

Mixed Results From Green Buildings and Energy Efficiency Contracts

by Todd Myers, Director, Center for the Environment &
Brandon Houskeeper, Policy Analyst

September 2009

During the past several years, Washington has engaged in a number of efforts to improve energy efficiency with the goal of reducing costs and emissions of greenhouse gases. There have been, primarily, two types of efforts: performance-based contracting and promotion of “green” building standards. Both of these policies have been in place for a few years and data are available to assess their performance. Examining the data from these efforts, we find that the results are mixed at best, with a number of investments that are unlikely ever to pay off.

Performance-Based Contracting

By using performance-based contracting, public facilities, such as schools or hospitals, have the ability to reduce energy costs by replacing inefficient systems with energy efficient systems. Performance-based contracting was established to ensure that, when a contractor makes promises through a contract, results are achieved. Unfortunately, some proponents have misrepresented the actual process of performance-based contracting and over-promised the savings, even arguing that the costs of these programs will be recovered through energy savings.

According to the Washington State Department of General Administration only about 100 projects have used this system over the course of more than a decade. These projects have cost taxpayers more than \$150 million with a claimed savings of roughly \$11.5 million annually. At this rate it would take more than thirteen years to pay back the costs of all of these projects. Even these numbers, however, are skewed.

For instance, the energy savings claim is based on a snapshot audit to determine energy use and it is difficult to track actual energy savings.

When a building project uses the performance-based contract process, an inspection identifies what systems can be changed to achieve greater efficiency. If the agency chooses to change light fixtures, a contractor can promise savings from changing each fixture, because they are installing more energy-efficient bulbs. The contractor, however, does not guarantee that the light fixture will be utilized or operated in the same manner as the previous fixture, and therefore is unlikely to promise a return on investment through cost repayment.

The “annual savings” identified by the General Administration are snapshots in time and cannot be used to predict actual savings, especially over the long-term. Nevertheless, the table below shows that the cost payback varies from one project to the next. Each of the following projects was completed in the South Kitsap School District. The range of payback for the School District ranged from 7.5 years to 51.5 years.

We have counted all costs as part of the “funding” column, no matter their source. General Administration may argue with this approach, claiming that grants from utilities toward energy savings should not count toward the total cost of the project. We disagree. Whether funding comes from the taxpayers through the state or ratepayers through higher energy costs, all costs should be added together to assess the total cost. An inefficient project is not made more efficient simply because many people are paying for it rather than a few. If that money could have been better used elsewhere, saying that a project wasted small amounts of many peoples’ money is no better than wasting a lot of one group’s money. Further, treating these sources of funds as “free money” can diminish the efforts to receive the best possible return on those investments. When considering the benefits of an investment, all costs borne by the state or local tax and ratepayers should be considered.

Year	Project	Funding	Annual Cost Avoidance	Avoidance Total to 2006	Years until cost payback
2001	So. Kitsap SD	\$1,600,000	\$213,700	\$1,282,200	7.5 years
2002	So. Kitsap SD ltg district wide	\$949,084	\$103,205	\$516,025	9.2 years
2003	So. Kitsap SD Cedar Hts HVAC	\$659,087	\$12,800	\$51,200	51.5 years
2004	South Kitsap SD phase 5	\$659,087	\$14,224	\$42,672	46.3 years

The cost avoidance is an estimate of the savings from new equipment. The assumption is that without the investment, these costs would be incurred. It is important to note that these savings are only estimates, not actual, ongoing audited savings. There is actually a good reason for this. Many things affect how energy is used and attempting to isolate the impact of particular upgrades on energy usage is impractical. That is one reason the state’s program has been small and extremely targeted. The more officials expand the program, the more difficult it becomes to isolate savings accurately. A recent audit of a similar federal program found exactly these problems¹.

An audit of the federal program found numerous weaknesses, including difficulties in estimating actual energy savings. *The Washington Post* reported that, since contractors are paid in part based on energy savings, “...the auditors found, some contractors appeared to use inflated energy cost estimates in their savings calculations, increasing their fees.” They also found that lack of regular auditing led to payments that may have been inappropriate.

Providing incentives to contractors to create energy savings is a wise approach to ensuring the state receives a strong return on its investment. Ensuring the project lives up to its promises, however, requires a reasonable expectation of results and accurate auditing and cost accounting.

Performance of “Green” Schools

The other effort to reduce energy use in Washington is the promotion of “green” schools using the Washington State High-Performance Schools Protocol. These schools have been promoted in a number of venues as energy savers, including the Climate Advisory Team, by the Department of Ecology and the Office of Superintendent of Public Instruction (OSPI), the US Green Building Council and environmental activists.

¹ “Management of Energy Savings Performance Contract Delivery Orders at the Department of Energy,” by U.S. Department of Energy, Office of Inspector General and Office of Audit Services, September 2009.

As we have noted in the past², however, the results fall far short of the promise. Many of the “green” schools actually use more energy per square foot than their recently-built, non-green counterparts. Given a choice between a new school and a green school, ironically, in many districts the new school performs better. This has led both the Department of Ecology and the OSPI to admit that any claims about energy savings in these buildings would be, in their words, “premature.”

Indeed the OSPI’s green buildings coordinator admitted earlier this year in an e-mail³ that her agency’s report to the legislature on the schools in December of last year “was not trying to show energy savings – never was.”

The failure of “green” buildings to live up to their promises is not a local phenomenon. Two recent articles show that the failure is nationwide.

- In their article “Some Buildings Not Living Up to Green Label,” The New York Times notes that buildings built to the Leadership in Energy and Environmental Design (LEED) standard aren’t saving energy as expected. One problem, they note, is that the certification relies on energy models to predict how much energy a planned building will use, but council officials and many experts agree that such models are inexact.
- Frustrated by the failure to produce expected energy savings, the City of San Francisco is looking at changes. In an article titled “Green buildings standard seen as flawed,” *The Chronicle* notes that “many buildings certified as green under a broadly accepted national standard for energy savings are not performing as well as predicted.”

The US Green Building Council itself is concerned about this issue, announcing recently that the “USGBC has recognized that there is a difference between intention and actual performance.” As a result, they announced “An Aggressive Focus on Measurable Performance⁴.”

Investing Wisely

Given the limited funding available during the economic downturn, Washington state needs to take steps to ensure that it is truly receiving the energy efficiency and emissions reductions that are promised. Both performance-based contracting and “green” schools have seen mixed results in delivering on those promises. Research and the data demonstrate that several steps can improve the performance of these projects:

- Rigorous audits. The ability to perfectly audit these programs is limited, but, as the federal audit demonstrates, failure to audit can lead to a waste of resources.
- Local control and flexibility. The experience of the performance of “green” schools shows that local facilities directors are consistently

² “Suspending Failed “Green” Building Rules Can Save Schools Millions,” by Todd Myers, Opinion Editorial, Washington Policy Center, February 2009.

³ “RE: Spokesman Review article: ‘Green’ school rules need to be suspended,” email from Patricia Jatzcak, Program Developer Manager, School Facilities and Organization, Office of Superintendent of Public Instruction to Allison Kingfisher, Green Building & Sustainability Specialist, Washington Department of Ecology, March 3, 2009, available upon request.

⁴ “USGBC Update – The Future of Green Buildings: An Aggressive Focus on Measurable Performance,” email from U.S. Green Building Council to Todd Myers, Director, Center for the Environment, Washington Policy Center, September 25, 2009, available upon request.

better at making effective investments that produce real results than state-mandated cookie-cutter approaches. Placing control and accountability at the local level is more likely to produce effective results.

- **Accountability.** Holding agencies and contractors accountable for the results is critical in this process. Audits are an important part of this effort, but if there are no costs for the agency or contractor for failing to achieve energy savings targets, there is unlikely to be strict enforcement or effective auditing. Without those elements, savings are not likely to materialize.

The simple fact is that waste of money is waste of resources. If the state is spending money that does not achieve the promised energy or environmental goals, it does real damage to the environment by taking money away from projects or private investments that would make a real difference. Only a serious approach to auditing, local control and accountability can ensure we do not waste those resources.

Todd Myers is director of the Center for the Environment at Washington Policy Center, a non-partisan independent policy research organization in Seattle and Olympia. Brandon Houskeeper is a policy analyst with WPC.