



# Regulatory Treatment of Uneconomic Power Plants

## Summary

This position paper recommends the appropriate regulatory treatment (including cost recovery) of the retirement and abandonment of uneconomic power plants. It also addresses how regulators should determine whether or not any plants are indeed uneconomic on a long-term, forward cost basis.

There are potentially three types of generating assets at issue: (1) existing “legacy” assets that were rate-based by a traditionally regulated electric utility; (2) existing assets of unregulated merchant affiliates of regulated utilities; and (3) existing assets of unregulated merchant generating companies unaffiliated with regulated utilities. Generating plants that are still under construction is a variation of these three types. Regardless of ownership, generating units that are expected to be uneconomic on a long-term, forward-cost basis should generally be retired and abandoned. The decision to retire and abandon a plant should not be based solely on short-term market conditions. If such plants are uneconomic based on short-term market conditions, the applicable state may choose to balance the rate impact on consumers with the need to temporarily subsidize these plants until short-term market distortions or uncertainties have been resolved. On the other hand, for assets that are deemed uneconomic on a long-term, forward cost basis, states should not allow continued, subsidized operation because of localized job and other economic factors. Such efforts will likely induce greater economic harm to local businesses and manufacturers dependent on affordable electricity, and delay the planning and operation of lower cost resources.

Unregulated, merchant generation unaffiliated with a regulated utility are not entitled to any form of regulatory relief that result from changing market conditions or environmental regulations.

Regardless of ownership, the retirement and abandonment of certain uneconomic power plants may be temporarily delayed if such units have been independently verified as necessary for the reliable operation of the Bulk Power System.

The unamortized book value of existing assets of affiliate merchant entities that are deemed uneconomic or unprofitable should not be afforded any opportunity for cost recovery unless such action significantly impairs the credit rating of the regulated affiliate. Regulators should take actions such as ring fencing to prevent this spillover

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The Electricity Consumers Resource Council is the premiere national association representing large industrial consumers of electricity before FERC, NERC, EPA, DOE, and the Congress. Created in 1976, it has focused on federal and state policies that affect the price, availability and reliability of electricity service. This position paper is representative of ELCON’s original content that is prepared and endorsed by the ELCON membership based on sound technical and legal analysis.

effect. The uneconomic legacy assets of traditionally regulated utilities should be afforded some degree of cost recovery to balance the rate impact on consumers with the financial impact on the utility. Utilities should be denied full recovery of such costs to provide incentives for efficiency in reducing those costs in the first place.

In determining the appropriateness of allowing pass-through of abandonment costs, commissions should adhere to certain principles:

- Decisions must be made on a case-by-case basis and depend on the facts of the case, and consider the potential for the decision to be precedent setting. In addition, state statutes and previous commission and court actions will influence the decision.
- Only prudently incurred costs should be recovered from ratepayers. Ratemaking decisions that absolve utility management and investors of their responsibilities are inappropriate. Allowed cost recovery should be net of any salvage value, past stranded cost allowances, the value of any assets with market values above book value, and income tax reductions.
- The amortization period should be as long as possible consistent with maintaining the utility's financial viability and reducing the rate impact on customers. Securitization – in the form of ratepayer obligation charges or ROC bonds – is an appropriate long-term financial solution for dealing with prudently incurred unamortized balances and other abandonment costs. But not all states allow securitization.
- Utilities should not be allowed to earn a return on the unamortized balance or other abandonment costs.
- Prudently incurred costs represent a fixed investment by the utility incurred to meet anticipated growth in system peak demand. Recovery of these costs from ratepayers, if appropriate, should be accomplished on the basis of each customer class's contribution to system peak demand(s).
- Uneconomic power plants should not be allowed to continue operation by forcing utility customers to subsidize the plants' owners with out-of-market contracts.

## Background

During most of the long history of the US electric industry, generation was owned almost exclusively by regulated electric utilities. Except for isolated cases, independently-owned, non-utility or customer-owned generation was only made feasible by the enactment of the Public Utility Regulatory Policies Act of 1978 (PURPA). The restructuring of the US electric industry that began in the mid-1990s included the restructuring of generation ownership. In 1997 only 1.6% of US generation was produced by independent, merchant generators. Many states that restructured their jurisdictional utilities mandated the divestiture of generation. By 2002, 25% of generation was owned by merchant companies (including utility affiliates). By 2012, it was over a third. The share of nuclear generation owned by merchant companies

increased from zero percent in 1997 to almost 50% in 2012.<sup>1</sup> One of the core objectives of restructuring was to shift the ownership and operational risk of power plants away from retail customers. In exchange, the owners of the assets were able to sell power at market-based prices and not rates based on cost-of-service.

A combination of factors has rendered many existing coal-fired and nuclear power plants uneconomic and at risk of early retirement or abandonment. Most notable are market conditions such as low natural gas prices and environmental regulations that have increased the cost of coal-fired generation. Another, perhaps more significant factor, is federally-subsidized wind and solar energy resources. In organized markets such as MISO or PJM, these factors can interact with the short-term oriented market design and provide little in the way of long-term price support for base-loaded generation.

The utility owners of power plants generally make the decision to retire them when their expected costs exceed their expected revenues over the remaining life of the plants. Historically low prices for natural gas is only one driver that is reducing the potential revenues earned by these plants because gas-fired generation is now setting marginal wholesale prices in many regions. Many utilities are also facing reduced demand for their product. And more importantly a rash of new environmental requirements have also sharply increased costs and when and if CO<sub>2</sub>-related regulations are implemented such costs will be even more significant. Together these factors have accelerated the need to retire the unprofitable plants and the amount of capacity potentially at risk is considerable. For example, the Energy Information Administration (EIA) projects that 40 to 101 GW of coal-fired generation and 46 to 62 GW of natural gas/oil-fired generation are at risk of retirement through 2040 depending on how (and if) the Clean Power Plan is implemented. In addition, the North American Electric Reliability Corporation (NERC) in its assessment of the Clean Power Plan places 31 GW of nuclear capacity at risk of retirement by 2030.

ELCON is concerned with three aspects of this situation. First, the impact on rates resulting from the cost recovery of the unamortized book value of the assets. In addition to asset cost recovery, there are expenses associated with retiring coal units related to asbestos removal, ash pond closure and other mitigation efforts such as closing water intake tunnels to the plants. Nuclear plants have similar asset retirement obligations associated with the safe decommissioning of the plant. The asset owners of these plants must make maximum use of decommissioning funds that were accumulated over the useful life of the plant.

Second, there needs to be a process for identifying truly uneconomic assets that may be subject to special regulatory treatment. This is necessary because recent decisions to retire and abandon coal-fired and nuclear plants have been based on short-term market anomalies in wholesale power markets.<sup>2</sup> This is particularly true of plants that sell

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<sup>1</sup> Severin Borenstein and James Bushnell, *The US Electricity Industry after 20 Years of Restructuring*, Energy Institute at Haas Working Paper WP 252R, Revised May 2015.

<sup>2</sup> "Short-term" is relative to the life-span of such plants.

power into the so-called organized markets, which have struggled to provide stable long-term price support for investments in long-life assets.

Finally, there are increasing attempts to maintain the profitability of some plants with ratepayer-funded subsidies. This shifts the business risk from the utility—where it can be managed—to the utility’s customers.<sup>3</sup> To the extent these plants are otherwise deemed uneconomic, this also delays the planning and operation of more cost-effective resources that can be both profitable to the utility and lower cost to its customers. But if these plants are uneconomic based on short-term market conditions, the applicable state may choose to balance the rate impact on consumers with the need to temporarily subsidize these plants until certain short-term market distortions or uncertainties have been resolved. This might require, for example, the redesign of the organized markets or the resolution of litigation associated with new environmental regulations.

Once retired and abandoned, the plants cease to produce electricity and are no longer "used and useful." Traditional ratemaking principles deny further cost recovery in rates. However, disallowing pass-through of unamortized balances and other abandonment costs may result in higher utility financing costs. In such circumstances, the PUC must balance the rate impact on consumers with the financial impact on the utility.

## ELCON Position & Recommendations

Utility regulation is often viewed as a substitute for market competition. In a competitive market, a company's investment in an abandoned facility could not be recovered from its customers. The company and its shareholders would bear the risk and the cost associated with an investment. On this basis, a utility's investors should bear the costs associated with a retired plant.

On the other hand, competitive companies are not obliged to provide service to their customers. Therefore, on a case-by-case basis, it may be appropriate for ratepayers to share with investors the responsibility for some portion of prudently incurred costs, particularly if the utility’s financial viability is at risk.

The US electric industry, particularly the generation sector, is a mixture of regulated and unregulated asset owners and any policy on the opportunity to recover the unamortized book value and other retirement costs from utility customers should reflect this hybrid structure. Generally, the following determinations apply:

- **Traditionally Rate-Based (“Legacy”) Generation** – The uneconomic legacy assets of traditionally regulated utilities should be afforded some degree of cost recovery to balance the rate impact on consumers with the financial impact on the utility. Utilities should be denied full recovery of such costs to provide incentives for efficiency in reducing those costs in the first place.

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<sup>3</sup> Some jurisdictions are attempting to sustain these plants with non-bypassable ratepayer subsidies. The justification for such actions may vary from state to state but usually are one of the following: (1) coal-fired and nuclear plants are baseload and are needed to maintain reliability; (2) nuclear plants are “low carbon” and are needed to help states meet carbon policy objectives; and (3) jobs and the local economy are dependent on these plants.

- **Affiliate Merchant Generation** – The unamortized book value of existing assets of affiliate merchant entities that are deemed uneconomic or unprofitable should not be afforded any opportunity for cost recovery unless such action significantly impairs the credit rating of the regulated affiliate, which could happen if the PUC failed to adequately ringfence the regulated affiliate from the unregulated business activities of the parent holding company.<sup>4</sup> Regulators should take actions such as ring fencing to avoid this spillover effect.
- **Unregulated Merchant Generation** – Unregulated merchant power plants are not entitled to any recovery of unamortized book costs or other costs of abandonment.

It may be necessary to support the continued operation of certain affiliate and unregulated merchant plants if the relevant NERC Balancing and Planning Authorities deem the asset a reliability must-run (RMR) unit. The determination of RMR status should be done on a case-by-case basis by an independent assessment.

The decision to require ratepayers to assume a portion of plant abandonment costs should be weighed carefully on an individual utility-by-utility basis in a formal proceeding and depend on the facts of the case while recognizing the possibility of the decision to be precedent setting. In addition, state statutes and previous commission and court actions will influence the decision. All stakeholders should be allowed standing in such proceedings.

There are six steps to this process:

1. Determination that Asset is Uneconomic on a Long-Term, Forward-Cost Basis
2. Application of Prudent Investment Standard
3. Application of Used-and-Useful Test
4. Amortization of Abandonment Costs
5. Adjustments to the Unamortized Balance and Other Abandonment Costs
6. Cost Allocation in Retail Rates

As a first step, the PUC must determine if, in fact, the asset in question is uneconomic on a long-term, forward cost basis. Plants that are uneconomic on a long-term, forward-cost basis should be retired. This determination should be based on reasonably expected market conditions and environmental regulations, and consistent with the utility's most recently approved Integrated Resource Plan (IRP), including a thorough evaluation of cost-effective alternative resource options. These options should include new plant construction (e.g., NGCC), selling the plant, temporarily idling the plant, coal-to-gas conversions, distributed generation (including CHP), PPAs, and purchases from ISO/RTO energy and capacity markets (where applicable).

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<sup>4</sup> Ringfencing is done mainly to protect utility customers from financial instability or bankruptcy in the parent company resulting from losses in their unregulated activities. Ringfencing also keeps customer information within the public utility business private from the for-profit efforts of the parent company's other business.

Once a determination has been made that the asset is deemed uneconomic, the PUC should consider the prudence of the unamortized balances and other abandonment costs. Only those costs prudently incurred should be eligible for recovery from ratepayers. Under the prudent investment standard uniformly followed by utility regulators, a utility must demonstrate that the course of action leading to the expense for which it is seeking rate recovery is reasonable and necessary.

In practice, utility decisions to build power plants are rarely held to be imprudent. However this must not support the assumption that all utility decisions were prudent. Decisions that should be suspect are actions that attempt to extend the life of uneconomic units that in hindsight did not pan out. The capital cost associated with environmental retrofits is one such example. Recovery of any such costs that were not prudently incurred should be disallowed. Ratemaking decisions that absolve utility management and investors from their responsibilities and risks are inappropriate.

If a PUC decides pass-through to ratepayers is warranted for a portion of the prudently-incurred abandonment costs, it must next address the used-and-useful test. Unlike prudence, the used-and-useful test does not make a finding of fault. Clearly once the asset has been retired and abandoned and is no longer operated it ceases to be used-and-useful. While this determination may be perfunctory, its consequence is not. A utility should not be permitted to earn a return on its investment in an abandoned plant, i.e., an asset that is no longer used-and-useful. This means that the unamortized balance should be excluded from rate base without capitalization of carrying costs. This appropriately requires the utility and its shareholders to bear a portion of the risk and cost associated with the abandoned facility.<sup>5</sup>

Once a PUC determines that some cost recovery from ratepayers is appropriate, the utility should amortize that investment cost over a number of years. The length of the amortization period should be determined by considering the size of the unamortized balance (and other retirement costs) to be recovered, the utility's financial condition, the rate impact on consumers, and cost-cutting measures employed by the utility. The amortization period should be as long as possible, while maintaining the financial viability of the utility.

PUCs should also consider securitization – in the form of ratepayer obligation charges or ROC bonds – as an appropriate long-term financial solution for dealing with prudently incurred unamortized balances and other abandonment costs. Properly implemented it can reduce the carrying costs for abandoned assets. But not all states allow securitization.

PUCs should make the following adjustments to the amount recoverable from customers:

- **Salvage Value** – A credit against other costs. It consists of the funds received

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<sup>5</sup> For municipal and cooperative systems, the customers are placed in the role of investors as well as ratepayers. They receive a return on their investment in the form of lower rates. Therefore, these ratepayers assume some of the risk of plant cancellation and should repay the prudently incurred cost over an appropriate amortization period.

from the sale of equipment, land and other material associated with plant abandonment.

- **Credit for Prior Stranded Cost Recovery** – If the asset owners were previously the beneficiaries of “stranded cost” payments, any subsequent recovery of retirement costs should net out those payment, particularly if any windfall profits for the utility were produced because of the miscalculation of stranded costs. The stranded costs associated with industry restructuring beginning in the 1990s was generally defined as costs that might be recoverable from ratepayers under regulation that might not be recoverable in a competitive market. Those costs were typically recovered with a non-bypassable bill surcharge.
- **Netting of Assets** – The PUC should calculate the net book value of the utility’s entire portfolio of assets and not just single out the assets that are uneconomic, i.e., offset the assets with above market book value with assets that are below market book value.
- **Income Tax Impacts** – Plant abandonments also affect a utility's income tax liability. Investment costs incurred by the utility but not recoverable from ratepayers may be deducted from the utility's taxable income, thereby lowering its income tax obligation. The PUC should evaluate this income tax effect when dealing with plant retirements. Prudently incurred investment recovered from ratepayers should be net of income taxes. This, in effect, flows through to ratepayers the income tax reduction associated with an abandoned plant, and reduces the rate impact on consumers.

The costs that are allowed to be recovered from ratepayers should be allocated in rates to the responsible customer class that caused the utility to incur the costs. Fixed costs are generally demand-related and should be allocated to each customer class in proportion to that class’ contribution to maximum peak demand. The revenue burden is equitably shared, and there is no cost shifting, when each customer class produces roughly the same rate of return to the utility.

### Regulatory Treatment of Cancelled New Power Plants or Recently Constructed/Reconstructed Power Plants<sup>6</sup>

The regulatory treatment of the costs of cancelled power plant or plants that were recently constructed or reconstructed follows the same principles as the cost recovery of retired existing power plants. In summary, they are:

- Decisions must be made on a case-by-case basis.
- Only prudently incurred costs should be recovered from ratepayers. Ratemaking decisions that absolve utility management and investors of their responsibilities are inappropriate.
- The amortization period should be as long as possible consistent with maintaining the utility’s

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<sup>6</sup> This section is an updated version of an ELCON legacy paper, *Profiles on Electricity Issues: No.11 - Cost Allocation of Cancelled Electric Power Plants, September 1984*

financial viability.

- Utilities should not be allowed to earn a return on the unamortized balance.

There are, however, certain costs and prudence issues that are unique to this class of assets. For example, special consideration should be given to such factors as cost overruns and construction delays. Disposition of the investment in cancelled plants is usually determined by state public utility commissions (PUCs). While the ability of ratepayers to absorb the cost of a facility which will never produce electricity is limited, an affected utility's financial viability may be severely harmed by the regulatory treatment—or the lack thereof—of plant abandonment costs.

The jurisdictional PUC must determine who should bear the costs associated with a cancelled plant on a case-by-case basis. This determination involves several steps.

The commission must first determine the amount of the utility's abandonment costs. These are the total costs that would have been avoided had the project never been undertaken. They include:

- **Cash Expenditures** – Payment for labor and materials used in construction.
- **Allowance for Funds Used During Construction (AFUDC)** – The financing costs associated with the plant.
- **Contract Cancellation Penalties** – Any penalties charged the utility by manufacturers or vendors as a result of contract cancellations.
- **Site Shut down Costs** – Costs incurred in restoring the construction site to a useful condition.
- **Salvage Value** – A credit against other costs. It consists of the funds received from the sale of equipment and material associated with plant construction.

Once the total of abandonment costs is determined, the PUC must make a determination regarding "prudence." The determination of prudence involves a number of issues and considerable judgment. First, the PUC must determine if the original decision to construct the facility was prudent. This involves a review of the utility's load forecasting studies, system expansion plans and plant siting studies that were used as a basis for constructing the facility. Next, the commission must determine if the decision to cancel the plant was also prudent when made. The issue to be resolved here is usually: When was sufficient information available to the utility to support the decision to cancel? This involves an examination of load forecasting studies, generation availability, economic and other studies that were used to determine that the facility is no longer necessary. Finally, other factors need to be reviewed including an analysis of the initial and subsequent cost estimates for the facility, cost overruns (if any) and other relevant information to determine if any costs incurred were due to management error or neglect. Any such costs would be subtracted from total abandonment costs to arrive at prudently incurred costs.

Next, the PUC must decide which, if any, of these costs should be recovered from ratepayers. Utilities generally should not recover from ratepayers costs of plants that are not used-and-useful in providing service. However, electric utilities are regulated monopolies. As such, they are required to provide adequate service to all customers within their service territory. A part of this "obligation to serve" involves planning and constructing adequate capacity to meet expected future load growth.

Based on current knowledge and forecasts, a utility may decide to construct a plant. Major generating facilities, however, can take a decade or more to construct. During this period, circumstances beyond

the control of the utility may change such that it becomes prudent to cancel the facility. The question of who pays now becomes an issue.

When a utility cancels construction of a generating facility and files for recoupment of its costs with a utility commission, it must show cause why the facility was constructed and then abandoned. Factors that may contribute to the cancellation are:

- **Financial Constraints** – The utility could not adequately finance construction.
- **Regulatory Changes and Uncertainty** – Changing regulations that require back fitting of completed construction.
- **Construction Problems** – Problems encountered in supervising and completing construction.
- **Reversal of Economic Advantage** – Due to changed circumstances, the plant is no longer the least-cost alternative.
- **Problems Surrounding the Acceptability and future of the Technology** – Uncertain public acceptance and continually changing regulations (generally associated with both nuclear and coal-fired technologies).

The costs associated with building these generating units, even if ultimately cancelled, are invariably related to the utility's peak demand. Construction costs associated with a cancelled plant, then, cannot logically be considered energy related. Any portion of those costs deemed appropriate to be recovered from ratepayers by a PUC should be allocated to and collected from customers based on their contribution to the utility's peak demand(s), and recovered in the demand portion of the tariff.

The amortization period selected for the recovery of prudently incurred costs must balance a number of factors. The utility is better off financially if it can amortize its investment over a short time period. However, the rate impact on consumers may be severe. A long amortization period will reduce the impact on consumers but may imperil the financial condition of the utility. In order to reduce the impact of a plant cancellation on consumers, the utility should make every effort to reduce costs and improve cash flow. If allowed by the state, securitization – in the form of ratepayer obligation charges or ROC bonds – is an appropriate long-term financial solution for dealing with prudently incurred unamortized balances and other abandonment costs.

Some state PUCs approve construction of a generating facility when it is proposed and again when it is completed. Others address the facility only upon completion when rate-base treatment is requested. However, PUCs rarely review utility construction programs to determine if circumstances have changed to such an extent that the facility is no longer needed. Problems associated with plant cancellations increase substantially when utilities fail to cancel at an appropriate time. It is recommended that PUCs review utility construction programs periodically to ensure that completion of the facility is necessary and that construction is being performed efficiently. ✎

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