



October 27, 2021

## Updated Analysis on the Benefits of a 0.5% Energy Waste Reduction Target for Ohio

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### I. Introduction

On behalf of Ceres, the Environmental Law and Policy Center, Environmental Entrepreneurs, NRDC, the Ohio Environmental Council, and the Ohio Hospital Association, Gabel Associates, Inc., released research in March 2021 documenting the potential costs and benefits to Ohio of various energy waste reduction scenarios.<sup>1</sup>

This memorandum summarizes the results of an updated analysis that considers the costs and benefits of a 0.5% annual energy waste reduction target for Ohio, commensurate with the level of energy savings proposed in House Bill 389 sponsored by Representatives Bill Seitz and David Leland.

This updated analysis relies on the same methodology and underlying data used and documented in the March 2021 report.<sup>2</sup>

Specifically, we quantified four categories of benefits:

- (1) Utility system benefits, or the benefits achieved because energy waste reduction programs displace traditional power generation and reduce the need for and associated costs of future infrastructure expansion in generation, distribution, and transmission.
- (2) Environmental benefits, or the benefits achieved because energy waste reduction programs avoid power plant emissions, including nitrogen oxides (NO<sub>x</sub>), sulfur dioxide (SO<sub>2</sub>), carbon dioxide (CO<sub>2</sub>), and particulate matter.
- (3) Economic benefits, or the benefits achieved because energy waste reduction programs increase the state's gross domestic product (GDP) and create new jobs. These benefits are created in multiple ways. First, investment in energy waste reduction programs generate direct jobs through the implementation and delivery of programs, which also stimulate

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<sup>1</sup> *Estimating the Benefits of Energy Waste Reduction in Ohio*. Gabel Associates, Inc., March 2021. <https://static1.squarespace.com/static/60268486dc92ef10a5ee5ed2/t/6172c24cb1c16e6a0bfe61c5/1634910796900/Final+Ohio+EWR+Report.pdf>

<sup>2</sup> *Ibid.*

many sectors of the economy. Second, the customer bill savings produced by the programs drive significant economic growth because customers inject these dollars back into the local economy, thus growing GDP. And

(4) Program participant bill savings.

Finally, we compare the utility system and environmental benefits against a projection of potential program costs, based on the most recent actual program costs per unit of saved energy in Ohio.

Notably, the benefits analyzed herein capture many, but not all of the benefits of energy waste reduction. Other benefits that we have not attempted to quantify include avoided renewable portfolio compliance costs, avoided compliance costs with existing environmental regulations, the value of reduced capacity reserve requirements, reduced arrearages, improved comfort and safety, reduced maintenance costs, reduced price volatility exposure, and other non-energy benefits.

## II. Results of the Analysis

Table 1 shows the estimated program costs and the utility system and environmental benefits of a 0.5% annual energy waste reduction target for Ohio in 2021 dollars (net present value or NPV).

In sum, a 0.5% annual energy waste reduction target would deliver utility system and environmental benefits that exceed \$6.5 billion dollars. This amount far outweighs the projected costs of achieving these savings (\$491 million),<sup>3</sup> even when those costs are compared with just utility system benefits (\$1.8 billion). All utility ratepayers will experience cost savings from these benefits whether or not they participate directly in programs.

**Table 1. Cost Benefit Results, Ohio Cost to Achieve (NPV 2021\$)**

<b>Benefits</b>		<b>Value</b>
	Utility System Benefits	\$1,777,000,000
	Environmental Benefits	\$4,761,000,000
	<b>Total Benefits</b>	<b>\$6,538,000,000</b>
<b>Costs</b>		
	Program Costs	\$491,000,000
	<b>Total Costs</b>	<b>\$491,000,000</b>
<b>Net-Benefits</b>		
	Total	\$6,046,000,000
	<b>Benefit-to-Cost Ratio</b>	<b>13.3</b>

Table 2 shows the results of the economic benefits associated with a 0.5% annual energy waste reduction target for Ohio. Those benefits include \$1.2 billion added to the state’s GDP and the

<sup>3</sup> The estimated program costs shown in Table 1 are based on the most recent actual program costs per unit of saved energy in Ohio.

creation of ~2,055 jobs per year over the next two decades. These jobs occur in program implementation, construction, electricians, and other energy efficiency related industries.

**Table 2. Total Net Economic and Job Creation Impacts (Jobs, NPV 2021\$)**

Total Value Added to GDP	Total Jobs Created Per Year
\$1,204,000,000	2,055

Table 3 shows the program participant supply and distribution bill savings associated with a 0.5% annual energy waste reduction target for Ohio. These savings exceed \$3 billion and represent the primary reason why customers invest in energy waste reduction technologies and change behavior. These savings drive economic growth as customers inject dollars back into the local economy. Businesses are also able to reduce operating costs and improve profit margins, while also reducing maintenance costs.

**Table 3. Total Program Participant Bill Savings (NPV 2021\$)**

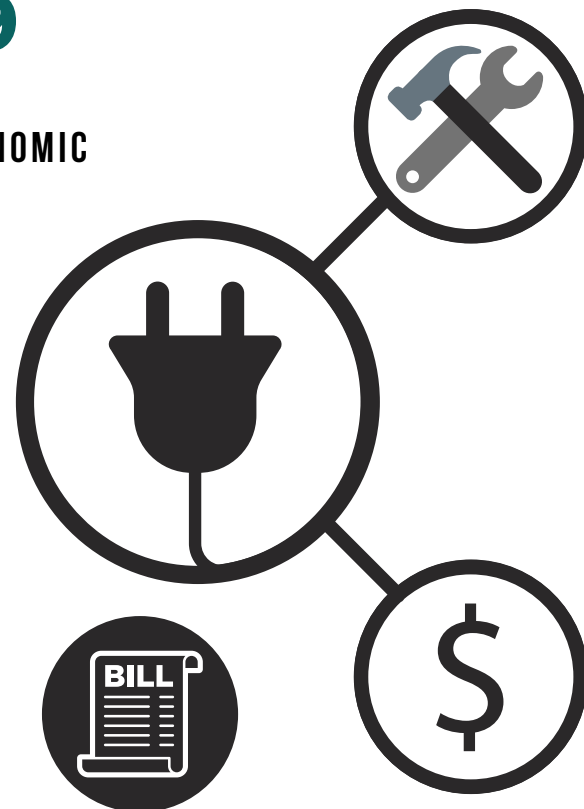
Cost	Value
Supply	\$1,403,000,000
Distribution	\$1,617,000,000
<b>Total</b>	<b>\$3,020,000,000</b>

In conclusion, a 0.5% energy savings target will produce benefits that far exceeded its costs, which means bills for all Ohioans will be lower if the 0.5% savings level is achieved.

# BENEFITS OF HB 389

## NEW ANALYSIS: HB 389 WOULD DRIVE BILLIONS IN ECONOMIC ACTIVITY, CREATE THOUSANDS OF LOCAL JOBS

An recent analysis by Gabel Associates, a leading energy consulting firm, analyzed the benefits of cutting energy waste in Ohio at levels commensurate with those proposed by HB 389 and found that the immediate investment in energy waste reduction programs would create an economic windfall of billions for Ohio.



## ACCORDING TO THE ANALYSIS:



Ohio electric utilities would avoid spending \$1.8 billion on electricity purchases and grid investments such as distribution lines, transformers, substations, and more that would otherwise be paid for by customers.



Ohio would add \$1.2 billion to its GDP as money saved by customers on their electricity bills is spent in the local economy - strengthening local restaurants, businesses, and stores.



Customers participating in energy saving programs would save \$3 billion on their bills - money that they could redirect elsewhere into the local economy.

These benefits would be realized by ramping up investments in energy-saving programs that help Ohio residents and businesses upgrade their buildings, improve manufacturing production lines, install new sensors and controls, and otherwise cut energy waste.