

Energy Efficiency in Michigan

Michigan House Energy Committee
December 4, 2019



David Gard, Executive Director



Alex Van Rijn, President



Shelley Sullivan, President



Mary Templeton, Director



Bali Kumar, Chief Executive Officer



Annual Report on the Implementation of PA 295 2017 Utility Energy Waste Reduction Programs

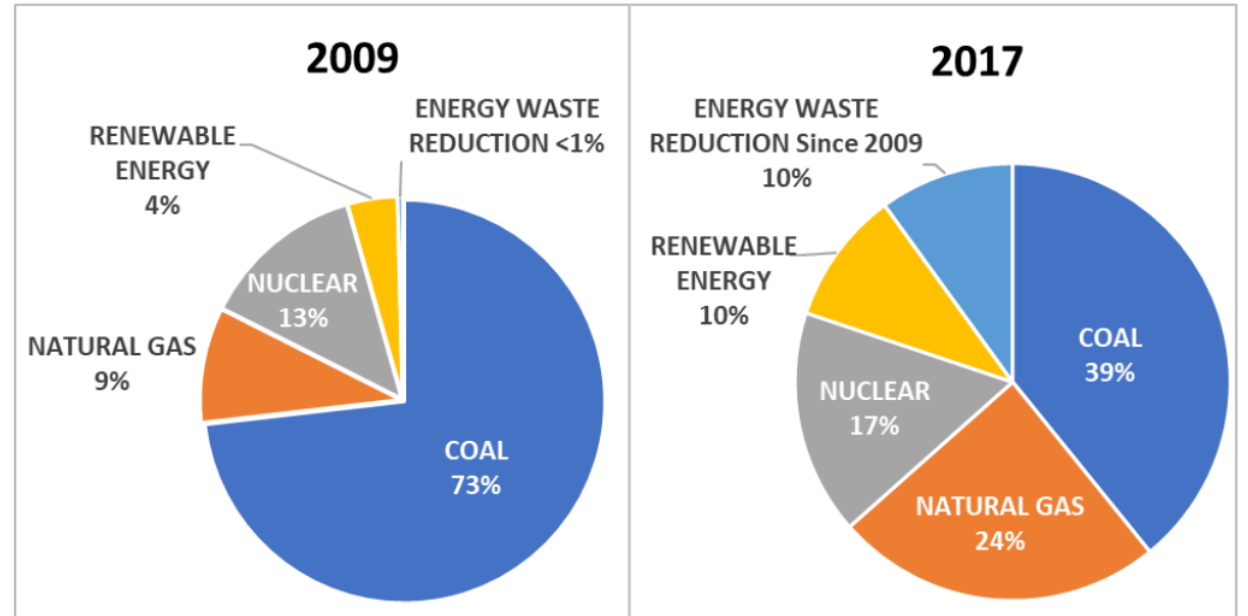
February 15, 2019

Sally A. Talberg, Chairman
Norman J. Saari, Commissioner



Figure 3

Michigan's Electric Resource Mix - 2009 vs. 2017

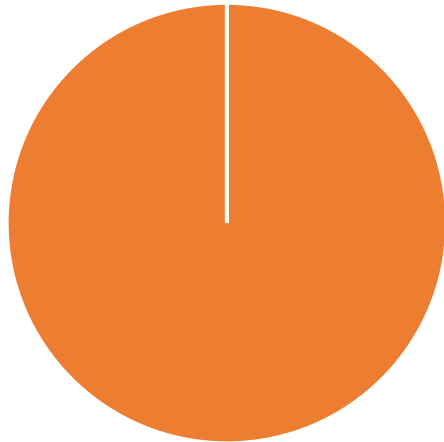


Program Benefits

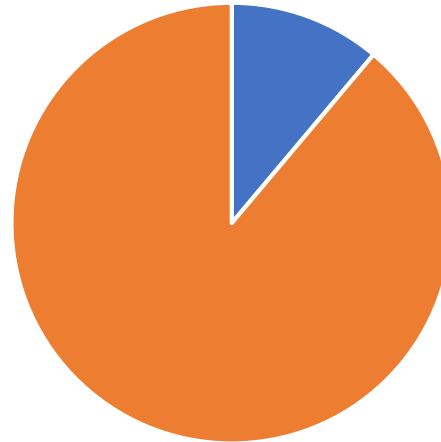
In 2017, aggregate EWR program expenditures of \$308 million by all natural gas and electric utilities in the state were estimated to result in lifecycle savings to customers of \$1.08 billion. For every dollar spent on EWR programs in 2017, customers should realize benefits of \$3.51. Data provided to the Commission in EWR provider annual reports indicated that EWR resources were obtained at a cost of \$16.23/MWh, significantly cheaper than supply side options such as new natural gas combined cycle generation of around \$55/MWh.¹

Annual Cost of Michigan's Energy Imports*

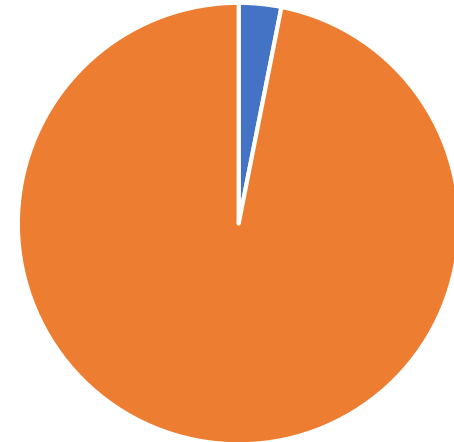
■ Imported fuel ■ Fuel produced in MI



Coal
\$1.1 Billion



Natural Gas
\$2.0 Billion



Oil & Petroleum Products
\$9.8 Billion

**Based on 2017 data from U.S. EIA and current wholesale market prices*

Building Performance Solutions Inc.



Our Mission:

Provide unbiased, data-driven recommendations and solutions based on sound building science principles to improve the performance of a building as it relates to comfort, efficiency, and health & safety.

Who We Are

Services: Attic insulation, walls insulation, spray foam, Crawl space systems, ventilation, IAQ solutions, Energy Audits, Diagnostics services, Consulting.

Located: Warren MI

Servicing Areas: All of South East Michigan

Industries: Residential, Commercial, Industrial, New and existing construction.

Credentials

- ✓ Licensed & Insured Michigan Remodeling and Alteration Contractor
- ✓ Experience in old & new construction, remodeling, and restoration
- ✓ Certified Building Analyst
- ✓ Certified Building Envelope Professional
- ✓ Certified Building Science Infrared Thermographer
- ✓ EPA Renovation, and Repair Lead Safety certified
- ✓ DOE Lead Safe work certified, company wide
- ✓ Indoor Air Quality Training, company wide
- ✓ OSHA certified
- ✓ Pearl certified

OVERVIEW OF INSULATION SERVICES



✓ **Injection Foam Insulation**

State-of-the-art **biodegradable** foam insulation for **existing** walls that has a Class 'A' fire rating to meet all local codes. Drywall, CMU Block or brick!



✓ **Cellulose Insulation**

The "**Greenest of the Green**" starts right here. We use the best cellulose in the business - Applegate Cellulose.



✓ **Spray Foam Insulation**

Advanced Insulation Science that outperforms **all** other types of insulation. The Smart Choice for **Healthy Living**.

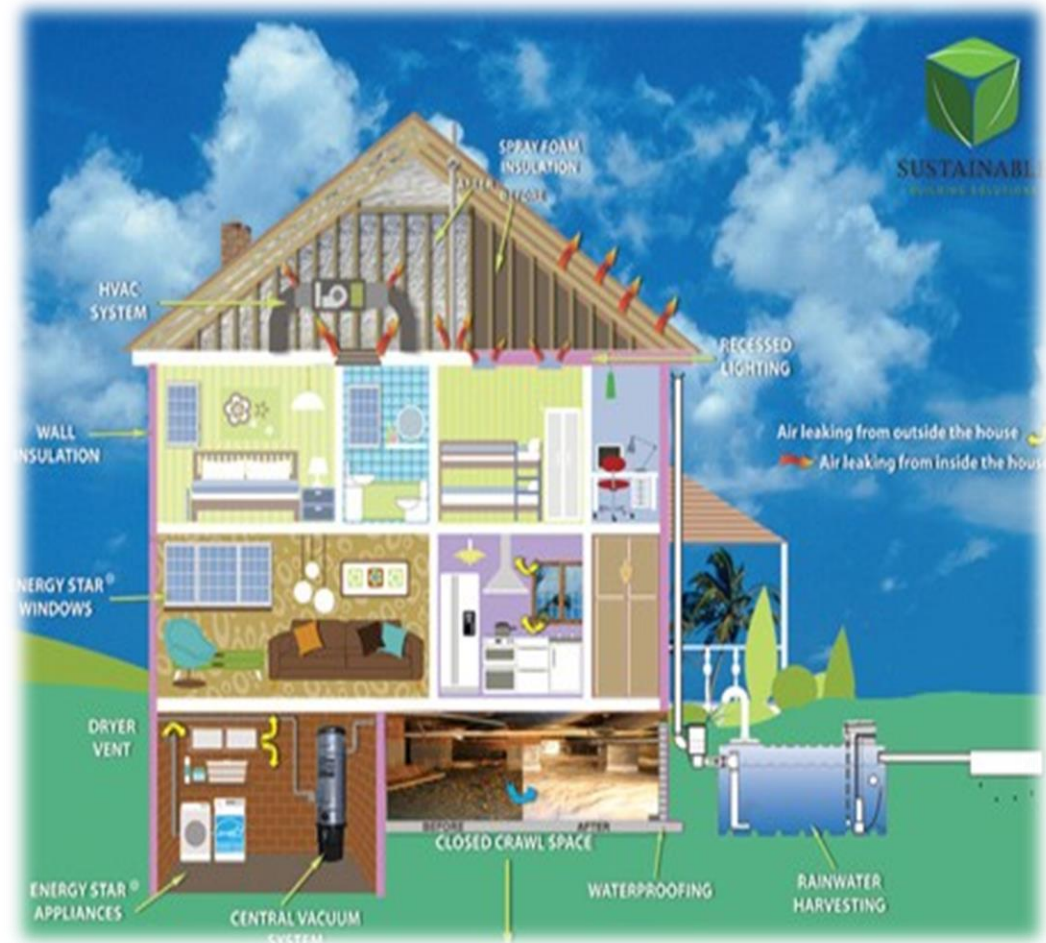
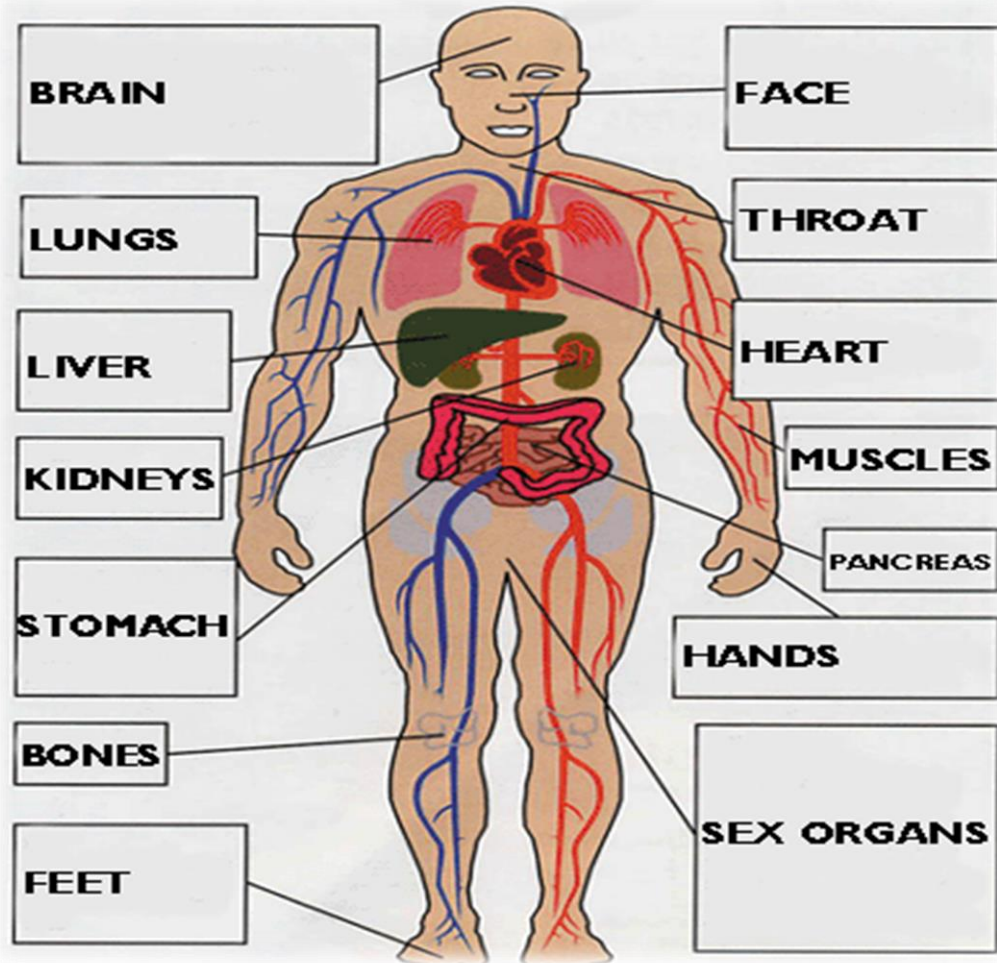


✓ **Cotton Blanket Insulation**

Our High-Technology, **revolutionary** insulation that is perfect for new additions and new construction projects.

The Systems Approach

Like your body, each component makes up the system. Without a component the system fails to function properly.



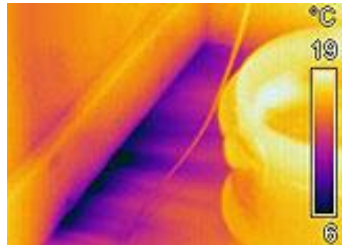
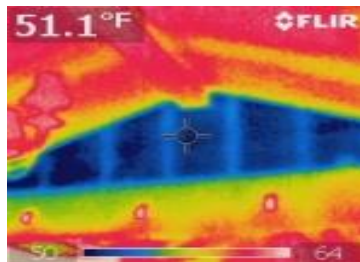
Symptoms



COMMON SIGNS OF AN INEFFICIENT HOME OR OFFICE

Here is a list of the most common signs of a poorly-performing home or office. These "symptoms" are typically related to the individual or interactive effects of air leakage, heat flow, or moisture build-up.

Once the symptoms are identified, please contact **Building Performance Solutions** to discuss their root cause, followed by recommendations and a plan to fix them once and for all.



- Visible mold on roof boards in attic, bedroom corners, baseboard molding, etc.
- Uneven and uncomfortable temperatures
- High energy usage in winter and/or summer
- Drafty rooms or cold floors (like edge of outside walls, living space over garage, over hanging floors, over crawl space or basement, etc.)
- Large icicles hanging from roofs edge
- Rapid snow melt off roof
- Furnace or air conditioner rarely shuts off or can't keep up
- Excessive dust
- Condensation or water beading on windows, walls or ceilings, etc.
- Musty, damp, or cold crawl space
- Dirty carpet along exterior walls, baseboards, and heat registers
- Cobwebs around basement windows, foundation walls, etc.
- Peeling paint or water beading on walls or ceiling
- Frozen and burst pipes or having to use heat tape
- Dirty fiberglass insulation ("filter-glass")
- Signs of dirt tracking around exterior door frames, attic lids or fold-up stairs
- Ceiling damage caused by ice damming
- Outdoor odors, car exhaust, pests or insects penetrating the structure
- Feeling sick, asthma, allergies or headaches worsen when at home

Case Study: Renovation in Franklin, MI (Symptom: Ice Damming)



Case Study: New Construction in Waterford, MI




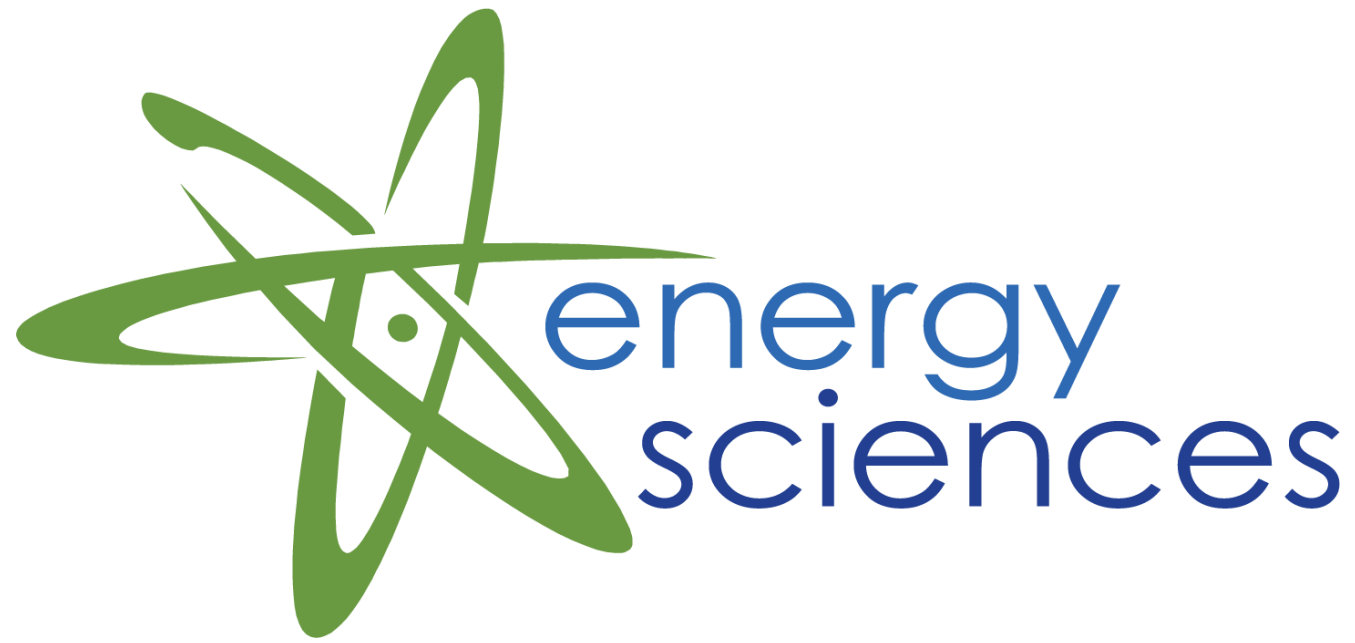


Building Performance Solutions Inc.

Building Performance & Weatherization Specialists

www.comforttolife.com

- *Your solution for:*
- *Drafty & cold (Or Hot) Rooms*
- *Ice Dams & frozen pipes*
- *Mold & Mildew*
- *Indoor air quality issues*
- *High heating & cooling bills*
- *Damp or musty crawl spaces*

A close-up photograph of a vibrant green leaf with a single water droplet. Inside the droplet, a miniature globe of the Earth is visible, showing green continents and blue oceans. The background is a solid, bright green.

Striving to make positive impacts on our world,
every day, in every way

We Envision...

...a resilient world
where clean, affordable energy and water
are available to everyone;
and the preservation of natural resources
is common practice for everyday life.

Our Services



Facility & Process
Assessments



Water
Management



Energy &
Sustainability
Education



Lighting Solutions



Strategic Energy
Management



Commissioning &
Retro-commissioning



Turnkey
Services



Technical
Staffing



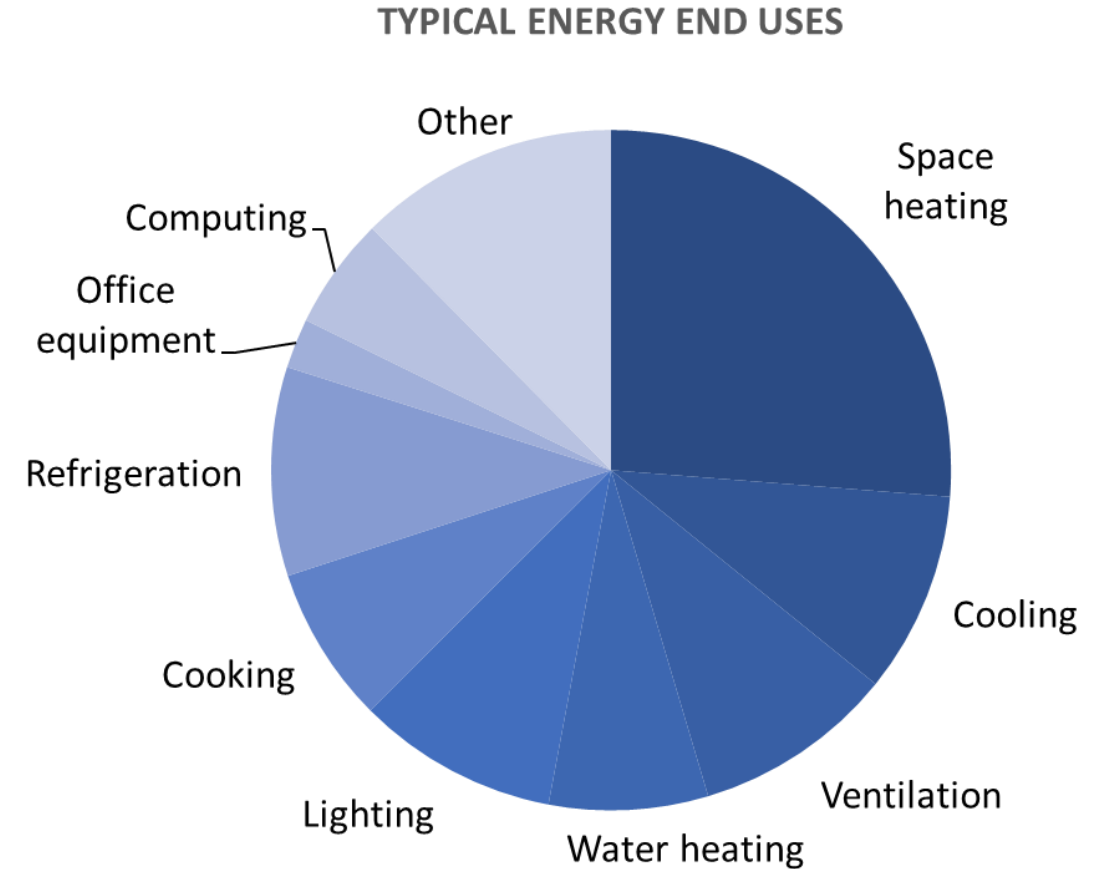
Owner Advisory
Services



Function Testing
& Quality Control

The Foundation: The Building Assessment

- Assess the facility and interview personnel
- Analyze utility bill
- Estimate energy use allocation
- Estimate energy reduction potential
- Develop energy waste reduction (EWR) plan
- Implement EWR plan
- Verify, track & communicate results
- Make plan adjustments as necessary



Case Studies



1st Place Winner!

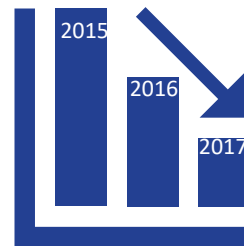


“Energy Sciences provided actionable and data driven opportunities to reduce energy use and save money throughout our building portfolio. They were flexible and responsive to our changing needs throughout the process.”

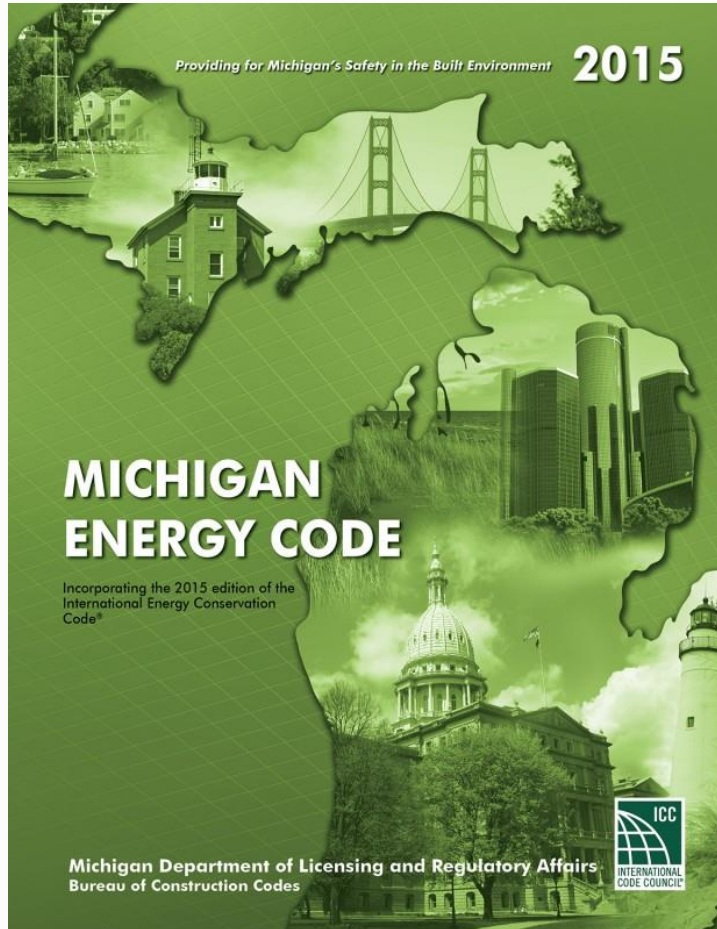
Joel Howrani Heeres
Director, Office of Sustainability
City of Detroit



Energy Use



Energy Education



- 15 Sessions
- 495 Attendees
- Partnership with MEECA
- Contract with Michigan Energy Office
- Recent 6-city tour across Michigan

“The training is amazing!”
-2019 MEC Training Attendee

Challenges

- People
- Education
- Money



Thank you



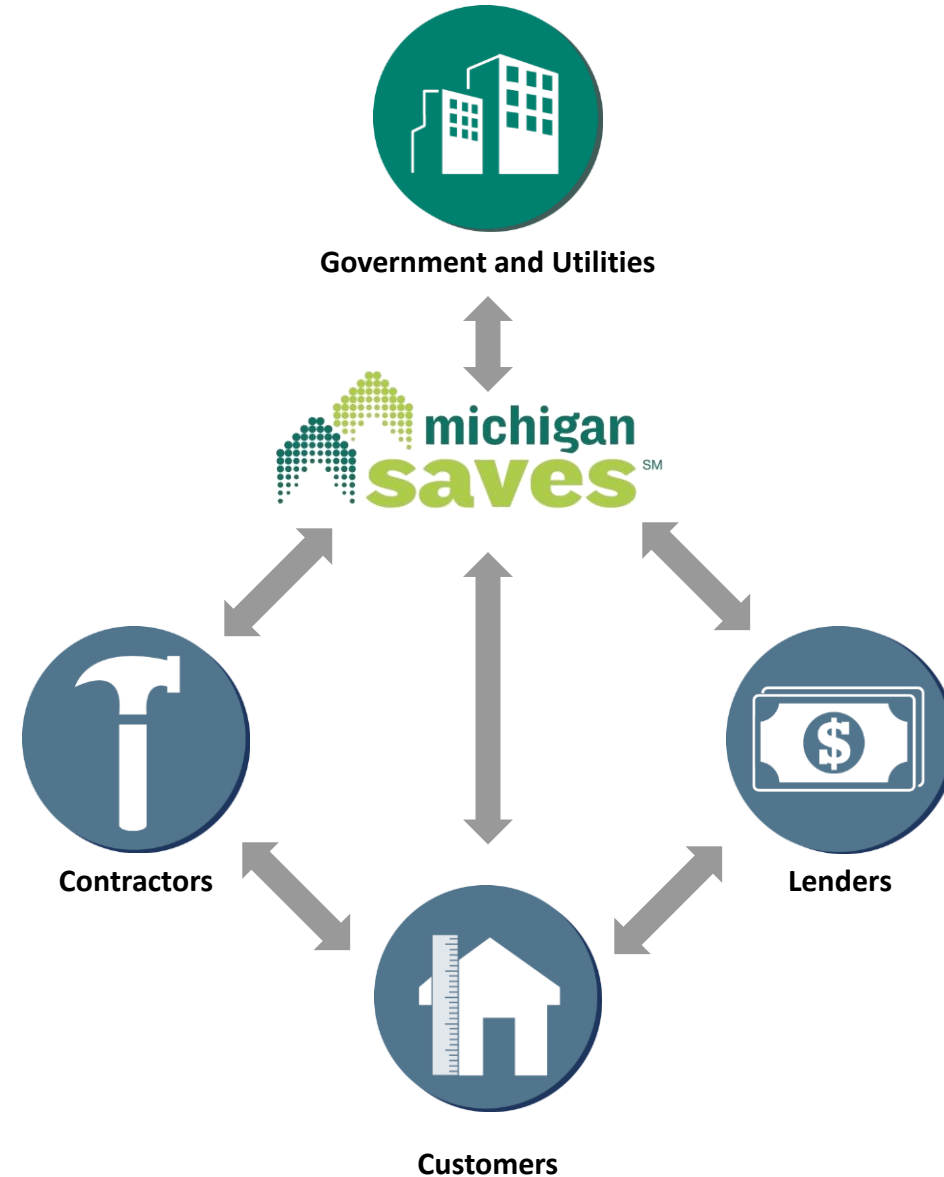
Michigan Saves

Easy, Affordable Financing for Clean Energy



Michigan's Nonprofit Green Bank

- Nonprofit, public-private partnership green bank
- Process driven by research and stakeholders
- Loss reserve for lenders
 - Yields better rates and terms that match needs of clean energy market
 - Allows for more expansive underwriting
- Oversight of authorized contractors
- Program guidelines and quality control
- Demand for energy efficiency through outreach and incentives



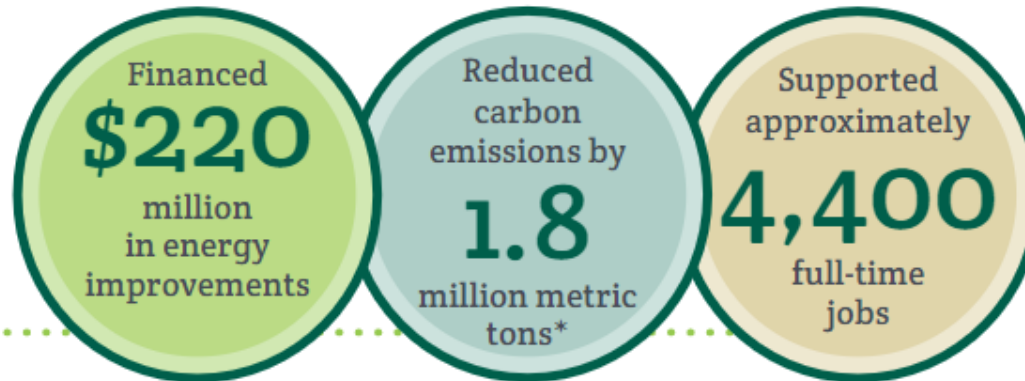
Transforming the State's Energy Landscape



We are Michigan's nonprofit green bank dedicated to making energy improvements easy and affordable.

Our Impact

From September 2010 through October 2019, Michigan Saves has:



*Calculations based on lifetime energy savings

Every dollar we hold in reserve translates into at least \$30 of private investment, all of which pours back into our state's economy.

Savings for Every Sector



We're doing the right thing.

“This project is a good statement about our stewardship of God’s house.”

—Kerry Caliman, chairperson, Tabernacle Missionary Baptist Church

TABERNACLE MISSIONARY BAPTIST CHURCH



We Have Greater Energy Independence!

“It’s great for our daughter, Evelyn, to grow up in a house where we’re using renewable energy as a primary source and showing her that it’s normal and good.”

— Marla Drury



10



I’m Getting New Customers!

“The new lighting has been wonderful. It’s a better quality light that doesn’t cost nearly as much to operate.”

— Sue Brunet, general manager

BARAGA LAKESIDE INN

Thank You!

Visit our website: www.MichiganSaves.org

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- Twitter: [@MichiganSaves](https://twitter.com/MichiganSaves)
- LinkedIn: linkedin.com/company/michigan-saves

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Financing as a Barrier

PACE as a Solution!

Presented by:

Bali Kumar, CEO

Lean & Green Michigan, LLC

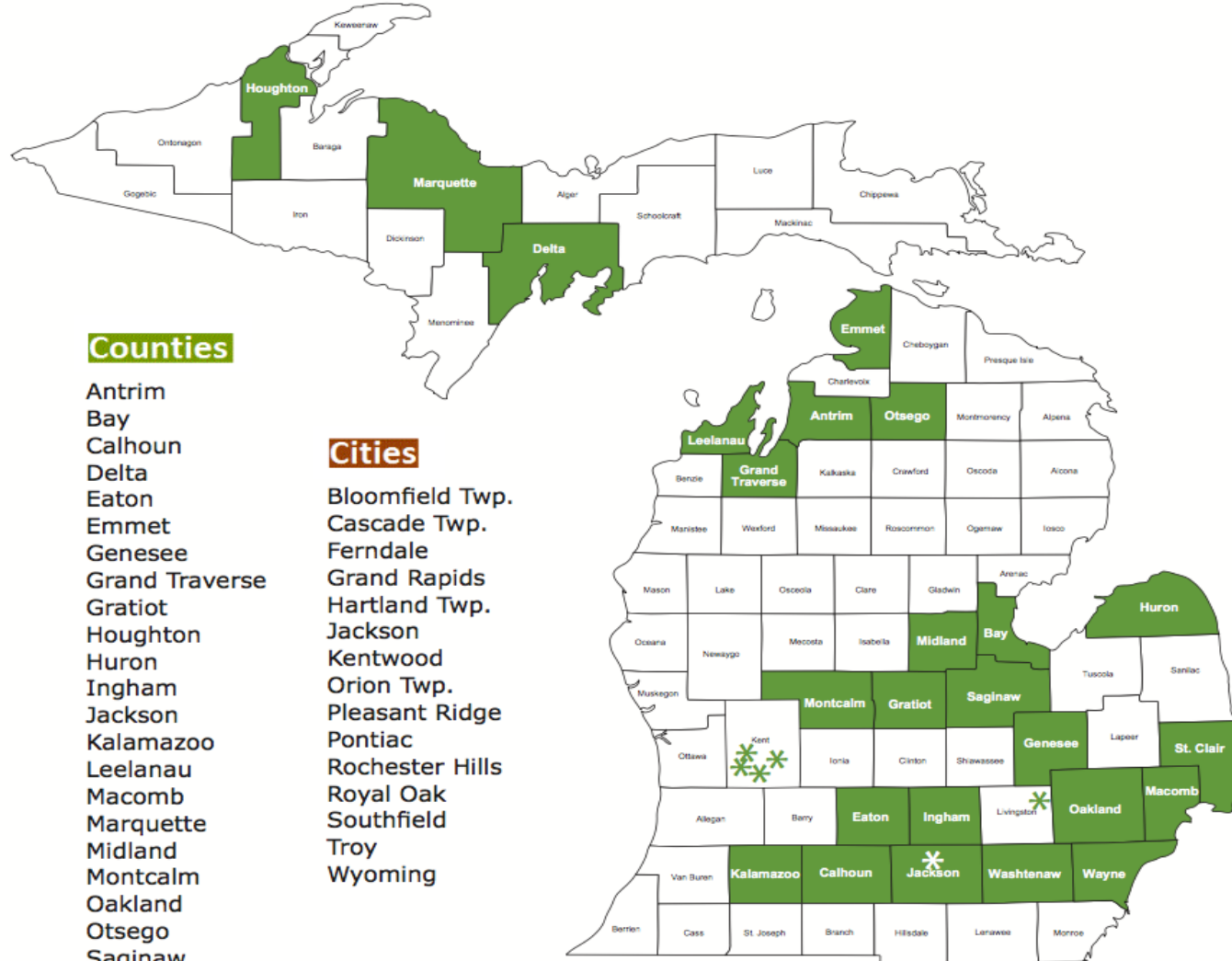
What is PACE? How does it help?

Property Assessed Clean Energy (PACE) Act of 2010
(MCL 460.931 *et seq.*):

- Up to 25 year
- Fixed interest financing
- For ***commercial, industrial, multifamily, non-profit, and agricultural*** property owners
- To make their buildings more energy efficient
- Without incurring upfront costs.

(Refi, gut rehab, new construction)

Map of Participating Jurisdictions



Counties

Antrim
 Bay
 Calhoun
 Delta
 Eaton
 Emmet
 Genesee
 Grand Traverse
 Gratiot
 Houghton
 Huron
 Ingham
 Jackson
 Kalamazoo
 Leelanau
 Macomb
 Marquette
 Midland
 Montcalm
 Oakland
 Otsego
 Saginaw
 St. Clair
 Washtenaw
 Wayne

Cities

Bloomfield Twp.
 Cascade Twp.
 Ferndale
 Grand Rapids
 Hartland Twp.
 Jackson
 Kentwood
 Orion Twp.
 Pleasant Ridge
 Pontiac
 Rochester Hills
 Royal Oak
 Southfield
 Troy
 Wyoming

PACE assessment payback

Year	1	2	3	4	5	6	7
Energy savings	50,000	50,000	50,000	50,000	50,000	50,000	50,000
Maintenance savings	20,000	20,000	20,000	20,000	20,000	20,000	20,000
Total savings	70,000	70,000	70,000	70,000	70,000	70,000	70,000
Debt payments	42,984	42,984	42,984	42,984	42,984	42,984	42,984
Net savings	27,016	27,016	27,016	27,016	27,016	27,016	27,016
Cum. net savings	27,016	54,032	81,048	108,064	135,080	162,096	189,112



Storer Camps

YMCA of Greater Toledo finances with PACE Express

Project Quick Stats:

PACE district: Jackson County
Property owner: YMCA of Greater Toledo
PACE contractor: GEM Energy
PACE lender: Greenworks Lending, LLC
Amount financed: \$153,270
Project term: 20 years
Total Energy Savings: \$111,480*

Energy conservation measures:

- Multiple furnace upgrades
- Digital thermostats
- Boiler upgrade
- LED lighting
- Domestic hot water

Impact: The YMCA Storer Camps will result in a reduction in CO₂ emissions equivalent to eliminating the energy use of 74.7 homes for each of the 20 years of the project.

*Under PACE Express, savings is not required to exceed investment.

Overview

Sitting on approximately 1,300 acres of beautiful Irish Hills region of southeast Michigan, the YMCA Storer Camps PACE project is part of a larger energy efficiency initiative the Greater Toledo YMCA has in the works, in which five other YMCA properties in northwest Ohio will be utilizing PACE.

To finance energy improvements at Storer Camps, the property owner utilized Lean & Michigan's **PACE Express** program — a new 2019 program that is designed to help finance smaller PACE projects (at and below \$250,000 in PACE financing). **The YMCA Storer Camp marks Lean & Green Michigan's first PACE Express project!**

The YMCA Storer Camps PACE project also marks the first PACE project to close in Jackson County, and the first Michigan PACE project for contractor GEM Energy.

The YMCA Storer Camps serves as an excellent example for how smaller PACE Express projects can finance significant energy efficiency upgrades through PACE Express.

Cambria Hotel project in Detroit receives \$6.8 million in PACE energy efficiency loan funding

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- Cambria Hotel in Detroit is being redeveloped using special energy efficiency funding stream
- About \$6.8 million of the \$49 million total development cost will come through PACE program
- Cambria is expected to open in 2020



Questions and Discussion