Incentives and Politics of Utility-based Energy Efficiency Programs in California

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Introduction

There is increasing recognition that energy efficiency is a preferred resource warranting aggressive public investment. For policy makers, escalating energy costs reflected in the economy, mounting concerns over global warming and associated regulatory demand for mitigation measures, and increasing energy dependency on politically unstable regions all contribute to a heightened awareness of energy efficiency. For utilities, particular concerns are rising fuel prices; increasing uncertainty about cost-recovery for “steel-in-the-ground” investments; and intimidating environmental costs, in particular, potential carbon emission costs. Improving energy efficiency is one of the most cost-effective ways to positively address these challenges. In fact, the pursuit of energy efficiency has never been more aggressive than it is today since 1995. Total utility energy efficiency spending continues to rebound since it touched the floor of $0.8 billion in 2003 (0.3% of total utility revenue), even surpassing the level of $1.2 billion in 2006 (0.4% of total utility revenue). This trend is likely to persist as leading states like California have identified the energy efficiency resource as the preferred means of meeting growing energy needs by committing $2.2 billion in ratepayer funds to energy efficiency programs from 2006 through 2008. Along with these favorable circumstances, policy makers, regulators, and utilities alike are now taking a serious look at what policy measures might be required to justify a substantial expansion of utility-based energy efficiency programs.

Among a number of the policy measures that are in place or being considered, the California Public Utilities Commission (CPUC) adopted the shared-savings incentive mechanism in September 2007 through the rulemaking process that required interested parties to submit their proposals and communicate each other. The CPUC estimates that, once the savings targets for 2006-2008 are precisely met under the adopted incentive mechanism, the energy efficiency programs will create a net benefit of $2.7 billion out of a $2.2 billion investment in energy efficiency, incurring $0.3 billion shareholder earnings and $2.4 billion ratepayer savings.

Research Objectives

The main focus of the analysis is not to obtain the first-best optimal regulatory process or mechanism for the delivery of energy efficiency programs, but rather to elucidate the implications of California’s shared-savings incentive mechanism for utilities and their customers. This descriptive approach enables us to explain or predict how the programs will be delivered with the incentive mechanism and how the changes in a variety of circumstances will affect the effectiveness of the programs. We conduct the economic analysis based on game and contract theory in order to achieve the following objectives:

• To understand the shared-savings incentive mechanism adopted by the CPUC and thereby to offer useful insights into how regulatory goals can be achieved with the mechanism.
• To investigate the welfare allocations as well as the social efficiency derivable from the shared-savings incentive mechanism in California.
• To provide a reasonable analytic framework with which to describe the rulemaking process for designing the shared-savings incentive mechanism in California.