



Executive Summary

American Energy Productivity

The Economic, Environmental and Security Benefits of
Unlocking Energy Efficiency

Prepared on behalf of the Alliance to Save Energy

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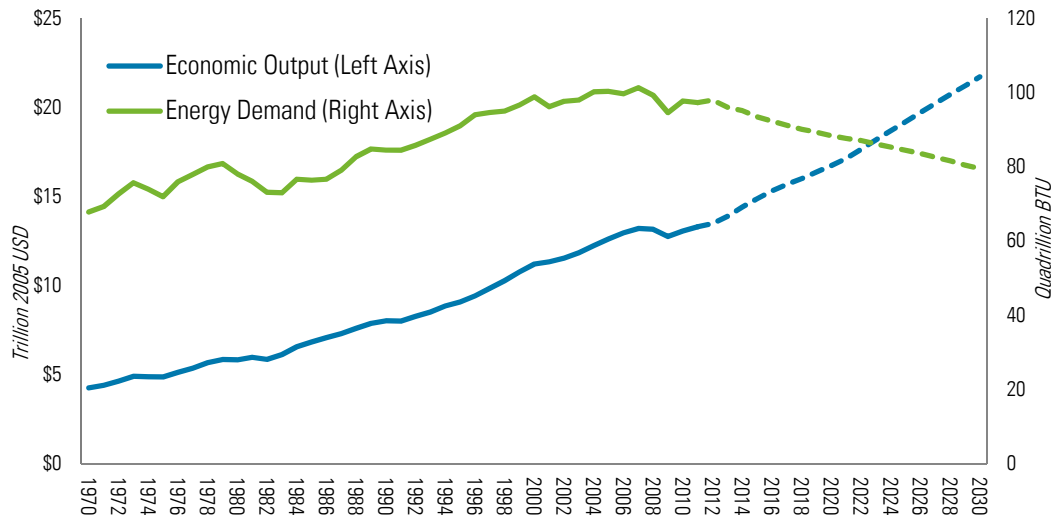
The Alliance Commission on National Energy Efficiency Policy (“the Commission”) asked the Rhodium Group (RHG) to analyze the economic, employment, environmental and security implications of the Commission’s goal doubling American energy productivity by 2030. RHG conducted such analysis independently of the Commission or participating organizations. A summary of our findings is provided below. Our complete report is available at www.energy2030.org.

ECONOMIC AND EMPLOYMENT IMPACTS

The US can achieve the Commission’s goal of doubling energy productivity by 2030 with currently available technology and design practices. To do so, households, businesses and federal, state and local governments will need to invest an additional \$166 billion a year (in real 2010 USD) in building improvements, energy efficient vehicles and industrial equipment, and energy saving transportation systems. This investment would both reduce the amount of energy needed to run the American economy and the price of energy for US consumers, lowering overall energy costs by \$494 billion a year. Net of investment costs, annual savings to American households, businesses and government agencies would total \$327 billion, and economic growth and energy demand would be decoupled for the first time in recent history.

Untying Economic Growth and Energy Demand

Economic output (left axis) and energy demand (right axis) under a doubling energy productivity scenario



By 2030 the average household would save \$1,039 per year in energy costs, net of the investment required to deliver those energy savings. That’s roughly the same as what the average American household spends on education and nearly as much as average household spending on medicine and produce combined. American business would save \$169 billion a year, almost as much as the corporate sector paid in federal income tax in 2011. Efficiency improvements combined with lower energy prices would also make energy-intensive industries like chemicals, glass, steel and cement more

competitive internationally. And efficiency improvements in government buildings and vehicles would save taxpayers \$13 billion a year, nearly as much as the annual budgets of the Department of Commerce and Environmental Protection Agency combined.

Annual Costs and Benefits of Doubling US Energy Productivity

Billion 2010 USD

By Sector				By Consumer			
Sector	Investment Costs	Energy Savings	Net Savings	Consumer	Investment Costs	Energy Savings	Net Savings
Buildings	\$72	\$167	\$95	Households	\$97	\$241	\$145
Industry	\$15	\$109	\$94	Businesses	\$61	\$230	\$169
Transportation	\$79	\$218	\$139	Government	\$9	\$22	\$13
Total	\$166	\$494	\$327	Total	\$166	\$494	\$327

Notes: Investment costs are annualized using sector-specific interest rates and financing terms. Energy expenditures and savings are in the year 2030 once a doubling is achieved. May not sum to totals due to rounding.

Capturing the benefits of profitable efficiency investments in buildings, industry and transportation could increase US economic output by as much as 2% in 2030.

Doubling American energy productivity would also change the composition of the US economy, redirecting revenue from energy production to more labor-intensive manufacturing and service sector activities. We estimate that successfully achieving the Commission's goal could increase overall US employment by 1.3 million jobs.

ENVIRONMENTAL BENEFITS

Doubling energy productivity would deliver substantial reductions in carbon dioxide (CO₂) emissions, providing a cost-effective strategy for addressing climate change. At the Copenhagen climate change conference in 2009, the US pledged to reduce emissions by 17% below 2005 levels by 2020. We estimate that if the Commission's goal is achieved, the US would meet that commitment, with CO₂ emissions falling 22% below 2005 levels by 2020 on the way to a 33% reduction by 2030. Doubling energy productivity will have other environmental benefits as well. We estimate that in 2030, sulfur dioxide (SO₂) emissions and nitrogen oxide (NO_x) emissions would be 55% and 45% lower than business-as-usual, yielding important health benefits.

SECURITY IMPLICATIONS

The recent boom in domestic oil and natural gas supply is reducing American dependence on imported energy. Doubling energy productivity would accelerate this process. We estimate that achieving the Commission's goal would reduce net energy imports to 7% of US energy consumption by 2030, down from 19% today. More importantly, it would make the US economy more resilient to future energy price spikes. Even if net US energy imports decline to zero, America will remain part of the global energy market and thus vulnerable to supply disruptions elsewhere in the world. But by doubling energy productivity, the direct economic cost of a global price spike would be reduced by up to 30%.

