7.2 Policies That Sustain Utility Financial Health

Policy Description and Objective

Summary

Although aggressive energy efficiency and clean distributed generation programs help utilities diversify their portfolio, lower costs, and meet customer needs, some utilities may face important financial disincentives to adopting these programs under existing state regulatory policies. State regulators can establish or reinforce several policies to help curb these disincentives, including addressing the throughput incentive, ensuring program cost recovery, and defining shareholder performance incentives.

Public utility commissions (PUCs) in leading states are refining traditional utility policies to better align the utility financial interest with state and customer interest in affordable, reliable electricity service that minimizes environmental impacts.

As part of their business model, utilities take on financial commitments and incur risks in support of infrastructure investments and procurement plans (see Section 7.1, "Electricity Resource Planning and Procurement"). If the state PUC finds in a rate case or otherwise that such costs and risks are prudent, the costs are recovered in customer rates. Investor-owned utilities also need to remain profitable to their shareholders; their failure to do so can affect their stock price and bond ratings, as well as the cost of capital for future investments made on behalf of customers.

Traditional regulatory approaches link the recovery of utility investment and operating costs to the volume of electricity (kilowatt-hours [kWh]) sold to customers. Most retail rates are "volumetric," meaning that fixed and variable costs are recovered incrementally for each unit of energy sold. This creates an incentive to maximize the volume of sales across the wire (the "throughput" incentive) and a disincentive to invest in energy efficiency, distributed renewable energy, or combined heat and power (CHP), all of which reduce sales volume.[80] Decoupling revenue from sales volumes, ensuring program cost recovery, and providing shareholder incentives linked to program performance can help "level the playing field" for utility resource investments by creating an economically based comparison between supply- and demand-side resource alternatives that can yield a lower cost, cleaner, and more reliable energy system.

Objective

The objective of these policies is to align utilities' financial interests with state policy goals of advancing energy efficiency, distributed renewable energy, and CHP. Policies can provide complementary cost recovery and performance incentives for well-run and well-performing energy efficiency and distributed generation (DG) installation and promotion, as well as address potential financial disincentives utilities may face by eliminating or minimizing the throughput incentive embedded in traditional ratemaking.

Benefits

As part of a broader suite of energy efficiency, renewable energy, and CHP policies, well-designed financial incentive structures for utilities can encourage them to actively support these demand-side resources. States with existing policies to support the utility's financial health, such as cost recovery, revenue decoupling, and

[80] The effect of this linkage is exacerbated in the case of distribution-only utilities, as the revenue impact of electricity sales reduction is disproportionately larger for utilities without generation resources.

shareholder incentives, have the highest per capita investment in energy efficiency programs. [81] Encouraging the effective delivery of cost-effective energy efficiency and clean DG resources reduces a utility's need to expand existing facilities or to build more expensive, new central station power plants or transmission and distribution infrastructure, thus maximizing the value of a utility's existing gas or electric capacity. Energy efficiency and clean DG programs can also lower overall electric system costs and customer bills, among other benefits (RAP 2013).

Background on Utility Incentive Structures

The majority of electric utility costs are for capital-intensive equipment such as wires, poles, transformers, and generators. State PUCs determine how these costs may be recovered through proceedings known as rate cases. Utilities recover most of these fixed costs based on the volume of energy they sell. As a result, between rate cases, utilities have an incentive to encourage higher electricity sales (relative to forecast levels) in order to maximize how much electricity flows across their wires. This ensures recovery of fixed costs and maximizes allowable earnings; however, it also creates a disincentive for investing in energy efficiency or DG during the time between rate cases. In some states, regular (usually quarterly) adjustments, often known as fuel adjustment clauses, ensure recovery of variable costs, such as those for fuel. These clauses create an even greater disincentive for investing in energy efficiency.

Ratemaking could address this disincentive, for example, by allowing more frequent true-ups to rates to reflect actual sales and actual fixed cost revenue requirements. Another option is to shift a greater portion of fixed costs out of variable per-kWh charges into fixed customer charges. In both cases, this disincentive would be removed or minimized. However, energy efficiency options would only be able to better compete with alternative supply options in the frequent true-up case. A simplified illustration of this decoupling rate effect is shown in Table 7.2.1.

Separate, supplemental shareholder incentive policies, such as performance-based return on equity guarantees, could then operate more effectively without the disincentive that standard ratemaking practices otherwise impose on utilities. Frequent true-ups and shareholder incentives are more desirable than charging customers a high fixed

Table 7.2.1: Simplified Illustration of Decoupling Rate Effect

Rates and fixed cost recovery during initial period			
	Sales at Forecast	**Sales Below Forecast**	**Sales Above Forecast**
Sales Forecast	100 kWh		
Fixed Cost[a]	$6.00		
Variable Cost[b]	$0.04 per kWh		
Total Variable Cost	$4.00	$3.80	$4.20
Total Costs [Fixed + Variable]	$10.00	$9.80	$10.20
Authorized Rate [Costs Sales Forecast]	$0.100 per kWh		
Actual Sales	100 kWh	95 kWh	105 kWh
Actual Revenues	$10.00	$9.50	$10.50
Fixed Cost Recovery [Revenue - Cost]	Even $0.00	Under ($0.30)	Over $0.30
Rates in next period after decoupling true up			
	Sales at Forecast	**Sales Below Forecast**	**Sales Above Forecast**
Sales Forecast[c]	100 kWh		
Total Costs[c]	$10.00		
Revenue Requirement [Total Costs - Fixed Cost Recovery]	$10.00	$10.30	$9.70
New Authorized Rate [Revenue Requirement Sales Forecast]	$0.100 per kWh	$0.103 per kWh	$0.097 per kWh

[a] Fixed costs include return on rate base.
[b] Variable costs include operating costs of power plants.
[c] Assumes values from initial period for illustrative purposes.

Sources: NRDC 2004; PG&E 2003

[81] In 2010, seven of the 10 states with the highest per capita investment in electric energy efficiency programs, as well as eight of the 10 states with the highest per capita investment in natural gas energy efficiency programs, had decoupling in place or had adopted decoupling as state policy (NRDC 2012).

charge each month because they provide more flexibility for addressing differences in short- and long-term costs. A high monthly customer charge can also diminish customers' incentives for energy efficiency and onsite generation.

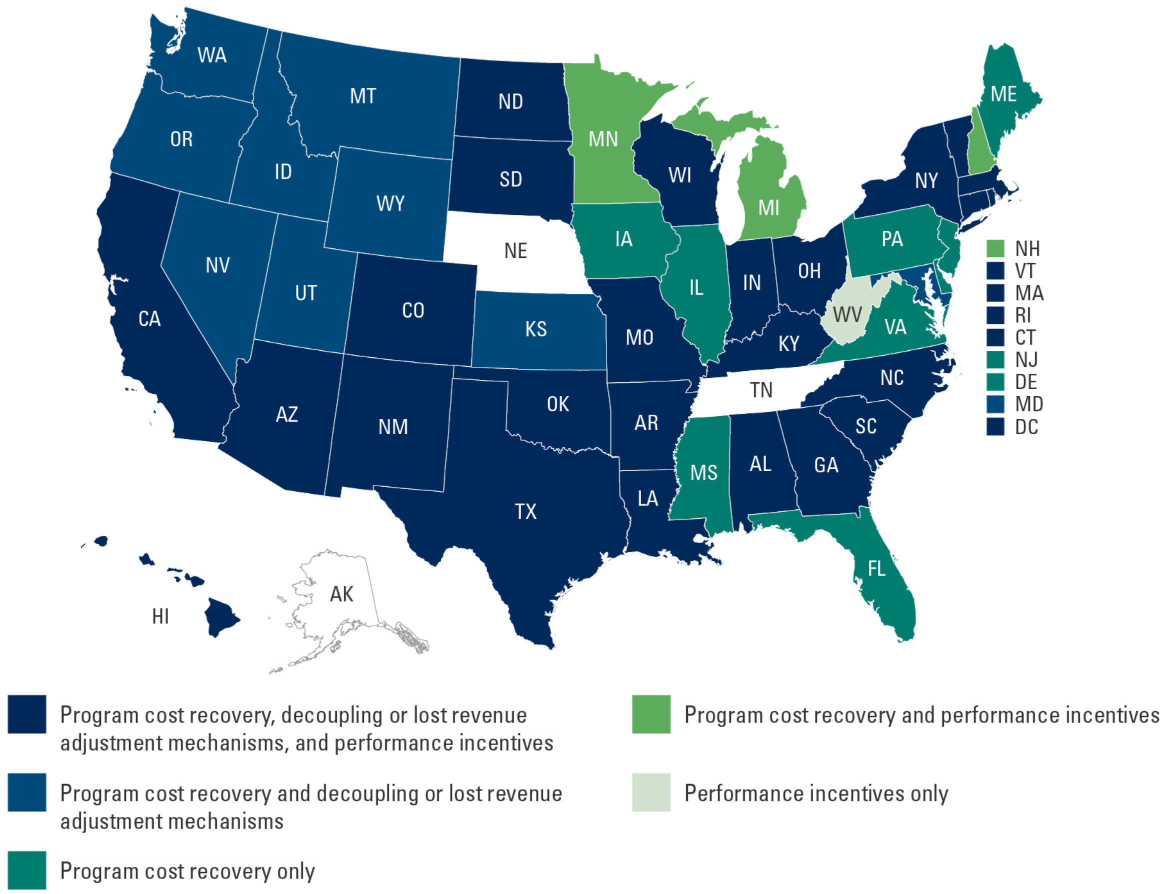
States with Utility Incentive Policies for Demand-Side Resources

States have developed three policies to level the playing field for demand-side resources through improved utility rate design:

- *Remove disincentives*. Some states have removed structures that discourage energy efficiency and clean DG implementation using revenue decoupling methods that seek to break the link between revenues and sales volumes. Some have alternatively established lost revenue recovery policies that are designed to recover lost margins for utilities as sales fall due to the success of energy efficiency programs. These two mechanisms can have significantly different effects and thus deserve careful consideration.
- *Recover costs.* Many states have given utilities a reasonable opportunity to recover energy efficiency and clean DG program implementation costs by incorporating program costs into utility base rates, providing riders or surcharges on bills, or establishing balancing accounts to prevent under-recovery of expenses. Cost recovery alone, however, does not remove the financial disincentive needed to further expand a utility's commitment to maximizing energy efficiency and clean DG.
- *Reward performance.* Some states have created shareholder incentives for implementing high-performance energy efficiency and, less frequently, clean DG programs. These incentives usually take the form of savings performance targets—in which incentives are paid when a utility achieves some fraction of proposed energy savings—or shared savings policies, in which utilities are compensated when they can demonstrate that energy efficiency programs resulted in net benefits (calculated as program costs netted against avoided supply-side costs) for ratepayers. In the past, states have implemented a bonus rate of return policy, in which utilities are allowed an increased return on investment for energy efficiency investments if the programs demonstrate measured or verified success; however, the bonus rate of return is rarely used now.

States with these three approaches, especially those with all three policies, have utilities supportive of policies to encourage demand-side energy efficiency, renewable energy, and CHP. Most states have had or are reviewing at least one of these forms of decoupling and incentive policy. Figure 7.2.1 shows the status of state implementation of financial incentive policies as of 2014.

Figure 7.2.1: Electric Utility Regulatory Financial Incentive Policies by State, 2014



Note: The sources update state status on a rolling basis, so this map reflects policies in place as of late 2013 to mid-2014, depending on the state. This map does not include states with pending legislation. As of September 2014, Delaware, Mississippi, and Virginia had pending decoupling or lost revenue adjustment mechanism legislation. Mississippi and Montana had pending performance incentive legislation.

Sources: ACEEE 2014; Edison Foundation 2013

Remove Disincentives through Decoupling or Lost Revenue Adjustment Policies

Traditional electric and gas utility ratemaking policies have caused financial disincentives for utilities to support energy efficiency and distributed renewable energy. This misalignment can be remedied through policies that decouple utility revenues from sales or lost revenue adjustment mechanisms (LRAMs).

Decoupling is an alternative means of eliminating lost revenues that might otherwise occur with energy efficiency and DG resource implementation. It is a variation of more conventional performance-based ratemaking (PBR). Under conventional ratemaking, a utility’s rates are fixed until the next rate case occurs at an undetermined future point in time. Under conventional PBR, a utility’s rates are typically set for a predetermined number of years (e.g., 5 years). This type of PBR is referred to as a “price cap” and is intended to provide utilities with a direct incentive to lower cost (and thereby increase profits) during the term of the price cap.

Decoupling is a variation of conventional PBR, and it is sometimes referred to as a particular form of "revenue cap." Under this approach, a utility's *revenues* are fixed for a specific term, in order to match the amount of anticipated costs incurred plus an appropriate profit. Alternatively, a utility's revenues per customer could be fixed, or some other revenue adjustment system can be used, thus providing an automatic adjustment to revenues. If the utility can reduce its costs during the term through energy efficiency, DG, or other system efficiencies, it will be able to increase its profits. Furthermore, if a utility's sales are reduced by any means, including efficiency, DG, weather, or economic swings, under-collections will be recovered from customers and the utility's revenues will not be affected. The effect is symmetrical; unexpectedly higher sales and the resulting higher revenues will return money to customers. This approach eliminates the throughput incentive and does not require an accurate forecast of the amount of lost revenues associated with energy efficiency or DG. It does, however, result in the potential for rate or price variation, reflecting an adjustment to the relationship between total utility revenue requirements and total electricity or gas consumed by customers over the defined term. Such rate adjustments, or true-ups, are a fundamental aspect of the rate design resulting from decoupling profits from sales volumes.

LRAMs allow a utility to directly recoup the lost revenue associated with not selling additional units of energy due to the successful reduction of electricity consumption by energy efficiency or DG programs. The amount of lost revenue is typically estimated by multiplying the fixed portion of the utility's prices per kWh by the energy savings from energy efficiency programs or the energy generated from DG. This amount is then directly returned to the utility. Some states have adopted these policies, but experience has shown that LRAMs can result in utilities being allowed more lost revenues than the energy efficiency program actually saved. This is because the lost revenues are often based on projected savings. Furthermore, because utilities still earn increased profits on additional sales, this approach does not fully remove the throughput incentive, and it provides a disincentive for utilities to implement additional energy efficiency or to support independent energy efficiency activities. In summary, unlike other decoupling approaches, the LRAM approach provides limited incentives, does not fully address the throughput incentive, and does not influence efficient utility operations companywide.

Another approach, known generically as straight fixed variable (SFV) ratemaking, involves an alternative rate structure that allows utilities to recover a larger share of their fixed costs through fixed charges to their customers. Ordinarily, utilities recover a sizable portion of their fixed costs (e.g., generators, transformers, wires, and poles) through variable charges (i.e., charges per unit of energy consumed), while the monthly per-customer charge collects costs strictly associated with connecting customers to the system. In contrast, SFV rate structures allocate all current fixed costs to a per-customer charge that does not vary with consumption. Related alternatives use a consumption block structure, which allocates costs across several blocks of commodity consumption and typically places most or all of the fixed costs within the initial block.

SFV and similar rate designs can provide significant earnings stability for a utility in the short run. Like revenue decoupling, these alternative rate structures do not provide a direct incentive for utilities to encourage customers to invest in energy efficiency, distributed renewables, or CHP, but do reduce the throughput incentives that encourage utilities to promote increased sales. However, these alternative rate designs can create problems because fixed costs can be very high, and allocation of fixed charges may impose ability-to-pay issues on lower income customers and thus be seen as regressive. SFV designs also reduce a customer's incentive to undertake efficiency improvements because the associated bill savings will be reduced. Further variable charges under an SFV design may fall to levels below the cost of new supply resources, which could lead to increased supply costs if customers are motivated to consume more electricity under such a rate design.

Table 7.2.2 compares the pros and cons of decoupling and lost revenue recovery mechanisms, as well as alternative rate structures. As the table illustrates, decoupling appears to be the simplest and most comprehensive approach to aligning utility incentives with investment in energy efficiency. While it requires more effort to establish a complete decoupling policy, it avoids the downsides of lost revenue and SFV approaches.

Table 7.2.2: Comparison of Policies for Removing Disincentives to Energy Efficiency Investment

Policy	Pros	Cons
Revenue decoupling: Policy that sets the utility's revenues at a fixed amount for a specific term to match the amount of anticipated costs incurred plus an appropriate profit.	o Revenue decoupling weakens the link between a utility's sales and margin recovery. This reduces utility reluctance to promote energy efficiency, including building codes, appliance standards, and energy efficiency programs. o Through decoupling, the utility's revenues are stabilized and shielded from fluctuations in sales. Some have argued that this, in turn, might lower utility risk and cost of capital (CA Energy Consulting 2007; Delaware PSC 2007).[a] The degree of stabilization is a function of adjustments made for weather, economic growth, and other factors (some regulations do not adjust revenues for weather or economic growth-induced changes in sales).[b] o Decoupling does not require an energy efficiency program measurement and evaluation process to determine the level of under-recovery of fixed costs.[c] o Decoupling has low administrative costs relative to specific lost revenue recovery policies. o Decoupling reduces the need for frequent rate cases and corresponding regulatory costs. o States have experience implementing revenue decoupling over several years.	o Rates (and in the case of gas utilities, non-gas customer rates) can be more volatile between rate cases, although annual caps can be instituted (Graceful Systems 2012). o Where carrying charges are applied to balancing accounts, the accruals can grow quickly. o The need for frequent balancing or true-up requires regulatory resources; however PUC resources to implement decoupling are much less than those required to conduct more frequent rate cases. o
Lost revenue recovery mechanisms: Policy that allows a utility to recoup lost revenue associated with not selling additional units of energy.	o Removes disincentive to energy efficiency investment in approved programs caused by under-recovery of allowed revenues. o	o Does not remove the throughput incentive to increase sales. o Does not remove the disincentive to support other energy saving policies. o Complex to implement given the need for precise evaluation; will increase regulatory costs if it is closely monitored. o Proper recovery (no over- or under-recovery) depends on precise evaluation of program savings.

Table 7.2.2: Comparison of Policies for Removing Disincentives to Energy Efficiency Investment

Policy	Pros	Cons
Alternative rate structures: Policy that allows utilities to recover a larger share of their fixed costs through fixed charges to their customers.	o Removes the utility's incentive to promote increased sales. o May align better with principles of embedded cost-causation. o Administratively simple.	o May not align with cost-causation principles for utilities, especially in the long run. o Creates issues of income equity. o Movement to an SFV design significantly reduces customer incentives to reduce consumption by lowering variable charges. High fixed charges can also lead to customer disconnection from the electric grid.

[a] The design of the decoupling policy can address risk-shifting through the nature of the adjustments that are included. Some states have explicitly not included weather-related fluctuations in the decoupling policy (the utility continues to bear weather risk). In addition, recognizing that utility shareholder risk decreases with decoupling, some decoupling plans include provisions for capturing some of the risk reduction benefits for consumers.

[b] The impact of decoupling in eliminating the throughput incentives is lessened as the scope of the decoupling policy shrinks.
Note, however, that as the various determinants of sales, such as weather and economic activity, are excluded from the policy, the need for complex adjustment evaluation methods increases. In any case, an evaluation process should nevertheless be a part of the broader energy efficiency investment process.

Source: Derived from NAPEE 2007.

As an example, California's original decoupling policy, an Electric Rate Adjustment Mechanism (ERAM), was in place between 1982 and 1996 and was successful in reducing rate risk to customers and revenue risk to the major utility companies (LBNL 1993). California dropped its decoupling policy in 1996 when electric utility restructuring was initiated and retail competition was introduced. When competition did not deliver on its promise, California brought back a decoupling approach as part of a larger effort to reinvigorate utility-sponsored energy efficiency programs. Conversely, Minnesota tried a lost revenue approach and met strong customer opposition because there was no cap on the total amount of revenues that could be recovered.

While decoupling is a critical step in optimizing energy efficiency benefits, states have found that decoupling alone is insufficient.[82] Most states therefore add one or both related approaches: assurance for energy efficiency program cost recovery and shareholder/company performance incentives to reward utilities for maximizing energy efficiency investment where it is cost-effective. Furthermore, as stated above, states that seek aggressive energy efficiency and DG deployment typically have a suite of policies in place to drive utility investment, such as energy efficiency and renewable energy resource standards.

Program Cost Recovery

Appropriate opportunity for cost recovery is an important element of utility energy efficiency and clean DG programs and all other utility costs. The extent to which this is a real risk for utilities depends upon the ratemaking practices in each state. Nonetheless, the perception of the risk can be a significant barrier to utilities, regardless of how real it is. Under traditional ratemaking, utilities might be unable to collect any additional energy efficiency or DG expenses that are not already included in the rate base. Similarly, under a price cap form of PBR, utilities might be precluded from recovering new costs incurred between the periods

[82] For example, see Cadmus (2013).

when price caps are set. However, traditional ratemaking can nonetheless allow program cost recovery for well-performing energy efficiency or DG programs, if desired. If revenue caps are in place, well-performing program costs can be included as part of the overall revenue requirement in the same way that supply-side fixed costs are usually included in revenue requirements. If energy efficiency/DG programs do not meet minimum performance criteria, then these costs could be excluded from revenue requirements and would therefore not be passed on to ratepayers.

Regulatory mechanisms can be used to overcome program cost recovery concerns. These mechanisms assure utilities that investments in cost-effective energy efficiency and DG resources will be recovered in rates, independent of the form of ratemaking in place. Under traditional ratemaking, an energy efficiency or DG surcharge could be included in rates and adjusted periodically to reflect actual costs incurred. Under a price cap form of PBR, energy efficiency and DG costs could be excluded from the price cap and adjusted periodically to reflect actual costs incurred.

Many states with restructured electric industries have introduced a public benefits fund (PBF) that provides utilities with a fixed amount of funding for energy efficiency and DG, thus eliminating this barrier to utilities. For example, in 2005, the New York Public Service Commission (PSC) approved a proposal in a Consolidated Edison Company (Con Edison) rate case that included, among other demand-side measures, demand-side management (DSM) program cost recovery through a PBF. In New Hampshire, the state Public Utilities Commission (PUC) allocates funding to several approved, core energy efficiency programs administered by the state's utilities.

Shareholder/Company Performance Incentives

Under traditional regulation, utilities may perceive that energy efficiency or clean DG investment conflicts with their profit targets. However, states are finding that once the throughput incentive is addressed, utilities are more likely to look at cost-effective energy efficiency and clean DG as a potential profit center and an important resource alternative to meet future customer needs. Utilities earn a profit on approved capital investment for generators, wires, poles, transformers, etc. Incentive ratemaking can allow for greater profit levels on energy efficiency or DG resources, recognizing that many benefits to these resources, such as improved reliability or reduced emissions, are not otherwise explicitly accounted for.

States such as California, Massachusetts, and New Hampshire are using profit or shareholder incentives to make returns on energy efficiency and clean DG investments sufficient enough to support serious consideration when compared with conventional supply-side investments. While implementing such policies can be contentious, the intent is that with throughput incentives removed, utilities can be rewarded with incentives stemming from superior program performance. Such incentives include a higher rate of return on capital invested in energy efficiency and clean DG, or equivalent earnings bonus allowances. Rewards require performance; independent auditing of energy efficiency/DG program effectiveness can drive the level of incentive. The savings that result from choosing the most cost-effective resources over less economical resources can be shared between ratepayers and shareholders, giving ratepayers the benefits of wise resource use while rewarding management for the practices that allow these benefits to be secured.[83]

---

[83] The utility industry uses the term "shared savings" in several ways. Alternative meanings include, for example, the sharing of savings between an end-user and a contractor who installs energy efficiency measures. Throughout this *Guide to Action*, "shared savings" refers to shareholder/ratepayer sharing of benefits arising from implementation of cost-effective energy efficiency/DG programs that result in a utility obtaining economical energy efficiency/DG resources.

Implementing a package of incentive regulation initiatives might include: 1) stakeholder discussion of the issues, 2) state commission rulemaking or a related initiative proposing a change from traditional ratemaking, and 3) clear and comprehensive direction from the state commission establishing the explicit rate structure or pilot program structure to be put in place.

Designing Effective Utility Incentives for Demand-Side Resources

Participants

A number of stakeholders are typically included in the design of decoupling and incentive regulations:

- *State legislatures*. Utility regulation broadly affects all state residents and businesses. State energy policy is affected by and affects utility regulation. Legislation may be required to direct the regulatory commission to initiate an incentive regulation investigation or to remove barriers to elements like periodic resetting of rates without a comprehensive rate case. Legislative mandates can also provide funding and/or political support for incentive regulation initiatives. By the same token, legislative initiatives can limit the ability of utility commissions and utilities to institute or benefit from regulatory incentives that support energy efficiency and DG.
- *State PUCs*. State PUCs have the greatest responsibility to investigate and consider incentive regulations. Staff and commissioners oversee the stakeholder processes through which incentive regulation issues are discussed. PUCs may have specific statutory direction, or they may implement "common good" laws. PUCs are the ultimate issuers of directives implementing incentive regulation packages for regulated gas and electric utilities.
- *Consumer counsels/advocates*. Most states have a standing "Office of Peoples Counsel" or similar organization whose mission is to represent consumer interests in PUC and court proceedings. Typically staffed by attorneys and regulatory specialists, consumer advocate offices regularly intervene in rate cases and related proceedings to represent typical residential ratepayer interests.
- *State energy offices/executive agencies.* State policies on energy and environmental issues are often driven by executive agencies at the behest of governors' offices. If executive agency staff are aware of the linkages between utility regulatory and ratemaking policies, it may be more likely that executive agency energy goals can be fostered by successful utility energy efficiency and clean DG programs. Attaining state energy and environmental policy goals hinges in part on the extent to which incentive regulation efforts succeed.
- *Energy efficiency providers*. Energy efficiency providers have a stake in incentive regulation initiatives. In some states, they contract with utilities to provide energy efficiency program implementation. In other states, energy efficiency providers such as Vermont's "Efficiency Vermont" serve as the managing entity for delivering energy efficiency programs.
- *DG developers*. DG developers, like energy efficiency providers, are affected by any incentive regulation that reduces throughput incentives, as they are likely to be able to work more closely with utilities to target the locations that maximize the benefits that DG can bring by reducing distribution costs. DG developers can benefit from net metering and other policies that reduce barriers to cost recovery.[84]

[84] See Section 7.3, "Interconnection and Net Metering Standards," and Section 7.4, "Customer Rates and Data Access," for more information.

- *Utilities*. Vertically integrated utilities and distribution or distribution-transmission-only utilities are affected to the greatest degree by incentive regulation, as their approved revenue collection mechanisms are at the heart of incentive regulation issues.
- *Environmental advocates*. Energy efficiency, distributed renewable energy, and CHP resources can provide low-cost environmental benefits, especially when targeted to locations requiring significant transmission and distribution investment. Environmental organizations can offer perspectives on using energy efficiency, distributed renewable energy, and CHP as alternatives to supply-side options.
- *Other organizations*. Other organizations, including local governments; third-party program administrators; and energy efficiency, distributed renewable energy, and CHP industry stakeholders, can provide cost-effectiveness information as well as perspectives on other complementary policies.

Best Practices: Designing Effective Incentive Regulations for Gas and Electric Utilities

The best practices identified below will help states develop effective incentive regulations to support implementation of cost-effective energy efficiency, distributed renewable energy, and CHP.

- Survey the current regulatory landscape in your state and neighboring states.
- Determine if and how energy efficiency, distributed renewable energy, and CHP are addressed in rate structures. In particular, determine if traditional ratemaking formulas exist. Do they create obstacles to promoting energy efficiency, distributed renewable energy, and CHP?
- Gather information about potential incentive rate designs for your state.
- Assemble key stakeholders and provide a forum for their input on utility incentive options.
- Clarify specific objectives and underlying rationale for motivating utility actions.
- Devise an implementation plan with specific timelines and objectives.

Interaction with Federal, Regional, and State Policies

Incentive regulation is closely intertwined with almost all state-level energy policy involving electric and gas utility service delivery, since it addresses the fundamental issue of establishing a means for a regulated utility provider to recover its costs. The following state policies will be affected by changing to a form of incentive regulation:

- *Resource portfolio standards.* As discussed in Section 4.1, energy efficiency resource standards (EERSs) set numerical, multiyear targets for total energy savings. EERSs drive efficiency investment and program planning from these top-down targets, often for periods of 5 to 10 years or more. Renewable portfolio standards, discussed further in Chapter 5, set targets for renewable electricity acquisition, which may include energy efficiency, distributed renewable energy, and CHP.
- *Electricity planning and procurement policies*. These are an important complement to utility incentives because they can provide vertically integrated utilities (through use of integrated resource planning) and distribution-only utilities (through use of portfolio management) with a long-term planning framework for identifying the quantity and type of energy efficiency, distributed renewable energy, and CHP resources to pursue.
- *PBFs.* Also known as system benefits charges, PBFs may eliminate the need for—or provide another way of addressing—cost recovery. PBF funding approaches are discussed in Section 4.2, "Energy Efficiency Programs."
- *PBR*. PBR includes a host of mechanisms that can help achieve regulatory objectives. Many are tied to specific elements of ratemaking, such as price caps (i.e., a ceiling on the per unit rate charged for energy), revenue caps (i.e., a ceiling on total revenue), or revenue per customer caps. Many states already use

energy efficiency performance rewards. Typically, all PBR mechanisms are established with the goal of rewarding utility performance that results in superior customer service, reliability, or other measured outcomes of utility company effort. Reducing the throughput disincentive is one important form of PBR, and if it is not addressed, the effectiveness of other aspects of PBR can be undermined.

Under federal stimulus legislation passed in 2009, state governors were required to notify the Secretary of Energy regarding their state's implementation of utility incentive policies in order to receive part of the Department of Energy's State Energy Program (SEP) $3.1 billion funding under the American Recovery and Reinvestment Act (ARRA) of 2009. States use SEP funding for a variety of programs, inclusive of energy efficiency and clean DG. Section 401 of ARRA required assurances from state governors that the state regulatory authority seeks to implement a "general policy that ensures that utility financial incentives are aligned with helping their customers use energy more efficiently and that provide timely cost recovery and a timely earnings opportunity for utilities."

Evaluation

Some states have begun to evaluate their decoupling activities to ensure program success (CA Energy Consulting 2013; Graceful Systems 2012). For example, independent evaluation of the Oregon initiative for Northwest Natural Gas included a summary of the program's intentions, recognition that deviations from forecast usage affects the amount of fixed costs recovered, and acknowledgement that partial rather than full decoupling was attained. The report stated that the program had reduced the "variability of distribution revenues" and "alter[ed] NW Natural's incentives to promote energy efficiency" (CA Energy Consulting 2005).

The following information is usually collected as part of the evaluation process to document additional energy efficiency, distributed renewable energy, and CHP; customer rate impacts; and changes to program spending that arise due to changes to regulatory structures:

- Utility energy efficiency, distributed renewable energy, and CHP program expenditure and savings information.
- Additional data on weather and economic conditions to control for factors influencing retail sales other than program actions.
- Rate changes occurring during the program, if any, such as those arising from use of a balancing mechanism.

State Examples

Numerous states previously addressed or are currently exploring electric and gas incentive policies. Experiments in incentive regulation occurred through the mid-1990s but were generally overtaken by events leading to various forms of restructuring. There is renewed interest in incentive regulation due to recognition that barriers to energy efficiency still exist, and utility efforts to secure energy efficiency, distributed renewable energy, and CHP benefits remain promising. States are looking to incentive policies to remove barriers in order to meet the cost-effective potential of clean energy resources.

Many states have had or are reviewing various forms of decoupling or incentive regulation, including performance incentive structures. The body of state experience continues to grow, and this summary section does not seek to address all of its complexities and implications. The following illustrative state examples are listed in the approximate order of the extent to which decoupling policies have been considered in the state.

California

California's rate policies are not new. Between 1983 and the mid-1990s, California's rate design included an ERAM, a decoupling policy that was the forerunner of today's policy and the model for balancing mechanisms implemented by other states during the early 1990s. The impact of the original ERAM on California ratepayers was positive, with a negligible effect on rates, and it led to reduced rate volatility. While certain issues have been contentious, California's experience helpfully illustrates one of the longest standing state policies in this area.

Beginning in 2004, California re-adopted a revenue balancing mechanism that applies between rate cases and removes the throughput incentive by allowing for rate adjustments based on actual electricity sales, rather than test-year forecast sales. The California Public Utilities Commission (CPUC) established this mechanism to conform to a 2001 law that dictated policy in this area, stating that forecasting errors should not lead to significant over- or under-collection of revenue. Currently, the revenue balancing mechanism is combined with performance incentives for energy efficiency targets.

California first implemented a shared-savings incentive mechanism in the 1990s. The CPUC authorized a 70 percent/30 percent ratepayer/shareholder split of the net benefits arising from implementation of energy efficiency measures in the 1994–1997 timeframe. This mechanism first awarded shareholder earnings bonuses based on measured program performance. Between 1998 and 2002, the performance incentive was changed to reward "market transformation" efforts by the utilities. These incentives were phased out after 2002 due to the state's overhaul of its energy efficiency policies. In 2012, the CPUC defined a new shareholder incentive mechanism known as the Energy Savings and Performance Incentive for investor-owned utilities. A subsequent ruling in September 2013 allocates incentive earnings among four categories, including energy efficiency resource savings. Incentives for energy efficiency resource savings are capped at 9 percent of program expenditures.

Websites:
http://www.cpuc.ca.gov/PUC/energy/Energy+Efficiency/Shareholder+Incentive+Mechanism.htm (Rulemaking 12-01-005)
http://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M076/K775/76775903.PDF (Decision 13-09-023)

New York

In the 1990s, the New York PSC experimented with several different types of PBR, including revenue-cap decoupling mechanisms for Rochester Gas and Electric, Niagara Mohawk Power, and Con Edison (Biewald et al. 1997). In 2005, the PSC approved a joint proposal from all the stakeholders in a Con Edison rate case that included significant increases in spending on DSM, an LRAM, DSM program cost recovery through a PBF, and shareholder performance incentives. An April 2007 PSC order mandated that all electric and gas utilities in New York file proposals for true-up-based decoupling mechanisms, and currently, all six major electric and all 10 major gas companies have revenue decoupling mechanisms in place. In 2008, the PSC established incentives for electric utility energy efficiency programs, in which utilities earn incentives or incur negative adjustments based on the extent to which they achieve energy savings targets. Goals are set annually.

In 2014, the PSC commenced its "Reforming the Energy Vision" (REV) initiative (Case 14-M-0101), which will examine the potential for major changes to the state's energy industry and regulatory practices. The initiative is primarily intended to increase the use and coordination of distributed energy resources. On February 29, 2015, the NY PSC issued an order adopting the REV policy framework and establishing an implementation plan. The PSC also plans to release a companion to this order, under Track Two of the REV initiative, to adopt ratemaking reforms inclusive of policies that align utilities' financial interests with REV's policy objectives (NY PSC 2015).

Websites:
http://www3.dps.ny.gov/W/PSCWeb.nsf/All/26BE8A93967E604785257CC40066B91A?OpenDocument (Case 14-M-0101—Reforming the Energy Vision)
http://media.corporate-ir.net/media_files/nys/ed/Three-YearRateplan-3-24-05.pdf (CASE 04-E-0572–Proceeding on Motion of the Commission as to the Rates, Charges, Rules and Regulations of Consolidated Edison Company of New York, Inc. for Electric Service)

Nevada

Nevada's current incentive mechanisms for electric utilities originate from a 2009 bill, SB 358, which directed the Public Utilities Commission of Nevada (PUCN) to remove financial disincentives for energy efficiency faced by utilities. In 2010, the PUCN approved an LRAM for utilities, which allows them to recover lost revenues during annual DSM filings. As of July 2014, a docket (12-12030) was open to investigate another method besides lost revenue recovery to compensate utilities for providing DSM programs. The PUCN has also adopted rules permitting gas utilities to propose decoupling profits from sales through a revenue-per-customer system.

In May 2011, NV Energy, the parent company of Nevada Power and Sierra Pacific Power Companies, received the first approval from the PUCN for the recovery of lost revenues for an electric utility.

Websites:
http://www.leg.state.nv.us/75th2009/Reports/history.cfm?billname=SB358 (Bill SB 358)
http://pucweb1.state.nv.us/PUC2/DktDetail.aspx (Docket 12-12030)

Arizona

Arizona has recently undertaken regulatory efforts to address incentive regulation, although it does not have an explicit decoupling policy in place. Arizona utilities operate a variety of DSM programs, and the Arizona Corporation Commission (ACC) has approved both performance incentives and full and partial revenue decoupling mechanisms on a case-by-case basis for utilities. Arizona Public Service and Tucson Electric Power Company (TEP), the state's two largest investor-owned utilities, both have partial revenue decoupling mechanisms and performance incentives in place, and the ACC has approved a full revenue decoupling mechanism for Southwest Gas.

Websites:
http://images.edocket.azcc.gov/docketpdf/0000137042.pdf (Partial-revenue decoupling, Arizona Public Service, Docket No. E-01345A-11-0224)
http://images.edocket.azcc.gov/docketpdf/0000152708.pdf (Performance incentive, Arizona Public Service, ACC Decision 74406)
http://images.edocket.azcc.gov/docketpdf/0000146156.pdf (Partial-revenue decoupling, TEP, Docket No. E-01933A-12-0291)
http://images.edocket.azcc.gov/docketpdf/0000146156.pdf (Performance Incentive, TEP, ACC Decision 743912)

What States Can Do

States are leveling the playing field for demand-side resources through improved utility rate design by removing disincentives through decoupling, LRAMs, or alternative rate structures. These actions make it possible for utilities to recover their energy efficiency, distributed renewable energy, and CHP program costs, and/or provide shareholder and company performance incentives.

The following are key state roles:

- *Legislatures*. While legislative mandate is often not required to allow state commissions to investigate and implement incentive regulation reforms, legislatures can help provide the resources required by state commissions to effectively conduct such processes. Legislative mandates can also provide political support or initiate incentive regulation investigations if the commission is not doing so on its own.
- *Executive agencies.* Executive agencies can support state energy policy goals by recognizing the important role of regulatory reform in providing incentives to electric and gas utilities to increase energy efficiency, distributed renewable energy, and CHP efforts. Their support can be important to encourage utilities or regulators that are concerned about change.
- *State PUCs*. State regulatory commissions usually have the legal authority to initiate investigations into incentive regulation ratemaking, including decoupling. Commissions have the regulatory framework, institutional history, and technical expertise to examine the potential for decoupling and consider incentive ratemaking elements within the context of state law and policy. State commissions are often able to directly adopt appropriate incentive regulation mechanisms after adequate review and exploration of alternative mechanisms.

Action Steps for States

States can take the following steps to promote incentive regulation for clean energy, as well as overall customer quality and lower costs:

- Survey the current utility incentive structure to determine how costs are currently recovered, whether any energy efficiency programs and shareholder incentives are in place, and how energy efficiency, distributed renewable energy, and CHP costs are recovered.
- Review available policy mechanisms.
- Review historical experience in the relevant states.
- Identify stakeholders that could be important to the process.
- Consider establishing a working group to engage stakeholders.
- Open a docket on these issues.
- Resolve priorities, which will help guide selection of tools.
- Determine which incentive regulation tools might be appropriate.
- Engage commissioners and staff and find consensus solutions.

Information Resources

General Reports, Articles, and Websites about Utility Incentives for Demand-Side Resources

Title/Description	URL Address
State and Local Energy Efficiency Action Network (SEE Action): Ratepayer-Funded Efficiency through Regulatory Policy Working Group. This SEE Action Working Group has several initiatives that provide state utility regulators and stakeholders the tools and information on how to create utility motivations that will lead to a significant increase in energy efficiency. The Working Group has hosted regional regulatory policy exercises and issued several fact sheets and reports to share policy options and best practices across states.	https://www4.eere.energy.gov/seeaction/topic-category/ratepayer-funded-efficiency-through-regulatory-policy
American Council for an Energy-Efficient Economy (ACEEE). ACEEE has published several reports in this area: • Utility Initiatives: Alternative Business Models and Incentive Mechanisms – ACEEE Policy Brief, June 2014. • Making the Business Case for Energy Efficiency: Case Studies of Supportive Utility Regulation – ACEEE Report Number U133, December 2013. • Balancing Interests: A Review of Lost Revenue Adjustment Mechanisms for Utility Energy Efficiency Programs – ACEEE Report Number U114, September, 2011. • Aligning Utility Interests with Energy Efficiency Objectives: A Review of Recent Efforts at Decoupling and Performance Initiatives – ACEEE Report Number U061, October 2006. • ACEEE's annual State Energy Efficiency Scorecards also contains information on regulatory incentives.	www.aceee.org http://www.aceee.org/files/pdf/policy-brief/decoupling-brief-0714.pdf http://aceee.org/research-report/u133 http://aceee.org/research-report/u114 http://www.aceee.org/research-report/u061 http://www.aceee.org/state-policy/scorecard
The Regulatory Assistance Project (RAP). RAP has published several reports on decoupling and financial incentives. The RAP Library allows users to search by both Decoupling/Utility Incentives and Cost Recovery within the Energy Efficiency/ Resource Planning Topic search. RAP resources include a summary of decoupling as implemented in six states.	http://www.raponline.org/search http://www.raponline.org/document/download/id/7209
Financial Analysis of Incentive Mechanisms to Promote Energy Efficiency: Case Study of a Prototypical Southwest Utility. A 2009 study published by Lawrence Berkeley National Laboratory. A primary goal of this modeling is to provide regulators and policy-makers with an analytic framework and tools that assess the financial impacts of alternative incentive approaches on utility shareholders and customers if energy efficiency is implemented under various utility operating, cost, and supply conditions.	http://emp.lbl.gov/publications/financial-analysis-incentive-mechanisms-promote-energy-efficiency-case-study-prototypic
National Action Plan for Energy Efficiency. This former public-private initiative that worked collaboratively across utilities, utility regulators, and other partner organizations published a paper titled, *Aligning Utility Incentives with Investment in Energy Efficiency*, in 2007 to provide a comprehensive overview of policy options for states.	http://www.epa.gov/eeactionplan http://www.epa.gov/cleanenergy/documents/suca/incentives.pdf
Database of State Incentives for Renewables and Efficiency (DSIRE). DSIRE is a comprehensive source of information on U.S. incentives and policies that support renewables and energy efficiency. DSIRE is currently operated by the N.C. Solar Center at N.C. State University, and funded by the U.S. Department of Energy.	http://dsireusa.org/

Title/Description	URL Address
Joint Statement of the American Gas Association and the Natural Resources Defense Council (NRDC) on Utility Incentives for Energy Efficiency. This statement identifies ways to promote both economic and environmental progress by removing barriers to natural gas distribution companies' investments in urgently needed and cost-effective resources and infrastructure.	http://www.naruc.org/Resolutions/GS%20Second%20Joint%20Statement.pdf
Edison Electric Institute/NRDC Joint Statement to State Utility Regulators. This statement includes a number of key recommendations, inclusive of utility incentives policy options.	http://docs.nrdc.org/energy/files/ene_14021101a.pdf
State Electric Efficiency Regulatory Frameworks. Published by The Edison Foundation Institute for Electric Innovation (IEI) in 2013. IEI is a not-for-profit membership organization consisting of investor-owned electric utilities that represent about 70 percent of the U.S. electric power industry.	http://www.edisonfoundation.net/iei/Documents/IEE_StateRegulatoryFrame_0713.pdf
The Effect of Energy Efficiency Programs on Electric Utility Revenue Requirements. Briefing released by the American Public Power Association as part of ARRA implementation. The briefing presents options for public power to address disincentives to increasing energy efficiency.	http://www.publicpower.org/files/PDFs/EffectofEnergyEfficiency.pdf
Link to All State Utility Commission Websites. This NARUC website provides links to all state utility commission sites.	http://www.naruc.org/commissions/

State and Regional Information on Incentive Regulation Efforts

State	Title/Description	URL Address
California	California Energy Commission (CEC). CEC website.	http://www.energy.ca.gov/
	Energy Action Plan II. California's implementation roadmap for its energy policies.	http://www.energy.ca.gov/energy_action_plan/2005-09-21_EAP2_FINAL.PDF
	California Public Utilities Commission. CPUC website.	http://www.cpuc.ca.gov/puc/
	Energy Efficiency Proceeding Activity. CPUC current rulemaking on energy efficiency policies.	http://www.cpuc.ca.gov/PUC/energy/Energy+Efficiency/Current+Proceeding+Activity.htm
	Energy Savings Goals for Program Year 2006 and Beyond. September 23, 2004, CPUC Decision establishing energy savings goals for energy efficiency.	http://www.cpuc.ca.gov/Published/Final_decision/40212.htm
	Energy Efficiency Portfolio Plans and Program Funding Levels for 2006–2008- Phase 1 Issues. September 22, 2005, CPUC Decision on energy efficiency spending in phase I.	http://www.cpuc.ca.gov/PUBLISHED/FINAL_DECISION/49859.htm
Colorado	House Bill 1147. Addresses funding and cost recovery policy for natural gas energy efficiency.	http://www.leg.state.co.us/clics/clics2012a/csl.nsf/fsbillcont/50727F4BF1602BC287257981007F5282?Open&file=1147_01.pdf

State	Title/Description	URL Address
Idaho	Idaho Power—Investigation of Financial Disincentives (Case No. IPC-E-04-15). Summarizes regulatory proceedings and workshop results regarding the Idaho Power Utilities Commission's investigation of financial disincentives to energy efficiency programs for Idaho Power.	http://www.puc.idaho.gov/fileroom/cases/elec/IPC/IPCE0415/ordnotc/20060306NOTICE_OF_APPLICATION_IPC.PDF
Maryland	Gas Commodity Fact Sheet. Maryland PUC, Gas Commodity Rate Structure reference.	http://webapp.psc.state.md.us/intranet/gas/gasCommodity_new.cfm
Mid-Atlantic Distributed Resources Initiative (MADRI)	Electric Utility Revenue Stability Adjustment Factor. Model rule being developed by MADRI to reduce a utility's throughput incentive.	http://sites.energetics.com/MADRI/regulatory_models.html
Oregon	Order No. 02-388. Oregon PUC order on Northwest Natural Gas Decoupling. This order reauthorized deferred accounting for costs associated with NW Natural Gas Company's conservation and energy efficiency programs.	http://apps.puc.state.or.us/orders/2002ords/02-388.pdf
Washington	Natural Gas Decoupling Investigation. Describes the Washington Utilities and Transportation Commission's actions to investigate decoupling policies to eliminate disincentives to gas conservation and energy efficiency programs.	http://www.wutc.wa.gov/rms2.nsf/177d98baa5918c7388256a550064a61e/43eb29bd6e98d0e8882577d1007fea20!OpenDocument

References

Title/Description	URL Address
ACEEE. 2014. State and Local Policy Database. American Council for an Energy-Efficient Economy. Accessed September 2014.	http://database.aceee.org/
Biewald, B., T. Woolf, P. Bradford, P. Chernick, S. Geller, and J. Oppenheim. 1997. Performance-Based Regulation in a Restructured Electric Industry. Prepared for the National Association of Regulatory Utility Commissioners.	http://www.synapse-energy.com/sites/default/files/SynapseReport.1997-11.NARUC_.PBR-in-a-Restructured-Electricity-Industry..97-U02.pdf
CA Energy Consulting. 2005. A Review of Distribution Margin Normalization as Approved by the Oregon PUC for Northwest Natural. Christensen Associates Energy Consulting, LLC.	http://www.wutc.wa.gov/rms2.nsf/177d98baa5918c7388256a550064a61e/59c3e4d9f57b530c882577230059cf34!OpenDocument
CA Energy Consulting. 2007. A Review of Natural Gas Decoupling Mechanisms and Alternative Methods for Addressing Utility Disincentives to Promote Conservation. Christensen Associates Energy Consulting, LLC.	http://www.psc.state.ut.us/utilities/gas/05docs/05057T01/6-1-0753572Exbt%206.1.doc
CA Energy Consulting. 2013. A Summary of Revenue Decoupling Evaluations. Christensen Associates Energy Consulting, LLC.	http://www.caenergy.com/summary-revenue-decoupling-evaluations/
Cadmus. 2013. DSM in the Rate Case: A Regulatory Model for Resource Parity Between Supply and Demand. Public Utilities Fortnightly. Cadmus Group, Inc.	http://www.cadmusgroup.com/wp-content/uploads/2013/01/1301-DSMRateCase-hires.pdf
Delaware PSC. 2007. PSC Regulation Docket No. 59. Delaware Public Service Commission.	http://depsc.delaware.gov/dockets/reg59/reg59.shtml

Title/Description	URL Address
Edison Foundation. 2013. State Electric Efficiency Regulatory Frameworks. Innovation Electricity Efficiency. The Edison Foundation Institute for Electric Innovation.	http://www.edisonfoundation.net/iei/Documents/IEE_StateRegulatoryFrame_0713.pdf
Graceful Systems. 2012. A Decade of Decoupling for U.S. Energy Utilities: Rate Impacts, Designs, and Observations. Graceful Systems, LLC.	http://switchboard.nrdc.org/blogs/rcavanagh/decouplingreportMorganfinal.pdf
LBNL. 1993. The Theory and Practice of Decoupling. Lawrence Berkeley National Laboratory.	http://eetd.lbl.gov/sites/all/files/publications/report-lbnl-34555.pdf
NAPEE. 2007. Aligning Utility Incentives with Investment in Energy Efficiency. National Action Plan for Energy Efficiency.	http://www.epa.gov/cleanenergy/documents/suca/incentives.pdf
NRDC. 2004. Do Electric-Resource Portfolio Managers Have an Inherent Conflict of Interest with Energy Efficiency? Natural Resources Defense Council.	http://aceee.org/files/proceedings/2004/data/papers/SS04_Panel5_Paper01.pdf
NY PSC. 2015. 14-M-0101: Reforming the Energy Vision (REV). New York Public Service Commission.	http://www3.dps.ny.gov/W/PSCWeb.nsf/All/26BE8A93967E604785257CC40066B91A?OpenDocument
NRDC. 2012. Removing Disincentives to Utility Energy Efficiency Efforts. Natural Resources Defense Council.	http://www.nrdc.org/energy/decoupling/files/decoupling-utility-energy.pdf
RAP. 2013. Recognizing the Full Value of Energy Efficiency (What's Under the Feel-Good Frosting of the World's Most Valuable Layer Cake of Benefits). Regulatory Assistance Project.	www.raponline.org/document/download/id/6739