



RATEMAKING FOR ENVIRONMENTAL COMPLIANCE PLANS

By John Wolfram

Electric utilities are paying attention to contemporary calls to care for the environment. As broad interest in reducing carbon emissions grows and emission requirements tighten, many utilities are taking steps to reduce their reliance on coal and to improve the quality of air, water and waste emissions at utility power plants. While most of the attention rests on renewable resources and distributed generation alternatives, utilities are quietly continuing to invest in existing technologies in order to comply with U.S. Environmental Protection Agency (“EPA”) mandates, as part of their Environmental Compliance Plans (“ECPs”). These plans involve significant investment in assets and can create numerous regulatory and rate challenges for regulators, utilities and customers alike.

Environmental Compliance Plans

An ECP is a comprehensive and cost-effective utility strategy for maintaining compliance with all applicable environmental regulations and requirements. The ECP usually includes a specific set of projects or activities for which the utility may project capital costs, annual O&M costs, revenues (if any), and other metrics impacting the budget and operations of the utility. Each ECP project, and the ECP in totality, may then be subject to the conventional standards of regulatory review applicable to regulated electric utilities in the United States.

Environmental Requirements

The U.S. Environmental Protection Agency (“EPA”) has promulgated numerous regulations applicable to utilities related to air, water, and waste. The requirements are continuously evolving; some examples are listed in Table 1. As technology advancements continue to emerge, the list of options available to utilities for adhering to such requirements grows. See Table 2 for examples. The technology options listed can be very costly, with capital costs alone for certain projects reaching the tens or even hundreds of millions of dollars. Because the costs can be so significant, the rate and regulatory considerations are especially important.

Regulatory Requirements

Fundamentally, the regulatory requirements surrounding ECPs are no different than those applicable to utilities in the normal course of business. Regulated utilities are entitled to a

Table 1.
Environmental Regulations Affecting Utility Power Plants

Rules & Regulations
Clean Power Plan (“CPP”) Cross State Air Pollution Rule (“CSAPR”) Mercury / Air Toxics Rule (“MATS”) Coal Combustion Residuals Rule (“CCR”) 316(b) of Clean Water Act (“Cooling Water Rule”) New Source Performance Standards for Greenhouse Gases PSD and Title V Permitting

Table 2.
Environmental Compliance Technologies

Pollutant	Technology
NOx	- Selective Catalytic Reduction (“SCR”) - Selective Non-Catalytic Reduction (“SNCR”) - Low-NOx burners
SO2	- Flue Gas Desulphurization (“FGD” or “Scrubber”) - Dry Sorbent Injection (“DSI”)
Mercury	- Activated Carbon Injection (“ACI”)
Particulates	- Electrostatic Precipitator (“ESP”) - Fabric Filters - DSI / ACI
General	- Continuous Emissions Monitoring Systems (“CEMS”)

reasonable opportunity to recover their prudently-incurred costs, as established in the landmark U.S. Supreme Court case, *Federal Power Commission et al v. Hope Natural Gas Co.* (“*Hope*”), 320 U.S. 591, 603 (1944). Regulated utilities are also entitled to earn a fair and reasonable rate of return on their capital investments, as established in another landmark U.S. Supreme Court case, *Bluefield Water Works and Improvement Co. v. Public Service Commission of West Virginia* (“*Bluefield*”), 262 U.S. 679 (1923). Both *Hope* and *Bluefield* apply to utility expenditures for ECPs.

Accordingly, utilities may submit filings to the regulator seeking a return of and on ECP project costs. The utility may seek to include the ECP costs in base rates in a general rate case. Alternatively the utility may seek to recover ECP costs through a special rate mechanism, often referred to as an Environmental Cost Recovery Rider (“ECR Rider”). The mechanism has other similar names, including Environmental Surcharge, Environmental Cost Recovery Clause, and Environmental Compliance Rider, which can vary by jurisdiction. Regardless of the name, the mechanism acts as a “rider” to base rates in that the ECP project costs are excluded from base rates and instead are layered on to those rates via a separate line item on customer bills. The ECR Rider changes more frequently than base rates and reduces the regulatory lag associated with ECP cost recovery.

In jurisdictions that do not allow the use of the ECR Rider, utilities may instead seek authority from the regulator to defer ECP costs for accounting purposes. This deferral results in the establishment of a regulatory asset in which all ECP-related costs can be set aside for consideration in a future general rate case. At that time, the regulator may undertake a review of those costs, in conjunction with a review of all other utility costs. The regulator can then decide whether an amortization of the ECP costs over a certain number of years should be incorporated in base rates. To determine whether regulatory asset treatment is appropriate, regulators typically apply certain criteria to determine which expenses qualify: some qualifying expenses include any of the following:

- 1) Extraordinary, nonrecurring expenses which could not have reasonably been anticipated or included in the utility’s planning;
- 2) Expenses resulting from a statutory or administrative directive; or
- 3) Extraordinary or nonrecurring expenses that over time will result in savings that fully offsets the costs.

In many states, utilities are required to request a Certificate of Public Convenience and Necessity (“CPCN”) before commencing construction of large projects, including ECP projects. In such a proceeding the utility must demonstrate the need for the project and show that the particular project is a reasonable and cost-effective way to meet that need. This is sometimes loosely referred to as the “least cost option” or “least cost standard.”¹ In states with laws governing ECPs, utilities may be required to seek authority from the regulator any time they want to add a new project to the ECP.

What Utilities Should Do

Utilities should provide the regulator with a thorough discussion of the ECP and actions related to the applicable environmental regulations. In this discussion, the utility should compare the risks, reliability and costs of available alternatives. The utility should also include a variety of

¹ Technically the “least cost option” label is a misnomer, because most jurisdictions do not specifically require that a project be “least cost” in order to qualify for a CPCN. Most regulators have broad discretion to consider many factors, including costs, and otherwise apply the “reasonable” standard rather than a “least-cost” standard in making such determinations.

sensitivity studies in its analysis, to evaluate the economics of each alternative under varying assumptions. Examples of variables include project costs (capital and O&M), system load, generating unit forced outage rates, energy prices, allowance prices, or any other key variables.

Considered sequentially, utilities should take the following broad steps when developing an ECP:

- 1) Identify all applicable current and proposed regulatory requirements;
- 2) Identify all realistic compliance alternatives;
- 3) Perform proper economic analyses, including sensitivity studies and qualitative risk analysis of all alternatives;
- 4) Make decisions based on the result of the analyses;
- 5) Revisit decisions as major milestones are reached or as conditions change;
- 6) Actively manage implementation and adapt as needed.

These steps will help establish a prudent approach that is thoroughly researched, transparent to stakeholders, and advantageous to utility customers.

What Regulators Should Do

Comprehensive Planning is essential to ensure that the appropriate compliance measures are implemented and to allow the regulator adequate information and time to perform its statutory duties in assessing whether proposed ECP components are necessary in order to provide safe and adequate service, and that the rates charged are fair, just, and reasonable

Regulators should:

- 1) Require a thorough, objective and transparent analysis of the current and proposed environmental compliance options before approving any investment. This includes a Net Present Value of Revenue Requirements analysis covering the appropriate time horizon, with sensitivity analyses and consideration of any qualitative risk factors.
- 2) Consider alternative ways to meet customer needs, environmental requirements, and reliability standards. This may include but is not limited to:
 - a. Retrofits to Existing Generation;
 - b. New Generation (including Renewable Resources);
 - c. Energy Efficiency & Demand Response;
 - d. Allowance Purchases;
 - e. Distributed Generation;
 - f. Transmission and Distribution Efficiency Improvements;
 - g. Interconnection Options for improving access to regional resources.

Many times the analysis of these alternatives may be considered within the framework of the *Integrated Resource Planning* (“IRP”) process, in which the utility evaluates a wide array of supply-side and demand-side alternatives for meeting its anticipated needs (including projected customer demand and long-term contract obligations plus a reserve margin).

- 3) Consider whether environmental compliance costs produce any off-setting savings (e.g. investment in equipment could reduce costs associated with purchasing allowances) or whether the costs incurred generate any revenue (e.g. sale of by-products like gypsum). Ultimately, the revenue requirement related to the ECP, whether included in base rates or in a separate rate mechanism, should reflect *net* costs.
- 4) Establish clear requirements for utilities seeking approvals for ECP-related cost recovery. Utilities should not have to guess what is required. Lack of clarity on this point also places a burden on both utilities and stakeholders to properly identify the criteria that must be met in order to persuade the regulator of the validity of their respective positions. The regulator should develop a checklist for items to be included in any ECP-related filing and clarify in its orders the criteria upon which it relies when ruling on ECP-related requests. This will help all stakeholders fully understand the requirements and minimize unnecessary conflict during ECP proceedings.
- 5) Consider retaining a third party expert to independently review the utility’s analysis of proposed ECP projects. This is a common method for assessing the utility proposal to determine whether it meets the other criteria noted herein.
- 6) Decide whether costs of utility investments should be recovered in rates. Are the utility ECP investments prudent? This is more complex than it sounds. The regulator must determine whether the utility made reasonable investment decisions, consistent with the applicable legal and regulatory requirements and considering the cost effectiveness, reliability, and availability of alternatives, *given the information the utility had available at the time decisions were made*. At bottom this is the same task the regulator faces for all other utility investment decisions, but applied to the ECP.
- 7) If a plant retirement is more cost effective than retrofit options, decide whether the undepreciated value in the plant that may no longer be “used and useful” to customers should be recovered in rates. This can be particularly difficult as more utilities elect to retire facilities from service before such facilities are fully depreciated, as a result of the economics surrounding more strict environmental requirements and new, more efficient power plants. This particular issue poses a distinct challenge to the traditional utility investment paradigm, and it is uncertain how regulators will address this issue prospectively.

These steps will benefit all of the stakeholders in the utility ECP planning and implementation process by improving administrative efficiencies and enhancing the public record available to support the decisions of the regulator in ECP-related proceedings.

Challenging Issues

Utilities and regulators face several challenges when considering ECPs. First, the body of applicable environmental regulations is not static. Many proposed regulations have been issued by the EPA in recent years, and of these, several have (a) undergone significant changes from proposed rule to final rule form, and/or (b) faced legal challenges in the court system. The sheer quantity of regulations, the variety of pollutants addressed by the regulations, and the validity of regulations from a legal standpoint all combine to make it difficult for both the utility and the regulator to assess ECPs on a comprehensive basis at any single point in time.

Another challenge is the question of whether utilities should make ECP investments for compliance with *proposed* regulations in addition to current regulations. While many regulators expect utilities to evaluate the options for complying with proposed regulations as they emerge, actually approving compliance options and the corresponding cost recovery for regulations that are not yet final is a different matter.

Do investments aimed at meeting proposed regulations qualify for inclusion in rates? Given the legal wrangling associated with recent proposed regulations, and the “necessity” component of the CPCN process, the answer in many cases is “no.”

Another question sometimes raised by environmental advocacy groups in ECP proceedings is whether the traditional utility production cost modeling and cost-of-service ratemaking approach should be modified to include other costs/benefits related to emission reductions. At this time, most regulators do not expect the utility to fully incorporate such costs into production cost modeling. Instead, the regulator considers evidence regarding those types of costs, if introduced into the record by intervenor expert witnesses, in their overall deliberations in ECP cases.

Base Rates vs. ECR Riders

The ECR Rider is an “Automatic Adjustment Clause” which can be defined as follows:

“Provision of a rate schedule which provides for an increase or decrease (or both), without prior hearing, in rates reflecting an increase or decrease (or both) in costs incurred by an electric utility. Such term does not include any rate which takes effect subject to refund and subject to a later determination of the appropriate amount of such rate.”²

Regulators have adopted the following criteria for determining whether or not an Automatic Adjustment Clause is appropriate for cost recovery:

- 1) Costs must be *significant*. If the costs simply do not amount to that much, then the use of a special rate mechanism is not justified, and base rate treatment is appropriate.
- 2) Costs must be *volatile*. If the costs do not vary much from year to year, the utility can incorporate the average annual amount into base rates without any additional risk.

²Federal Power Act -Title 16 U.S.C. §824d(f)(4)

- 3) Costs must be largely beyond the control of the utility. If the utility has wide discretion over the need for, timing of, and amount of costs, then the utility is positioned to propose inclusion of the costs in base rates.

In addition, for inclusion in an ECR Rider in many jurisdictions, *the costs must be related only to ECP projects which the regulator has pre-approved*. In this way the application of the ECR Rider by design is relatively narrow. The regulator wants to prevent double-recovery of ECP costs, and the utility wants to avoid any under-recovery of ECP costs, so any costs included in an ECR Rider must not be included in base rates, and vice versa.

Arguments Against the ECR Rider

Some maintain that the ECR Rider violates the prohibition against *Single Issue Ratemaking*. Single-issue ratemaking occurs when a regulator reviews and makes a rate determination with respect to a single component of the revenue requirement in isolation, without considering and reviewing all components of the revenue requirement in aggregate. This is typically not permitted in utility ratemaking, but many jurisdictions allow certain Automatic Adjustment Clauses to operate separately from base rates, including fuel or purchased power cost recovery mechanisms meeting the criteria noted earlier, that function as exceptions to the rule.

Others argue that the ECR Rider reduces the utility incentive to closely manage its environmental compliance costs; the rationale is that if the ECR Rider ensures prompt and full cost recovery, then the utility has no reason to try to minimize those costs. However, in most jurisdictions, the regulator conducts periodic audits, prudency reviews, or other focused reviews of the costs included in the ECR Rider to ensure that the ECP rate impacts are fair, just and reasonable. Costs may be disallowed and refunds through the ECR Rider may be required. In this way the ECR Rider does not guarantee full recovery of all ECP-related costs.

Arguments For the ECR Rider

Some maintain that the ECR Rider, like other Automatic Adjustment Clauses, streamlines the regulatory process by avoiding more frequent base rate case filings by utilities. The ECR Rider also helps avoid customer exposure to less frequent but more significant rate increases; the ECR Rider may produce more frequent but much smaller increases to customer bills, thus mitigating “rate shock” for customers.

For the utility, having an ECR Rider in place reduces the volatility of utility margins, which in turn can lower the utility’s cost of debt and improve its credit ratings. Poor debt ratings can constrain the utility’s operations and increase overall risks to customers. Credit rating agencies have acknowledged that an ECR Rider helps a utility to earn a favorable ratings outlook supported by strong credit metrics and favorable regulatory practices that limit cash flow volatility and business risk.

How ECR Riders Work

Fundamentally, the ECR Rider is a separate line item on customer bills which is calculated using the formula:

$$\text{ECRR Factor} = E(m) / S(m)$$

where the ECRR Factor is applied to the appropriate billing units, $E(m)$ is the total ECP cost for the period (here assumed to be monthly, designated by “m”) and $S(m)$ represents the billing basis for the month (e.g. Total kWh for ECRR Factors that are billed on an energy basis).

The formula for $E(m)$ or ECP costs for a given month is:

$$E(m) = \text{RET} + \text{OE} - \text{BAS} + \text{Over/Under Recovery}$$

Here, the ECP monthly costs include cost of capital including a return on investment (RET), plus ECP-related Operating Expenses (OE) including O&M, depreciation, property taxes, insurance expense, and emission allowance expense. This is then offset by net proceeds from any By-Product and Emission Allowance Sales (BAS), plus any Over/Under-recovery amount from prior periods.

There are variations of this approach but in general the determination of an ECRR Factor for customer bills follows the same techniques used by utilities to calculate billing factors for other Automatic Adjustment Clauses that may apply in a particular jurisdiction.

Regulators typically initiate periodic audits or reviews of ECR filings, to ensure that the costs included in the ECR Rider are appropriate. These reviews sometimes occur at six-month, one year, or two year intervals, and typically include a detailed audit of all costs included in the ECR Rider and the status of various approved ECP projects.

As with costs considered in a base rate proceeding, the ECP costs can be classified in the ECR Rider in various ways.

- 1) There are sound arguments for classifying ECP costs as energy-related; emissions themselves are energy-related, so some argue that ECP costs are also predominately energy-related. When ECP costs are classified by energy, low load factor customers benefit relative to high load factor customers, all else being equal.
- 2) In other jurisdictions, the ECRR Factor is calculated as a percentage of revenue or net revenue (total revenue less fuel and purchased power), and applied to customer bills as a percentage of base rate revenue. This approach places less emphasis on energy and more emphasis on demand (particularly if net revenue is used, because the revenue that remains after removing fuel and purchased power revenue is largely related to recovering fixed costs). In these cases, high load factor customers benefit relative to low load factors.

Generally, the utility should classify and allocate costs in ways that are consistent with the base rate cost methodologies, where possible. This reinforces the idea that the ECR Rider is “layered

on” to the base rates and helps ensure that the classification and allocation methods in base rates and the ECR Rider are equitable.

From time to time, the utility may be required to transfer or “roll in” amounts from the ECR Rider to base rates. This amounts to a revenue neutral transition of cost recovery from the ECR Rider to base rates that can take place any time after the ECR Rider amounts are reviewed by the regulator. Often, utilities would prefer to avoid a roll-in of ECP costs so that customers can distinguish on their monthly bills the costs incurred by the utility to comply with the EPA from the other costs over which the utility has greater control.

Conclusion

Utility ECPs can be very costly and may warrant special cost recovery outside of base rates via an ECR Rider. Regardless of the cost recovery mechanism, utilities should provide the regulator with a thorough discussion of the ECP and actions related to the applicable environmental regulations, including a comprehensive analysis of alternatives using a Net Present Value of Revenue Requirements approach, various sensitivity studies, and consideration of applicable qualitative factors.

Regulators should take steps to ensure that utilities perform thorough, accurate and transparent analysis of all available realistic environmental compliance alternatives. Regulators should also make their expectations clear, so that unnecessary conflict and uncertainty can be minimized during ECP proceedings. The generally established criteria for ECPs and ECR Riders should be applied, and, when possible, the ratemaking approach with an ECR Rider should be as consistent as possible with base rate treatment of similar costs. If these steps are taken, the ratemaking for ECPs can mirror the ratemaking practices broadly applicable to utilities in the normal course of business.

Finally, in spite of the well-established planning and ratemaking aspects of ECPs, difficult questions will likely remain, for utilities and regulators, as new environmental requirements, technological advances for compliance options, and challenges to the traditional utility investment paradigm continue to emerge.

John Wolfram is the founder of Catalyst Consulting LLC, a consulting firm specializing in rate and regulatory matters for utilities. Contact the author by phone at 502.599.1739 or by e-mail at johnwolfram@catalystllc.com. See other articles at www.catalystllc.com

© 2015 Catalyst Consulting LLC