

ISSUE BRIEF

SENATE POLICY DEVELOPMENT AND RESEARCH OFFICE

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Promoting Energy Efficiency through Demand Side Response and Utility Revenue Decoupling

Demand Side Response

A 3% reduction in electricity use during the top 20 five-hour periods of electricity demand in the mid-Atlantic region would reduce energy prices by at least \$57 million and possibly as much as \$182 million annually. - [Mid-Atlantic Distributed Resources Initiative](#)

[Demand Side Response](#) or [Demand Side Management](#) in the energy market is the response by a consumer to high energy prices resulting from (1) tight supplies or, (2) in the case of electricity, when the most expensive generating units must be run. Demand Side Response is an energy consumer's exercise of choice to buy now, to refrain from buying, to buy less or more, or to buy at some other time.

Demand Side Response can be as simple as a business choosing to use electricity during low-cost periods rather than high-cost intervals, or turning on an in-house generator; or a homeowner lowering or turning off an air conditioner during very warm weather, when electricity prices reach their peak; or a utility making *a priori* agreed upon adjustments to energy consumption by customers in its service territory.

In addition to curbing both consumer and supplier costs, Demand Side Response can bolster power system reliability, reduce the need for new power plants and associated infrastructure, and lessen pollution that may be produced in generating electricity or in refining fossil fuels for heating, manufacturing, and other purposes.

The [Demand Response and Advanced Metering Coalition](#) reports, "According to McKinsey Consulting, Princeton University, the California Energy Commission, and others, Americans can save from \$10 billion to \$19 billion every year by balancing investment in new power plants with demand response programs."

Revenue Decoupling

The California Public Utilities Commission claims revenue decoupling has caused the state's per capita energy consumption to remain almost flat over the last 30 years, while surging by 50% in the rest of the country. With respect to total energy consumption per capita, the Energy Information Administration reports California ranks 49th, and Pennsylvania, 30th (the higher the rank, the greater the energy consumption).

Revenue Decoupling, pioneered in California in the 1980s, is a mechanism to disconnect energy sales and profits. It is based on the premise that policymakers have to break the link between utilities' financial health and their energy sales to effectively encourage conservation.

For the sake of conservation, utility companies must push customers to buy less of their products. When a utility company's profits are directly tied to its sales, as essentially all company profit models are, the company has an obvious disincentive to encourage its customers to purchase less of its product. In the absence of a Revenue Decoupling mechanism, utility companies have an inherent conflict of interest when it comes to saving energy.

Revenue Decoupling redefines the incentive structures of utility companies, allowing them to campaign aggressively for conservation. Utilities can also provide consumer incentives – such as rewards for purchases of high-efficiency appliances – without losing revenue.

Revenue Decoupling is not without detractors and the Electricity Consumers Resource Council is one. The Council is the national association representing large industrial consumers of electricity, with members that include Alcoa, ExxonMobil, General Motors, Intel, Procter & Gamble, and Rio Tinto. In its [Policy Brief on Revenue Decoupling](#), the Council advises:

- Revenue Decoupling promotes mediocrity in the management of a utility;

- Revenue Decoupling shifts significant business risk from shareholders to consumers with only dubious opportunities for net increases in consumer benefits;
- Revenue Decoupling eliminates a utility’s financial incentive to support economic development within its franchise area, including the incentive to support the well-being of manufacturers and their workforces;
- Revenue Decoupling mechanisms address “lost revenues” and not the real issue, which is lost profits;
- the first and most important step regulators can take to promote energy efficiency is to send the proper price signals to each customer class; and
- several states, for example, New York and Ohio, have successfully used alternative entities – including government agencies – for “unselling” energy, thereby creating an entity solely focused on promoting energy efficiency, and retaining a separate entity aimed only at selling and delivering energy efficiently.

Actions by the Pennsylvania Public Utility Commission

The [Demand Side Response Working Group](#) of the Pennsylvania Public Utility Commission (PUC) has considered Demand Side Response and Revenue Decoupling since 2001. In September 2006, the PUC [ordered](#) the Group to investigate:

- energy utilities’ current efforts to assist their customers to reduce usage, increase energy efficiency, and implement Demand Side Response programs;
- whether [Advanced Metering Infrastructure](#) (“smart meters” that can measure and record usage data as a function of time, and that allow electricity consumers, suppliers, and service providers to participate in price-based Demand Side Response programs) should be developed by Pennsylvania utilities; and
- whether Revenue Decoupling or similar mechanisms is necessary or appropriate to assure that energy utilities encourage and implement conservation and energy efficiency in their service territories, and whether such mechanisms are fair to customers and otherwise in the public interest.

In response to this charge, the Group issued a [Report on Conservation, Energy Efficiency, Demand Side Response and Advanced Metering Infrastructure](#) in June 2007. The Group’s general findings were:

- energy efficiency, conservation, and Demand Side Response programs can be cost-effective methods for retail customers to manage the amount of money they pay for electric and natural gas utility service;
- ratepayers may directly benefit through participation in Demand Side Response or conservation programs, and the utilization of energy efficiency technologies;
- ratepayers may indirectly benefit from Demand Side Response or conservation programs due to their effect on wholesale energy prices;
- no stakeholder consensus exists on deployment of “smart meters” for all customer classes at this time;
- no stakeholder consensus exists on the need or role for Revenue Decoupling at this time; and
- consumer education is an important component of any conservation, energy efficiency, and Demand Side Response strategy adopted by the PUC.