

# Overview of Proposed MEMD Measure: Smart Energy Web Portal with Encouragement Reports

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Jill Steiner, Cadmus*



*April 19, 2016*



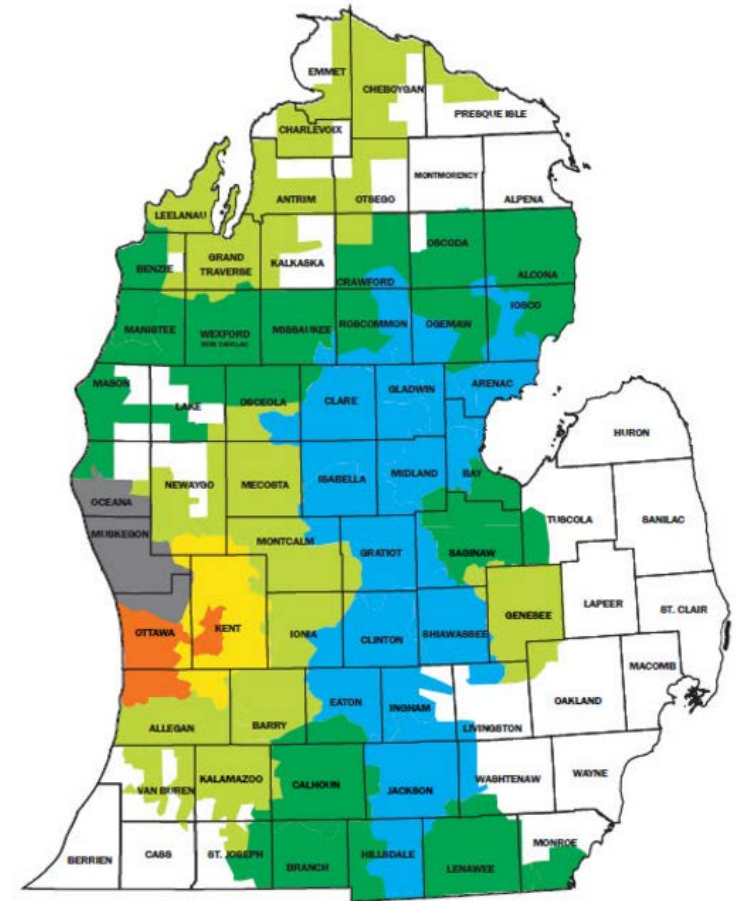
- Introductions
- Smart Meter Deployment Status
- Overview of Web Portal and Portal Encouragement Reports Measure
- Brief Demonstration of the Customer Experience
- Cadmus Evaluation of Savings
- Q&A

# Smart Energy Meter Deployment

Over 1.5 Smart Meters will be deployed by end of 2017

As of April 10, 1 Million Smart Meters Deployed

- 896K to Electric Residential and Small Business Customers
- Green and Blue areas of map reflect 2016 and 2017 deployment



### MAP KEY



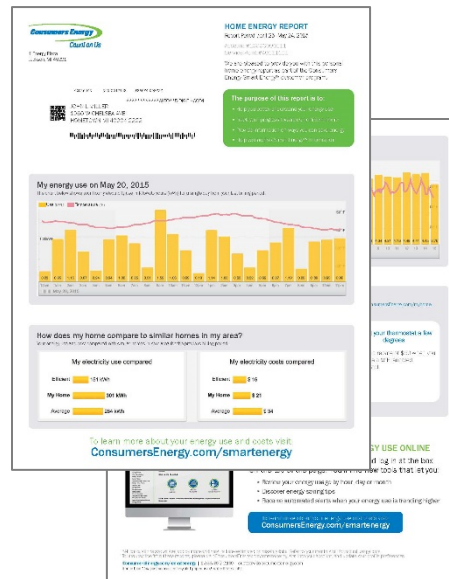


# Overview: Measure & Customer Experience<sup>4</sup>

## Installation of a Smart Meter



## Education and Encouragement



## Engagement with the Smart Energy Portal






## Scheduled Encouragement Reports

- Welcome report after meter install
- Follow-up report 6-8 weeks later

## Ad Hoc Encouragement Reports


- On demand/customer request
- When customers meet specific thresholds or parameters based use and cost




1 Energy Plaza  
Jackson, MI 49201

00056445 545-C012345 -P56674-008777

\*\*\*\*\*AUTO\*\*5-DIGIT 40004



JOHN L MILLER  
1960 W CHELSEA AVE  
HOMETOWN MI 40004-2222



Report Period: April 25-May 24, 2015

Account #10000000111  
Service Point #40111111

We are pleased to provide you with this personal home energy report as part of the Consumers Energy Smart Energy™ customer program.

**The purpose of this report is to:**

- Help you better understand your energy use
- Track your progress towards an efficient home
- Provide information on ways you can save energy
- Help you access Smart Energy™ information

### My energy use on May 20, 2015

The chart below shows your hourly electricity use in kilowatt-hours (kWh) for a single day from your last billing period.

■ Use (kWh) ■ Temperature (°F)

| Hour | Use (kWh) | Temperature (°F) |
|------|-----------|------------------|
| 12am | 0.23      | ~65              |
| 1am  | 0.95      | ~65              |
| 2am  | 1.15      | ~65              |
| 3am  | 0.67      | ~65              |
| 4am  | 0.24      | ~65              |
| 5am  | 0.94      | ~65              |
| 6am  | 1.02      | ~65              |
| 7am  | 0.85      | ~65              |
| 8am  | 0.31      | ~65              |
| 9am  | 1.59      | ~65              |
| 10am | 1.06      | ~65              |
| 11am | 0.69      | ~65              |
| 12pm | 0.19      | ~65              |
| 1pm  | 1.14      | ~65              |
| 2pm  | 1.00      | ~65              |
| 3pm  | 0.63      | ~65              |
| 4pm  | 0.32      | ~65              |
| 5pm  | 0.69      | ~65              |
| 6pm  | 0.87      | ~65              |
| 7pm  | 1.19      | ~65              |
| 8pm  | 0.28      | ~65              |
| 9pm  | 0.89      | ~65              |
| 10pm | 0.93      | ~65              |
| 11pm | 0.96      | ~65              |



- **Encouragement Report Contents (Residential)**
  - Illustration of customer hourly usage for a typical day
  - Daily consumption and average temperature
  - Comparison of the customer usage to peers – average and efficient homes
  - Customized energy savings tips
  - How to access the Smart Energy Portal



 **Alert - Your Bill Might Increase**

- MY REPORT
- MY BILL
- ENERGY INSIGHTS
- HOW TO SAVE
- ENVIRONMENT

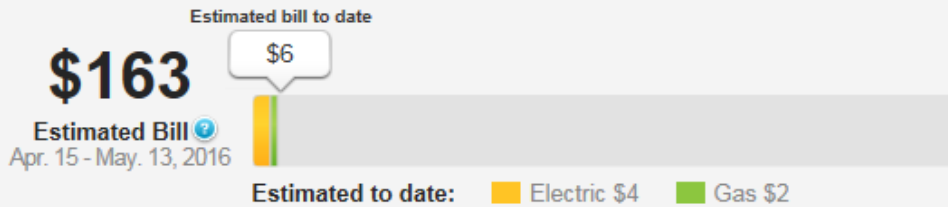


Friday I used **28 kWh** of electricity at a cost of **\$4.18**  
 Yesterday I used **.08 MCF** of natural gas at a cost of **\$0.80**

## My Report

Last meter read:  
 Electricity: Apr. 16, 2016, 12:00 AM, 3995 kWh  
 Gas: Apr. 16, 2016, 12:27 AM, 911 MCF

### How much will my next bill be?



**Estimated**  
 Electric: \$132  
 Gas: \$31  
**Total: \$163**

#### Your bill might increase

Your projected bill might be **\$5 higher** than your previous bill. Your bill might increase due to several factors, including the weather or a longer billing cycle. See reasons why.

[View My Bill](#)

MY REPORT MY BILL ENERGY INSIGHTS HOW TO SAVE ENVIRONMENT

## My energy use and cost over time

Click on a question below to see details on your energy use and cost for a certain period.

What is my energy use over the last week?

What is my energy use over the last year?

What is my energy use over the last day?

Electric Gas

Cost (\$)

Price (\$)

Use (kWh)

Power (kW)

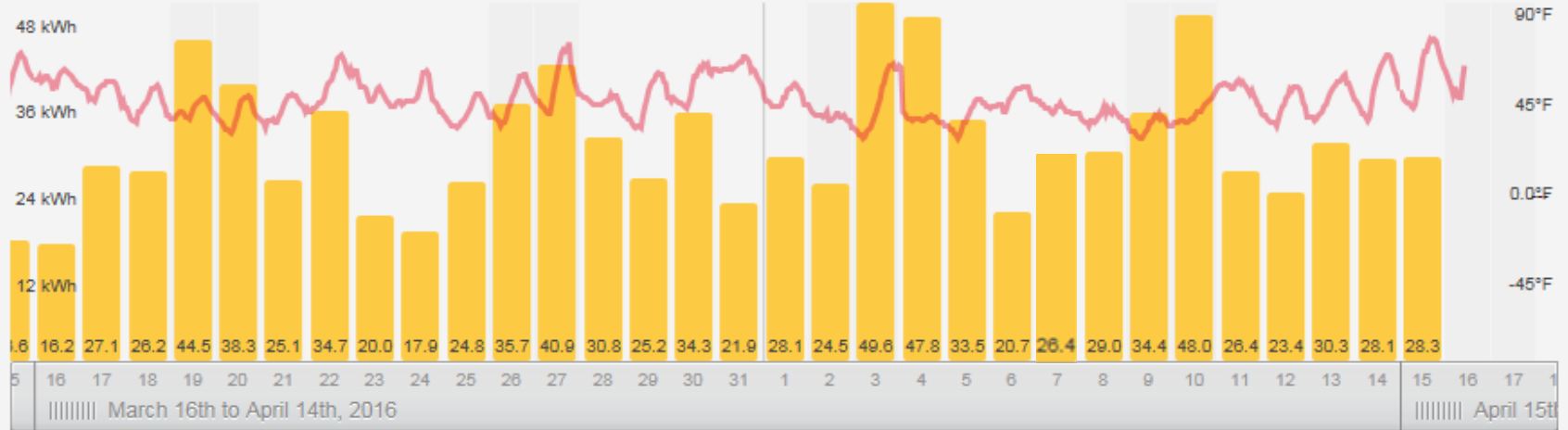
Day

Week

Bill

Year

Electricity Use (kWh) Temperature (°F)



◀ 2015

Jan-16

Feb-15

Mar-15

Apr-14

May-13

2016

April 2016



# Energy Use Details – Cost by Time

## My electricity cost by time

Current Use Previous Use

Compare your costs for each time period to see if you pay more for your electricity use during particular times of day. Current use refers to the current billing period and previous use reflects your previous billing period. Knowing how you are using electricity at various times of day can help you to better understand and manage your use overall.



|                           |            |
|---------------------------|------------|
| > Morning<br>6am - 11am   | \$0.57     |
| > Afternoon<br>11am - 7pm | \$0.36     |
| > Evening<br>7pm - 11pm   | \$0.93     |
| > Overnight<br>11pm - 6am | \$1        |
| > Always On               | \$0.84     |
| <b>Total</b>              | <b>\$4</b> |

Morning 6am - 11am

**\$0.57**<sup>Cost</sup>

Closing blinds or curtains in east-facing windows in the morning can substantially decrease your energy use for cooling.



MY REPORT

MY BILL

ENERGY INSIGHTS

HOW TO SAVE

ENVIRONMENT

## What if I make small changes in how I use electricity?

When and how much electricity you use determines your costs. Explore how much you could save by switching to a new rate plan, reducing use, or shifting your use from on-peak to off-peak hours.

10%



Reduce use

0%



Shift use

|                | Rate plan                  | Monthly cost | Result of changes |
|----------------|----------------------------|--------------|-------------------|
| <b>CURRENT</b> | 1 Residential Service 1000 | \$129        | \$116             |
|                | 2 Residential Service 1005 | \$117        | \$108             |

**\$13 less/month**

You might save money by changing to a lower-cost rate plan. To change your rate plan, please call Consumers Energy at 888-862-2199.

# How are customers saving energy?

*“Detailed information (by the hour) helped figure out what in my house was using so much energy.”*

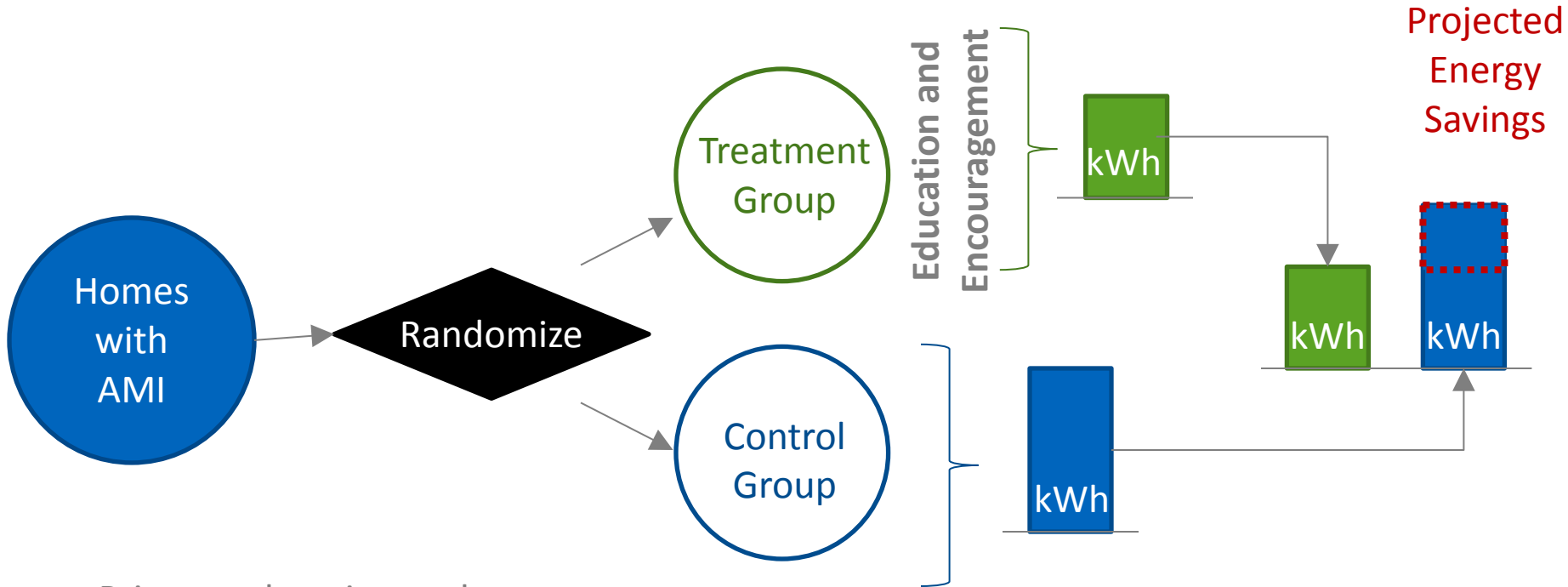
*“I like the ability to compare expenses day to day, or month to month. I also really like the feature that shows the amount of energy usage by hour.”*

*“It helps to track energy use so I can try to determine where our household can get better.”*

*“I like to know how I stack up against the general or similar homes. Such as, if the average electric consumption is \$80, I have something to compare my efforts to.”*

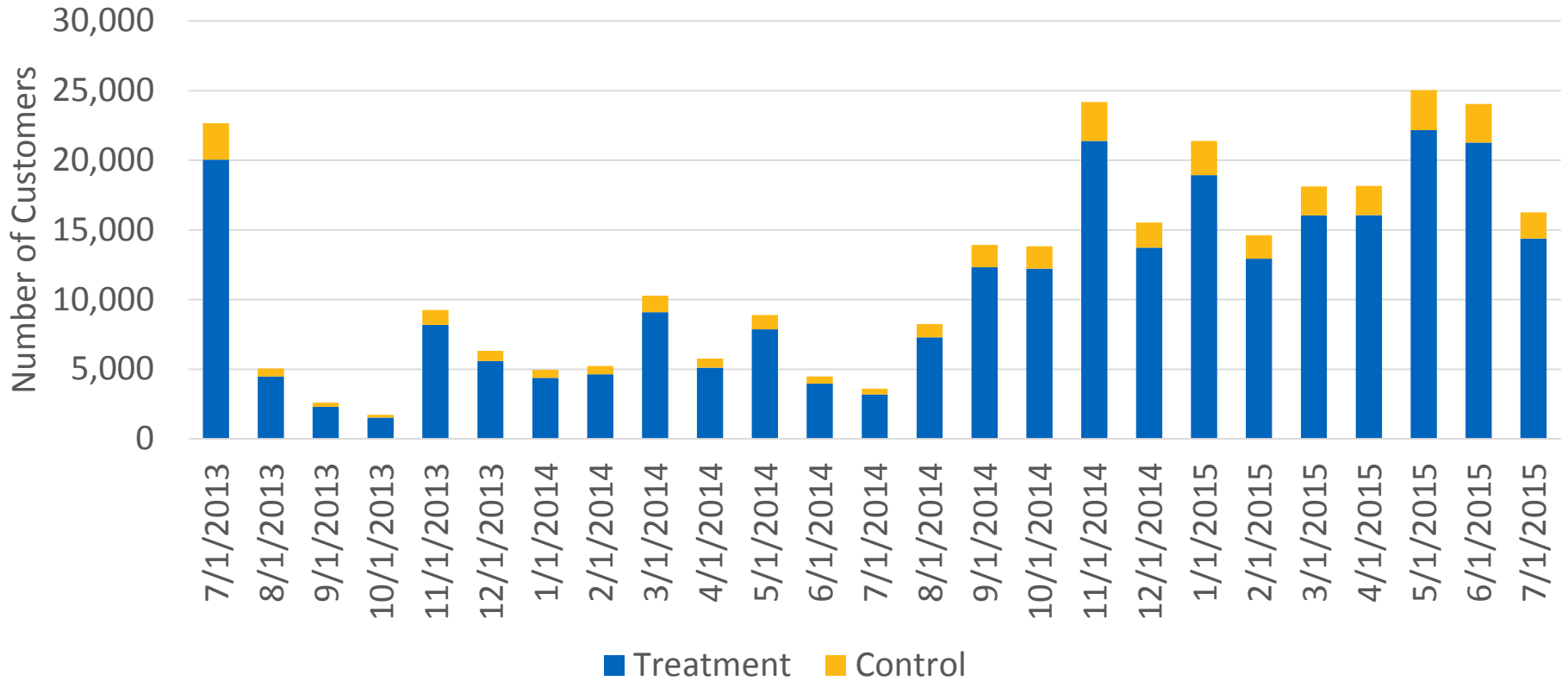


- Randomized Control Group Design



Prior to education and encouragement, treatment and control groups use energy similarly.

# Portal Encouragement Deployment





## • Savings Estimate

- Similar to other behavioral savings programs, proposed deemed savings are calculated as a percentage of baseline consumption
- Claimed savings =

Deemed savings percentage \* Control group usage

| Control Customer Post-Usage (kWh) |            | Savings per Customer (kWh)* |            | Savings Percentage |
|-----------------------------------|------------|-----------------------------|------------|--------------------|
| Daily                             | Annualized | Daily                       | Annualized |                    |
| 21.8                              | 7,973      | 0.20                        | 73.4       | 0.92%              |



# Smart Energy Web Portal - Energy Use Details

## Questions ?



# Appendix

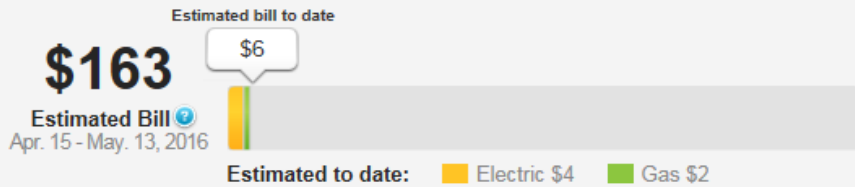
1. Following slides for use if time permits





# My Report – Current Energy Use

## How much will my next bill be?



Estimated  
Electric: \$132  
Gas: \$31  
Total: \$163

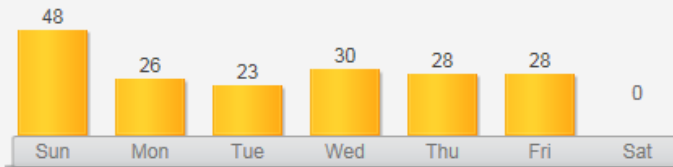
### Your bill might increase

Your projected bill might be **\$5 higher** than your previous bill. Your bill might increase due to several factors, including the weather or a longer billing cycle. See reasons why.

[View My Bill](#)

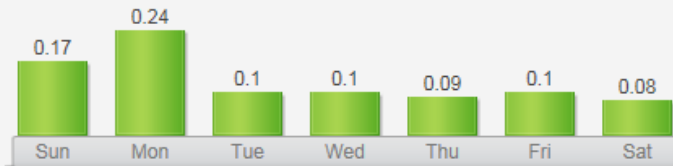
## What is my energy use?

**28 kWh**  
Use To Date  
Apr. 15 - Apr. 16, 2016



Electricity Use (kWh): Last 7 Days

**0.18 MCF**  
Use To Date  
Apr. 15 - Apr. 16, 2016



Gas Use (MCF): Last 7 Days

### Electricity use

You are projected to use **106 kWh more electricity** compared to last month.

### Gas use

You are projected to use **0.1 MCF less gas** compared to last month.

[View Energy Insights](#)



# My Report – Compare Use to Other Homes

## How does my home compare to similar homes in my area?

Electric  Gas

Your energy use and cost compared with similar homes in your area for the last month. [?](#)

### My gas use compared

Efficient  11 MCF

**My Home**  **3 MCF**

Average  17 MCF

### My gas costs compared

Efficient  \$ 69

**My Home**  **\$ 28**

Average  \$ 107



MY REPORT

MY BILL

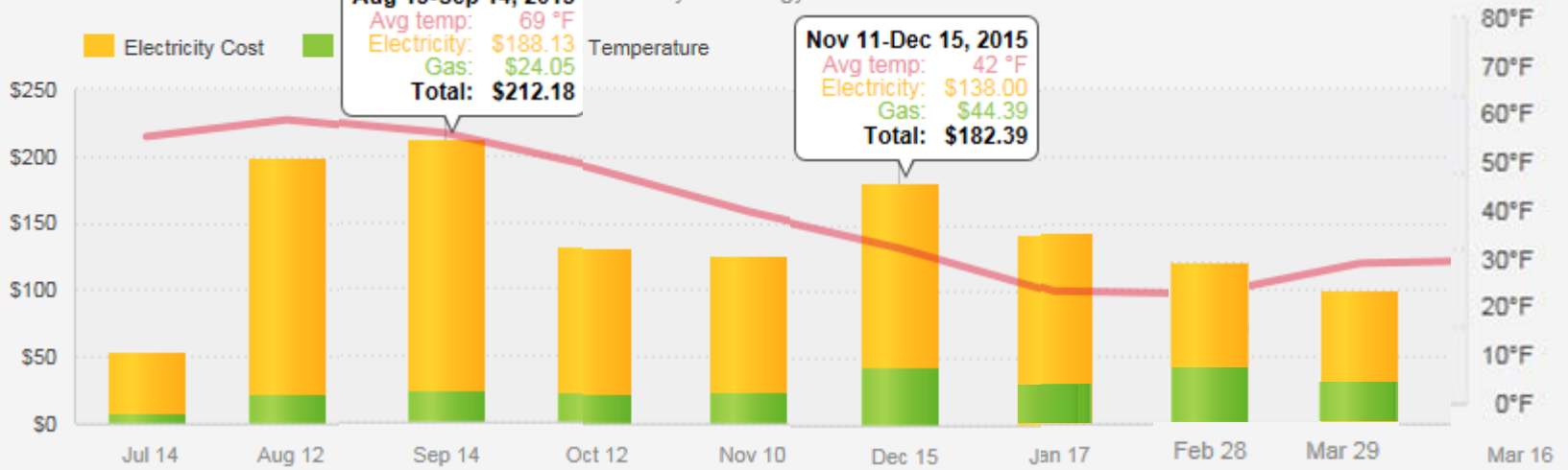
ENERGY INSIGHTS

HOW TO SAVE

ENVIRONMENT

## How does my bill compare?

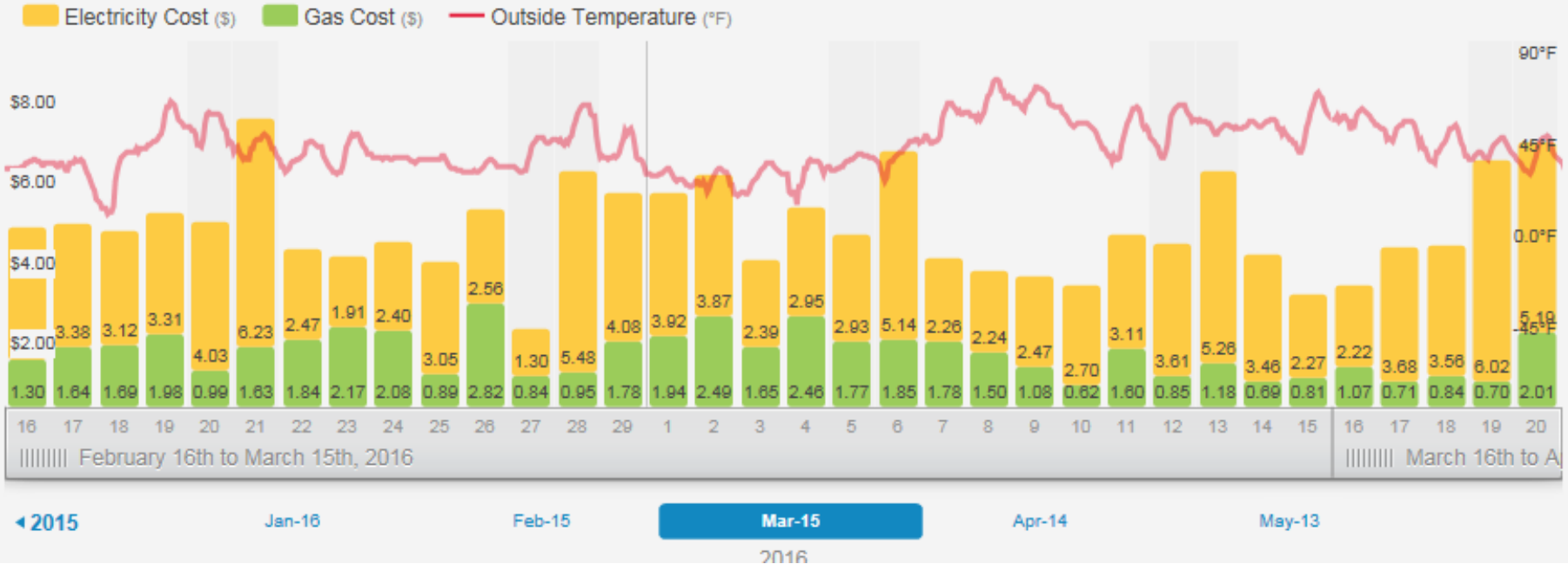
Click or hover on a month in the chart to see details on your energy costs.





## What is my daily energy cost for the current month?

Your energy cost for each day in the current month is shown in the chart below. Drag the chart from side to side to view previous days.



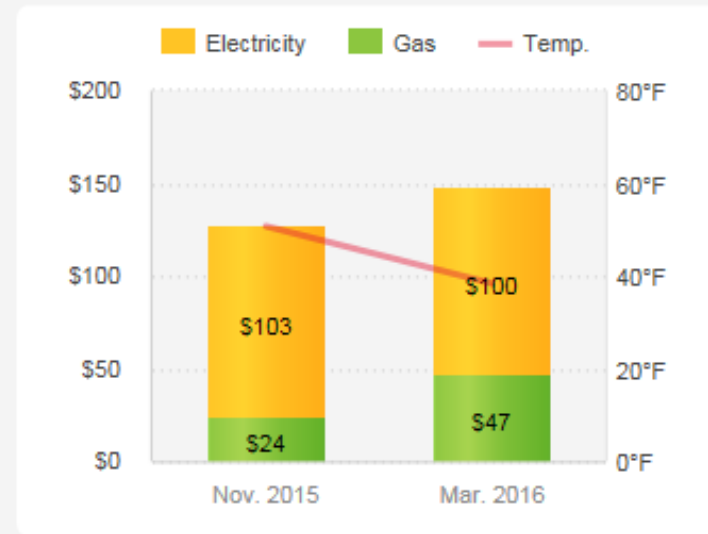


# Energy Use Details – Compare Costs

## Why do my energy costs change?

The table below shows possible reasons why your energy costs might change over time. Use the drop down menu to select bills to compare. Note that these are only estimations and may not include all fees. Please refer to your actual bill for actual costs with a detailed breakdown. [?](#)

|                             | Nov 2015           | Mar 2016           | Bill Impact  |
|-----------------------------|--------------------|--------------------|--------------|
| <b>Electricity</b>          | <b>\$103</b>       | <b>\$100</b>       | <b>-\$2</b>  |
| Price (avg. \$/kWh)         | \$0.14             | \$0.15             | +\$3         |
| Bill Period (days)          | 29                 | 29                 | \$0          |
| Energy use (avg. daily kWh) | 25                 | 24                 | -\$5         |
| Weather (avg. monthly °F)   | 51                 | 38                 | \$0          |
| Billing period              | Oct 13-Nov 10 2015 | Feb 17-Mar 16 2016 |              |
| <b>Gas</b>                  | <b>\$24</b>        | <b>\$47</b>        | <b>+\$23</b> |
| Price (avg. \$/MCF)         | \$11.63            | \$8.47             | -\$6         |
| Bill Period (days)          | 29                 | 29                 | \$0          |
| Energy use (avg. daily MCF) | 0                  | 0                  | +\$29        |
| Weather (avg. monthly °F)   | 51                 | 39                 | \$0          |
| Billing period              | Oct 13-Nov 10 2015 | Feb 17-Mar 16 2016 |              |



My energy costs increased by \$21



MY REPORT

MY BILL

ENERGY INSIGHTS

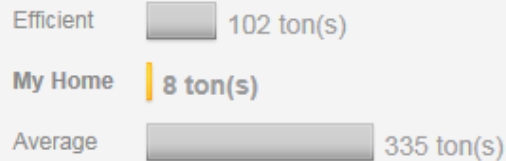
HOW TO SAVE

ENVIRONMENT

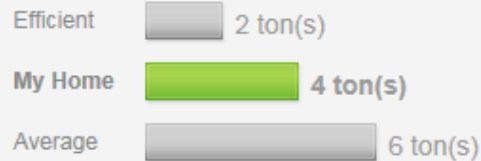
## What is my carbon impact and how do I compare to similar homes?

Your neighborhood comparisons are based on other homes in your ZIP code. Efficient homes are those that are in the 5th to 20th percentile of efficiency. Average refers to all homes in your ZIP code. [?](#)

### My electric impact compared



### My gas impact compared



You are generating the equivalent total of **11 ton(s)** of CO<sub>2</sub> in the last year. By reviewing the tips and suggestions that this tool provides, you have an excellent opportunity to decrease your CO<sub>2</sub> impact.



### What is 'carbon impact' and why should you care?

Carbon impact describes the carbon dioxide (CO<sub>2</sub>) emissions resulting from your energy use. Electricity generation (from certain power plants) or natural gas use produce CO<sub>2</sub>, so reducing your energy use generally reduces your carbon impact on the environment.



# Green Button Download



### Download My Data

Export All:

Start Date: 4/1/2016

End Date:

File Type: CSV

**Export**

**Choose a date:**

April 2016

| Su | Mo | Tu | We | Th | Fr | Sa |
|----|----|----|----|----|----|----|
| 27 | 28 | 29 | 30 | 31 | 1  | 2  |
| 3  | 4  | 5  | 6  | 7  | 8  | 9  |
| 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| 17 | 18 | 19 | 20 | 21 | 22 | 23 |

Your Green Button data might contain estimated information to help you make better electricity use decisions. This data might not match your utility bill for payment purposes.

## Hour by Hour print of electric use

|                | A                                       | B          | C        | D         | E    | F      | G     | H |
|----------------|---|------------|----------|-----------|------|--------|-------|---|
| Name           | CUSTOMER NAME                           |            |          |           |      |        |       |   |
| Address        | 1234 MAIN AVE, KALAMAZOO, MI 49008-2730 |            |          |           |      |        |       |   |
| Account Number | 1234247054                              |            |          |           |      |        |       |   |
| Type           | Date                                    | Start Time | End Time | Usage     | Unit | Cost   | Notes |   |
| Electric Usage | 3/1/2016                                | 0:00       | 1:00     | 0.629 kWh |      | \$0.09 |       |   |
| Electric Usage | 3/1/2016                                | 1:00       | 2:00     | 0.647 kWh |      | \$0.09 |       |   |
| Electric Usage | 3/1/2016                                | 2:00       | 3:00     | 0.585 kWh |      | \$0.08 |       |   |
| Electric Usage | 3/1/2016                                | 3:00       | 4:00     | 0.666 kWh |      | \$0.09 |       |   |
| Electric Usage | 3/1/2016                                | 4:00       | 5:00     | 0.607 kWh |      | \$0.09 |       |   |
| Electric Usage | 3/1/2016                                | 5:00       | 6:00     | 0.597 kWh |      | \$0.08 |       |   |
| Electric Usage | 3/1/2016                                | 6:00       | 7:00     | 0.943 kWh |      | \$0.13 |       |   |
| Electric Usage | 3/1/2016                                | 7:00       | 8:00     | 1.221 kWh |      | \$0.17 |       |   |
| Electric Usage | 3/1/2016                                | 8:00       | 9:00     | 1.009 kWh |      | \$0.14 |       |   |
| Electric Usage | 3/1/2016                                | 9:00       | 10:00    | 3.475 kWh |      | \$0.49 |       |   |
| Electric Usage | 3/1/2016                                | 10:00      | 11:00    | 1.863 kWh |      | \$0.26 |       |   |
| Electric Usage | 3/1/2016                                | 11:00      | 12:00    | 0.752 kWh |      | \$0.11 |       |   |
| Electric Usage | 3/1/2016                                | 12:00      | 13:00    | 0.778 kWh |      | \$0.11 |       |   |
| Electric Usage | 3/1/2016                                | 13:00      | 14:00    | 0.787 kWh |      | \$0.11 |       |   |
| Electric Usage | 3/1/2016                                | 14:00      | 15:00    | 0.809 kWh |      | \$0.11 |       |   |
| Electric Usage | 3/1/2016                                | 15:00      | 16:00    | 0.906 kWh |      | \$0.13 |       |   |
| Electric Usage | 3/1/2016                                | 16:00      | 17:00    | 1.538 kWh |      | \$0.22 |       |   |
| Electric Usage | 3/1/2016                                | 17:00      | 18:00    | 4.351 kWh |      | \$0.61 |       |   |
| Electric Usage | 3/1/2016                                | 18:00      | 19:00    | 1.444 kWh |      | \$0.20 |       |   |
| Electric Usage | 3/1/2016                                | 19:00      | 20:00    | 1.358 kWh |      | \$0.19 |       |   |
| Electric Usage | 3/1/2016                                | 20:00      | 21:00    | 1.033 kWh |      | \$0.15 |       |   |
| Electric Usage | 3/1/2016                                | 21:00      | 22:00    | 0.669 kWh |      | \$0.09 |       |   |
| Electric Usage | 3/1/2016                                | 22:00      | 23:00    | 0.633 kWh |      | \$0.09 |       |   |
| Electric Usage | 3/1/2016                                | 23:00      | 0:00     | 0.567 kWh |      | \$0.08 |       |   |
| Electric Usage | 3/2/2016                                | 0:00       | 1:00     | 0.689 kWh |      | \$0.10 |       |   |