Decoupling Policies: Options to Encourage Energy Efficiency Policies for Utilities

Decoupling can be a win-win strategy to both utility companies and their customers by breaking the link between electricity and gas sales and revenue. A well-designed decoupling plan helps keep utility profits steady and customers' energy costs in check—and it removes the disincentive for utilities to promote energy efficiency programs.

Decoupling Defined

Decoupling is a rate adjustment mechanism that breaks the link between the amount of energy a utility sells and the revenue it collects to recover the fixed costs of providing service to customers.[1] This ensures that a utility's revenue from fixed costs remains at the level regulators determine to be fair and reasonable, including a fair return on investment and that customers pay a fair amount for services rendered.[2]

Traditional regulatory mechanisms keep prices constant between rate cases, but actual revenue floats up or down as a function of actual sales. However, decoupling allows automatic or semi-automatic price adjustments, which ensures recovery of the allowed revenue amount as prices are adjusted so that the allowed revenue is recovered.[3]

While decoupling does not alter the traditional rate case process (see Decoupling Terminology box on page 2 for definition), it redefines allowed revenue between rate cases, and this **removes the incentive for utilities to increase sales as a means of increasing revenue and profits** (called the Throughput Incentive). Because the direction of price adjustments is always opposite the direction of changes in overall consumption, decoupling dampens the volatility of customer bills.

[1] These are costs that are relatively fixed in the short-run measured on the timescale between rate cases.

[2] Variable costs—those that vary directly with consumption and production such as fuel, variable operation and maintenance, and purchased power—are typically excluded from the decoupling mechanism.

[3] With or without decoupling, the allowed revenue determined in the rate case is no guarantee the utility will recover all of its costs, including a fair return on investment. Further, ratemaking is on a prospective basis; the utility cannot request retroactive ratemaking treatment. At a minimum, the utility has no opportunity to explicitly recover any newly incurred costs that are not otherwise already included in its allowed revenue, unless they are booked to a suspense account for the next rate case.

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Decoupling Terminology

Allowed revenue
The amount of revenue the regulator determines a utility can collect to sufficiently recover costs and earn a fair rate of return (ROR).

Balancing account
A method used to track over or under collections of revenue from one period to the next. A balancing account is required only in the deferral method of decoupling, which is described on page 3.

Throughput incentive
The financial incentive for utilities to sell more electricity to increase revenue.

Rate case process
During the rate case process, the prices for different customer classes are determined based on expected consumption and the utility's revenue requirements. The span between rate making processes can be multiple years.

True-up
A price adjustment made when the collected revenue varies from the allowed revenue.

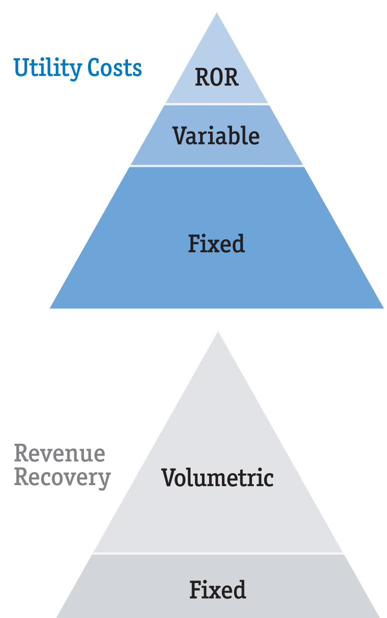
Decoupling sets a budget for the utility (Shirley, et al. 2008), similar to a budget for other purposes. As an analogy, a college student with a monthly budget for food expenses might decide to spend the entire amount eating out every meal. Alternatively, the student can eat less expensive meals at the cafeteria to reduce food-related costs, but eat the same number of meals (and maintain the same food intake). Just as a student can stretch the meal budget by reducing cost per meal, a utility can stretch profits by increasing the margin between variable costs and the allowed revenue.

Decoupling reduces the throughput incentive

A utility's costs for infrastructure and customer service are largely fixed, whereas commodity costs are variable. Most utilities pass commodity costs to customers as a separate fuel or power cost adjustment. Utilities typically recover a fraction of their fixed costs through fixed monthly customer charges and recoup the remainder through consumption-based rates, as shown in Figure 1. That means a decline in sales can hinder a utility's ability to recover fixed costs, which creates a disincentive for utilities to promote customer energy efficiency.

However, because fixed costs remain relatively stable regardless of incremental energy use, it is unlikely the utility can significantly improve its profitability by reducing those costs. The easiest way for a utility to increase profits is to increase sales, creating a powerful throughput incentive. Decoupling alleviates the throughput incentive by reducing the connection between increased sales and increased revenue.

Figure 1. Utility's Revenue Recovery and Allowed Costs



This representation shows that a utility's variable costs to produce and deliver electricity (the costs directly associated to the volume of electricity sales) is disproportionately smaller than the portion of revenue recovery through volumetric pricing.

Figure 2. Ratemaking Scenarios With and Without Decoupling

Traditional Ratemaking Equation

$$\text{Unit Price} = \frac{\text{Allowed Revenue Requirement}}{\text{Expected Units of Consumption}}$$

$$\text{Actual Revenue} = \text{Unit Price} \times \text{Actual Units of Consumption}$$

Ratemaking Equation With Deferral Decoupling[5]

$$\text{Allowed Revenue} = \text{Last Rate Case Revenue Requirement}$$

$$\text{Prior Period Over or Under Collection} = \text{Allowed Revenue} - \text{Actual Revenue}$$

$$\text{Unit Price} = \frac{\text{Allowed Revenue + or - Prior Period Over or Under Collection}}{\text{Expected Units of Consumption}}$$

Ratemaking Equation With Current Period Decoupling

$$\text{Allowed Revenue} = \text{Last Rate Case Revenue Requirement}$$

$$\text{Unit Price} = \frac{\text{Allowed Revenue}}{\text{Actual Units of Consumption}}$$

A comparison of traditional ratemaking, deferral, and current period decoupling shows the different equations used to determine unit price in each scenario. With decoupling, consumer prices are adjusted regularly between ratemaking processes (up if utility-wide consumption is less than expected and down if it is greater than expected to ensure the true cost of electricity is recovered by the utility), resulting in reduced volatility in a customer's bill.

Decoupling offers rate setting options

The unit price of energy is traditionally determined based on the revenue requirements and the expected amount of consumption. A utility's actual revenue is a function of actual units sold. As a result, a utility experiences the throughput incentive to increase net revenue (profit) by either increasing sales or by reducing costs.

It is unlikely that actual sales will exactly match the expected sales used to set prices during the rate case. As a result, during a multiyear span between ratemaking processes, a utility could earn more or less than its allowed revenue, and customers could be paying more or less than they should for the services provided.

Decoupling offers two alternative options for setting rates:

- **Deferral decoupling:** A utility holds the over or under collection of revenue in a balancing account. This balance (positive or negative) becomes allowed revenue in a subsequent period for distribution, to either the utility or customers, in the form of lower or higher per-unit prices.[4]
- **Current period decoupling:** Rates are adjusted each billing cycle to ensure that the utility collects the allowed revenue, and no balancing account is required. This enables utilities to have a fair revenue stream (as defined by the regulators) that is related to providing electricity and customer service versus amount of electricity sold.

Figure 2 shows the ratemaking equations in traditional and decoupling scenarios.

> **"The throughput incentive has been identified by many as the primary barrier to aggressive utility investment in energy efficiency."**
>
> (NAPEE 2007)

[4] The period between adjustments can be monthly, quarterly, or some other length of time as determined by the utility commission. The length of this period determines when the "balance" is redistributed to either the utility or customers.

[5] In both decoupling approaches, allowed revenue may be a fixed amount based on the last rate case or a formulaically determined amount which adjusts the rate-case revenue requirement for other factors, such as number of customers, inflation and productivity, etc.

Types of Decoupling

Various types of decoupling have emerged to meet utility needs. Decoupling policies are generally designed using either a set last-rate-case value or a revenue-per-customer formula to determine allowed revenue. A revenue-per-customer is the most common method (NAPEE 2007), because it recognizes that the utility's costs to deliver energy fluctuate based on the number of customers covered per period.

Regardless of how the revenue is determined, a decoupling policy can be implemented at various levels.

- **Full decoupling:** A utility recovers the allowed revenue no matter the reason (e.g., weather fluctuations, economic needs, or efficiency measures) for the variation in projected to actual sales. Customers as a whole will pay the costs of the services provided (Shirley, et al. 2008). This removes the risks of sales volatility for both the utility and customers and levels out earnings and customer bills (NAPEE 2007).
- **Partial decoupling:** A utility recovers only some of the difference between the allowed revenue and the actual revenue (Shirley, et al. 2008). For example, if revenue is lower than expected at the time of the true-up, the utility receives a percentage of the difference between actual revenue earned and the allowed revenue. This ensures the utility recovers the costs of providing electricity without connecting recovery to the volume of electricity delivered.
- **Limited decoupling:** This true-up occurs only when revenue deviates from allowed revenue for specific reasons defined by the policy (or conversely, by excluding the known effects of a specific cause). For example, a policy could be designed to allow a true-up if the deviation is caused by changes in weather but not by changes in economic conditions (Shirley, et al. 2008).

Regardless of the decoupling policy, a customer's bill is not decoupled from consumption. This still gives the customer financial incentive to reduce energy consumption, while the utility retains its ability to recover costs and revenue.

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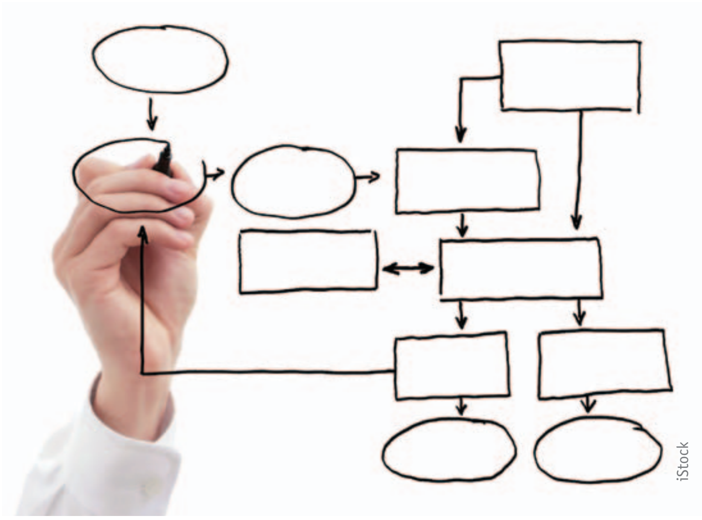

Impacts of a Decoupling Strategy

A well-designed decoupling policy reduces the need for general rate cases, which reduces the costs of the ratemaking process. Additionally, a utility's administrative costs to implement a decoupling program are expected to be negligible (Shirley, et al. 2008). However, in deferral method decoupling, if the balancing account is designed with carrying charges for balances, and large balances are allowed to accrue, the utility might see greater price impacts (NAPEE 2007).

Under a decoupling policy, the financial risk for the utility decreases because the policy reduces the volatility of traditional pricing. This also reduces the company's capital costs. Utilities may gain greater leverage in their capital structure, which reduces costs to consumers without affecting the profit rate to investors. This may also improve the utility's future bond ratings, because rating agencies view decoupling as a risk mitigation measure.

In some cases, it might be several years before a utility realizes the benefits from reduced debt and equity rates. This will depend on the stability of the decoupling policy as determined by the rating agency (Shirley, et al. 2008). However, these benefits may be captured immediately, if the reduction in cost of capital is reflected in the capital structure (the amount of debt and equity), instead of waiting for change in the underlying debt and equity cost rates.

Policy Design Considerations

Utilities and policy makers have several decisions to make when developing and implementing a decoupling policy. Evaluating these options can be helpful in the decision-making process.

Mechanism mathematics

- Decide the mechanism for decoupling revenue from sales. This includes revenue per customer, a predetermined annual revenue requirement (e.g. historical or future test year), or other method.
- Select a full or partial decoupling method.

Decoupling adjustments

- Establish a plan for reconciling actual to allowed revenue.
- Determine the time period for reconciling actual to allowed revenue (e.g. monthly, quarterly, semi-annually, or annually).
- Define the price adjustments and whether these will be distributed equally among customer classes or weighted using other criteria.

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Policy Design Considerations

continued

Timing of adjustments

- Set the timing of customer decoupling adjustments. For example, these could be implemented during the period when sales volume deviates from test year volumes, or accrued and deferred for later collection or refund.

Term of decoupling program

- Determine an end for the program, if appropriate, and define provisions for review, renewal, or termination.
- Outline a process for making changes based on review and renewal.
- Specify if the terms will be different if the initial decoupling proposal is a pilot program.

Implementation

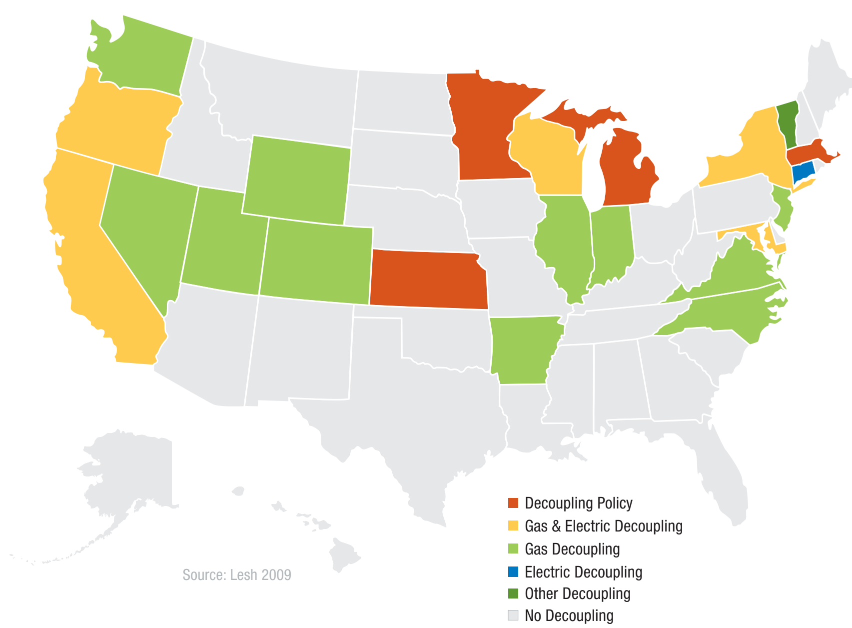
- Determine when the decoupling mechanism will be implemented. For example, should implementation occur only in a rate case, or within a limited period of time after a rate case?

Status of Decoupling Policy in the United States

While decoupling has been in practice for a few decades, interest in this policy option is on the rise. As of June 2009, 17 states have implemented decoupling mechanisms, including 28 natural gas distribution utilities and 12 electric utilities. Six other states are in the process of implementing decoupling mechanisms (Lesh 2009). The following are general characteristics of current decoupling mechanisms (Lesh 2009):

- Most existing decoupling policies are adjusted annually, although some utilities do this more frequently.
- The decoupling adjustments, positive or negative, tend to be small, resulting in less than a $2.00 difference in a customer's average monthly electric bill (less than a 1% change in the total bill in the majority of cases).
- Utilities commonly measure the difference between allowed revenue and collected revenue on a per customer class or per rate schedule. They provide a refund or apply a surcharge only to that schedule or class.
- Most of the mechanisms allow utilities to keep additional revenue that results from increases in customer accounts during a decoupling period.
- The majority of decoupling mechanisms do not exclude the impacts of weather and are fully decoupled. Any variances in revenue collection are either refunded or surcharged.[6]

Figure 3. Decoupling in the United States



[6] Decoupling only applies to fixed costs (primarily for delivery services). Customers will continue to see the impact of weather on the commodity portion of their bill (primarily fuel and purchased power costs).

The Role of Utilities and Regulators

Utility companies and utility regulators each have a role to play in ensuring a balance of service to electricity customers and profitability of the utility company.

Utilities provide customers with three main services:

- Delivery of the electricity commodity from the generation and transmission system to the distribution system and individual customers.
- The commodity itself—in this case electricity.
- Customer service and technical assistance in using electricity safely and wisely.

Meanwhile, utility regulators are charged in part with ensuring electric and gas utilities have a reasonable opportunity to earn sufficient revenue to recover their prudently-incurred costs as well as a fair ROR on their investments used to provide utility service.

How Does Decoupling Interact with Other Policies?

A well-implemented decoupling policy more accurately reflects the cost of production and delivery of electricity. Decoupling can complement other policies that encourage energy efficiency, demand response, low-carbon resources, and supply-side resources. For example, decoupling leverages these policies:

Carbon reduction: A carbon tax, or, alternatively, the cost of carbon certificates in a cap and trade regime, can function as a proxy for external (e.g., environmental or security) costs. Decoupling can ensure that a utility still recovers short-run fixed costs, if consumption declines as a result of carbon reduction policies.

Residential energy conservation ordinance and general building energy efficiency incentives: Decoupling can motivate consumers and governments to improve building efficiency by facilitating a lower price for fixed-rate components on the utility bill with associated higher volumetric charges. At the same time, decoupling ensures revenue stability for fixed costs.

Feed-in-tariff (FIT): This policy has different but complementary goals to decoupling policies. FITs target the development of renewable energy generation. Revenue from decoupling focuses on accurate reimbursement to the utility for fixed-cost services and infrastructure and promotes least-cost options. These often involve efficiency instead of generation measures. However, if a FIT is successful, the utilization of utility-owned generation and transmission will decline and utility net revenue will also decline. Decoupling prevents margin erosion, which makes the utility more receptive to a FIT policy.

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