2017 and 2018,
9 the capacity factor of the Rush Island units increased by over 30% in a single year.

10 **FIGURE 1: RUSH ISLAND CAPACITY FACTOR³⁴**



11
12 As Witness Meyer stated in his direct testimony, Ameren Missouri fully anticipated that
13 there would be significant periods when the units would not need to operate at full load,

³⁴ SNL, accessed on January 24, 2023.

1 and times when neither unit will need to operate at all, absent an emergency or system
2 reliability concerns identified by MISO.³⁵

3 A comparable review of any of Ameren Missouri's generating facilities, or frankly
4 any generating facilities owned and operated by any regulated electric utility, would show
5 variation in the achieved capacity factor over time – and sometimes very significant
6 variation. Yet it is simply not consistent with sound regulatory principles – nor is it a
7 common regulatory practice – to adjust the level of cost recovery associated with any of
8 those facilities based on the variation in capacity factor. As Company witness Meyer's
9 rebuttal testimony discusses, the capacity factor for Ameren Missouri's Meramec energy
10 center was quite low in the last few years of its operation before retirement, but that did
11 not render the plant not used and useful. As Mr. Meyer also notes, the Company's
12 combustion turbine generator fleet also operates at low net capacity factors and, primarily,
13 during system peaks (as is now the case for Rush Island), but that too does not render those
14 units not used and useful. For the same reasons, it is not sound regulatory practice to do so
15 here in the case of Rush Island.

16 **Q. Has Ameren Missouri's rate base ever been adjusted in the past to reflect a decrease**
17 **in the utilization of the Rush Island units or any of its other generating facilities?**

18 A. No, it has not, nor would it be appropriate to do so. A used and useful measure as it applies
19 to a generating resource is not the capacity factor of the resource, it is the ability of the
20 resource to provide service to customers. Rush Island satisfies this used and useful
21 measure.

³⁵ Direct Testimony of Andrew Meyers, pg 35, lines 3 – 6.

1 **Q. Is the Rush Island facility used and useful in the provision of service to customers?**

2 A. Yes. Pursuant to the SSR Agreement, both Rush Island units are required to be fully
3 available to be called on to address system reliability needs, except when the unit is
4 undergoing scheduled maintenance. In fact, there are provisions in the SSR Agreement to
5 ensure that Rush Island remains in a ready state to respond to system reliability needs as
6 they arise.

7 **Q. Is the risk that circumstances may cause a given unit's output to be less than expected,
8 or less than they once were, a risk that customers bear?**

9 A. Yes, just as Staff witness Luebbert recognized, as discussed above. Rush Island was
10 constructed because it was needed to serve the Company's load. Rush Island continues to
11 operate today because it is needed to serve the Company's load in a reliable manner. That
12 its capacity factor is lower, because it will be retired and until then is operating as an SSR,
13 is a change in circumstance the risk of which is borne by customers. Ameren Missouri did
14 not get to keep the upside in times when Rush Island may have had a capacity factor that
15 was greater than expected and indeed for years 95% of any benefit of such operation above
16 the levels reflected in the revenue requirement used to establish rates flowed back to
17 customers via the fuel adjustment clause between rate reviews and, as base rates were reset,
18 100% of such benefits were flowed to customers through a resetting of net base energy
19 costs. Under well-established ratemaking principles, Ameren Missouri does not bear the
20 asymmetric risk that the capacity factor is now lower.

21 **Q. Does this conclude your rebuttal testimony?**

22 A. Yes, it does.

THE USED AND USEFUL TEST: IMPLICATIONS FOR A RESTRUCTURED ELECTRIC INDUSTRY

*Jonathan A. Lesser**

In the late 1980s, the demand for electricity was growing steadily in Vermont. Vermont utilities sought out new supplies that would provide long-term price stability. Additionally, Vermont utilities, politicians, and regulators were concerned about forecasts of much higher fossil fuel prices in the long terms, and concerned about the adverse environmental consequences of developing additional fossil-fuel generating capacity. The most obvious source of new supply was Hydro-Québec (HQ), which had been developing the Province of Québec's hydroelectric potential and was actively seeking to increase sales for export into the United States. HQ offered the prospect of seemingly limitless supplies of clean energy at stable prices, apparently the ideal solution for Vermont's situation.¹

In 1987, a group of nine Vermont utilities, collectively called the Vermont Joint Owners (VJO), entered into a thirty-year contract, from 1990 to 2020, for power from HQ. Given the duration of this contract, the VJO was required to seek regulatory approval because the State of Vermont requires that parties seeking long-term supply commitments (five years or longer) obtain a Certificate of Public Good (CPG).² The contract was amended, in 1988, because of concerns about obtaining all of the necessary regulatory approvals. Under the amended contract, the parties had until April 30, 1991 to terminate the contract if the necessary regulatory approvals were withheld or simply unsatisfactory to the party. In October 1990, the Vermont Public Service Board (PSB) issued a CPG to the Vermont utilities, providing interim approval for the contract and the participation agreement among the nine utilities.³ However, in early 1991 HQ was running into its own regulatory problems, and was dissatisfied with one of the conditions of the regulatory approval it obtained from the Canadian National Energy Board. Because HQ was appealing that condition to the Canadian Court of Appeals, it sought to extend the April 30, 1991 termination deadline. The parties subsequently signed a new agreement with a termination deadline of

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1. This background is based on the brief history provided by the Vermont Supreme Court in its decision, *In re* Tariff Filing of Central Vermont Public Service Corp., 769 A.2d 668, 671-672 (Vt. 2001). That case is discussed more extensively *infra* Section II.

2. VT. STAT. ANN. tit. 30, § 248(a) (2001).

3. *In re* Twenty-Four Elec. Utils., No. 5330 (Vt. P.S.B. 1990).

December 1, 1991. This new agreement was also approved by the PSB.⁴

In July 1991, the Canadian Court of Appeals affirmed the export license to HQ and struck down the condition to which HQ had objected. By the end of August 1991, the parties had locked-in the contract. In February 1992, the PSB approved the allocation of the contract costs among the participants.⁵ Under the agreement, the cost of power under the HQ contract increased significantly beginning in 1995, but would then be tied to the rate of inflation.⁶ However, in light of the forecasts for fossil fuel prices and inflation, those higher HQ contract costs still appeared to offer benefits to Vermont ratepayers, including price stability.

The forecasts of rapid fuel price and demand increases did not come to pass. The recession in the early 1990s reduced the demand for power in Vermont. By 1994 deregulation of natural gas supplies had also significantly reduced fuel costs and increased supplies. The ideal solution that the HQ contract initially provided was appearing to be less than ideal. The regulatory controversy over the contract intensified and ultimately utilities were unable to recover all of the costs of the contract because the PSB determined that the contract was not *economically* used and useful. The PSB's definition and application of an economic used and useful test has been highly controversial, and has raised numerous legal and economic issues. This article focuses on that regulatory controversy and its implications for a restructured electric utility industry.

I. INTRODUCTION

When the State of California began its march towards restructuring and retail competition in its electric industry in 1994, few imagined the ensuing debacle. Nor would it have been predicted in the late 1990's that rapid growth in wholesale market trading and emergence of sophisticated derivatives instruments would so rapidly disintegrate as a result of the financial scandal propagated by the collapse of Enron. Yet, in hindsight, the fundamental flaws were easy to spot: a failure to allow for long-term contracts, a failure to provide retail customers with price discovery and real-time price signals, and a failure to address fundamental conflicts between the need to develop new supplies and environmental and other regulations preventing such development. While restructuring may have initially been envisioned as industry deregulation, the reality of restructuring has instead become re-regulation. California's failure will continue to have important implications for utilities, their customers, energy regulators, and the courts.

One of the major changes in the politics of restructuring after California will be continued regulatory oversight of utility actions to secure sufficient

4. *In re Twenty-Four Elec. Utils.*, No. 5330 (Vt. P.S.B. 1991).

5. The Vermont Supreme Court affirmed all of the PSB decisions. *In re Twenty-Four Vt. Utils.*, 618 A.2d 1295 (Vt. 1992); *In re Twenty-Four Vt. Utils.*, 618 A.2d 1309 (Vt. 1992); *In re Twenty-Four Vt. Utils.*, 627 A.2d 355 (Vt. 1993).

6. The HQ contract consisted of several "schedules," each having different terms. The initial schedule, A, was priced lower than later schedules B, and C-1 through C-4. *In re Twenty-Four Elec. Utils.*, No. 5330, 62-6 (Vt. P.S.B. 1990).

generation supplies. While utilities may not own, or even operate, some of that generation until there is full and complete retail competition, utilities will continue to retain their historic obligation to serve captive customers who, either by choice or by default, remain with their traditional utility. That obligation will require regulators to continue their oversight of resource acquisition decisions made by utilities. In some cases, regulators may continue to rely on traditional “prudence” assessments and detailed resource planning requirements; in others, they may require structured competitive bids or set a “price-to-beat.”

Whatever the approach, many regulators will evaluate utility decisions using some type of market-based comparison. Such comparisons may be forward looking, using existing market data on forward prices and forecasts of such prices into the more distant future. Some regulators have also introduced ongoing comparisons to “market” prices (ironically, even when there are not well-functioning markets on which to base such prices). This latter approach, which I term an “economic used and useful” test, has become a centerpiece of utility rate regulation in Vermont. This article argues that application of an economic used and useful test goes far beyond the more common used and useful tests that were applied extensively as part of a number of nuclear plant prudence reviews beginning in the late 1970s and which originated in “physical” interpretations of asset usefulness developed by the courts. The use of an economic used and useful test, ostensibly to protect customer interests and provide the necessary economic signals for utilities to be responsible for their actions, instead creates an untenable regulatory and economic situation. Utilities can never fully know whether their actions are reasonable or where their shareholders may be exposed to asymmetric risks. Such conditions are likely to increase the reluctance of capital markets to provide funds for generation plant development and increase overall costs borne by customers.

A. *Outline of the Article*

Section II begins with a brief review of the used and useful concept and its evolution over time. Economic used and usefulness can be seen as an alternative prudent investment standard, initially formulated by Justice Brandeis and culminating in Justice Douglas’s opinion in *Hope Natural Gas*.⁷ The approach adopted by the Supreme Court in *Hope*, which essentially left regulation to the regulators as long as the results were not confiscatory, took on new importance in the wake of numerous prudence reviews of nuclear power plant investments, beginning in the late 1970s. These prudence reviews, which were undertaken in order to exclude failed nuclear power plant investments from utility ratebase, have been extended to utility expenses that, although not earning a rate of return, do contribute to overall utility rates. Because Vermont regulators have cited Supreme Court decisions in *Jersey Central*⁸ and *Duquesne*,⁹ both of which involved failed nuclear power plant investments, as providing precedent for application of an economic used and useful test, we then discuss these two cases

7. FPC v. Hope Natural Gas Co., 320 U.S. 591 (1944).

8. Jersey Cent. Power & Light v. FERC, 810 F.2d 1168 (D.C. Cir. 1987).

9. Duquesne Light Co. v. Barasch, 488 U.S. 299 (1989).

and their relevance to economic used and usefulness. We show that an economic used and useful test, especially as most recently applied in Vermont, is simply a return to the *Smyth v. Ames* “fair-value” regulation approach that favored ratepayers.¹⁰ Unlike the Court’s findings in *Hope*, however, the economic used and useful test *is* confiscatory, offering regulators a “second bite of the apple” with which to disallow both capital investments and expenses that would be considered prudent and used and useful in the more common sense. Ultimately, therefore, regulators who apply an economic used and useful test appear to be confusing good decisions with good outcomes, while holding utilities to management standards that, in essence, require clairvoyance.

Section III discusses the economic and regulatory implications of an economic used and useful test: including asymmetric risk allocation, higher costs of utility capital, and inefficient levels of new utility investment. These economic consequences necessarily have other regulatory implications, including regulatory takings and fundamental incompatibilities within legislative and administrative resource planning requirements such as “least-cost” planning. Section IV provides some concluding comments and recommendations.

II. EVOLUTION OF ECONOMIC USED AND USEFUL

The more common used and useful test for regulated electric utility investments is an established concept.¹¹ Utility investments that were deemed not used and not useful could be denied rate recovery. This definition of used and useful applied a physical test: was the resource in question in-service and providing actual physical services that were relevant for customers asked to pay for those services? In the case of an electric utility, those services would encompass generation, transmission, and distribution. Although the distinction between *used* and *useful* has not always been clear-cut, a reasonable interpretation is between investments that do not provide physical services (not used) and those that, while providing physical services, are superfluous (not useful).¹²

Under this traditional definition, a prudent investment (or expense) found to be used and useful is incorporated into a utility’s rates. A partially completed nuclear power plant would be unused and almost certainly unuseful. A surplus of new generating capacity in the face of declining customer demand would be unuseful.

A. *Origins of Used and Useful (1870–1944)*

The origins of the “used and useful” concept can be traced back to the “fair-value” doctrine initially established by the United States Supreme Court in

10. *Smyth v. Ames*, 169 U.S. 466 (1898).

11. Hoecker refers to the used and useful test as having arisen from the “primordial ooze” of public regulation. James J. Hoecker, *Used and Useful: Autopsy of a Ratemaking Policy*, 8 ENERGY L.J. 303 (1987) [hereinafter Hoecker].

12. This distinction is evident in *Denver Union Stockyard Co. v. United States*, 304 U.S. 470 (1938), discussed *infra*. Clearly, the determination of the physical used and usefulness of an asset has economic implications for ratepayers.

Smyth v. Ames.¹³ Rather than investment costs, the Court decided to focus on the measures of value that could be used to determine whether rates established were confiscatory. This itself represented a retreat from the Court's views in *Munn v. Illinois*, twenty years earlier.¹⁴

In *Smyth*, the Court held that the Constitution required regulators to accord railroads a return for the value of the assets that were used and useful in providing services. Otherwise, the Court held, rates would be confiscatory. The Court enumerated six specific measures of value and specified a number of methodologies for determining whether the rates charged by a corporation (in this case a railroad) represented the "fair value of the property being used by it for the convenience of the public."¹⁵ While the Court held that the railroad companies could recover the fair value of their assets, the Court also stated that "what the public is entitled to demand is that no more be extracted from it . . . than the services rendered by it are reasonably worth."¹⁶ The Court did *not* envision that eventually an economic test would set regulated rates on a comparison with competitive markets. At the end of the Nineteenth Century, restructuring and deregulation of the railroads were nowhere in sight.

Through the 1920s, the court began to replace the fair value doctrine with one emphasizing reproduction costs. This evolution engendered a greater emphasis on market economics, as reproduction cost more clearly reflects the current market value of utility assets.¹⁷ Reproduction cost ratemaking became far more prevalent after World War I because of rising asset prices.

B. The Shift Towards an Alternative Prudent Investment Standard

The shift towards an alternative regulatory standard began in 1923. Justice Brandeis's dissenting opinion in *Southwestern Bell*¹⁸ proposed the concept of "prudent investment" as an alternative to fair value determination, and linked this concept to the idea of "usefulness." In doing so, he proposed that more economic relevance be introduced to the determination of "fairness." Put another way, Justice Brandeis developed a more economically efficient approach to achieve distributional equity between investors and ratepayers.¹⁹ He wrote:

13. *Smyth*, 169 U.S. at 546-47. These were: (1) the original cost of construction; (2) the amount expended in permanent improvements; (3) the amount and market value of its bonds and stock; (4) the present as compared with the original cost of construction; (5) the probable earning capacity of the property under particular rates prescribed by statute; and (6) the sum required to meet operating expenses. The Court did not rule out other measures of value. *Id.*

14. *Munn v. Illinois*, 94 U.S. 113 (1876). In the ensuing 125 years, regulation in the "public interest" has evolved. Whether that evolution represents advancement, of course, is a matter of political and economic philosophy.

15. *Smyth*, 169 U.S. at 546. The Court also stated that other (unspecified) methods might be applied. *Id.* at 547.

16. *Smyth*, 169 U.S. at 547.

17. This was assisted by the difficulty, in many cases, of accurately determining original cost and the lack of clear accounting standards that could define "reasonable" costs. ALFRED E. KAHN, *THE ECONOMICS OF REGULATION, PRINCIPLES AND INSTITUTIONS* 20 (1988).

18. *Mississippi ex rel. Southwestern Bell Tel. Co. v. Miss. Pub. Serv. Comm'n*, 262 U.S. 276 (1923) (Brandeis, J. dissenting).

19. Economic efficiency is, in fact, a rather broad concept, having three dimensions that incorporate

Historical cost, on the other hand, is the amount which normally should have been paid for all the property which is usefully devoted to the public service. It is, in effect, what is termed the prudent investment What is now termed the prudent investment is, in essence, the same thing as that which the court has always sought to protect in using the term present value.²⁰

Justice Brandeis focused on the four elements making up the determination of a “fair return.” These include gross earnings, operating expenses, rate base, and rate of return. While the latter was also the subject of much fairly contemporaneous legal opinion, including *Consolidated Gas*²¹ and *Bluefield Waterworks*,²² the focus of the fair value doctrine had clearly been the rate base. Comparatively little attention was paid at the time to gross earnings and expenses, which Justice Brandeis deemed “predictions.” Ironically, utility earnings and expenses are the most difficult issues confronted when addressing economic used and usefulness today.

Beginning in the 1930s, a majority of the Supreme Court began to embrace the minority views expressed by Justice Brandeis in *Southwestern Bell*. Philips deemed this a shift to “end results,”²³ which culminated with the Court’s well known decision in *Hope Natural Gas* in 1944.²⁴ Within that time frame, the Court addressed used and useful in a less well known, yet important, case, *Denver Union Stockyard*.²⁵ Although this case was cited by Vermont regulators in a 1998 rate order as providing legal precedent for an economic used and useful test, the facts suggest otherwise.²⁶

In 1937, after a three year investigation, the Secretary of Agriculture set both the fair value and rate of return that could be earned by the stockyard owners. The owners sued, on the grounds that “the prescribed rates are confiscatory and that enforcement of the order would deprive the company of its property without due process of law in violation of the Fifth Amendment”²⁷ As part of the rate setting process, the Secretary of Agriculture had evaluated the value of the property that was “used and useful:”

To ascertain the amount on which appellant is entitled to earn a return, the Secretary determined what land and structures *were used and useful for performance of the services*, and to present value of land added cost of reproduction new less depreciation of structures, and allowances on account of a bridge and sewage

production, allocation, and distribution of goods and services. For additional discussion, *see also* RICHARD JUST, ET AL., *APPLIED WELFARE ECONOMICS AND PUBLIC POLICY* (1982). Here, “economic efficiency” refers to the achievement of a “just, equitable, and fair” outcome in a way that preserves the highest level of overall economic value.

20. *Mississippi ex rel. Southwestern Bell Tel. Co.*, 262 U.S. at 295, 308-09 (emphasis added). *See also*, CHARLES F. PHILIPS, *THE REGULATION OF PUBLIC UTILITIES* 325-26 (2nd ed. 1994) [hereinafter PHILIPS].

21. *Wilcox v. Consol. Gas Co.*, 212 U.S. 19 (1907).

22. *Bluefield Waterworks & Improvement Co. v. Pub. Serv. Comm’n of W. Va.*, 262 U.S. 679 (1923).

23. PHILIPS, *supra* note 20, at 313.

24. *FPC v. Hope Natural Gas Co.*, 320 U.S. 591 (1944). *See also* Philips, *supra* note 20, at 314, for a discussion of this case.

25. *Denver Union Stockyard Co. v. United States*, 304 U.S. 470 (1938).

26. *In re Green Mountain Power Corp.*, No. 5983 (Vt. P.S.B. 1998).

27. *Denver Union Stockyard Co.*, 304 U.S. at 472.

disposal plant being built, and working capital.²⁸

The controversy in the case arose over the treatment of costs associated with an annual stock show in January. The issue was whether the costs incurred should be incorporated into the rates then regulated by the Secretary of Agriculture.

The stock show is held on property owned by appellant and . . . continues for about one week in January of each year. The Secretary found a part of that property, which is operated by the Colorado Horse and Mule Company, to be used and useful for performance of services covered by the rates regulated by him, and included it in the rate base. He appraised the rest of the show property . . . but excluded it as not used for the performance of services covered by the rates he regulates.

The show attracts buyers and throughout the year widens the outlet for producers' stock, operates to increase receipts, makes for improvement of stock raised and for higher prices, has educational value, and advertises the market. It is supported by appellant in good faith and in the belief that it stimulates its business and that of livestock producers. These facts are not in substantial conflict with the Secretary's findings, and may be taken as established by the evidence. But they are not sufficient to prove that the property excluded is used and useful for the performance of services covered by rates being regulated by the Secretary. None of those services is performed on or by the use of any of that property.²⁹

The Court, in affirming the appeals court decision, hewed to the traditional used and useful test. The Court determined that some of the expenses used for the livestock show and property were not pertinent (useful) towards operation of the stockyard and thus would not be included in the yard rates.³⁰ This application was simple and apparently straightforward. The Court also held an outward appeal of equity. After all is said and done, ratepayers ought not to be required to reimburse utilities and their investors for costs incurred that provide no direct benefits to ratepayers.

The development of a prudent investment standard culminated in 1944, when the Supreme Court issued its decision in *Hope Natural Gas*.³¹ In *Hope*, the Court reaffirmed its "end results" focus and explicitly recognized the riskiness of investments made in public utilities, such that "return to the equity owner should be commensurate with returns on investments . . . having corresponding risks."³² This meant in practice that investors could expect to earn the cost of capital, which was defined as the expected rate of return in capital markets on investments having comparable risks. It also changed the regulatory focus from determining the fair value of the rate base to determining a fair rate of return.³³ Although the *Hope* decision focused on the achievement of a reasonable and fair rate of return regardless of the determination process, the decision also established a foundation for regulatory "adjustments." The Court determined

28. *Id.* at 473 (emphasis added).

29. *Denver Union Stockyard Co.*, 304 U.S. at 475-76.

30. Although approved expenses are included to determine overall rates, they are not assets and, therefore, not included in ratebase.

31. *Hope Natural Gas Co.*, 320 U.S. at 591.

32. *Id.* at 603.

33. A discussion of rate of return and the cost of capital can be found in PHILIPS, *supra* note 20, at 374-81.

that when a rate went beyond “just and reasonable” boundaries, only the end results of that order mattered.

[I]t is the result reached not the method employed which is controlling It is not theory but the impact of the rate order which counts. If the total effect of the rate order cannot be said to be unjust and unreasonable, judicial inquiry under the Act is at an end And he who would upset the rate order under the Act carries the heavy burden of making a convincing showing that it is invalid because it is unjust and unreasonable in its consequences.³⁴

The “end results” requirement was to prove critical in used and useful determinations. Ironically, decades later many utilities faced financial ruin owing to the costs of the abandoned nuclear power plants whose construction they had embarked on. As discussed next, while strict application of the traditional used and useful test may have been straightforward in those cases (not completed implies not used, which implies not useful), the “end result” standard was used by utilities in a number of cases, including *Jersey Central*, to preserve financial viability. These cases necessitated greater flexibility in the application of the used and useful test.

C. *The Increasing Role of Used and Useful in the Electric Industry*

Used and useful determinations in the electric utility industry began to take on far greater importance as the end of steady growth in electricity demand coincided with the exhaustion of scale economies. Electric utilities began developing nuclear power plants in earnest in the late 1950s and 1960s, based on forecasts of steadily increasing demand. At that time, nuclear power was touted as the next great leap in generation technology, which promised unlimited supply at ever decreasing costs. However, there was little or no commonality between individual nuclear plants, resulting in construction firms almost custom-designing each plant. This reduced efficiency and increased costs.

Although there have been endless arguments as to why, the promise of nuclear power was never realized. Many plants planned for in the 1960s and 1970s were either cancelled outright or, worse, abandoned while only partially completed. Some of these are well known, such as the Washington Public Power Supply System’s (WPPSS) nuclear power plants in Washington State and the Shoreham Nuclear Plant on Long Island.

There have been a number of regulatory and legal decisions regarding unfinished nuclear power plants. These cases are especially important because, as will be discussed, they have been relied on to establish precedent for economic used and useful disallowances. Here we focus on two important cases, *Jersey Central*³⁵ and *Duquesne*.³⁶ *Jersey Central* is important because it is was cited by the Vermont Public Service Board as precedent for its current policy of applying economic used and useful disallowances to wholesale power contracts. The *Duquesne* decision is important because it arguably established possible justifications for allowing regulators to change the rules after the fact.

34. *Hope Natural Gas Co.*, 320 U.S. at 602 (citations omitted).

35. *Jersey Cent. Power & Light Co. v. FERC*, 810 F.2d 1168 (D.C. Cir. 1987).

36. *Duquesne Light Co. v. Barasch*, 488 U.S. 299 (1989).

1. *Jersey Central*

In the late 1960s, Jersey Central Power & Light (JCP&L) began development of a nuclear power plant in Forked River, New Jersey. By 1982, after having committed \$397 million to the still-uncompleted project, JCP&L abandoned the project. JCP&L sought to recover its investment by amortizing it over a fifteen-year period and requested that the unamortized portions be included in the rate base, with a rate of return sufficient to cover the carrying charges on the debt and the preferred stock portions of that unamortized investment, but did not request a return to common equity.³⁷ The FERC responded by summarily denying inclusion of the unamortized \$397 million in rate base, stating that this was “consistent with Commission precedent . . . unamortized investment in cancelled plants must be excluded from rate base.”³⁸ After the ruling by the FERC, JCP&L requested a hearing based on a fundamental premise that Commission rate orders must be “just and reasonable” for both consumers and investors, and that its allowed rate of return was too low.³⁹ The Commission denied a hearing, a decision that was affirmed by the Appeals Court.⁴⁰ JCP&L persisted, stating that its financial health had been severely impaired and that the Commission had violated the Supreme Court’s guidelines set out in *Hope*. Thus, JCP&L argued, the Commission had imposed an illegal regulatory taking, contrary to the Fifth and Fourteenth Amendments to the United States Constitution.

Ultimately, the Appeals Court ruled that the Commission was required to hold evidentiary hearings on the merits of JCP&L’s arguments. The Court concluded that, because the Commission had provided neither evidence nor reasoning for its denial of cost recovery, JCP&L’s regulatory takings theory had merit. Thus, rather than blindly applying a traditional used and useful test, it was necessary for the Commission to be flexible and consider the special circumstances of each case separately, noting whether such application would result in financial ruin for the utility. As Judge Starr noted in his concurring opinion:

[t]his policy of flexibility, it seems to me, reflects the practical reality of the electric utility industry, namely that investments in plant and equipment are enormously costly. Rigid adherence to “used and useful” doctrines would doubtless imperil the

37. *Jersey Cent. Power & Light Co.*, 810 F.2d. at 1171.

38. *Jersey Cent. Power & Light Co.*, 19 F.E.R.C. ¶ 61,208, 61,403 (1982). The Commission cited as precedent its decision on a previous abandoned nuclear power plant owned by *New England Power Company (NEPCO)*, where it relied on an “end results” approach developed in *Hope*. *New England Power Co.*, 8 F.E.R.C. ¶ 61,054 (1979), *aff’d sub nom.* NEPCO Mun. Rate Comm’n v. FERC, 668 F.2d 1327 (D.C. Cir. 1981), *cert. denied*, 457 U.S. 1117 (1982) (denial of rate base treatment for the costs of a nuclear power project abandoned due to changed circumstances). See also Hoecker, *supra* note 11, who is critical of the Appeals Court findings. He notes that the Court’s decision:

reflects a hostility to used and useful. . . [and that the] use of the takings doctrine to defeat the modest application of the used and useful rule led the dissent to believe that the majority wished mainly to rid modern ratemaking of this atavistic doctrine because of the disproportionate threat it poses to investors’ interest in recouping the enormous cost of cancelled nuclear facilities.

Id. at 333.

39. *Jersey Cent. Power & Light Co.*, 810 F.2d. at 1172.

40. *Jersey Cent. Power & Light Co. v. FERC*, 730 F.2d. 816 (D.C. Cir. 1984).

viability of some utilities; thus, while not articulating its results in *Hope* or “takings” terms, the Commission—whether as a matter of policy or perceived constitutional obligation—has in the past taken these realities into account and provided relief for utilities in various forms.⁴¹

Judge Starr further noted that:

[t]he obvious danger in not examining both ends of the continuum—both the prudence of the investment and whether the end result of the investment was used and useful—is to build in pressures for building excess generating capacity. The “used and useful” rule operates as a restraining principle, reminding utility managers that they must assume the risk of economic forces working against an investment which is prudent at the time it is made.⁴²

As we shall see later in this section, the *context* of that statement, made in reference to an abandoned and uncompleted nuclear power plant and the ability of utilities to earn a rate of return on such a failed investment, was subsequently turned on its head by Vermont regulators. These regulators used Starr’s concurrence to justify an *economic* used and useful test for a functional purchase-power contract that was not classified as a capital investment and, hence, unable to earn any return for investors whatsoever.

2. *Duquesne*

At about the same time JCP&L had embarked on construction of its Fall River nuclear plant, Duquesne Light Company joined four other utilities in a venture to construct seven nuclear power plants.⁴³ By 1980, after the second Arab oil embargo and the accident at Three Mile Island, four of the plants were canceled. Nevertheless, in 1982, the Pennsylvania Public Utilities Commission (PUC) permitted the utilities to amortize the costs they had incurred on these four plants into rates. Soon thereafter the Pennsylvania Legislature enacted a law precluding construction costs of facilities from being included in rate base if those facilities were not “used and useful.” Using this legislation as a basis, a consumer group then sued Duquesne and the PUC. The PUC argued that the law permitted the utilities to recoup their investment in the abandoned plants, but not earn a return on that investment.

The Pennsylvania Supreme Court reversed the PUC. The court concluded that the legislation prohibited collection of the investment *and* any return on the investment. On appeal, the United States Supreme Court affirmed. The Court concluded that disallowing “recovery of capital investments that are not ‘used and useful in service to the public’”⁴⁴ did not constitute a “taking” under the Fifth and Fourteenth Amendments of the Constitution.⁴⁵ While this was

41. *Jersey Cent. Power & Light Co.*, 810 F.2d. at 1188.

42. *Id.* at 1190 n.1.

43. For a complete and critical discussion of *Duquesne*, see also A. L. Kolbe & William B. Tye, *The Duquesne Opinion: How Much ‘Hope’ is There for Investors in Regulated Firms?* 8 YALE J. ON REG. 113 (1990) [hereinafter Kolbe & Tye]. Kolbe & Tye focus on the economic implications of the Court’s findings, notably the asymmetry of regulated returns and the crucial differences between expected and allowed rates of return.

44. *Duquesne Light Co.*, 488 U.S. at 300.

45. Hoecker, *supra* note 11, at 332.

consistent with the findings of the appeals court in *Jersey Central*, in *Duquesne* the Supreme Court went further; it opened the door to the long-discarded “fair-value” regulation concept of *Smyth v. Ames*.

In theory the *Smyth v. Ames* fair value rule standard mimics the operation of the competitive market. To the extent utilities’ investments in plants are good ones . . . they are rewarded with an opportunity to earn an “above-cost” return, that is, a fair return on the current “market value” of the plant. To the extent that utilities’ investments turn out to be bad ones (such as plants that are cancelled and so never used and useful to the public), the utilities suffer because the investments have no fair value and so justify no return.⁴⁶

In reaching its conclusions, the Court implied that a switch from a modified prudent investment standard, under which investors would have received a return of (but not on) unused and unuseful investments, to a used and useful test, under which neither a return of nor return on unused and unuseful investments were received did not constitute a regulatory taking. The Court’s suggestion that a return to the pre-*Hope* fair value standard that “mimics the operation of the competitive market” would apply only if risk and return were truly symmetric.⁴⁷ However, that was not to be the case in the emergence of an economic used and useful test.

D. The Emergence of Economic Used and Usefulness

It is perhaps not surprising that the most common employment of the used and useful test after early cases like *Denver Union Stockyard* (which played a crucial role in *Jersey Central* and *Duquesne*) focused on the “used” side. Concluding that abandoned nuclear power plants were not “used” was fairly straightforward. It offered regulators an opportunity to limit rate increases by preventing inclusion of capital assets in ratebase, thereby saddling utility investors with the consequences of both bad management in some cases, and unavoidable risks in others.⁴⁸ At least in the eyes of regulators and consumer advocates, a “risk-sharing” approach could be justified on the basis of the Court’s decisions in *Hope* and *Duquesne*, arguing that utility investors were being adequately compensated for the *inherent* riskiness of utility management investment decisions.

The economic used and useful test did not appear until the mid-1980s. The concept was proposed by a number of consumer advocates, primarily in conjunction with prudence reviews of nuclear power plants whose capital costs had exceeded original forecasts. Although cost overruns for many nuclear facilities were addressed in prudence cases, in several cases consumer advocates took positions that the plants should have been cancelled rather than completed, and that even a portion of the prudently incurred costs should be disallowed on the grounds that the investment had turned out to be uneconomic.⁴⁹

46. *Duquesne Light Co.*, 488 US at 308-09.

47. *Id.* at 308.

48. In the case of municipally owned utilities, taxpayers bore the costs of bankruptcy.

49. The FERC soundly rejected this sort of ex-post evaluation and the United States Court of Appeals affirmed in *Violet v. FERC*, 800 F.2d 280 (1st Cir. 1986). This case involved New England Power Company’s (NEP) investment in the Pilgrim II nuclear project, which had begun in 1972.

This reasoning allowed the economic used and useful test to supplement, or indeed trump, the traditional prudence standard. A specific cost incurred could be excluded from a utility's cost of service, whether or not prudently incurred, if it turned out to be anything other than the least-cost option based on developments in the "market" occurring well after the acquisition was made. The economic used and useful test suggests that, even if prudent and "used," uneconomic, and thereby "unuseful," costs may be disallowed.

The economic used and useful test compares the current (and possibly projected) market value of the cost item, whether a capital asset or an expense, to its current (and possibly projected) cost.⁵⁰ If the cost exceeds the market value, the item "fails" the economic used and useful test and all or a portion of the cost differential (*i.e.*, the difference between the actual cost and the market value) may be disallowed. If the cost is below the market value, the utility is allowed only to recover that cost, not the total market value. Under different versions of the economic used and useful test, this cost versus market value comparison may be performed periodically in each utility rate case, as long as the cost is sought to be included in rates. Therefore, the reasonableness of the entire cost may never be fully or finally determined. Ultimately, the economic used and useful test implements a regulatory policy under which: (1) prudently incurred costs can be disallowed any time in the future; (2) the extent to which a utility will be able to recover prudently incurred costs will be determined using information not available to the utility at the time its decision was made; (3) the determination of "uneconomic" costs will change over time as market conditions change; and (4) the treatment of investments and purchase decisions will be the same, except that a utility will not be allowed to profit from an advantageous purchase decision – at most, it will be able to recover its cost.

A notable early example of the adoption by a public utility commission of a risk-sharing approach in a nuclear prudence case was the Kansas Corporation Commission's (KCC's) first *Wolf Creek* decision.⁵¹ In its order, the KCC disallowed approximately \$257 million of the Wolf Creek Nuclear Plant's cost (8.85% of the total cost) that it considered to have been imprudent, and disallowed \$411 million (14.2% of the total cost) that it considered to be "uneconomic," based on a risk-sharing methodology. However, two years later, the Commission allowed a significantly larger portion of the plant to be included

Although the focus of the case was NEP's investments in the plant after 1980, an Administrative Law Judge (ALJ) found NEP imprudent since entering a 1972 agreement in which NEP ceded decision making about the plant to Boston Edison. The FERC overruled the ALJ's finding and the States of Rhode Island and Massachusetts appealed The FERC's decision, stating that the FERC's interpretation of prudence, whose origin could be traced to Justice Brandeis's 1923 opinion in *Southwestern Bell*, was too narrow, and that prudence findings should be backward looking as well. The appeals court noted that, "The Commission rejected this approach as neither 'fair, equitable, [n]or logical.'" *Id.* at 283. The court agreed with the Commission's ruling, and denied the petition by the states. *Violet*, 800 F.2d 280.

50. Future projected costs and market value are generally discounted to determine a net present value figure on which to base a disallowance. In some cases, however, advocates of an economic used and useful test have sought to base comparisons with current market prices. In either case, numerous regulatory and economic issues arise, as will be discussed in Section III, *infra*.

51. *In re Wolf Creek Nuclear Generating Facility*, 70 P.U.R.4th 475 (Kan. 1985) (includes the relevant statutory language that a facility be used and "economically desirable").

in rate base.⁵²

Soon after *Wolf Creek*, the Massachusetts Department of Public Utilities (MDPU) invoked a more extreme “optimality” standard for both prudence and economic used and usefulness. The case involved rate recovery for Western Massachusetts Electric Company’s investment in the Millstone 3 Nuclear Facility. The MDPU ruled that “[n]eed for a new electric utility production plant is established if it can be shown that the investment in question can provide either capacity . . . or energy . . . at a net cost which is lower than the cost of the capacity which it displaces. . . .”⁵³

While the MDPU’s statement was geared towards the prudence of the Millstone 3 investment, it also detailed how cost-effectiveness would be determined. “The calculation of the cost-effectiveness of Millstone 3 requires that the cumulative net present-value revenue requirements of Millstone 3 (CNPVRRM3) be compared to the cumulative net present-value revenue requirements of the optimal supply alternative (CNPVRRSA).”⁵⁴

This characterization of cost-effectiveness, while standard components in many utility “least-cost” planning requirements, was to be invoked later in other jurisdictions as an economic used and useful test. Ultimately, the MDPU ruled that no return on investment would be allowed for a plant that was not economically used and useful.

Subsequently, the MDPU opened Docket No. DPU 86-36 for “a full exchange of ideas . . . on the wide range of issues pertaining to the impact of various ratemaking alternatives on new utility investment.”⁵⁵ The MDPU asked commentors to address the manner in which a comprehensive regulatory framework could best ensure that non-utility sources are incorporated in a utility’s least-cost integrated planning process. At the conclusion of this investigation, the MDPU reversed its earlier decision, stating that an economic used and useful test was:

impracticable; (2) inconsistent with economic efficiency, the obligation to serve, and the avoidance of bias in the decision-making process . . . [and] jeopardized efficient provision of service by creating financing barriers for utility projects⁵⁶

The pre-approval contract approach, relying as it does primarily on harnessed competitive forces and secondarily on Department approval of utility proposals with pre-established parameters for cost recovery . . . better satisfies these competing requirements. We reaffirm our rejection of the used and useful approach.⁵⁷

Another contemporaneous case, *Montana Power Company*, was important in that it was the first instance in which a “marketplace” standard was applied.

52. *In re Kansas Gas & Elec. Co.*, 82 P.U.R.4th 539 (Kan. 1987).

53. *In re Western Mass. Elec. Co.*, 80 P.U.R.4th 479, 520 (Mass. 1986), quoted in PHILIPS, *supra* note 20, at 340.

54. *Western Mass. Elec. Co.*, 80 P.U.R.4th at 525.

55. *In re Pricing and Rate-making Treatment for New Elec. Generating Facilities Which are Not Qualifying Facilities*, 89 P.U.R.4th 190, 192 (Mass. 1986).

56. *Id.* at 191.

57. *In re Pricing and Rate-making Treatment for New Electric Generating Facilities Which are Not Qualifying Facilities*, 93 P.U.R.4th 313, 338 (Mass. 1988).

In 1983, Montana Power Company filed to increase its rates. A major portion of the requested increase was to cover the costs associated with its investment in a share of the Colstrip 3 generating station. In August 1984, the Montana Department of Public Service Regulation denied rate recovery, determining that better alternatives were available at the time.⁵⁸ The Montana District Court overturned the Department's ruling, stating that:

[t]he [C]ommission has not been empowered by the legislature to act as 'surrogate for the marketplace' and to displace, without any finding of imprudence, unreasonableness, or need, the generation resource acquisitions made by a utility The [C]ommission's marketplace standard was unreasonable, arbitrary, and clearly erroneous, because it used the supposed market value of electricity only to reduce the value of the output of the Colstrip 3 generating station, and it did not use the same supposed market value to increase the value of the output of the older generating facilities on the MPC system, such as its hydroelectric facilities.⁵⁹

Thus, the Court not only rejected the Department's decision on the requirements to meet a prudence standard, it also rejected a market-based standard for used and usefulness for which no competitive "market" existed and which was applied selectively, penalizing a utility for a supposedly "above-market" resource while not rewarding it for "below-market" resources.

In the early 1990s, the economic used and useful test continued to appear and further evolve. The test almost always was invoked in response to cost overruns for nuclear plant investments. In Illinois, for example, Commonwealth Edison Company brought three nuclear plants, Byron Unit 2, and Braidwood Units 1 and 2, on-line in 1987 and 1988. In part because of the cost overruns, the State of Illinois Legislature revised the Illinois Public Utility Act that required the Illinois Commerce Commission (ICC) to conduct construction audits of all new electric generating plants. The revisions to the Public Utility Act also included language for determining used and usefulness, which stated that: "A generation or production facility is used and useful only if, and only to the extent that, it is necessary to meet customer demand or *economically beneficial* in meeting such demand."⁶⁰ This language came to be called the "needs and economic benefits test."

The ICC initially allowed the plants in rate base. A consumer group, however, appealed that decision. The Illinois Court of Appeals ruled against the group, stating that the ICC should base a used and useful determination on the rules that existed prior to the legislative changes, because the nuclear plants were under construction long before those changes took effect.⁶¹ The Illinois Supreme Court reversed and remanded the case back to the ICC, finding that the Commission had broad discretion in selecting the methodology on which to gauge used and usefulness.⁶² In 1993, the ICC determined that the Byron 2 unit

58. *In re Montana Power Co.*, 61 P.U.R.4th 177 (Mont. 1984).

59. *Montana Power Co. v. Mont. Dep't of Pub. Serv.* 68 P.U.R.4th 521, 526-27 (Mont. 1985).

60. 220 ILL. COMP. STAT. 5/9-212 (2002) (emphasis added).

61. *Business & Prof'l People for the Pub. Interest v. Ill. Commerce Comm'n*, 555 N.E.2d 693 (Ill. 1989).

62. *Business & Prof'l People for the Pub. Interest v. Ill. Commerce Comm'n*, 585 N.E.2d 1032, 1053 (Ill. 1991).

was 93% used and useful, based on the needs test adopted in the 1987 revision to the Public Utilities Act. Similarly, Braidwood 1 was found to be 21% used and useful, and Braidwood 2 was found to be 0% used and useful.⁶³ However, this was not the end of the story. In a 1995 rate case, the ICC reversed itself and found that all three plants were 100% used and useful. Furthermore, the ICC explicitly *rejected* application of a “net economic benefits test,” which was based on the present value revenue requirements of the plants relative to those of an alternative system designed to meet required reserve margins. The Commission stated, “[t]his test is a *radical* departure from the Commission’s needs and economic benefits test since it requires a needed unit also to be economically beneficial in order to be deemed used and useful.”⁶⁴ Thus, in overturning its previous decisions, the ICC returned to the traditional application of a used and useful test.

Applying an economic used and useful test to generating plant investments that, like many nuclear plants, were either not completed or suffered from unexpected cost overruns clearly extended the original concept of used and useful. In the case of failed nuclear power plants, such an extension was unnecessary. Why apply a new, and potentially controversial, regulatory concept when an existing one (traditional used and useful) would work as well?

The other problem that the application of the economic used and useful concept suffered from was comparative. Without some sort of actual market within which to make “economic” comparisons, regulators were simply allowing themselves a “second bite of the apple.” They substituted their after-the-fact judgment about future plant economics for management’s, without the benefit of any actual market data. Electric industry restructuring offered the promise of obtaining that data and thus enabling regulators to hold electric utility resource to a realistic competitive “yardstick.” Or so it appeared.

E. The Influence of Electric Restructuring

Even in the absence of actual market prices, regulators have always needed some form of proxy estimate for the value of new generating supplies, whether capitalized or expensed, in order to determine the prudence of those supplies. So in 1994, when California became the first state to pass legislation to restructure its electric utility industry, the economic used and useful test gained new momentum by providing its proponents with a promise of “true” market comparisons. Additionally, by invoking “competition,” proponents of an economic used and useful test could resurrect prior case law to provide precedent for not guaranteeing cost recovery to utilities, even when supply decisions had previously been found prudent.⁶⁵

63. *In re Commonwealth Edison Co.*, 139 P.U.R.4th 165, 208 (Ill. 1993).

64. *In re Commonwealth Edison Co.*, 158 P.U.R.4th 458, 480 (Ill. 1995) (emphasis added). The net economics benefit test is difficult to distinguish from a prudence test in which the lowest present value cost resource would be “prudent,” all other things equal. This “second bite of the apple” problem is a critical regulatory issue, and is discussed *infra* Section III.

65. The nearest equivalent of an economic used and useful test applied in electric restructuring is the calculation of so-called “stranded generating costs” when the generating assets of integrated electric utilities have been spun off through divestiture or assignment to unregulated subsidiaries. For a useful

One of the tenets of a competitive marketplace is the absence of any guarantee of success. Competitive enterprises succeed and fail, not only because of their own actions, but also because of the overall changes in markets for the goods and services they provide. In a well-known 1945 Supreme Court case, *Market Street Railway*,⁶⁶ the appellant argued that a rate reduction ordered by California Railroad Commission constituted a regulatory taking under the Fifth and Fourteenth Amendments of the Constitution.

The Market Street Railway Company had been formed in 1893 as a consolidation of a number of existing companies. It operated a system of street cars and buses in the San Francisco area. The Court noted the various cycles the Company had been through, stating “[t]his property has passed through cycles of competition, consolidation and monopoly, and new forms of competition; it has seen days of prosperity, decline, and salvage.”⁶⁷ Seeing a decline in service quality, the Railroad Commission ordered the company to reduce its rates. The Commission also noted the inherent price elasticity of services offered, concluding “the Company would reap no lasting benefit from rates in excess of five cents, due to the tendency of a higher rate to discourage patronage.”⁶⁸ Market Street Railway appealed the rate reduction. The Supreme Court, however, affirmed the appeals court decision, stating:

[t]his company obviously is up against a sort of law of diminishing returns; the greater amount it collects per ride, the less amount it collects per car mile. . . . While the Company does not assert that it would be economically practicable to obtain a return on its investment, it strongly contends that the order is confiscatory by the tests of *Federal Power Commission v. Hope Natural Gas Co.* . . . Even monopolies must sell their services in a market where there is competition for the consumer’s dollar and the price of a commodity affects its demand and use.⁶⁹

The Court had thus established a competitive “out.” Regulators were under no obligation to guarantee the returns of firms facing inevitable competitive pressures.

Applying this same logic to a restructured electric utility industry, regulators could conclude that electric utilities would have to face the same competitive pressures as other firms. Unfortunately for the proponents of this approach, the analogy offered by *Market Street Railway* breaks down because of the underlying causality. *Market Street Railway* did affirm the inevitable effects of the competitive marketplace; changing technology and consumer preferences create both winners and losers. However, whereas the Railroad Commission of California did not decree that there would be competition in the transportation industry or the technological changes that had replaced the horse-and-buggy with

introduction to the economic and legal issues raised by stranded cost measurement and recovery, see generally Timothy Brennan & James Boyd, *Stranded Costs, Takings, and the Law and Economics of Implicit Contracts, Resources for the Future* (Sept. 11, 2002) available at http://www.rff.org/CFDOCS/disc_papers/PDF_files/9702.pdf.

66. *Market St. Ry. Co. v. R.R. Comm’n*, 324 U.S. 548 (1945). The Supreme Court heard arguments on two separate appeals that were combined into its decision.

67. *Id.* at 554.

68. *Market St. Ry. Co.*, 324 U.S. at 557.

69. *Id.* at 565-66, 569.

the automobile, regulators themselves have primarily driven electric restructuring and “competition.”⁷⁰

Of course, electric industry restructuring has faltered. The debacle in California, along with the more recent failure by Enron and a number of other energy firms, and ensuing skepticism about “risk management” activities, has reduced the political and regulatory ardor for restructuring. Nevertheless, workably competitive wholesale markets exist in some regions, such as New York.⁷¹ Restructuring has also tended to deregulate generation activities in certain regions, though not transmission and distribution. A number of integrated electric utilities have, as a result, either voluntarily or forcibly divested themselves of their generating assets. One consequence of this divestiture has been the increasing importance of power-purchase agreements (PPAs) between generation suppliers and utilities.

Evaluating the economic used and usefulness of PPAs, in turn, has become a new regulatory battleground. PPAs are far different from owning generating assets. While PPAs obviously introduce contractual performance risks that differ from owned generating assets, the most significant difference is their rate treatment. PPAs are not treated as rate-based regulatory assets, but are instead expense items, on which utilities do not earn a return. This difference has important implications for “symmetry” arguments, such as those raised in *Duquesne*, and the end-results focus of *Hope*. The implications have been felt by electric utilities in Vermont, which is the only state to currently apply economic used and useful tests to PPAs with any regularity. Those applications have not only been baffling, they have stood the regulatory “symmetry” principle on its head.

F. Current Application of the Economic Used and Useful Test: Vermont

Since 1994, economic used and useful tests have been a centerpiece of utility rate cases in Vermont, which have centered on the PPA between Vermont’s electric utilities and HQ. The PSB has cited the need to impose competitive pressures on utilities as justification for application of the test. However, “competition” in the electric industry arises primarily from active deregulation, and Vermont has not deregulated or restructured its electric industry whatsoever. In applying an economic used and useful test to well-functioning power contracts that had been the subject of extensive prior review and approval, the PSB imposed asymmetrical risk on utilities with catastrophic

70. While there has been technological change in the industry that may someday lead to cost-effective “generation-in-a-box” for every consumer, that day has yet to arrive. Jonathan Lesser & Charles Feinstein, *Distributed Generation: Hype vs. Hope*, 140 PUB. UTIL. FORTNIGHTLY, 11, 20 (June 1, 2002).

71. A complete discussion of “workable” competition is beyond the scope of this article. For an introduction, see generally W. Hogan, Market Power and Electricity Competition, Presentation to the American Bar Association 50th Annual Spring Meeting, Washington, D.C., April 25, 2002; Notice of Proposed Rulemaking, *Remedying Undue Discrimination Through Open-Access Transmission Service and Standard Electricity Market Design*, 67 Fed. Reg. 57,187 (Sept. 9, 2002) (wholesale markets may change as rules for transmitting power and the institutions that oversee such transmission will likely change).

financial results.⁷²

The application of economic used and useful tests to this PPA contract represents what can only be concluded as a perversion of the “regulatory compact.”⁷³ The reasons for this extend back to the nature of electric resource planning requirements in Vermont, which will be summarized below. Not only has the test’s application been financially ruinous for utilities, it has also effectively resulted in their facing a “Hobson’s Choice” of rate disallowances: choosing between prudence disallowances today or economic used and useful disallowances in the future. This hardly seems to be an “equitable and sound regulatory policy,” as concluded by the PSB. Additionally, the PSB has selectively applied its own previous rulings to effectively “bootstrap” its way towards establishing regulatory and legal precedent for its actions.

The first of the cases involving the HQ contract began in February 1994 when Central Vermont Public Service Corporation, the largest electric utility in the state and one of the VJO participants, filed for a rate increase. Much of that increase was linked to the increased costs of the HQ contract.⁷⁴ The Vermont Department of Public Service (DPS), the state’s ratepayer advocate and official energy planning agency, opposed the increase on grounds of both imprudence and economic used and usefulness. Specifically, one DPS witness argued that, because the cost of HQ power was more expensive than concurrent alternatives (as of 1994), it was not economically used and useful.⁷⁵ The DPS witness also insisted that an economic used and useful test was consistent with traditional utility regulation.

The PSB ruled that the economic used and useful test as proposed was inappropriate, because it:

would penalize investors for prudent investments that are, or had been, reasonably expected to yield net present value benefits over their lifetime, that are not excessive in scope, and that are still in service, but whose costs may exceed market prices at a particular moment in time. In this way[,] . . . Dr. Rosen’s ratemaking approach may discourage utilities from making least-cost investments that fail a short-term market cost-effectiveness test.⁷⁶

Although the PSB rejected this form of economic used and useful test in *Central Vermont I*, it left open the possibility that market-value tests were not inherently unacceptable, especially in light of efforts to restructure the electric industry. “As utility markets become more open and competitive, it may become increasingly possible and, in many cases, desirable to employ market-based tests to govern the utility’s total return.”⁷⁷ This caveat became critical in two subsequent cases: *Green Mountain Power*⁷⁸ and *Central Vermont II*.⁷⁹

72. Kolbe & Tye, *supra* note 43.

73. See generally PHILIPS, *supra* note 20, at 21.

74. *In re Central Vermont Public Service Corp.*, No. 5701/5724 (Vt. P.S.B. 1994) [hereinafter *Central Vermont I*].

75. *Id.*

76. *Central Vermont I*, *supra* note 74 also available at *In Re Tariff Filing of Central Vt. Pub. Serv. Corp.*, 769 A.2d 668, 676-77 (D.C. Cir. 2001).

77. *Id.* at 677.

78. *In re Green Mountain Power Corp.*, 184 P.U.R.4th 1 (Vt. 1998).

In June 1997, Green Mountain Power Corporation (GMP) filed for a 16.7% rate increase to cover the costs of its HQ contract obligations. At that time, Vermont, like many other states, was in the midst of regulatory and legislative efforts to restructure its electric industry, efforts that ultimately collapsed.⁸⁰

In February 1998, the PSB ruled not only that GMP's 1991 lock-in of the contract was imprudent, but also that the contract was not economically used and useful. In its decision, the Vermont Public Service Board continued to reject the form of the economic used and useful test proposed in *Central Vermont I*, and instead adopted a new form of test based on a comparison between the net present value of the projected *future* cost of the HQ contract and the projected market price of power over the contract's remaining lifetime. The PSB stated that an investment or purchase decision is not used and useful "when it is not expected to yield net present value benefits, after consideration of non-price benefits, over its lifetime."⁸¹ A witness for the DPS also proposed this form of economic used and useful test.⁸²

The PSB cited several cases as justification for its conclusions, including *Interstate Power*⁸³ and *In re Section 712 of the Energy Policy Act of 1992*.⁸⁴ Although both cases specifically involved purchase-power contracts, neither case provided precedent for applying an economic used and useful test. In *Interstate Power*, the Minnesota PUC reaffirmed a previous rate order finding that the Interstate Power Company had been *imprudent* in signing three PPAs. The Minnesota PUC imposed a disallowance for that imprudence based on the price of another long-term power contract that had been signed previously by Interstate Power to purchase power from Iowa Public Service Company.⁸⁵ The Minnesota PUC's ruling was thus based on a finding that Interstate Power had a less expensive alternative *at the time that it signed* the agreements. There was no reference to a midstream reevaluation of the PPA as in the HQ case. Nor had there been any prior regulatory approval of the contract by the Minnesota PUC, as with the HQ contract. Thus, rather than applying used and usefulness of any type, in *Interstate Power* the Minnesota PUC evaluated the *prudence* of a PPA.

The PSB cited *In re Section 712 of the Energy Policy Act of 1992* as evidence that purchase-power contracts should not be treated differently than power plant investments.⁸⁶ Here again, however, the focus of the case was the *prudence* of a PPA entered into by PNM, the largest investor-owned utility in the

79. *In re Central Vt. Pub. Serv. Corp.*, 769 A.2d. 668 (2001) [hereinafter *Central Vermont II*].

80. Central Vermont Public Service filed a second rate case (*Central Vermont II*) requesting a 6.6% rate increase, in September 1997. This case was ultimately appealed to the Vermont Supreme Court on the basis of both *res judicata* and collateral estoppel relating to issues raised in the 1994 case. The findings of the Vermont Supreme Court are discussed *infra*.

81. *Green Mountain Power Corp.*, 184 P.U.R.4th at 19.

82. GMP filed a motion for reconsideration, which provided little relief, and then appealed the case to the Vermont Supreme Court. The parties settled before the Court issued its ruling.

83. *In re Interstate Power Co.*, No. E-001/GR-95-601, 1996 WL 532195 (Mn. P.U.C. 1996) [hereinafter *Interstate Power*].

84. Section 712 of the Energy Policy Act of 1992, 146 P.U.R.4th 177 (N.M. P.U.C. 1993).

85. *Interstate Power*, *supra* note 83, at *15.

86. *Green Mountain Power Corp.*, 184 P.U.R.4th at 243 n.425.

State of New Mexico. The case did not address the economic used and usefulness of this PPA. Rather, the New Mexico Public Utilities Commission (NMPUC) had, contrary to the situation involving the HQ contract, specifically rejected *pre-approval* of long-term power purchase contracts. Instead, the NMPUC decided it would review *future* contracts within the confines of *future* rate cases, IRP processes, or both.⁸⁷ The NMPUC determined that an *ex-post* review of power purchase contracts, which most closely mirrored the approach to power plant investments, was appropriate. This review provides a stark contrast to the *ex-ante* Certificate of Public Good required under Vermont law.⁸⁸

In February 2001, the Vermont Supreme Court issued its decision in *Central Vermont II*. As part of that decision, the Court addressed the PSB's application of the economic used and useful test to the HQ contract. Specifically, the Court found the test recommended by the witness for the DPS was no different than the test that had been rejected by the PSB in the *Central Vermont I*. The Court's decision directly addressed the Board's statement in its Order in *Central Vermont I* that an economic used and useful test could be applied in future dockets if electric markets became more open and competitive.

We agree that [the Board] left open the possibility that it might use a market-value approach in the future, and deny recovery of costs that exceed market value, but under very limited circumstances. It stated: "As utility markets become more open and competitive, it may become increasingly possible and, in many cases, desirable to employ market-based tests to govern the utility's total return. . . . As far as we can determine, Vermont has essentially the same electric regulatory system as it had in 1994 and that system is based on regulation of electric service monopolies, not competition."⁸⁹

Despite the Supreme Court's ruling in 2001, the PSB today continues to insist that an economic used and useful test represents established policy. In its most recent rate order involving the HQ contract, *Citizens Energy Services*, the PSB concluded that an economic used and useful test "represents equitable and sound regulatory policy."⁹⁰ Additionally, the PSB formally extended the common interpretation of used and usefulness discussed previously to embody economic used and usefulness.

Long standing regulatory policy in Vermont, and throughout the United States, has held that a utility may fully recover in rates the costs of a resource only if it is both used – *i.e.* necessary for the utility's provision of service to its ratepayers – and useful – *i.e.*, economic for the purposes that it is serving. A resource is not used and useful when it is not expected to yield net present value benefits, after consideration of non-price benefits, over its lifetime. . . . This Board applies the economic usefulness⁹¹ test to purchased power contracts, and not just to investments in generation plants.

87. Section 712 of the Energy Policy Act of 1992, 146 P.U.R.4th at 182.

88. VT. STAT. ANN. tit. 30, § 248(a) (2001).

89. *Central Vermont II*, *supra* note 78, at 685 (emphasis added).

90. *In re* Tariff Filing of Citizens Communications Company Requesting a Rate Increase in the Amount of 40.02% to Take Effect December 15, 2001, No. 6596 at 38 (Vt. P.S.B. July 15, 2002) (the author testified on economic used and usefulness in this case on behalf of Citizens Energy Services) [hereinafter Tariff Filing], available at <http://www.state.vt.us/psb/orders/2002/files/6596final.pdf>.

91. *Id.* The DPS and the PSB apply the test over the *remaining* lifetime of the contract, as will be

The PSB further declared:

the economic usefulness test, including its application to power contracts, represents equitable and sound regulatory policy. The test furthers the purpose of regulation as a substitute for competitive markets, by assigning some (but not all) of the risk of uneconomic decisions to companies. The test produces equitable results; although regulation may limit the upside for investors should a utility's decision prove to be especially beneficial, the economic usefulness test symmetrically limits their downside risk by sharing the financial consequences of uneconomic decisions.⁹²

The PSB cited Judge Starr's concurring opinion in *Jersey Central* to support an *economic* used and useful test, even though the case, as was previously discussed, hinged on application of the *traditional* used and useful test and whether its application implied an illegal taking. Finally, in citing Judge Starr's opinion, the PSB justified its application of an economic used and useful test on the basis that doing so provides a *benefit* to utilities by sharing the adverse financial consequences between ratepayers and shareholders.

The comparison is, of course, imperfect since the airline will enjoy the full fruits of financial success if its acquisition program succeeds. A utility's rate of return, in contrast, is limited by regulation. On the other hand, the airline is not provided with the protection of a regulatory body's interest in preserving the financial soundness of the enterprise.⁹³

Of course, Judge Starr also stated:

For me, the prudent investment rule is, taken alone, too weighted for constitutional analysis in favor of the utility. It lacks balance. *But so too, the "used and useful" rule, taken alone, is skewed heavily in favor of ratepayers.*⁹⁴

While the "end results" standard embodied in *Hope* may have assisted utilities otherwise facing financial ruin, the PSB's application of economic used and usefulness has not. Rather, it has provided the PSB the proverbial "second bite of the apple." The PSB has applied its economic used and useful test in the same selective manner which *Montana Power* and other cases rejected. Ultimately, the PSB's "precedent" for applying an economic used and useful test to a functioning power contract has been erroneously derived from cases involving application of the more common used and useful test to investments in abandoned nuclear power plants. Arguing that electric utilities benefit from such selective application is, to say the least, ironic, given the adverse economic and regulatory implications of the test that are discussed in Section III.

G. Conclusions

There is no doubt that applications of traditional used and useful tests to generating plant investments that, although prudent, had for whatever reason failed, is established precedent. The traditional test's importance was established

discussed *infra* Section III. This is a critical distinction.

92. Tariff Filing, *supra* note 90, at 39.

93. *Jersey Cent. Power & Light Co. v. FERC*, 810 F.2d 1168, 1191 n.2 (D.C. Cir. 1987). Ironically, the airline industry was provided government financial protection subsequent to the terrorist actions of September 11, 2001.

94. *Id.* at 1191 (emphasis added).

as utilities and regulators addressed a series of failed nuclear power plant investments. As Judge Starr noted in *Jersey Central*, “[w]hether this regime is wise or not is, needless to say, not before us.”⁹⁵

In contrast, the development of the economic used and useful test, especially in its most recent applications to purchase power contracts, is less a gradual evolution of regulatory and legal precedent and more an “end-run” allowing regulators to second-guess utility resource decisions. Such second guessing extends even to decisions they themselves may have previously found to be prudent and used and useful in the common sense. Other than Vermont, there appears to be no existing judicial or regulatory precedent for applying economic used and useful tests to regulated investments and power contract expenses.

Because electric industry restructuring has faltered, many utilities continue to have an obligation to serve their customers. That continuing obligation means that further application of economic used and useful tests will have important economic and regulatory implications. It is those implications to which we now turn.

III. ECONOMIC AND REGULATORY IMPLICATIONS

We have argued that there is no judicial precedent for an economic used and useful test. But what of the test’s economic and regulatory implications? As this section discusses, these implications are significant, especially in the quasi-regulated environment that electric utilities operate within today. The economic used and useful test is fundamentally incompatible with utility efforts to manage market price uncertainty. Application of the test necessarily increases financial risks faced by utilities. Greater financial risks contribute to higher utility costs of capital and, ultimately, to higher rates for ratepayers who the test is supposed to protect.

From a regulatory standpoint, the economic used and useful test clearly does not offer any “symmetry” in the allocation of risk between ratepayers and investors. The test is also at odds with long-term planning requirements still required of many electric utilities, especially with the collapse (whether temporary or not) of restructuring efforts. Lastly, applications of economic used and useful tests in conjunction with long-term resource planning obligations can result in economic “double jeopardy” that may, in principle, *guarantee* regulatory disallowances of utility generation supply costs. Such an outcome hardly seems what the Supreme Court’s decision in *Hope* was meant to achieve.

A. Economic Framework

To address these economic and regulatory issues, we construct an economic framework to illustrate the impacts of the economic used and useful test in a

95. *Jersey Cent. Power & Light*, 810 F.2d at 1189. The pros and cons of the traditional used and useful test were addressed by Hoecker, who concluded that, “[t]he public should indeed pay for what it gets and get what it pays for. Unless this is more precisely explained and applied, however, agencies and courts will overlook used and useful for other means to accomplish the particular end results they desire.” Hoecker, *supra* note 11, at 335.

quasi-deregulated setting.⁹⁶ We begin by constructing the following hypothetical situation. Suppose that an electric utility is required, by statute, to develop a long-term “least-cost” resource plan (LCRP). By “least-cost,” the statute means the lowest expected net present value portfolio of resources that will meet anticipated (but also uncertain) future customer demand.⁹⁷ Typically, for example, a utility’s resource plan will cover a ten to twenty-year period. For any future generating resource acquisition to be found prudent, it must be adequately assessed in the LCRP.⁹⁸ The utility’s planning problem is to determine the least expected cost portfolio of generating resources (including purchase power contracts).

To determine a preferred resource acquisition, we can assume that the utility evaluates a number of generation alternatives, or strategies. Each strategy can contain multiple resources. Thus, we can assume that the utility has identified a set of N potential new resource portfolios $[R_1, R_2, \dots, R_N]$ as candidates to add to its existing resource portfolio, R .⁹⁹ The present value cost of each of these individual portfolios R_j is given by PV_j , where $j = 1, 2, \dots, N$, $PV =$ present value, while the present value cost of the existing resource portfolio R is PV_R . The utility’s problem is to choose one of the R_j ’s such that the overall present value cost, $PV_j + PV_R$ is minimized.

If there were a well-established competitive wholesale market and neither uncertainty about future market prices, nor the costs associated with the candidate resource portfolios, the prudent portfolio choice could be determined easily. Suppose that the prudent portfolio, based on the minimum present value cost rule, consists of a single, long-term power purchase contract “A,” whose cost gradually increases over time relative to the (known) wholesale market price.¹⁰⁰ That is, the contract is somewhat back-loaded, offering immediate

96. By “quasi-deregulated,” we mean a situation whereby the utility continues to have an obligation to serve some or all of its customers, and where there exists a well-functioning and competitive wholesale power market that provides transparent prices.

97. This is, in fact, the language contained in VT. STAT. ANN. tit. 30, § 218(c) (2000).

98. Mathematically, this is equivalent to the LCRP providing a necessary, but not sufficient, condition for prudence. The utility must solve a dynamic optimization problem under uncertainty. The techniques for performing this type of analysis are beyond the scope of this article.

99. It is likely that individual resources will appear in more than one resource portfolio, but this does not affect the example.

100. Ironically, this example was raised by the Chairman of the Vermont PSB in *In re* Tariff Filing of Citizens Communications Co. Requesting A Rate Increase in the Amount of 40.02 Percent to Take Effect December 15, 2001, No. 6596 at 26-7 (Vt. P.S.B. April 11, 2002) (statement of Michael H. Dworkin, Chairman, Vt. P.S.B.). Prudence is established using a “fair value” test, where fair value is determined by the market price of electricity in the assumed competitive wholesale market. As Judge Starr noted in *Jersey Central Power & Light Co.*:

Requiring an investment to be prudent when made is one safeguard imposed by regulatory authorities upon the regulated business for benefit of ratepayers. As I see it, the “used and useful” rule is but another such safeguard. The prudence rule looks to the time of investment, whereas the “used and useful” rule looks toward a later time. The two principles are designed to assure that the ratepayers, whose property might otherwise of course be “taken” by regulatory authorities, will not necessarily be saddled with the results of management’s defalcations or mistakes, or as a matter of simple justice, be required to pay for that which provides the ratepayers with no discernible benefit.

810 F.2d at 1168, 1190.

savings relative to the market value of electricity today, in exchange for above-market costs in the future.¹⁰¹ We assume that, at the outset, the contract has an aggregate net present value benefit of \$250 million, that is, the contract offers savings of \$250 million relative to the projected (with complete certainty) market price.

Because the contract meets the resource-planning requirement, it must be prudent. Assuming there is no performance risk, *i.e.*, that the supplier meets its obligations under the contract, once the contract begins it will also pass *both* a traditional used and useful test and an economic one.¹⁰² In fact, when the contract begins, there is no difference between prudence and economic used and usefulness: both will have measured the net present value of the contract relative to all other alternatives, including the wholesale market. This conclusion is also true if the resources under consideration are both investments in new capacity that will become part of the utility's rate base. The initial decision to go forward with construction of a generating plant can be determined by selecting the least-cost alternative.¹⁰³ Once the plant is on-line, it will meet the traditional definition of used and useful. This is surely what Judge Starr referred to in his description of the purposes of the two tests.¹⁰⁴

As the PPA proceeds over its lifetime, the savings it provides relative to wholesale market prices necessarily decrease over time, as shown in Figure 1, ECONOMIC USED AND USEFULNESS OF CONTRACT OVER TIME. This is simply a consequence of the contract's increasing price structure. In other words, while at the contract's inception it provided \$250 million in present value savings, the present value savings over the final ten years decreases to about \$20 million. Given the structure of the contract, at some point, the present value savings over the remaining life *must* vanish, which in Figure 1 occurs at year thirteen. Again, this is simply a consequence of the back-loaded nature of the contract. We then ask whether, at the start of year thirteen, the contract is economically used and useful? Under the PSB definition of economically used and useful, as it has been applied in the Vermont cases noted previously, the utility would suffer a disallowance, because there would no longer be any present value savings to the contract over its *remaining* lifetime.¹⁰⁵ The utility, having previously made a

In the example, we presume that the long-term power contract meets the criteria set out by Judge Starr for prudence. For ease of exposition, we can also assume that there is no performance risk associated with the contract; the supplier will faithfully meet the terms and obligations as set out.

101. The requirement that all contracts be below market at all times is clearly unreasonable, since the market value of electricity is itself determined by supply and demand in the aggregate. To suggest otherwise is to impose a "Lake Wobegon" prudence requirement, where all utilities must be below market at all times. This is impossible.

102. Had the utility constructed its own generating facility, this would be equivalent to the facility being successfully brought on-line without any cost overruns. Thus, the plant would also pass a traditional used and useful test.

103. We are abstracting from multiple planning requirements that may be in effect, such as "diversity" of fuel supplies, environmental impacts, renewable portfolio requirements, etc. Such planning requirements can be addressed mathematically by constructing a multi-attribute optimization model that assigns specific weights to each desired portfolio attribute.

104. *Jersey Cent. Power & Light Co.*, 810 F.2d. at 1191.

105. Since we have assumed no market price uncertainty in this example, an economic used and

prudent decision, now faces a disallowance for it.

Next, consider an alternative purchase power contract, “B.” Contract B offers aggregate net present value savings of \$100 million over its lifetime. Unlike contract A, however, B is always “below market,” as shown in Figure 2, COMPARISON OF PV SAVINGS OF ALTERNATIVE CONTRACTS: PRUDENCE VS. ECONOMIC USED AND USEFULNESS. If the utility initially signs contract B, it is imprudent because there is a far more cost-effective alternative available. Conceivably, the utility could be assessed a disallowance equal to the entire \$150 million net present value savings difference between the two contracts.¹⁰⁶ Once signed, however, contract B would always pass an economic used and useful test. This, then, is the “Hobson’s choice” facing the utility: does it choose a prudent resource option today and possibly incur an economic used and useful disallowance in the future, or does it avoid an economic used and useful disallowance by selecting an imprudent resource option?¹⁰⁷ It is this dilemma that, even in the supposed absence of future market uncertainty, provides a stark realization of the problematic nature of applying an economic used and useful test.

1. Market Uncertainty and Risk Management

Clearly, electric utilities face uncertain and volatile costs. Thus, a “fair value” test, such as that envisioned by the Court in *Duquesne*, will be subject to uncertainty as well. This has important implications for economic used and usefulness. To see this, we consider again the PPA example. Now, however, instead of known future market prices, we assume that prices are uncertain. Although market prices will follow the economic tenets of supply and demand, specific conditions affecting short-term and long-term market equilibrium will exist: fluctuating prices for fuels used to generate electricity; extreme weather conditions at times of peak demand; fluctuations in overall economic growth that lead to unexpected changes in customer demand; and non-market factors, such as new environmental regulations.

With these uncertainties, we assume that the prudence and economic used and usefulness of a utility’s resource decision will be based on some type of probabilistic assessment.¹⁰⁸ That is, the prudence of the utility’s decision will be based on the difference between the expected (average) present value of each of the contract alternatives and the expected market value of electricity over the contract period. Thus, before any contract is signed, there will be a probability

useful test applied to the *entire* contract period would be superfluous, as the results would be the same as the initial prudence determination.

106. For ease of exposition, we are ignoring amortization of the costs over time.

107. It could be argued that applying an economic used and useful tests ensures intergenerational equity so that future ratepayers are not unfairly transferred higher costs in order to benefit current ratepayers. This argument has not, to the author’s knowledge, been raised as a justification for an economic used and useful test.

108. A complete discussion of the nature of such assessments is beyond the scope of this article. For an application to investments for distribution utilities, *see generally* CHARLES FEINSTEIN & JONATHAN LESSER, *Defining Distributed Resource Planning*, ENERGY J., SPECIAL ISSUE, DISTRIBUTED RESOURCES: TOWARD A NEW PARADIGM OF THE ELECTRICITY BUSINESS 41 (1998).

distribution surrounding the estimate of present value savings for each contract.

Figure 3, PROBABILITY DISTRIBUTIONS SURROUNDING MARKET PRICE PROJECTIONS, provides a representation of average market prices over the twenty-year contract period. Volatile short-term conditions, such as variations in weather and the availability of specific generating units, will change short-term market-clearing prices (where markets exist). In one year, a peak hourly market price might be as high as \$1,000 per megawatt-hour (MWh); in another year, the peak price might only be \$200/MWh. That variation can greatly affect the value of specific generating assets. Unfortunately, much of that variation cannot be predicted.¹⁰⁹

We assume that there is a probability distribution surrounding each year's average market price caused by the underlying uncertainties making up electric supply and demand. Over time, the uncertainty will tend to increase because our ability to forecast the future accurately is imperfect. This leads to the more dispersed probability distributions as shown. As a result of this market price uncertainty, there will also be uncertainty as to the aggregate present value savings associated with the two contracts, A and B, relative to those market prices. For example, Figure 4, COMPARISON OF ECONOMIC USED AND USEFULNESS: UNCERTAIN MARKET PRICES, provides a representation of the probability distributions of aggregate present value savings for the two contract alternatives when the utility initially must choose between them.¹¹⁰ Contract A clearly affords the greatest present value savings.

Because of the back-loaded nature of Contract A, the relative present savings of A compared to B decline over time. For example, Figure 5, COMPARISON OF ECONOMIC USED AND USEFULNESS: YEAR 10 OF CONTRACTS, shows the present value savings midway through the twenty year contract period in year ten (as forecast from the present). As Figure 5 shows, the probability distributions overlap significantly. The expected savings for Contract B now exceed those for Contract A over the remaining ten years, but there is significant overlap in the two distributions. In this situation, the determination of economic used and usefulness becomes even more problematic, not only because of the back-loaded nature of Contract A, but also because of the underlying uncertainty in future market prices and the volatility of short-term prices.

The best a utility could generally expect is for their resource acquisition, whether a power contract or a generating plant investment, to be "at the market." This follows since it is the aggregate of all transactions that defines market prices. It would not be reasonable for regulators to insist on below-market costs at all times for all utilities, since that is clearly impossible by definition.

An additional consequence of uncertain electric and fossil fuel prices is revenue and earnings instability caused by regulatory "lag" – the time between

109. "Volatility" refers to price changes that cannot be predicted. For example, in New England, electric demand peaks in the summer because of air conditioning loads. As a result, wholesale market prices are expected to be higher than in winter. We thus say that seasonal prices are "variable," but that variability is *not* the same as price "volatility" caused by a sudden hot spell.

110. Figures 4 and 5 were generated using a simple Monte-Carlo model to compute the present value savings for each contract using a one thousand draw sample. Interested readers are welcome to obtain the model from the author.

changes in a utility's cost structure and the rates it is allowed to charge to reflect that structure. To address market price volatility, some regulators have required utilities to develop "diversified" resource portfolios, although the specific form of diversification is often vague.¹¹¹ Diversification, of course, is simply a form of insurance and fair valued insurance will be priced such that its cost is greater than the expected payout. Yet strict application of an economic used and useful test is clearly incompatible with diversification. Again, this points to the "Hobson's Choice" potentially faced by a utility that must make both prudent and economically used and useful resource decisions.¹¹²

2. Impacts on the Cost of Capital

Cost uncertainties, whether the result of volatility in the prices of fossil fuel used to generate electricity or volatility in existing wholesale electric markets, affect utility earnings and financial stability. In the absence of competitive wholesale markets supplying complete information, including futures prices, application of both prudence and economic used and useful tests require some type of forecast about future value. This requires regulators to make an independent assessment of market prices. If a resource requires prior review for approval, then a finding of prudence can only be made if, in the absence of non-price factors, the expected net present value cost of the resource is consistent with projected market value.

Of course, all forecasts change over time. This raises the specter of a resource being found economically used and useful at one point in time, not economically used and useful at a later time, perhaps economically used and useful still later, and so forth. Looking forward, therefore, the utility will face additional revenue and earnings volatility that are likely to increase its cost of capital.¹¹³ The reason for this is that investors will perceive greater uncertainty as to the ultimate treatment of the utility's capital costs and expenses. With continuous regulatory uncertainty a utility's ability to meet its financial obligations, such as bond payments and interest coverage covenants, will be more unlikely. As such, investors will demand that the utility increase the amount of equity it carries relative to debt, and ratings agencies (*e.g.*, Moody's or Standard & Poor's) are likely to reduce the utility's bond rating, thus further increasing the cost of capital.

The cost of capital could increase not only for the utility whose investments were under direct consideration, but also for future resource investment decisions. The effects could be felt throughout the utility industry, to the extent

111. See generally WILLIAM STEINHURST ET AL., FUELING VERMONT'S FUTURE: COMPREHENSIVE ENERGY PLAN AND GREENHOUSE GAS ACTION PLAN PURSUANT TO 30 V.S.A. §202B 2-4 (1998).

112. For a debate about the implications of upfront regulatory commitments to prudent investments, see generally Glenn Blackmon & Richard Zeckhauser, *Fragile Commitments and the Regulatory Process*, 9 YALE J. ON REG. 73 (1992); Eric Blank & Stephen Pomerance, *After-the-Fact Regulatory Review: Balancing Competing Concerns*, 9 YALE J. ON REG. 107 (1992).

113. For a discussion of the effects of regulatory lag on a utility's cost of capital, see also A. LAWRENCE KOLBE ET AL., THE COST OF CAPITAL: ESTIMATING THE RATE OF RETURN FOR PUBLIC UTILITIES 62-63 (1984). A discussion of the methodologies associated with calculating utilities' cost of capital can be found in ROGER A. MORIN, REGULATORY FINANCE: UTILITIES' COST OF CAPITAL (1994).

that investors conclude that the same type of economic used and useful tests applied in one jurisdiction might well be applied in the future to previous investments and power purchase contracts. The reason for these more widespread increases in the cost of capital again hinges on investor expectations. Rational investors would conclude that policies applied to one utility could also apply to others. As a result, they would adjust their expectations of risk upward, which could lead to a higher cost of capital for *all* utilities, ultimately harming ratepayers.

3. Impacts on New Market Entry

A fundamental requirement for a well-functioning wholesale power market is ease of entry. As entry costs increase, new supplies are less likely to be developed in response to increased demand. Unfortunately, higher entry costs for unregulated wholesale suppliers will also tend to be a direct consequence of increased regulatory uncertainty. In most cases, potential new market entrants need to secure up-front financing owing to the capital intensiveness of developing new generating supplies. To obtain such financing, these generation developers need to provide lenders reasonable assurance of repayment. That is generally accomplished either through additional equity commitment by the supplier, long-term purchase contracts between the supplier and regulated utilities, or both.

If lenders believe that previously approved investments and purchase contracts can be disapproved even after initial regulatory review, they may face greater risks because they may be unable to collect their costs of providing power supplies to utilities. Marginal competitors may choose to stay out of the market entirely, ultimately contributing to higher costs for ratepayers as well.

B. Regulatory Implications

Widespread application of an economic used and useful test also raises a number of regulatory implications. These include the economic used and useful test's imposition of asymmetric risk on utilities, the potential for unjustified regulatory takings, and the inability for utilities to plan effectively for future resource supplies.

Ratepayers are protected by existing prudence standards and traditional used and useful requirements. Asserting that economic used and useful tests are not a reasonable regulatory tool does not excuse imprudent utility behavior. In Vermont, as in a number of other states, electric utilities still have an obligation to perform reasonable analyses of supply alternatives within the confines of integrated resource planning exercises. If the results of those planning exercises reasonably show that purchased power supply options meet defined objectives within a planning framework (*e.g.*, lowest life-cycle cost, environmental standards, standards for fuel diversity, risk, etc.), then such options should be pursued.

1. Imposition of Asymmetric Risk

In *Bluefield Waterworks* and *Hope*, the Supreme Court discussed the

“balance” between ratepayer and shareholder interests, stating famously that returns should be commensurate with risk. Economists have defined the Court’s requirements as being satisfied if investors expect to earn the cost of capital, which is defined as the “economic cost to the firm of attracting and retaining capital in a competitive environment. . . .”¹¹⁴ For any firm, regulated or not, publicly held or privately held, the cost of capital represents the economic cost of attracting and retaining capital in an efficient and competitive capital market. To be consistent with *Hope*, a utility’s cost of capital should be set to its expected return, which necessarily implies that its allowed return (the upper bound) should exceed the expected return as long as utility investors face appreciable risks.¹¹⁵

Applying an economic used and useful test to a PPA will necessarily lead to asymmetric treatment of risk for the utility, unless the utility is able to capture the benefits of below-market prices on an ongoing basis. Even with that proviso, which Vermont regulators do not allow since a purchase-power contract is an expense item, investors earn no return from such contracts. To the extent that regulators impose disallowances on a utility based on above-market costs, while not allowing the utility to profit in the case of below-market costs, the utility faces a “lose-lose” situation. No rational utility investor would want management to sign a purchase-power contract under such conditions.

Ironically, in *Green Mountain Power*, the Vermont PSB stated that application of an economic used and useful test to PPAs was needed to ensure *symmetric* risk allocation between ratepayers and shareholders.

[F]ailure to apply the used-and-useful principle to both investments and power purchases would create perverse incentives to fill resource needs with purchased power contracts simply because rate-making practices made doing so less risky, notwithstanding the merits of the particular power sources and the obligation to meet demand at the least societal cost.¹¹⁶

That Order references “perverse” incentives *favoring* PPAs, while at the same time adopting a regulatory principle that, as discussed previously, creates a situation in which, absent perfect foresight by a utility’s management, a regulatory taking becomes inevitable. An after-the-fact economic used and useful test, at least the one established by Vermont regulators, creates a clear incentive to *avoid* PPAs, since the expected return they provide to utility investors will in all likelihood be negative.

The critical empirical question, therefore, is whether the absence of an economic used and useful test would lead to greater reliance on PPAs and, if so, to higher *ex-post* costs for ratepayers? The answer depends on a number of factors, most notably how utility regulators apply prudence standards and traditional used and useful tests. Asserting that an economic used and useful test is not a reasonable regulatory tool clearly does not excuse imprudent utility

114. STOCKS, BONDS, BILLS, AND INFLATION: 2002 YEARBOOK: MARKET RESULTS FOR 1926 - 2001, 23 (Valuation ed., Ibbotson Assoc. 2002). A general introduction to the relationship between the cost of capital and risk can be found in RICHARD BREALEY & STEWART MYERS, PRINCIPLES OF CORPORATE FINANCE ch. 7-8 (3d ed. 1988).

115. A complete discussion can be found in Kolbe & Tye, *supra* note 43.

116. *Green Mountain Power Corp.*, 184 P.U.R.4th at 243.

behavior. Where electric utilities continue to have an obligation to perform *ex-ante* analyses of supply alternatives and where the results of those planning exercises show that PPA options meet defined objectives within a planning framework (e.g., lowest life-cycle cost, environmental standards, standards for fuel diversity, risk, etc.), then such options should be pursued.

In fully competitive markets, management and shareholders *should* bear the costs associated with “poor” economic outcomes (even though this does not always happen). It is also true that in fully competitive markets, management and shareholders should reap the rewards from “good” economic outcomes. But evaluating a utility company as if it were in a competitive industry, while constraining its behavior as a fully regulated firm, is inconsistent with promoting economic efficiency. Instead, it encourages economic inefficiency because of the asymmetric risks imposed on investors. These risks will lead to too little investment (*i.e.*, not the economically efficient amount) because investors will be unwilling to commit funds for which fair compensation cannot be expected

IV. CONCLUSIONS

The electric utility industry has changed dramatically over time. In its current state, it is more important than ever to address economic concepts, not only to promote greater efficiency in the provision of electric services to ratepayers, but also to promote equity. An economic used and useful test promotes neither. Instead, it allows regulators a “second bite of the apple” that combines the “end results” standard of *Hope* and the fair-value approach of *Smyth v. Ames*, while relegating economic, legal, and established regulatory principles to the dustbin.

There is no legal precedent for an economic used and useful test, despite Vermont’s having attempted to bootstrap one. Economic used and usefulness is not an inevitable evolution of the traditional used and useful test, nor should it be. When a utility makes a resource acquisition decision, whether PPA or nuclear plant investment, the prudence test provides a well-established framework for evaluating efficiency and equity. For a failed investment or contract abrogation, the traditional used and useful test can be applied. Both can be assessed in conjunction with regulatory planning requirements for *ex-ante* analysis of resource options. But just as the court found in *Violet v. FERC*¹¹⁷ that a prudence test cannot be applied on an *ex-post* basis, neither can an economic used and useful test be applied to second-guess, or otherwise impose impossible standards of conduct on, utilities.

In regulation, as in many facets of the law, there will almost always be a conflict between economic efficiency and equity. And, while economic efficiency (arguably) can be well defined, equity is far more problematic. In its partially restructured state, many electric utilities will continue to have an obligation to serve their customers for the foreseeable future. If utility regulation continues to be, as Judge Starr noted in *Jersey Central*, a “compact of sorts,”¹¹⁸

117. 800 F.2d 280 (1st Cir. 1986).

118. *Jersey Cent. Power & Light Co. v. FERC*, 810 F.2d 1168, 1189 (D.C. Cir. 1987).

then that compact must balance the needs of both utility investors and ratepayers. The economic used and useful test does not balance these needs. By failing to do so, its application will ensure greater inefficiency and inequity, to the ultimate detriment of both ratepayers and utilities.

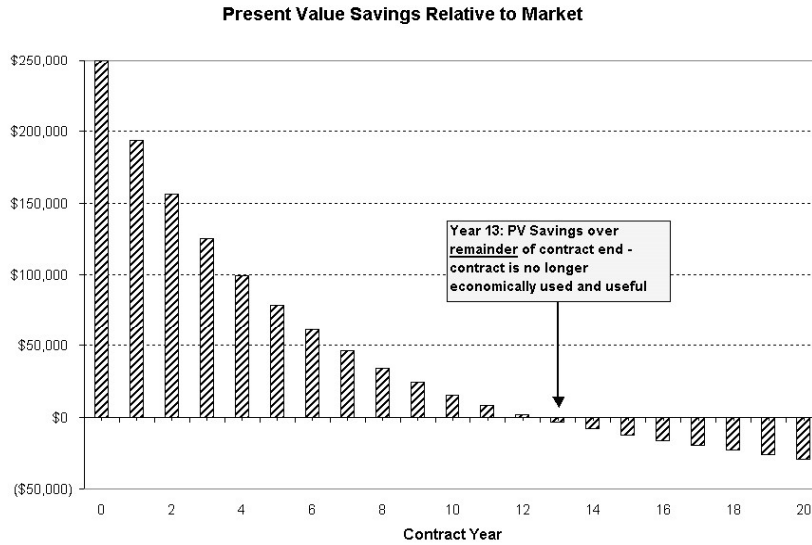


Figure 1: Economic Used and Usefulness of Contract Over Time

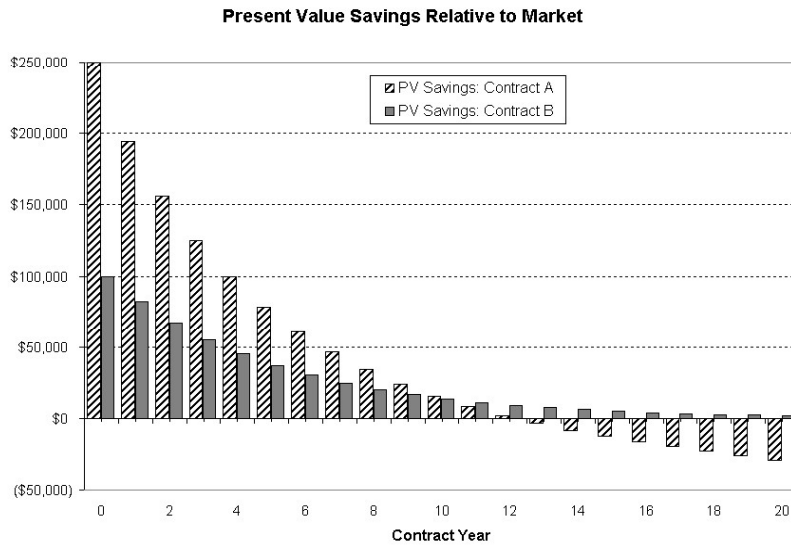


Figure 2: Comparison of PV Savings of Alternative Contracts: Prudence vs. Economic Used and Usefulness

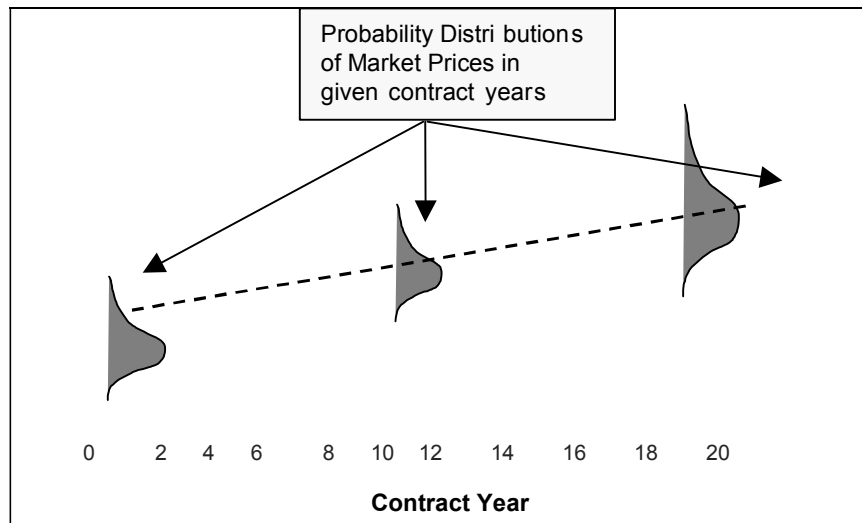


Figure 3: Probability Distributions Surrounding Market Price Projections.

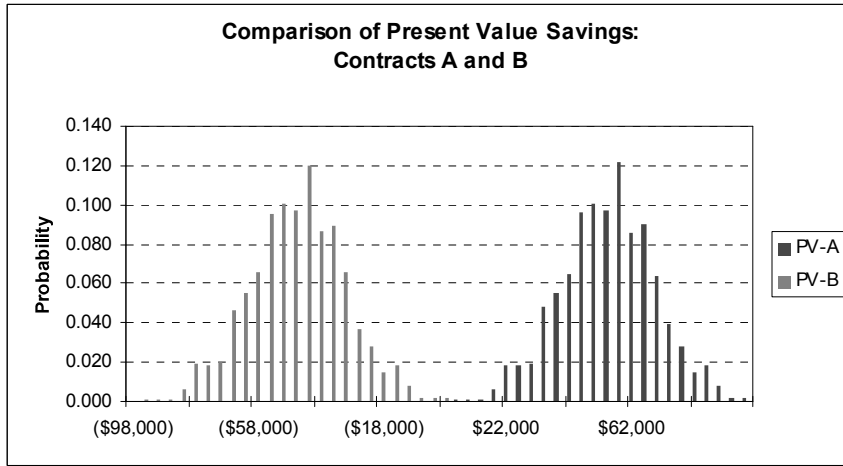


Figure 4: Comparison of Economic Used and Usefulness: Uncertain Market Prices

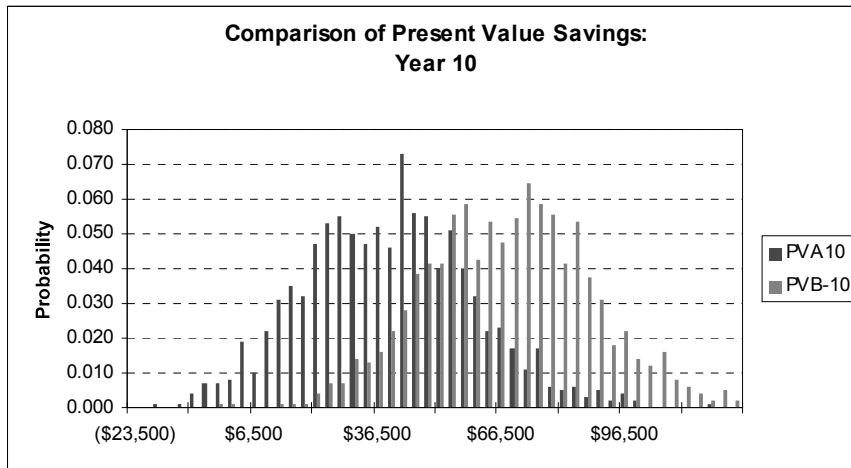


Figure 5: Comparison of Economic Used and Usefulness: Year 10 of Contracts

