



**ENERGY EFFICIENCY:  
THE FIRST FUEL FOR A CLEAN ENERGY FUTURE  
RESOURCES FOR MEETING MARYLAND'S ELECTRICITY NEEDS<sup>1</sup>**

**Executive Summary**

**February 2008**

Maryland faces daunting challenges for its energy future. The growing demand for electricity and the stall in power system capacity calls into question our ability to keep the lights on past 2011–2012. Consumers are reeling from the recent surge in electricity prices that strain household budgets, imperil jobs, and create uncertainty for the state's economy. Building new generation or transmission resources cannot meet these challenges in the near term—they cannot be brought online in time to forestall blackouts, and they will further increase electricity prices. Energy efficiency and demand response are the only resources that can be mobilized now to stave off the prospect of power curtailments in the next few years. Because they cost less than conventional powerplants, these demand-side resources are also the best way to help customers reduce their electricity bills.

Energy efficiency and demand response are not only the least-cost resources for meeting Maryland's future electricity needs: they also help the economy by creating new “green collar” jobs. Maryland has begun to lay the groundwork for a clean energy future with the recent enactment of a renewable electricity standard, appliance efficiency standards, and its participation in the Regional Greenhouse Gas Initiative (RGGI). Despite these important steps, much more is needed. In 2007, Governor O'Malley set a goal to reduce per-capita electricity usage 15% by 2015. The Maryland General Assembly is now considering the Governor's request to write this target into law. Because the energy policy choices the legislature makes today will define Maryland's energy future for years to come, this report provides a detailed assessment of energy-saving options to help policy-makers reach informed decisions.

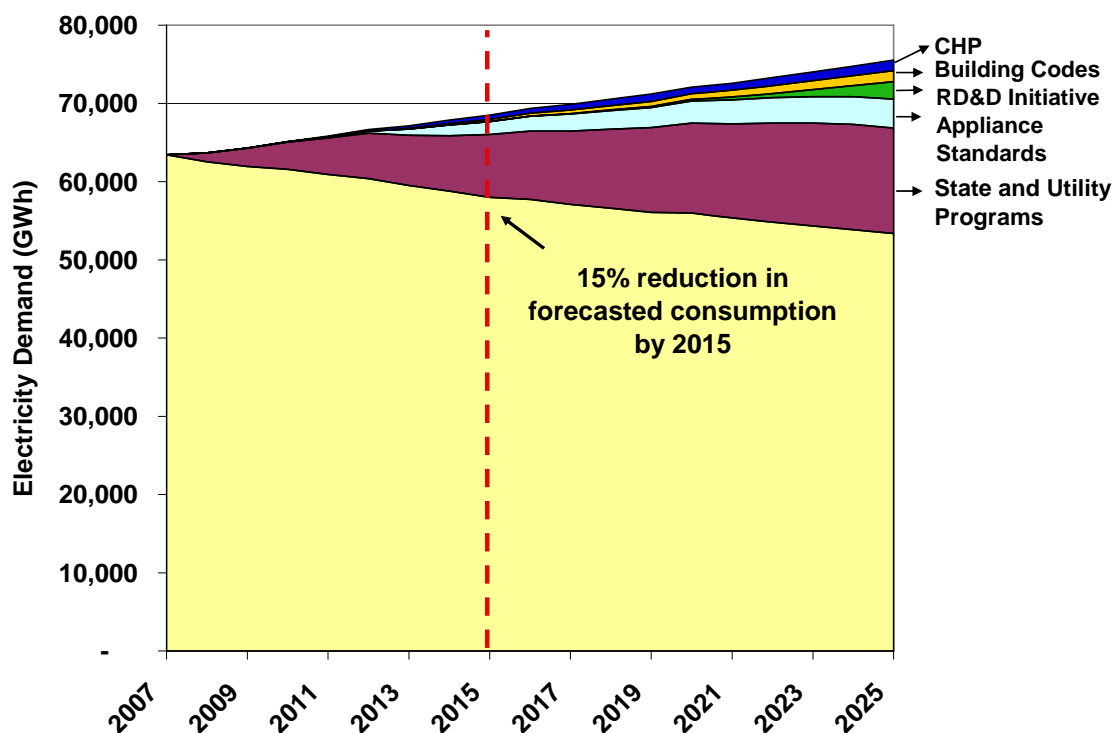
The energy efficiency policies assessed in this report hold the potential to meet 15% of forecasted electricity consumption by 2015, enough to meet Governor O'Malley's goal, and 29% by 2025 (see Figure 1). Our resource assessment identifies over 22,000 GWh of cost-effective electricity efficiency, more than sufficient to meet the projected 2015 policy suite savings of 10,500 GWh. Reducing summer peak demand, those times when utilities face the greatest strain on their electricity systems, is equally important as reducing overall electricity consumption. These energy efficiency initiatives, along with expanded demand response programs, have the potential to reduce summer peak demand by 32% in 2015 and 47% in 2025.

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These energy savings and demand reductions will reduce customer electricity bills, help stave off possible power blackouts, and give Maryland a head start on reducing carbon dioxide emissions, all while boosting the economy. Few policies offer this four-way payoff of lower consumer bills, increased energy security, a cleaner environment, and a stronger economy.

**Figure 1. Share of Projected Electricity Demand Met by Efficiency Resource Policies**



## Policy Recommendations

ACEEE recommends, and has assessed in this report, the following policies:

- An Energy Efficiency Resource Standard (EERS) requiring 15% electricity savings per capita by 2015, relative to 2007 per capita consumption
- Extend the electricity savings target by 1.5% of total sales per year from 2016–2025, ultimately reaching savings equal to 29% of the state’s forecasted sales in 2025
- Implementation of existing federal and state appliance standards, supplemented by a suite of new state standards
- More stringent residential and commercial building energy codes
- A clean energy research, development, and deployment (RD&D) initiative funded by the state to meet the state’s unique needs while helping to build a “green collar” energy industry in the state
- Policies to encourage new combined heat and power (CHP) systems in the industrial, institutional, and commercial sectors
- Expanded utility demand response programs to reduce peak demand for electricity

The EERS represents the core of these policies, providing a foundation upon which the appliance standards, building codes, and RD&D can be layered to fully achieve the goals. Table 1 presents electricity and peak demand savings results by policy for 2015 and 2025.

**Table 1. Electricity and Peak Demand Savings by Energy Efficiency Policy**

	2015		2025	
	GWh	MW	GWh	MW
Appliance Standards	1,636	346	3,705	785
Building Energy Codes	264	61	1,403	325
State RD&D Initiative	21	4	2,235	433
Utility & State Programs	8,046	1,709	13,473	2,864
Combined Heat & Power (CHP)	553	62	1,348	134
<i>Energy Efficiency Subtotal</i>	<i>10,520</i>	<i>2,183</i>	<i>22,164</i>	<i>4,542</i>
Expanded Demand Response	NA	3,135	NA	3,982
<b>Total</b>	<b>10,520</b>	<b>5,318</b>	<b>22,164</b>	<b>8,524</b>
Percent Savings of Reference Forecast	<b>15%</b>	<b>32%</b>	<b>29%</b>	<b>47%</b>

### Economic and Jobs Impacts

The energy savings from these efficiency policies can cut the electricity bills of participating customers by a net \$860 million in 2015 and \$2.6 billion in 2025. While these savings will require some public and customer investment, they yield an impressive return of \$4 in reduced consumer electricity bills for every dollar invested. By 2015, an average household will save a net \$8 on their monthly electricity bill from residential efficiency programs. 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. These reduced wholesale prices can save a typical household another \$2 on monthly electricity bills.

Investments in efficiency have the additional benefit of creating new, high-quality “green-collar” jobs for the state. Our analysis shows that these investments will create more than 12,000 new jobs in the state by 2025 (see Table 2), including well-paying trade and professional jobs needed to design and install energy efficiency measures. These new jobs, including both direct and indirect employment effects, would be the equivalent of some 100 new manufacturing plants relocating to Maryland, but without the public costs for infrastructure or the environmental impacts of new facilities.

**Table 2. Economic Impact of Expanded Energy Efficiency on Maryland**

Macroeconomic Impacts	2015	2025
Jobs (Actual)	8,067	12,241
Wages (Million 2006 \$)	462	780

### Conclusions

Based on the analyses behind this report, we are confident that the state can meet Gov. O'Malley's energy efficiency goals with positive economic and environmental benefits. Energy

efficiency policies can more than offset projected load growth in the state over the next 18 years, deferring costly new electric power generation and transmission projects and reducing the risk of blackouts over the next 3–4 years.

All of the choices for the state's energy future bear costs. The key question for Maryland policy-makers is: which kinds of investments provide the best return for Maryland electricity customers? This analysis shows that demand-side investments are the better choice, and thus should be pursued first. While new supply investments may well be needed, investing on the demand side now is Maryland's best energy, economic, and environmental strategy.

Reducing demand for electricity with efficiency will also reduce air pollutant emissions from the combustion of fossil fuels at power plants, giving the state a cleaner energy future at an affordable cost. Reduced global warming emissions will also contribute to meeting Maryland's RGGI commitments, while actually saving consumers money.

Maryland is poised to take the next steps toward its energy future. The current path is not sustainable—it threatens the security of Maryland's power system, and could raise customer electricity bills still further. A clean energy policy suite, beginning with energy efficiency, can meet the state's growing needs for electricity, making the power system more reliable while reducing consumer bills and cutting global warming pollution. This clean energy path will also strengthen, not weaken, the state's economy by stimulating investment and creating good jobs.

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

The report, *Maryland's Clean Energy Future: Potential for Energy Efficiency and Demand Response to Meet Electricity Needs in Maryland*, is available for free download at <http://aceee.org/pubs/e082.htm> or a hard copy can be purchased for \$50 plus \$5 postage and handling from ACEEE Publications, 1001 Connecticut Avenue, N.W., Suite 801, Washington, D.C. 20036-5525, phone: 202-429-0063, fax: 202-429-0193, e-mail: [aceee\\_publications@aceee.org](mailto:aceee_publications@aceee.org).

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- *Organizing conferences and workshops*
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