

# The Impact of Deregulation on Power Plant Depreciation Practices: Status, Trends & Opportunities

by

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This paper provides the results of a survey of electric utilities and independent power producers (IPPs) conducted by Transactive Management to determine the extent to which plant depreciation practices have changed in response to power market deregulation. In particular, have power-generating companies taken advantage of industry trends that can provide a basis for projecting power plant life beyond what has been used under a regulated market structure? Such trends, which can serve as a basis for identifying positive plant residual value, include the following: <sup>1</sup>

- Power plant sales, which provide a market-based measure of value
- The emergence of a sellers market for divested power plants which are being sold for 40 percent or more over book value
- Repowering older plants, including plants recently divested by utilities
- Emphasis on extending power plant life through maintenance and plant refurbishment

Residual value represents the remaining useful life of an asset after it

has been fully depreciated for tax purposes. <sup>2</sup> Identifying positive residual value results in an upward valuation of power plants, which can increase annual book income by several million dollars.

The paper first describes the survey scope and interview strategy. This is followed by a summary of survey findings by the three areas of inquiry:

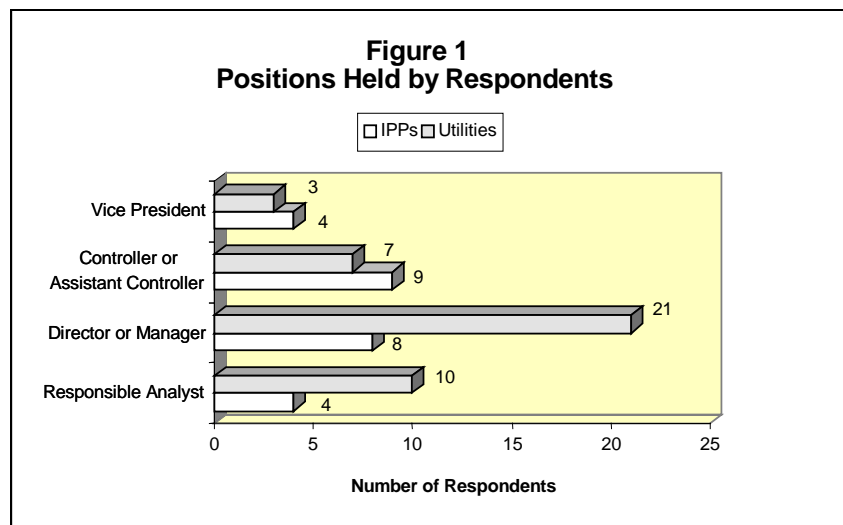
1. Current accounting practices
2. Changes in such practices

3. Asset residual value applications

The last part of the discussion summarizes conclusions in terms of industry status, trends and opportunities.

## Survey Scope & Interview Strategy

The survey obtained input from utility and IPP respondents familiar with company depreciation practices. A target interview population of 90 power generators—50 utilities and 40 IPPs—



was developed using:

1. Penwell Publications' *Electric Light & Power*: 1996 Top 100 Financial Performance—the first 50 electric utilities identified<sup>3</sup>
2. McGraw-Hill Companies' 1997 publication, *180 Independent Power Companies*—40 IPPs with an equity position in operating plants totaling 700 MW or more<sup>4</sup>

Over a six week period, beginning on October 2, 1997, a total of 66 telephone interviews were conducted (41 utilities and 25 IPPs) with executives, directors, managers and analysts responsible for depreciation practices. (See Figure 1.) This included a total of 18 companies with both a utility and an IPP affiliate.<sup>5</sup>

The survey obtained information on a consistent set of topics by using a written questionnaire, which in most cases took about 5 minutes to administer. When respondents engaged in a more open-ended conversation, interviews ranged up to 15 minutes and additional details and insights were gained. In several instances, initial interviews resulted in follow-on discussions with others interested in

value analysis, which provided additional information.

An effort was also made to contact utilities in each of the 10 regions defined by the National Electric Reliability Council Region (NERC) to gain a regional perspective of deregulation—driven by state public utility commission (PUC) policy, regional power markets, local consumers, and other regional factors.<sup>6</sup> Figures 2 and 3 respectively depict the percent response by NERC region and the dates projected by respondents for the first year of deregulated operation (also by percent of respondents).

### Findings: Prevailing Practices

The following provides a summary of findings based on responses in the first area of inquiry, prevailing depreciation practices.

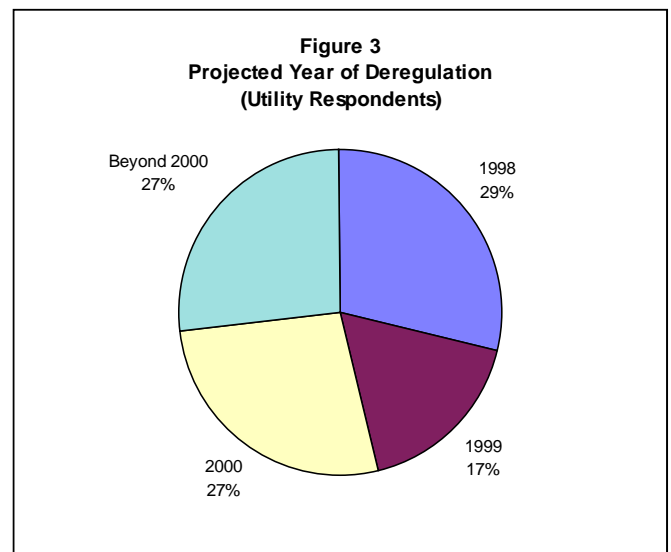
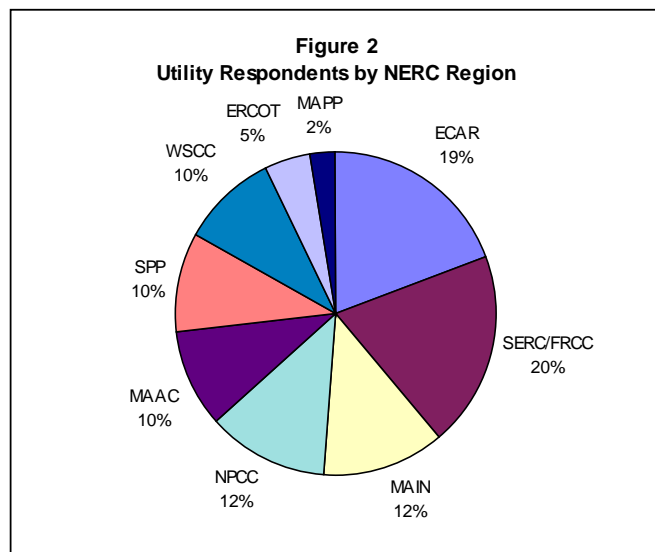
**Both utilities and IPPs use original plant cost as the basis for book value.** All 66 respondents stated that book value is based on original plant cost. Although several companies responding had recently acquired plants divested by utilities, the basis for recording such

books was not disclosed.

**Utilities depreciate plants over a much longer period than IPPs.** The large majority of utility respondents reported depreciation schedules of 40-to-50 years, versus a duration of up to 25-to-30 years for most IPPs. Figure 4 groups the percent of utility and IPP responses by the high-end of each reported range.<sup>7</sup>

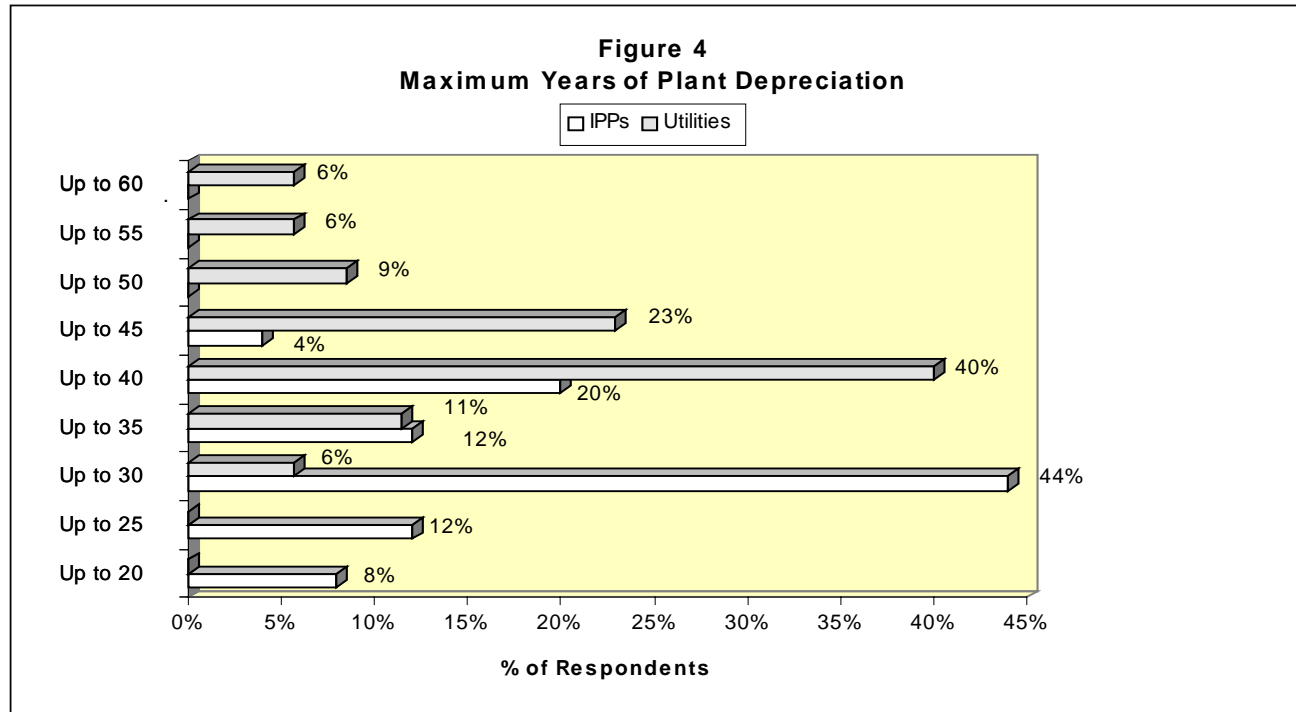
**Utility depreciation practices are an integral part of the PUC regulatory process.** Ninety-five percent of utility respondents reported that depreciation schedules are based on studies mandated by state regulators.<sup>8</sup> Requirements were identified as: the type of study; how often it must be updated; and the degree to which decommissioning costs, site clean-up cost and salvage value are considered.

**The life of the Power Purchase Agreement is the most prevalent basis for IPP depreciation schedules.** Over half of the IPP respondents (56 percent) identified the duration of the power purchase agreement (PPA) as the sole basis for depreciation schedules. Other IPPs cited plant specific studies—on their own or in conjunction with the PPA—as the basis for capital recovery



discussing approaches to asset residual

assets on their



schedules. Figure 5 depicts responses regarding depreciation schedules.

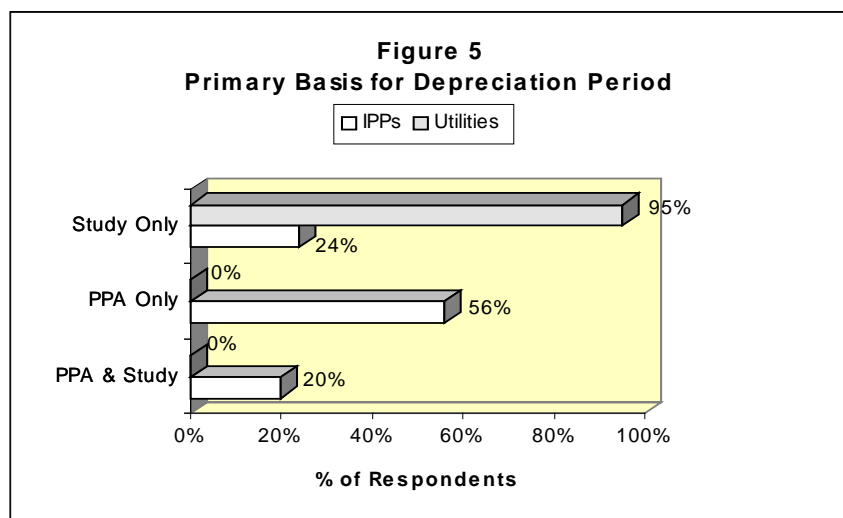
**IPP depreciation studies project plant competitive position; utility studies use historic operating data.** Utility studies rely on historical industry plant, system and component operating data, which are sometimes adjusted to reflect individual utility experience and judgment. In contrast, IPP studies are based on projections of plant income under competitive market conditions and consider cost of production vis-à-vis competitors, technological obsolescence and other factors.

However, most IPPs performing such studies do so to show that plants will stay in operation for the remaining duration of the PPA rather than to demonstrate economic life beyond this period—i.e., to derive asset residual value. In this regard, IPPs cited requirements for assessing asset impairment as defined by the Financial Accounting Standards Board Statement of Financial Accounting Standards (SFAS) No. 121.<sup>9</sup>

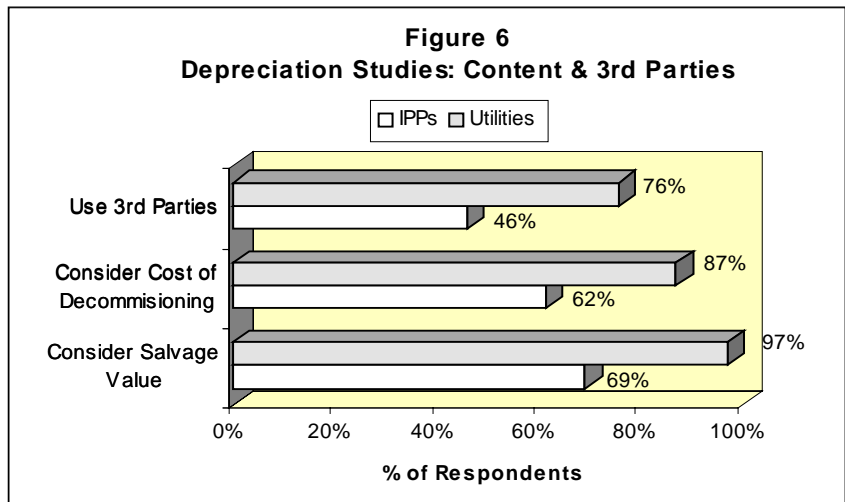
**Utility standards for depreciation accounting are more rigorous.** Utilities are required to maintain accounts in accordance with the Federal Energy Regulatory Commission (FERC) system and standards established for publicly regulated businesses.<sup>10</sup> IPPs, on the other hand, account for depreciation in accordance with generally accepted accounting

principles (GAAP) which are not as rigorous. Two IPPs with an affiliated utility, however, indicated that practices were similar to the extent that both relied on SFAS No. 121 to derive plant depreciation schedules.

**Utility studies are more rigorous than IPP studies with regard to considering decommissioning costs salvage value and the use of**



**consulting support.** Figure 6 compares the utility and IPP response to questions in these three areas. As indicated, utility affirmative responses are higher. Percentages are based on the respective total number of utility (39) and IPP (11) respondents that conduct depreciation studies. While several respondents indicated that positive salvage value and negative shutdown costs tend to “net out” to zero, others stated that decommissioning and clean-up costs caused net salvage value to be negative. Several utilities commented that negative net salvage value allows shutdown costs to be recovered in ratebase.<sup>11</sup>



## Findings: Changing Practices

Responses in the second area of inquiry, changing practices, are provided below.

**To date, only a relatively small number of companies have changed depreciation practices.** Only 14 percent of utilities (5 of 40) reported changing depreciation practices within the past two years. Such change did not include recognizing plant asset residual value.

Almost a third of responding IPPs (8 of 25) reported a change in depreciation methods during this same

period. The reason cited most often was compliance with SFAS No. 121. Figure 7 provides a summary of the percent of IPPs and utilities that have changed or are considering a change in depreciation practices.

**There is no consensus amongst utilities on how deregulation will impact depreciation practices.** Figure 8 provides a summary of responses to the following questions that were only asked utilities:

1. Will deregulation have an impact on depreciation methods?
2. Will you change methods if and

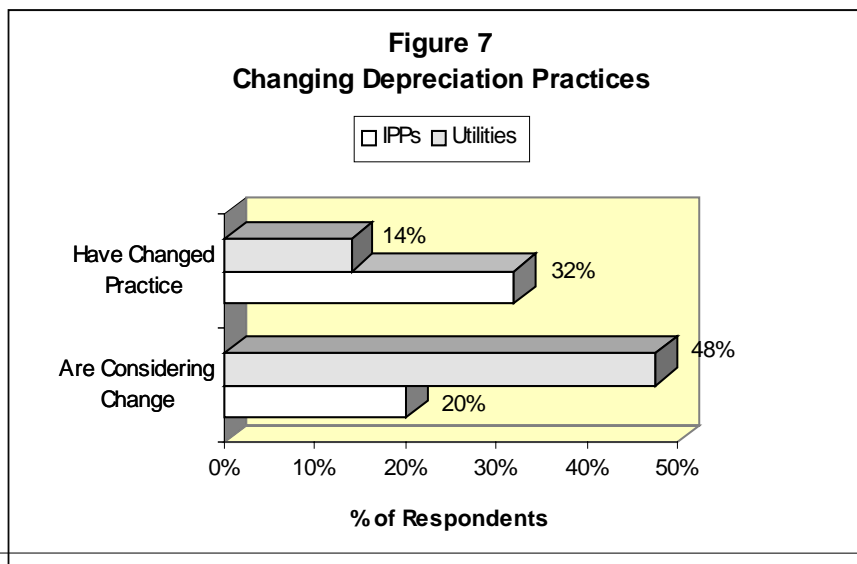
when deregulated?

3. Are you currently considering a change?

As indicated, over three quarters (31) of the utilities stated that deregulation will have an impact; over 60 percent (26) stated they would likely change depreciation methods after being deregulated; and about half (19) were currently considering a change.

Of the 19 respondents considering change, 8 were uncertain about the outcome and 2 anticipated very little change. Of the 9 respondents who did have specific thoughts on the outcome, 4 expected schedules to increase and expressed an interest in recognition of asset residual value. However, the other 5 believed that schedules would accelerate or that there would be more emphasis on expensing, rather than capitalizing, plant costs. The issue most often raised in this regard was the need to recover stranded asset costs. There was also an expectation that the outcome of a state-level deregulation debate would be to maintain the status quo or otherwise ensure recovery of capital costs previously allowed into the ratebase.

**The IPP response reflected a similar dichotomy in the perceived impact of**

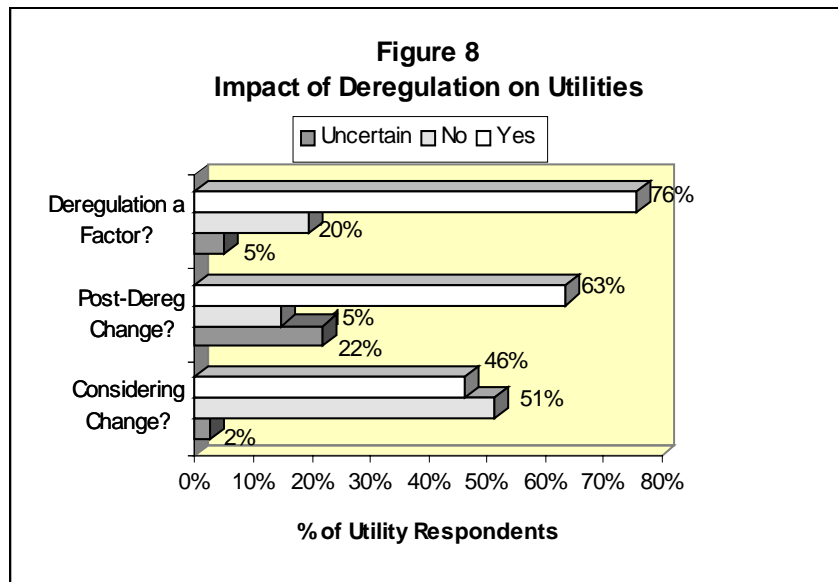


**deregulation.** Of the 17 IPPs that did not already change methods, only 5 believed that changing industry trends provided an opportunity to recognize asset residual value. The other 12 IPPs either had not considered a change in depreciation practice or believed that such a change would lower plant valuation, accelerate capital recovery and reduce book income.

The most prevalent explanation for this pessimistic view was that an increasingly competitive power market will reduce the price at which power is sold—lowering revenue streams which, in turn, will require shorter depreciation schedules. Another explanation was that, with deregulation, more emphasis would be placed on merchant plant sales and capital recovery for plants built on this basis would be shorter than for plants operating under a PPA.

### Findings: Asset Residual Value Applications

The final area of inquiry specifically addressed the extent to which utilities and IPPs were aware of and had applied (or were considering applying) approaches to recognize asset residual

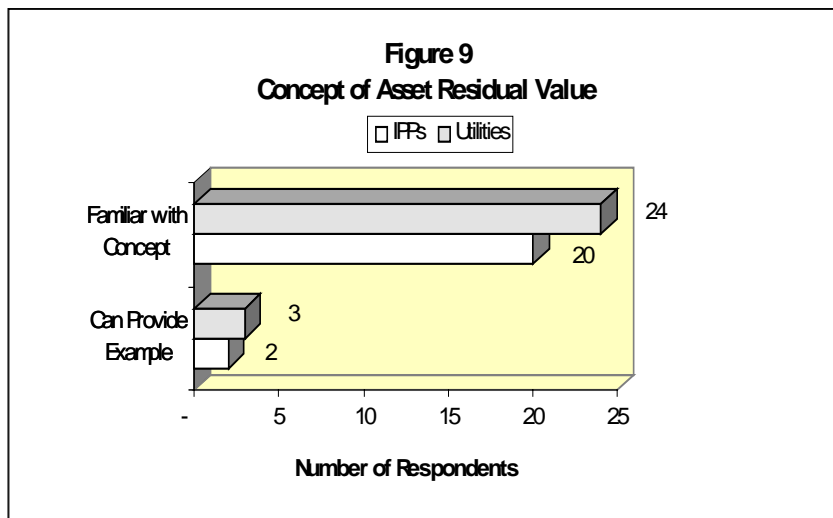


are summarized below and depicted in Figure 9.

**Residual Value is not a universally recognized concept.** While 70 percent of total utility and IPP respondents claimed familiarity with the concept, this is not particularly high for an interview population of experts in both accounting and depreciation.<sup>12</sup> Of those who did recognize asset residual value, only a limited number have applied, or

**There are few examples of studies to derive asset residual value.** Utility and IPP respondents could only identify a total of 5 examples of residual value studies or third parties that perform such studies:<sup>13</sup>

- An in-house IPP study (rejected by the company's independent public accountant)
- A utility reference to an unnamed consultant engaged to conduct a study to support longer depreciation schedules
- An intervenor's testimony in a PUC proceeding to approve the sale and leaseback of utility power plants
- A reference to an independent public accounting firm that has developed a methodology for deriving asset residual value
- A proposed site-specific study that would extend capital recovery beyond the life of the PPA



value in calculating depreciation and reporting plant book income. Responses

considered applying, this concept in conjunction with plant depreciation.

There are other indications, however, that other methods exist. For example, the IPP response to questions on depreciation schedules (see Figure 1) revealed that 5 IPPs depreciate some plants up to 40 or more years. Such

duration exceeds the life of most PPAs and thus implies a study or other basis for explicitly or implicitly recognizing asset residual value. (Figure 9 does not include this possible source.)<sup>14</sup>

## **Summary & Conclusions: Industry Status, Trends & Opportunities**

Survey results show that only a very limited number of power-generating companies have taken advantage of changes introduced by deregulation to recognize residual value in calculating depreciation. While utilities acknowledge that deregulation impacts depreciation, most are currently focusing on implications with regard to stranded asset cost recovery or other transitional issues. As a result, many are more interested in accelerating, rather than extending capital recovery duration.

IPPs continue to look to the PPA as the basis for depreciation schedules. Studies are being used to supplement or replace the PPA, but the goal is to validate that income will, in fact, be realized over the remaining PPA contract life, rather than to extend schedules beyond this period.

The status of industry practice reflects the prevailing mood of uncertainty and caution as power generators stand on the brink of moving from a regulated past to a competitive, market-driven future. This will change as deregulation continues. Restructuring will remove the regulated underpinnings of both market segments—the PUC regulatory process for utilities and the PURPA-based contracting process for IPPs.<sup>15</sup> As this reality is reflected in business practices, depreciation schedules will increasingly be based on plant competitive position rather than a contractual or PUC “guarantee” of a future income. That is, capital recovery will reflect the operational, efficiency, cost and other realities of power plants as economic assets.<sup>16</sup>

For plants positioned for success in a competitive market, the result will be recognition of asset residual value, longer capital recovery schedules and increases in book income—which can be used to further improve competitive position.<sup>17</sup>

This conclusion is supported by the wide disparity between utility and IPP depreciation schedules revealed by the survey. There is no technological or management basis to support a conclusion that the physical life of utility plants should exceed the life of IPP plants by 10 years or more. In fact, most would argue just the opposite. The only explanation for the disparity is the respective regulatory process that, to date, has been the defining feature of utility and IPP power market segments.

The survey identified some examples of this emerging trend. Some IPP studies define a capital recovery schedule beyond the remaining life of the PPA. Some utilities and IPPs are seeking approaches to support longer depreciation schedules, including methods to recognize asset residual value. Moreover, one of the results of the survey itself has been to make a significant number of utilities and IPPs aware of the opportunity to recognize asset residual value.

In conclusion, IPPs and deregulated utilities may have an opportunity to gain a significant increase in plant book income simply by taking residual value into account in calculating depreciation. Industry trends listed in the first part of this paper provide a basis for projecting plant useful life well beyond the capital recovery period IPPs, in particular, are currently using for depreciation. The Transactive Management Survey Report, which is the basis for this summary, will support the research, analysis and methods, already developed, to assist clients in taking full advantage of this opportunity.

## Endnotes

<sup>1</sup> During 1997, Transactive Management completed a study for a leading IPP that developed several methodologies for recognizing the asset residual value of coal-fired plants. This study was done under subcontract to RAMCO, a consulting and engineering practice that provided expertise on plant operations. Survey results provide additional support for conclusions regarding changing power plant depreciation practices and recognition of asset residual value as determined in the RAMCO/Transactive Management study.

<sup>2</sup> The useful lives of power plants allowable for tax purposes under the accelerated cost recovery system (ACRS), enacted in the Economic Recovery Act of 1981, and the modified accelerated cost recovery system (MACRS) enacted under the Tax Reform Act of 1986, in many cases are shorter than the realistic economic service lives used for financial reporting purposes.

<sup>3</sup> *Electric Light & Power*, August, 1997, p. 24

<sup>4</sup> *180 Independent Power Companies*, p. 4. Other criteria for selecting the IPP interview population included companies with fossil-fired plants of at least 50 MW and a significant percent of such plants operating in the U.S. or Canada.

<sup>5</sup> Each target company was contacted by telephone beginning with the Chief Financial Officer or Corporate Controller. This often led to a referral to a director, manager or analyst responsible for plant depreciation in areas such as project accounting, property management, or taxation. If companies were not willing to respond by telephone, a written version of the questionnaire was provided. Only one written form was returned and is included in the response population of 66.

<sup>6</sup> Utilities in the South expected the least change and often pointed out that public demand for change is not as great because power costs are low and do not vary significantly between regions. The most aggressive changes were reported in the Northeast and in California where retail wheeling will begin as early as January 1998. Respondents from Midwest and Mountain States, generally fell in-between these two extremes, with the exception of Michigan and Illinois where deregulation may begin in 1998.

<sup>7</sup> Questions did not distinguish the type of plant in terms of technology, fuel, age or other characteristics. Several utility respondents added, however, that depreciation schedules for coal plants tend to increase as these plants reach their originally projected end-of-life—typically 45 years. This tendency accounted for several respondents reporting an upper depreciation bound of 50-to-60 years.

<sup>8</sup> Some utilities stated that studies were required on a site-specific basis, while others stated they were done by class of plant. All utility respondents reported that depreciation studies are not done annually but in intervals which ranged from 3-to-10 years.

<sup>9</sup> See Financial Accounting Standards Board (FASB) *Statement of Financial Accounting Standards No. 121: Accounting for the Impairment of Long-lived Assets and for Long-Lived Assets to Be Disposed Of*, December 15, 1995.

<sup>10</sup> The standard cited by several utilities is SFAS No. 71, regarding accounting for publicly regulated businesses.

<sup>11</sup> Some utilities pointed out that it was in their interest to show negative salvage value to ensure that adequate decommissioning costs would be included in ratebase or in funds allowed to recover stranded asset costs.

<sup>12</sup> One explanation for this general lack of familiarity is that accounting guidelines do not clearly distinguish the concept of residual value from salvage value.

<sup>13</sup> This excludes two IPPs and two utilities that are familiar with the approach that RAMCO/Transactive Management have developed to derive asset residual value.

<sup>14</sup> Several utilities asked to provide examples of residual value approaches discussed studies to support the recovery of stranded asset costs through accelerated depreciation schedules. Some IPP respondents to this same question cited studies to assess asset impairment per SFAS No. 121. Such examples were not recorded as a positive response: the former because they identify negative value (the very definition of a stranded asset); and the latter because they are directed at validating a depreciation schedule defined by the PPA rather than seeking to identify useful plant life after this agreement expires or is otherwise voided as the basis for future income.

<sup>15</sup> The Public Utility Regulatory Act (PURPA) of 1978, which ultimately gave rise to the IPP sector, has been the regulatory basis for PPAs.

<sup>16</sup> This is true even for utilities in regions that may not be deregulated for 5 or more years. The remaining operating life of a significant number of existing plants in such regions—the relevant period for a forward-looking study of depreciation—extends well beyond what any reasonable assumption regarding the eventual advent of deregulation would postulate. Therefore, under guidelines defined by SFAS No. 121, such a future change should be considered in projecting cash streams. While the focus of this standard is asset impairment, this does not preclude applying the same methods to show asset residual value.

<sup>17</sup> Depreciation methods are likely to emerge as a vital strategic component of a “competitive asset positioning” approach to posture plants as the low-cost producer. Residual value studies will link projections and assumptions to multi-year, plant-level positioning plans and incentives to make such projections a reality—i.e., integrate a “forward-looking” asset valuation with a competitive positioning plan. See the Transactive Management White Paper, *Competitive Asset Positioning*, November, 1996, for a discussion of such plans and how they reinforce a “virtuous circle” of success.