

Idaho: Idaho Power Company

Idaho Power Company's (IPC) Fixed Cost Adjustment (FCA) mechanism compares the authorized fixed-cost revenue requirement with weather-normalized sales and reconciles the difference annually for residential and small business customers. The allowed revenue is determined on a per-customer basis during the general rate case, and the total fixed-cost recovery amount is adjusted based on the number of customers.

Authority

In 2004, the Idaho Public Utilities Commission established a case to investigate financial disincentives to investment in energy efficiency by IPC. After a series of workshops, in 2007 the Commission approved a three-year pilot of IPC's proposed revenue regulation mechanism. In 2009, the Commission extended the pilot for an additional two years, starting January 1, 2010. On April 2, 2012, the Idaho Public Utilities Commission made the IPC pilot program permanent.

Authorized Revenue Requirement

During the general rate case, the Commission establishes the class-specific portion of IPC's revenue requirement. For purposes of the FCA, this includes the fixed costs collected through Residential Service and Small General Service customer rates. During the general rate case, the Commission also establishes a fixed-cost per-customer rate—the amount of fixed cost revenue the Company will recover from each customer. Finally, the Commission must also establish the fixed-cost per-kWh rate—the portion of retail rates that covers fixed costs. "Fixed costs" are defined much more broadly than accounting standards provide, including return, taxes, and labor expenses.

Rate of Return

IPC's most recent rate case resulted in an overall settlement. The Stipulation specified an overall rate of return of 7.86 percent, which combines return on equity (ROE), capital structure, and cost of debt. The Commission made no explicit adjustment to the Company's allowed rate of return

based on the implementation of the FCA.

Revenue Adjustment Mechanism

The revenue adjustment mechanism was designed to be weather normalized. For each customer class included in the revenue regulation mechanism, the actual number of customers (CUST) is multiplied by the fixed-cost per-customer rate (FCC) to give the allowed fixed-cost recovery amount. This pro forma amount is then compared to the fixed costs recovered by the company. This actual fixed-cost recovery is determined by taking the weather-normalized sales for each class (NORM) and multiplying it by the cost-per-kWh rate (FCE) as determined in a general rate case. The difference (allowed fixed cost recovery minus actual fixed cost recovery) determines the FCA. In this way, the revenue requirement is adjusted between rate cases based on the number of customers, and is weather normalized, leaving the weather risk with the company. This difference is the FCA and is applied to each decoupled customer class.

The mathematical formula is $FCA = (CUST \times FCC) - (NORM \times FCE)$. The number of customers is determined by class on the same basis as the methodology used in the general rate case.

Reconciling Actual Revenue With Authorized Revenue

Each month, the actual fixed-cost recovered amount is determined based on the weather-normalized sales for each customer class multiplied by the fixed-cost per-kWh rate. For reporting, a monthly "shaped" fixed cost per kWh is used for calculating actual fixed-cost revenue. This adheres to Generally Accepted Accounting Practices (GAAP) and better reflects end-of-year impacts within the year. The methodology used to weather-normalize actual monthly energy used in the FCA is the same as used in the general rate case. Finally, the actual fixed-cost recovered amount is subtracted from the allowed fixed-cost recovery amount and the difference is recorded as a line item in the monthly Power Cost Adjustment (PCA) report provided to the Commission. Differences are deferred with interest until the end of the

year. The actual FCA balance will differ from that recorded in the monthly reports to reflect the fact that the deferral balance is calculated on an annual, not monthly basis. FCA balance is based on annual average prorated customer count, annual weather normalized sales, and non-shaped FCE rates, which would affect both the balance accrual and the associated interest.

Each year, the Company totals the FCA results, including interest, for the period from January 1 to December 31. If the total is negative, it represents an under-collection of revenue from customers and the amount will be recovered from ratepayers in the following year through an adder to rates (Schedule 54.) Likewise, if the total is positive, the Company has over-collected its fixed-cost revenue, and will return the excess amount to customers through an adder in rates using a credit or surcharge mechanism. These adjustments are currently included in the Annual Adjustment Mechanism line item on customer bills. Since July 2012, the Annual Adjustment Mechanism includes PCA and FCA to avoid customer confusion.

Originally, FCAs were calculated for each decoupled customer class; however, the FCA is now recovered proportionally between the residential and small general service customers for such reason as a lack of cost of service studies to support the underlying cost allocations and acknowledgment of the “portfolio” approach toward energy efficiency. Annual adjustments are capped at three percent and differences beyond that are rolled over until the next period. Adjustments to the rate occur June 1 of the year following the previous one-year period from January 1 to December 31.

IPC was initially obligated to submit its adjustment request, subject to Staff audit, on March 15 of each year. Under the pilot program, this included a detailed summary of demand-side management (DSM) activities that demonstrate an enhanced commitment to DSM resulting from implementation of the FCA. “Evidence of enhanced commitment will include, but not be limited to broad availability of efficiency and load management programs, building code improvement activity, pursuit of appliance code standards, expansion of DSM programs, pursuit of energy savings programs beyond peak shaving/load shifting programs, and third party verification” (IPC-E-04-15 Settlement Stipulation, p 5). However, the Company is no longer required to file the separate annual report specifying ways in which it increased its investment in energy efficiency and DSM as a result of the FCA mechanism. DSM is comprehensively reported in annual DSM reports filed with

the Commission.

Potential Changes

The Commission noted when approving the permanent FCA that it “does not isolate or identify changes in cost recovery associated solely with the Company’s energy efficiency programs.”¹⁷ The Company was required to file a proposal to adjust the FCA to address the capture of changes in load not related to energy efficiency programs. In its compliance filing, IPC recommended making no change to the FCA mechanism, but did propose an altered mechanism in order to comply with the Commission’s request. The proposal would cap the annual change in per-customer consumption to two percent (up or down). The Commission Staff had previously proposed that the FCA balance be equally shared between the customers and the Company in order to account for variations in energy consumption other than weather and energy efficiency. However, the Commission found that neither proposal satisfied its needs, stating that the Company’s proposal to cap deviations in annual usage would not have had any effect on previous FCA results. Additionally, both IPC and the Idaho Conservation League filed comments stating that the Staff’s 50/50 sharing proposal failed to remove the financial disincentives inherent in DSM programs. The Commission finally determined to keep the FCA mechanism unchanged and continue to monitor the results.

Complementary Policies

Idaho requires its investor-owned utilities to pursue all cost-effective energy efficiency; however, it does not have incentives for achieving energy efficiency savings.

IPC uses inclining block rates as the default rate structure for its residential customers, but there is also available an optional Time-of-Day pilot program with summer and winter peak and off-peak periods. Small general service customers take service on a two-tier, inclining block schedule.

IPC has no filing or reporting requirements relating to service quality (except in Oregon).

Energy Efficiency Outcomes

Before IPC implemented revenue regulation in January 2007, it reported increasing incremental energy efficiency savings from 0 percent of retail load in 2003 to 0.5 percent of

17 Order No. 32505, p 6. Available at: <http://www.puc.idaho.gov/orders/32599.ord/32505.pdf>

retail load in 2006. Since the revenue regulation mechanism was implemented, reported savings have increased from 0.6 percent in 2007 to 1.3 percent in 2010 (with low or no reported savings in 2009 and 2011.)¹⁸ The DSM Report for 2012 shows this to be 1.2 percent.

Resources

Idaho Public Utilities Commission

IPC-E-04-15 - Idaho Power — Investigation of Financial Disincentives

IPC-E-09-28 - Idaho Power — Application to Make the Fixed Cost Adjustment Permanent

IPC-E-11-19 - Idaho Power — Request to Convert Schedule 54 (Fca) From Pilot to Permanent

18 EIA. Form EIA-861 data files. Available at: <http://www.eia.gov/electricity/data/eia861/>

Maryland: Baltimore Gas and Electric

Baltimore Gas and Electric's (BGE) revenue regulation mechanism compares actual distribution revenue to the authorized revenue, adjusted for the number of customers, for each applicable rate schedule. The authorized revenue, including the cost of power, is based on test year requirements and sales levels. Over- or under-collections are reconciled monthly through a rider. This mechanism differs from the others we describe by having a monthly, rather than annual, deferral and recovery period.

Authority

BGE requested a revenue regulation mechanism in 2007 due to the expected impact on electricity sales of the company's conservation and demand response programs. BGE stated that the revenue regulation mechanism was necessary to eliminate the inherent disincentive in the traditional ratemaking process with respect to conservation and demand response. Under traditional ratemaking, BGE pointed out that, "a one percent reduction in electricity use and demand on the Company's system for the residential and small commercial classes would cut cost recovery by approximately \$4 million. This first year impact on recovery is then followed by \$8 million in the second year (as an equal amount of savings is added), and so on: the five-year loss to shareholders from this steady-state utility investment program would be more than \$20 million"¹⁹ The revenue regulation mechanism proposed by BGE was based on its gas revenue regulation mechanism, which has been in place since 1998.

Authorized Revenue Requirement

BGE initially calculated its revenue requirement per class separately for each rate scale based on weather-normalized 2007 sales and the number of customers. Because BGE proposed the mechanism in 2007, the test year 2007 included nine months of actual sales and three months of forecasted sales. BGE used three steps to calculate the base monthly revenue requirement:

1. Calculate the Customer Charge revenues by multiplying the number of customers by the

Customer Charge for each class.

2. Calculate the Delivery Service revenues by multiplying the weather-normalized sales by the Delivery Price for each class.
3. Add the Customer Charge revenues and the Delivery Service revenues to determine the base revenue requirements for each class.

BGE's residential, small general service and general service customers are included in the revenue regulation mechanism.

Rate of Return

BGE was allowed a return on common equity of 9.75 percent applied to a common equity ratio of 51.05 percent in its most recent rate case. BGE strongly opposed the reduction of its ROE and preferred another lost revenue mechanism over revenue regulation if an ROE reduction was implemented as a result of revenue regulation.

The Public Service Commission (PSC) made no adjustment to BGE's ROE when revenue regulation was first implemented in 2007, but did reduce its allowed ROE by 50 basis points in the last rate case. The Commission had previously reduced the ROE of another utility by 50 basis points when it adopted a similar revenue regulation mechanism for that utility.^{20, 21}

Revenue Adjustment Mechanism

On a monthly basis, the adjustment to base revenue requirement is calculated for each rate class using the following steps:

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- 19 BGE. (2007, October 26). 9111FilingConser-va102607F. Available at: <http://webapp.psc.state.md.us/intranet/maillog/content.cfm?filepath=C:%5CAsenum%5CAdmin%20Filings%5C60000-109999%5C108061%5C9111FilingConserva102607F.pdf>.
 - 20 Potomac Electric Power Company.
 - 21 BGE's gas mechanism was approved in a 1998 settlement that did not discuss any adjustment to ROE.

1. Calculate the revenue adjustment for the change in the number of customers by multiplying the change in the number of customers by the Customer Charge.
2. Calculate the revenue adjustment associated with the change in sales by multiplying the change in the number of customers by the average use per customer and multiplying that product by the Delivery Price for the class.
3. Calculate the target base revenues for each class for the current period by adding the two types of adjustments to the revenue requirement.

The Delivery Price for each class is the delivery rate, established by the PSC, adjusted for the electric universal service charge, nuclear decommissioning credits, and the administrative credit associated with the administrative adder portion of the Standard Offer Service rates.²²

BGE had a full electric and gas rate case in 2010²³ and another one filed in 2013 and concluded in 2014.²⁴ Both reset the required decoupling elements—monthly revenue requirement, monthly average usage per customer, and number of customers. Neither case changed the mechanism.

The decoupling mechanism now excludes lost sales resulting from major storms.

Reconciling Actual Revenue With Authorized Revenue

On a monthly basis, each rate class's target base revenues are compared to the actual base revenues for the month. The difference is divided by the forecasted sales for the following period to calculate the monthly rate adjustment. Balancing accounts are used to record the timing differences associated with when the adjustments are calculated versus when they are billed or refunded. The monthly rate adjustment, Rider 25, is capped at ten percent of rates. Any amount beyond ten percent of the current rate will be carried over and reconciled in the subsequent period.

Complementary Policies

Maryland requires its electric utilities to provide energy efficiency services to achieve a ten-percent reduction in per capita electricity use by 2015. The state's overall goal is a 15 percent reduction of per capita electricity use by 2015. Although the PSC is explicitly allowed to approve financial incentive mechanisms to promote energy efficiency, no incentives have been approved yet.²⁵

BGE's default service to its standard offer residential customers (those customers who have not elected to take generation service from an alternate supplier) features seasonal

rates—summer and winter. BGE also offers a TOU rate as an option to standard offer residential customers and as the default rate for small general service customers.

Regarding performance incentives under revenue regulation, in October 2012, Maryland issued a four-part plan designed to speed up investments that will strengthen the state's distribution grid. Part of that plan would set a rate-making structure that aligns customer and utility incentives by rewarding reliability that exceeds established reliability metrics and penalizing failure to reach those metrics. A task force has encouraged the Maryland state regulatory commission to implement a performance-based ratemaking process for IOUs such as BGE, linking a utility's progress or failure to meet certain reliability metrics with its authorized rate of return.

Energy Efficiency Outcomes

When BGE implemented electric revenue regulation in mid 2007, it had not achieved incremental energy savings for several years. In 2008 it reported incremental savings of 0.5 percent of retail load, increasing to 1.7 percent in 2010 and 2011.

Resources

Maryland Public Service Commission

- Letter Order ML 108061 (December 27, 2007)
- Letter Orders ML 108069 (November 30, 2007)
 - Case No. 9036
 - Order No. 80460 (December 21, 2005)
 - Case No. 9230
 - Order No. 83907 (December 13, 2013)
 - Case No. 9326
 - Order No. 86060 (December 13, 2013)

- 22 BGE. (2007, October 26). 9111FilingConser-va102607F Available at: <http://webapp.psc.state.md.us/intranet/mailllog/content.cfm?filepath=C:%5CCasenum%5CAdmin%20Filings%5C60000-109999%5C108061%5C9111FilingConserva102607F.pdf>
- 23 Case No. 9230 – See references above.
- 24 Case No. 9326 – See references above.
- 25 ACEEE. *Maryland*. Available at: [http://aceee.org/sector/state-policy/maryland#Energy Efficiency Resource Standards](http://aceee.org/sector/state-policy/maryland#Energy%20Efficiency%20Resource%20Standards)
- 26 EIA. Form EIA-861 data files. Available at: <http://www.eia.gov/electricity/data/eia861/>

Table 13

Annual Incremental Energy Efficiency Savings as Percentage of Retail Sales ⁶⁸							
<i>Highlighted cells are the year that utility started decoupling.</i>							
	2004	2005	2006	2007	2008	2009	2010
Pacific Gas & Electric ⁶⁹	1.1%	1.6%	1.0%	2.1%	3.5%	2.0%	1.9%
Idaho Power Company	0.1%	0.3%	0.5%	0.6%	1.0%	1.1%	1.3%
Baltimore Gas & Electric	0.0%	0.0%	0.0%	0.0%	0.5%	0.6%	1.7%
Wisconsin Public Service Corporation ⁷⁰	0.3%	0.3%	0.3%	0.3%	0.9%	1.0%	0.9%
National Grid	1.1%	0.9%	1.2%	0.9%	0.5%	1.1%	1.36%
Hawaiian Electric Company ⁷¹	0.0%	0.5%	0.5%	0.4%	0.5%	1.1%	1.2%

tion will be made in future mechanisms, and furthermore it is anticipated that follow on work to this paper will want to study that connection between revenue regulation and DG performance.

Conclusions

An increasing number of states are looking to increase the rate of energy efficiency investments for their long-run cost and risk advantages. The benefits of energy efficiency include not only its ability to reduce system costs across the distribution, transmission, and generation functions, but also the opportunity for customers to reduce their individual energy costs for their own electric bills. Nevertheless, it is counterintuitive to encourage or order a utility to sell less of its product. In order to encourage the proliferation of energy efficiency programs as a solution that can contribute to this nation's energy needs, this tension between the goals of society versus the goals of the utility needs to be addressed. Revenue regulation can be such a solution by removing the link between sales and revenues.

There are many ways to implement revenue regulation and multiple decision points that regulators must consider in designing a revenue regulation mechanism. This paper focused on six utilities, each of which implemented revenue regulation in different ways in accordance with the objectives of that state. Different decision points discussed include:

- Should revenue regulation apply to all functions (generation, transmission, and distribution), which sometimes depends on if the utility is regulated or restructured?
- Should revenue regulation apply to all customer classes?

- Should there be symmetry such that a reconciliation adjustment occurs for both over- and under-recoveries of the revenue requirements?
- Should recovery of indicated surcharges be conditioned on acceptable performance on customer service quality or energy efficiency goals?
- Should there be an attrition adjustment to account for other expenses, or should the revenue regulation adjustment be limited to reconciling existing revenue requirements?
- Should there be an inflation adjustment?
- To calculate the revenue requirements, should the current or accrual method be used?
- Should the adjustments be made in rate cases or through a rider?
- How frequently should adjustments be made: monthly, annually, or some other time period?
- Depending on the period of time between true up and recovery, should there be carrying charges, and if so, how should they be calculated?

68 EIA. Form EIA-861 data files. Available at: <http://www.eia.gov/electricity/data/eia861/>

69 PG&E began revenue regulation in 1974 and it was later suspended and recommenced in 2001.

70 WPS savings are represented by the statewide program savings from the Focus on Energy program. WPS provided additional funds to Focus on Energy, starting in CY10, through their territory-wide program activities.

71 In 2009, Hawaii Energy, a ratepayer-funded statewide energy efficiency provider, began delivering services. Savings reported after 2009 represent savings achieved through the programs of Hawaii Energy.