

Shaping Ohio's Energy Future: Energy Efficiency Works

EXECUTIVE SUMMARY¹

March 2009

The passing of Senate Bill 221 (SB 221), which was signed by Governor Ted Strickland on May 1, 2008, was a landmark event that has positioned Ohio to become a national leader in energy efficiency. SB 221 created an aggressive Energy Efficiency Resource Standard (EERS) mandating that Ohio's investor-owned utilities save at least 22% of electricity consumption by 2025, which our report clearly demonstrates is not only achievable, but can also be accomplished cost-effectively while providing significant job and financial benefits to Ohio's economy. The timing of the legislation is opportune, as rising unemployment and a deepening state budget deficit have shown that Ohio and its consumers are in great need of economic revitalization. Deployed as Ohio's "first fuel," investments in energy efficiency will facilitate this revitalization in three ways: (1) by minimizing employment losses through the creation of new "green collar" jobs; (2) by providing critical financial relief to Ohio's consumers through lower energy bills and stable rates, and; (3) by easing the strain on the state budget through lower state operating costs, enabled by the expansion of energy efficiency into state and local government buildings.

Ohio's current fiscal and economic challenges do not preclude the state from garnering considerable benefits from energy efficiency. Energy efficiency and demand response are the lowest-cost resources available to moderate short-term impacts and are also the quickest to deploy, meaning that efficiency resources begin to generate financial savings for the state and its consumers quickly, which can then be reinvested to further stimulate Ohio's ailing economy. A comprehensive state energy plan is also important in order to effectively leverage the boon of federal funding from the *American Recovery and Reinvestment Act*, which includes \$6.3 billion for state and local energy efficiency and clean energy grants. So long as investments in energy efficiency are made prudently and complemented by strong programs and policies, Ohio will be able to alleviate these short-term issues and improve its economic vitality well into the future.

Policy Recommendations

To meet the state's savings targets, ACEEE suggests a suite of ten "innovative" programs and policies (henceforth referred to as "innovative policies" or "policies") in addition to the proven utility program approaches ("programs") that are already beginning to be implemented by the state's utilities. We believe that five of these policies, which could be implemented by utilities or in cooperation with a statewide effort, should be allowed to contribute towards the EERS target. Together these policies and programs would more than satisfy the 22% savings goal; however, we did not attempt to quantify the potential for additional savings beyond the EERS target in this analysis. Our innovative policies are:

- A. Energy Efficiency Resource Standard
 - 1. Advanced Residential Buildings Initiative
 - 2. Advanced Commercial Buildings Initiative
 - 3. Manufacturing Initiative
 - 4. Rural and Agricultural Initiative
 - 5. Combined Heat and Power

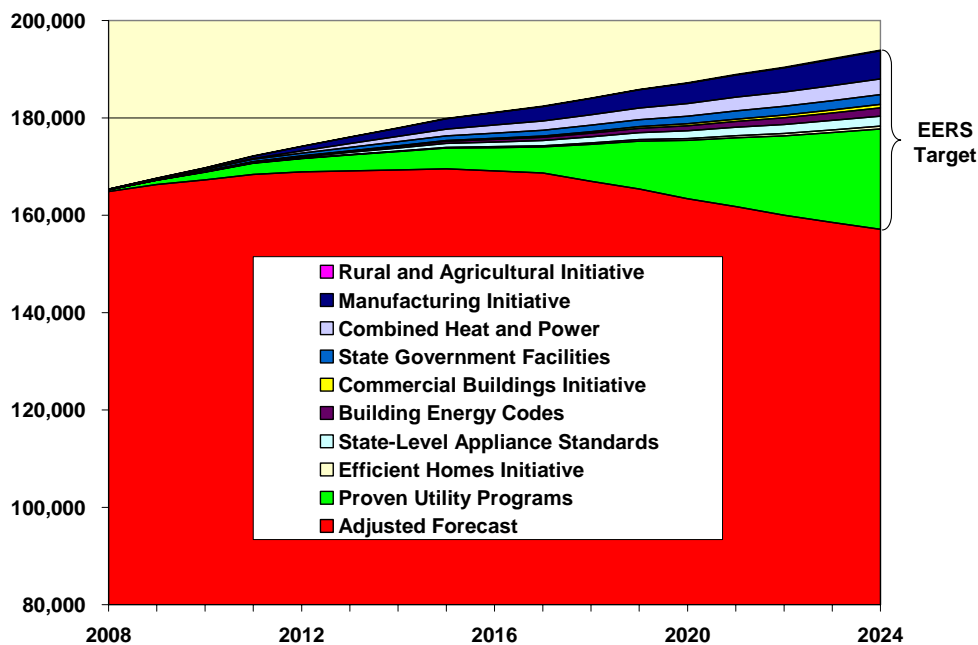
¹ This report was prepared by ACEEE staff, Summit Blue Consulting, ICF International, and Synapse Energy Economics, and made possible by funding from The Energy Foundation, U.S. DOE, U.S. EPA., and the Cleveland and Gund Foundations. The complete report is available for free download at <http://aceee.org/pubs/e092.htm>.

B. Complementary Policies

- 6. Workforce Development
- 7. State and Local Government Facilities
- 8. State-Level Appliance and Equipment Efficiency Standards
- 9. Building Energy Codes
- 10. Expanded Demand Response Programs

Figure ES-2 shows the contribution of the individual policies and programs towards the EERS target. Our suite of innovative energy efficiency policies will contribute savings of 16,235 GWh, or 10% of Ohio's electricity needs, by 2025. This will leave only 12%, or 20,596 GWh, of the EERS target to be met by the proven programs. In this report we highlight best practice programs that have proven to be effective at reducing electricity consumption in other states across the U.S. With the combination of these innovative policies and proven utility programs, we believe that Ohio can easily satisfy the EERS target cost-effectively and with a net positive benefit to the economy.

Figure ES-1. Share of Projected Electricity Use Met by Innovative Energy Efficiency Policies & Proven Utility Programs



These policy suggestions draw from the best practice policies currently implemented throughout the country. The establishment of Ohio's EERS target represents the core of these policies, providing the foundation upon which the five supporting policies can begin to help achieve the savings goal.

In addition, we find that a suite of demand response (DR) recommendations, which focuses on shifting energy from peak periods to off-peak periods and cutting back electricity needs during periods with the highest needs, is a critical component of reducing peak demand in Ohio. Figure ES-3 presents the combined effects of energy efficiency and demand response on peak reductions.

Economic Potential of Energy Efficiency Resources

This report assesses the total cost-effective, or “economic,” potential for energy efficiency investments in Ohio. By characterizing the incremental costs and energy savings for a number of efficient technologies or measures for residential, commercial, and industrial consumers, we determine the cost-effectiveness for each measure and estimate the total energy efficiency “resource” potential. We estimate an economic potential for efficiency resources in Ohio of over 64,000 GWh, or 33% of projected electricity consumption in 2025, as illustrated by Figure ES-3 below. Our results show that contributions from cost-effective resources are not evenly distributed across all sectors, which will necessitate the development and implementation of proven programs that take this weighting into account.

Figure ES-2. Estimated Reductions in Summer Peak Demand through Energy Efficiency and Demand Response (2025 peak reduction = 11,416 MW, or 29%)

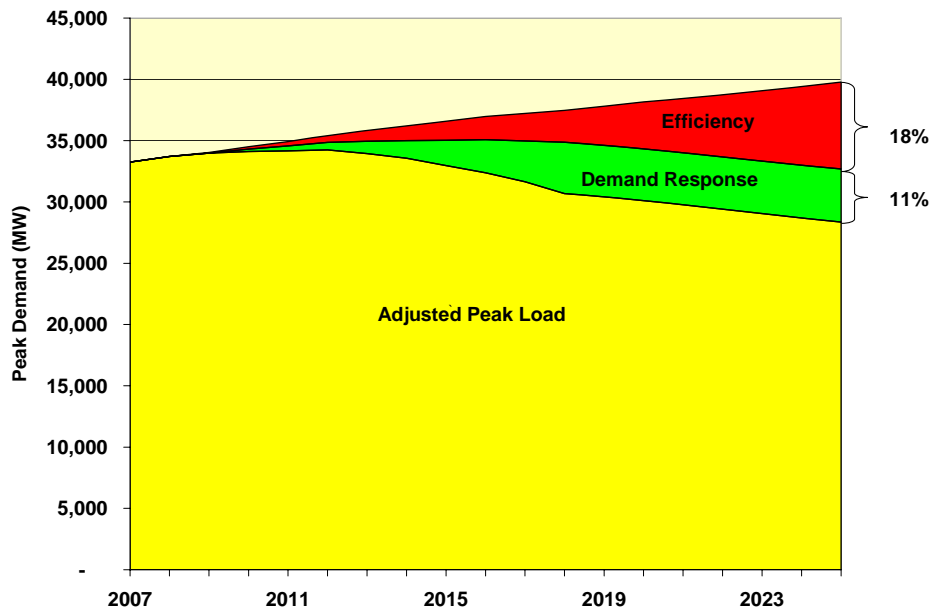
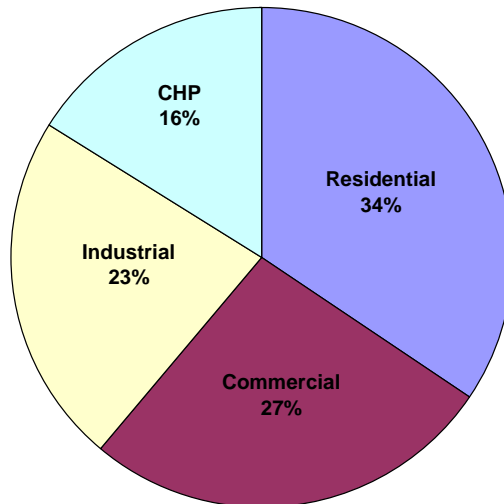


Figure ES-3. Summary of Energy Efficiency Economic Resource Potential (64,284 GWh, or 33% of Projected Electricity Consumption in 2025)



Impacts on Employment and the Economy

The energy savings from these efficiency policies and programs can cut the electricity bills for customers by a net \$430 million in 2015. Net annual savings grow eight-fold to \$3.3 billion in 2025. While these savings will require some public and customer investment, by 2025 net cumulative savings on electricity bills will reach almost \$19 billion. These savings are the result of two effects. First, participants in energy efficiency programs will install energy efficiency measures, such as more efficient appliances or heating equipment, therefore lowering their electricity consumption and electric bills. In addition, because of the current volatility in energy prices, efficiency strategies have the added benefit of improving the balance of demand and supply in energy markets, thereby stabilizing regional electricity prices for the future.

Investments in efficiency policies and programs have the added benefit of creating new, high-quality "green-collar" jobs in Ohio and increasing both wages and Gross State Product (GSP). Our analysis shows that energy efficiency investments can create over 32,000 new jobs in Ohio by 2025 (see Table ES-1), including well-paying trade and professional jobs needed to design, install, and operate energy efficiency measures. These new jobs, including both direct and indirect employment effects, would be equivalent to over 250 new manufacturing facilities relocating to Ohio, but without the public costs for infrastructure or the environmental impacts of new plants.

Table ES-1. Economic Impact of Energy Efficiency Investments in Ohio

Macroeconomic Impacts	2015	2025
Jobs (Actual)	7,928	32,061
Wages (Million \$2006)	300	1,615
GSP (Million \$2006)	444	2,559

Conclusions

The State of Ohio is poised to make great strides in expanding efficiency throughout the state. As this report documents, there is tremendous potential for Ohio to become a national leader in efficiency and to take advantage of the numerous cost-effective energy efficiency and demand response opportunities that exist in the state. Nonetheless, Ohio does have some difficult decisions to make with regards to its energy future. Faced with severe budgetary constraints and a slumping economy, there may be an inclination to dispel energy efficiency in light of the present conditions. It is therefore extremely important that the momentum created by the establishment of the aggressive EERS target by legislation included in SB 221 not be lost. This legislation has sent a strong signal of Ohio's intent, which in large part contributed to its respectable ranking in ACEEE's 2008 state energy efficiency scorecard. However, Ohio will have to continue to balance its priorities in order for energy efficiency to affect its economy as beneficially as this report highlights.

The various energy efficiency and demand response policies we suggest have been successful in other states in delivering efficiency resources and reducing consumer electric expenditures. We estimate efficiency can meet 122% of the increase in the state's electricity needs over the next 17 years while meeting 188% of the increase in peak demand and reducing emissions by 12%. What is more, these policies and programs can accomplish this at a lower cost than building new supply infrastructure, while simultaneously creating over 32,000 new, high-quality "green collar" jobs by 2025.

Our suggestions are intended to be the starting point for dialog among stakeholders on how to realize the demand-side efficiency resource potential in the state, particularly given the economic challenges it faces. ACEEE's suggestions are based on our review of existing opportunities and stakeholder discussions, and reflect proposals that we think are politically viable. However, it is important to note that these suggestions will not necessarily meet all of the state's future energy needs. While energy efficiency is perhaps the only new energy resource available that can be deployed quickly in the short term and continue to contribute significantly into the long term, the state will still require additional resources to meet the remainder of new load and to replace older, dirtier generation plants as they are retired. Furthermore, additional policies and programs exist that could be implemented to realize even more of the available energy efficiency resources. Ultimately, energy efficiency can delay the immediate need for investments in infrastructure, allowing Ohio the time to rigorously consider its future resource choices.

ABOUT THE AMERICAN COUNCIL FOR AN ENERGY-EFFICIENT ECONOMY (ACEEE)

ACEEE is a nonprofit organization dedicated to advancing energy efficiency as a means of promoting economic prosperity, energy security, and environmental protection. For more information, see <http://www.aceee.org>. ACEEE fulfills its mission by:

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- Conducting in-depth technical and policy assessments
- Advising policymakers and program managers
- Working collaboratively with businesses, public interest groups, and other organizations
- Organizing conferences and workshops
- Publishing books, conference proceedings, and reports
- Educating consumers and businesses

Support for our work comes from a broad range of foundations, governmental organizations, research institutes, utilities, and corporations.