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JOHN F. KENNEDY SCHOOL OF GOVERNMENT



Harvard Electricity Policy Group

**MEMORANDUM**

*Center for Business and Government  
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**TO:** Harvard Electricity Policy Group

**FROM:** Bill Hogan

**SUBJ:** Discussion from San Diego on Stranded Assets

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The discussion at our HEPG meeting in San Diego (January 13-14) included a continuing conversation about the magnitude and nature of the potential for "stranded assets" associated with increased competition in the electricity industry. Subsequent to our meeting, a number of you expressed concern over the apparent differences in the estimates of the magnitude of the exposure, ranging from a low of less than \$20 billion to a high of \$200 billion. The purpose of this note is to summarize the assumptions behind these estimates, highlight important distinctions among them, and explain the principal source of the apparent discrepancy.

According to my recollection and our notes, the different estimates are roughly consistent when seen properly as different answers to different questions. There is no broad dispute in the understanding of the underlying facts. The three questions and the corresponding answers can be summarized as:

What is the exposure arising from self-generation by industrial customers?  
**("Self-Generation Only" scenario.)** In many service territories, current electricity prices provide an incentive for self-generation, even without further introduction of competition. One estimate outlined a potential of 29 GWs of lost industrial load. A round number assumption of \$1000/KW of associated stranded assets produced an estimate of the lower bound of the cost exposure as \$29 billion. This potential loss would be absorbed either by shareholders or the remaining ratepayers.

What is the exposure arising from fully competitive access to generation at embedded cost rates for wheeling? **("Maximum Retail Wheeling" scenario.)** Assuming that virtually all customers could obtain power in the competitive market at current wheeling rates produces an upper bound on the exposure to

stranded assets. Under the current conditions of excess capacity, market clearing prices could be in the range of 3 to 4 cents per KWh. The difference between these and current rates for many companies leaves an exposure that is well in excess of the book value of equity. For the investor owned utilities, the current book value of equity is approximately \$175 billion, with a corresponding market value estimated at about \$300 billion. This range is roughly consistent with industry estimates that the total stranded asset exposure could approach \$200 billion. This potential loss would be absorbed by shareholders or any remaining captive ratepayers.

What is the best shareholders can expect as their loss due to stranded assets? ("Maximum Regulatory Protection" scenario.) The choices of regulators, companies and customers can affect the magnitude and the distribution of the cost of stranded assets. Given the large magnitude of the potential exposure, it is unlikely that we will see an immediate jump to a fully competitive market, or that all of the cost will be born by shareholders. At the lower bound of the potential exposure, the \$29 billion estimate associated with self-generation, with a fifty-fifty sharing of the type recently adopted in New York, shareholders would face an exposure of \$15 billion. Reasoning that regulators might intervene actively to protect stranded assets prompted one estimate at San Diego that the eventual utility company writedowns could be no more than \$20 billion.

Apparently the upper estimate of the maximum exposure was not contested in San Diego. And the lower bound depends critically on a judgment about the actions of regulators. There remains a substantial challenge to develop the policy for the transition to manage the level and allocation of the costs of stranded assets. This problem is complicated by the fact that the allocation of sunk costs affects the magnitude of real costs. Also, the significant variation across companies in the level of stranded asset exposure must be taken into account in designing transition strategies. It will require creative initiatives to guide the industry to achieve the benefits of competition while guaranteeing a reasonable treatment of the responsibility for the sunk costs.