

THE RELIABILITY OF BEHAVIORAL DEMAND RESPONSE

2017 IEPEC CONFERENCE
BALTIMORE, MARYLAND

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ASSOCIATE DIRECTOR



NAVIGANT

WHAT IS BEHAVIORAL DEMAND RESPONSE (BDR)?

Figure 1. BDR Program Design

DTE Energy
One Energy Plaza, 1280 W.C.S.B., Detroit, MI 48226-1221

-MONTH XX, XXXX-

-FULLNAME-
-ADDRESS LINE 1-
-ADDRESS LINE 2-
-ADDRESS LINE 3-

Join your community on peak days to save electricity this summer

During the summer months, electricity costs can rise right along with the thermostat. You've been selected to participate in our peak days program, giving you the opportunity to join your neighbors and save electricity on a few of the highest demand days of the year.

Joining your community on peak days is a breeze. We will notify you when peak days are approaching and let you know afterwards how much electricity you used. To lower your use, you can take small actions like turning up the temperature on your thermostat a few degrees or delaying the use of large appliances.

If you have questions or would like to find more ways to save, please call us at **877.883.4119** or visit dteenergy.com/saveenergy.

Flip this letter over for your peak day savings plan. >>

Saving on peak days is easy. Participate this summer with these simple steps:

Before:
Look out for notifications
We'll notify you via phone or email to let you know about the upcoming peak day.

During:
Lower your use
Take simple steps, like those on the back of this report, to lower your energy use during the peak day.

After:
See how you did
A few days later, we'll show you how much electricity you used.

save on peak days
It's optional, but each small step you take

Plan an outing to stay cool
One of the easiest and most effective ways to reduce your home's electricity use during peak hours is to not be home.

Use fans and reduce air conditioning
During peak days, when electricity demand is high, the need to stay cool tends to increase as well. Small actions during peak hours can have big impacts.

Put off household chores
Appliances can account for up to 25% of total energy use in a typical household and can unintentionally heat up your home.

To help your community save energy on peak days, try steps like running the dishwasher after peak hours or doing laundry on the weekends. You can also talk with your household to make plans for peak days and identify what other appliance-related chores you can postpone.

Saving on peak days is easy. Participate this summer with these simple steps:

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Take simple steps, like those on the back of this report, to lower your energy use during the peak day.

After:
See how you did
A few days later, we'll show you how much electricity you used.

>> **To find even more ways to save, visit dteenergy.com/saveenergy.**

dteenergy.com/saveenergy | 877.883.4119 | peakdays@dteenergy.com

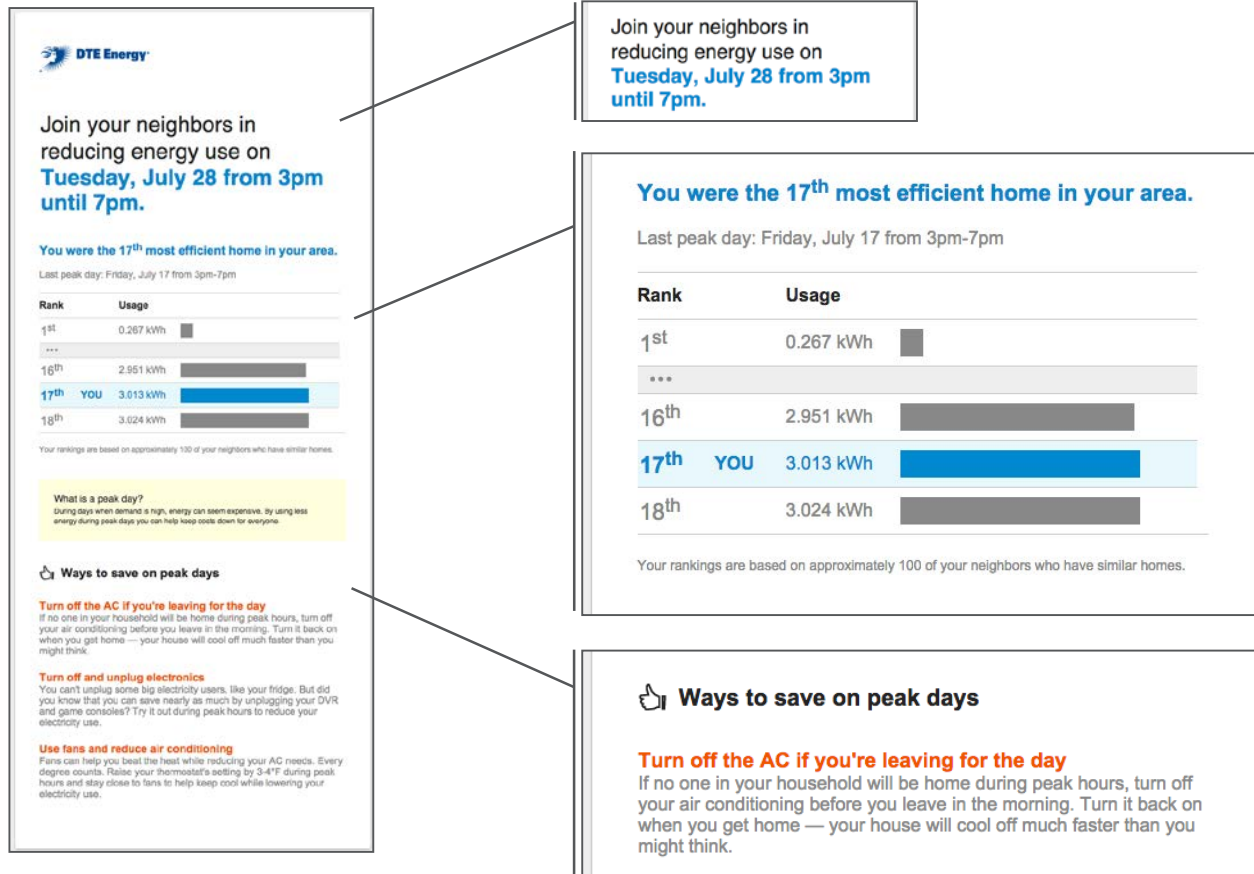
DTE 2015.06.02.04.0117P.000004

DTE Energy

Source: DTE Energy

WHAT IS BDR?

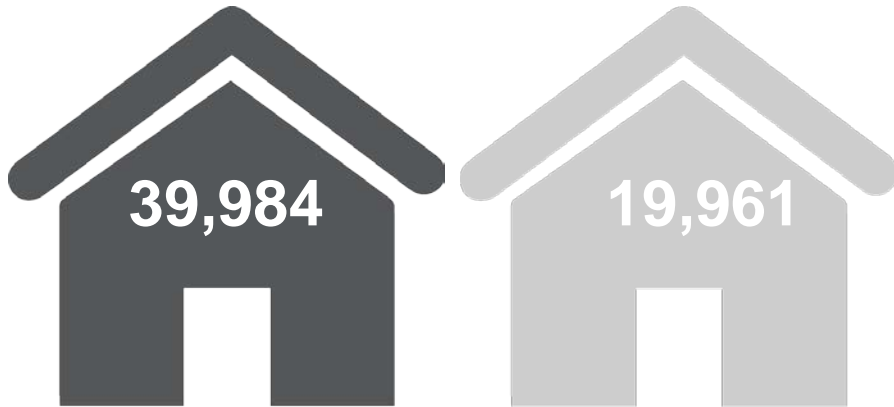
Figure 2. BDR Communications



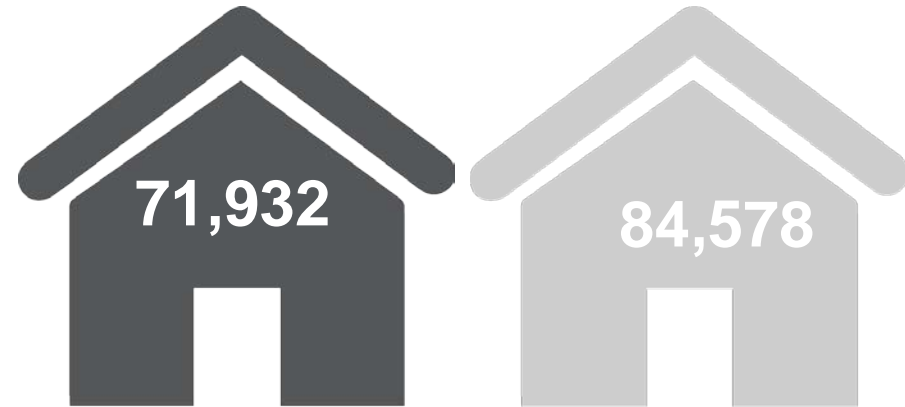
Source: DTE Energy

DTE ENERGY'S BDR PILOT

2015

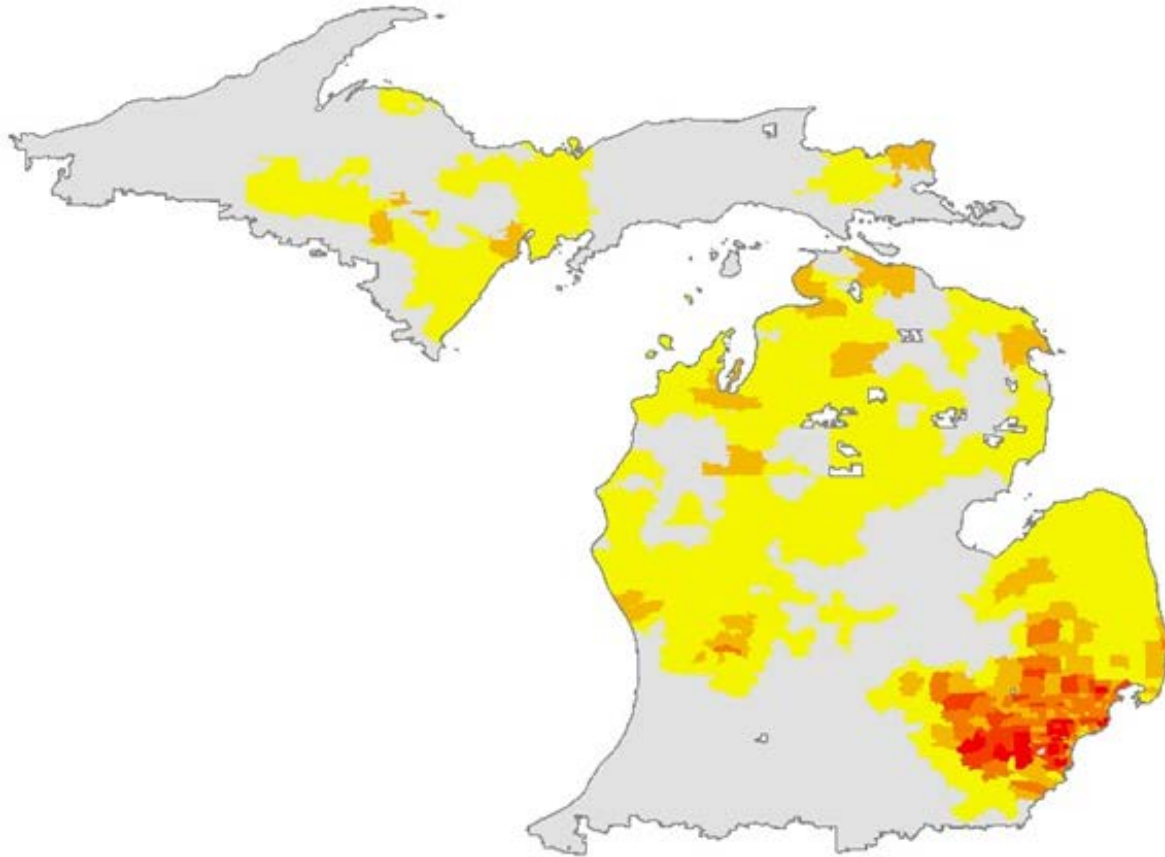


2016



DTE ENERGY'S HOME ENERGY REPORT (HER) PROGRAM

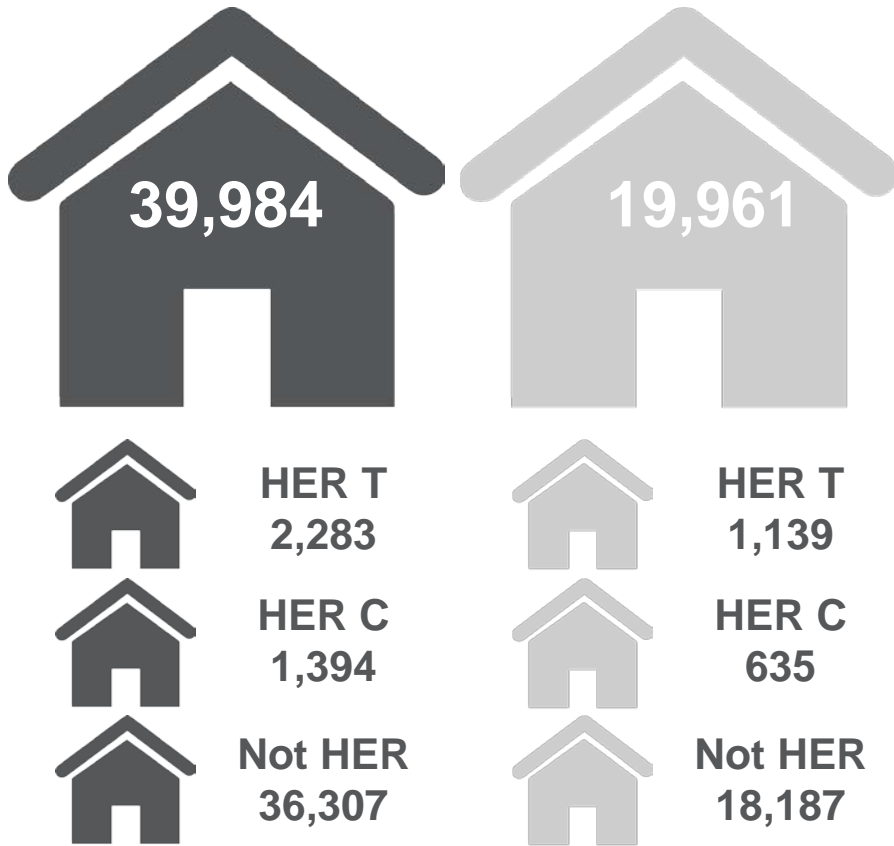
Figure 3. Penetration of DTE Energy's HER Program (2016)



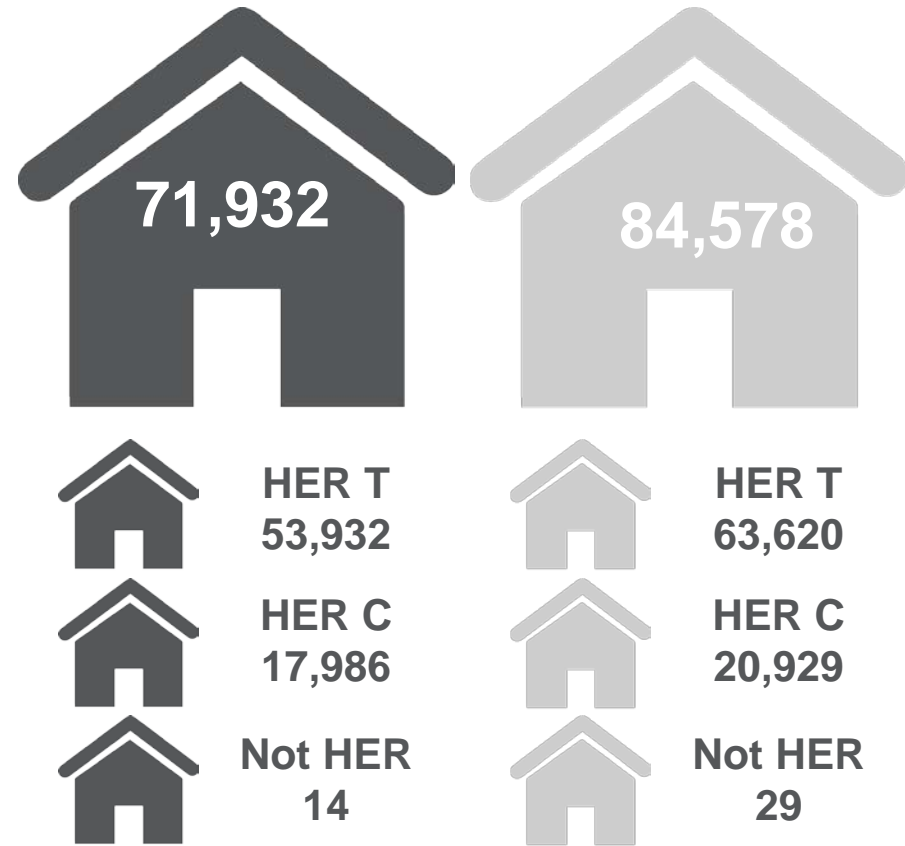
Source: Navigant analysis of DTE Energy program tracking data

DTE ENERGY'S BDR PILOT

2015

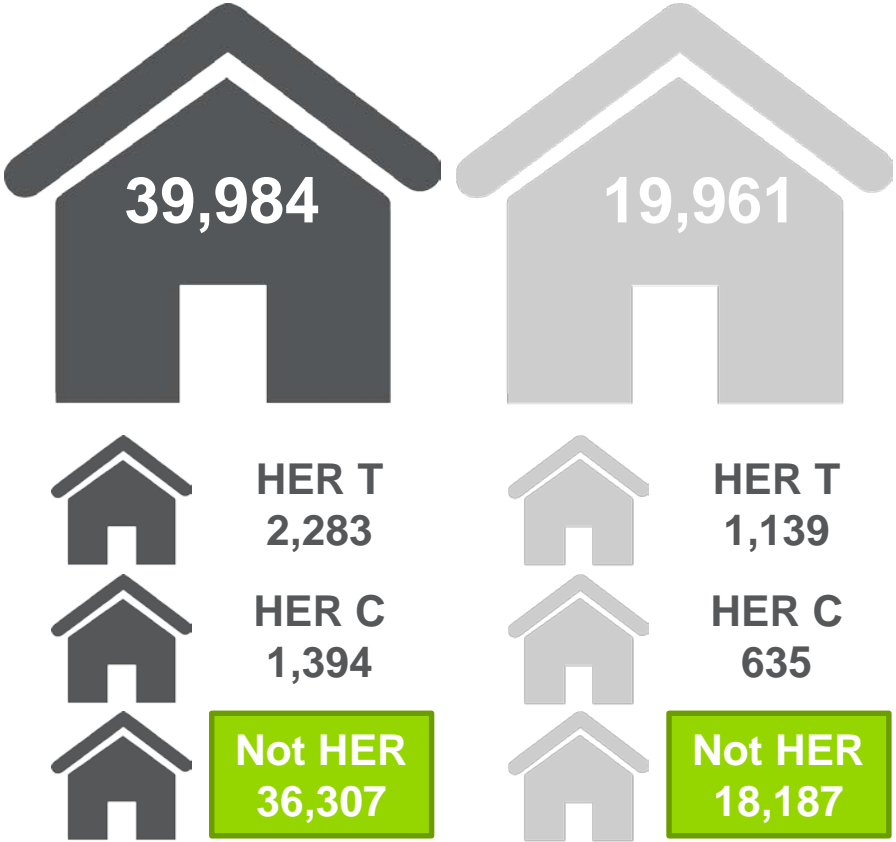


2016

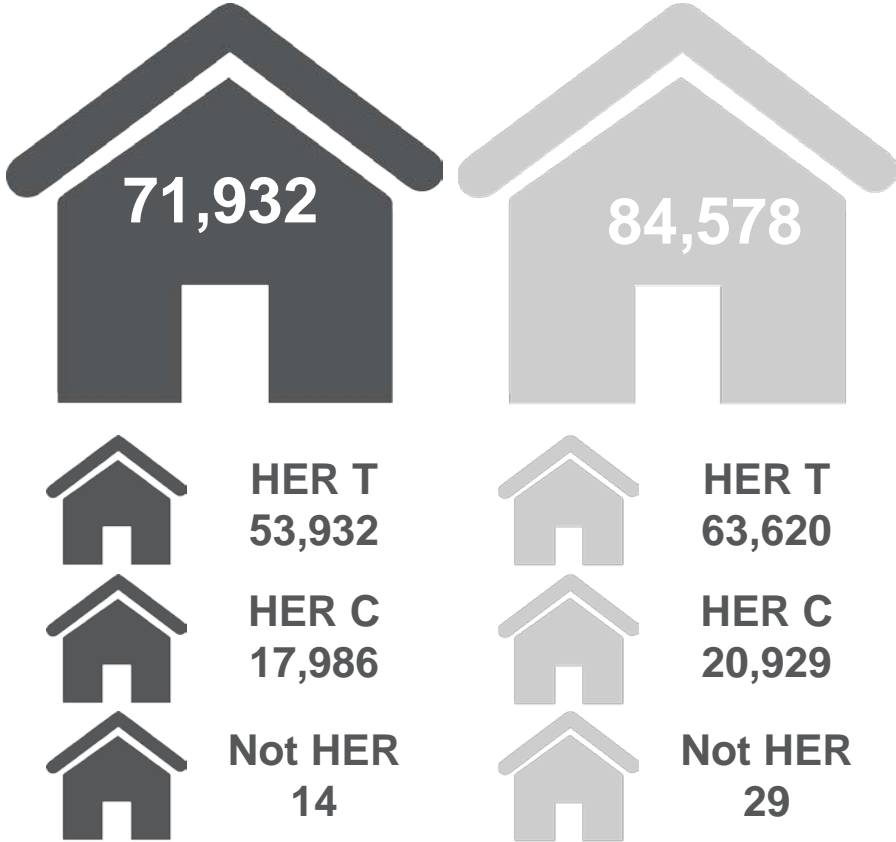


DTE ENERGY'S BDR PILOT

2015

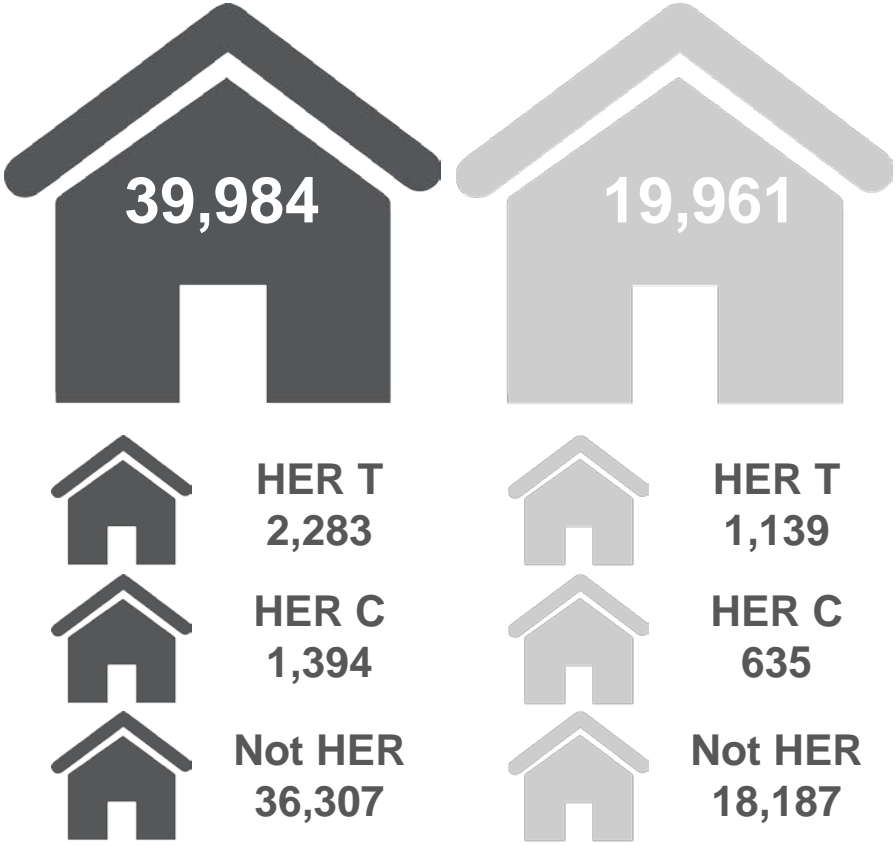


2016

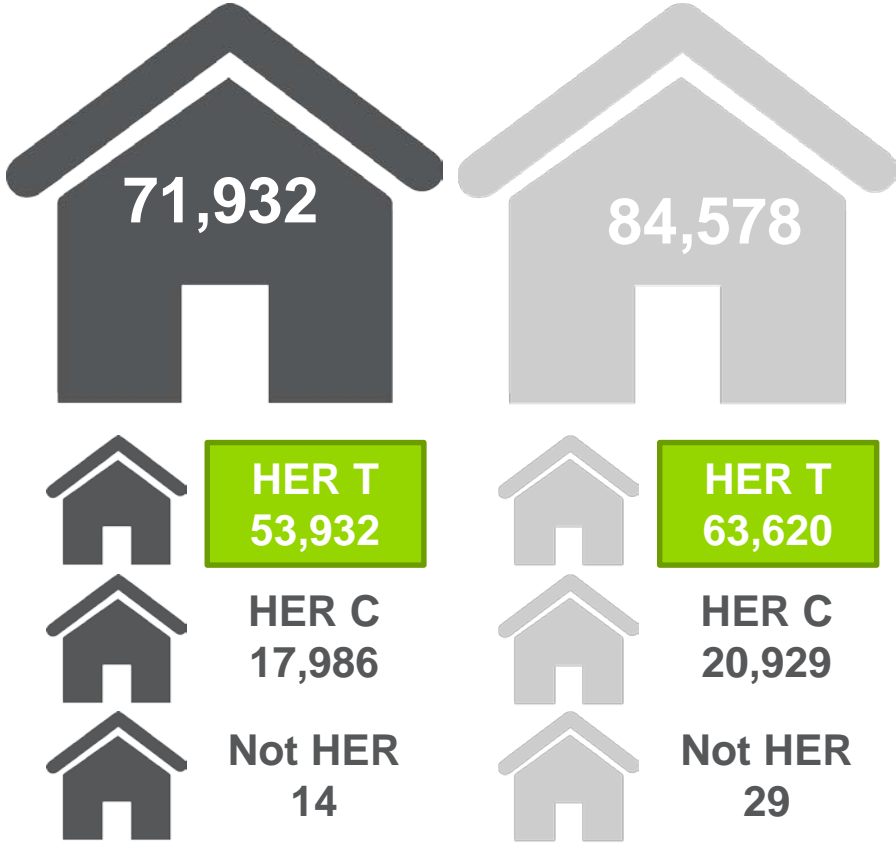


DTE ENERGY'S BDR PILOT

2015



2016



RESEARCH QUESTIONS

1

What are BDR demand savings?

2

Do BDR demand savings change year-over-year?

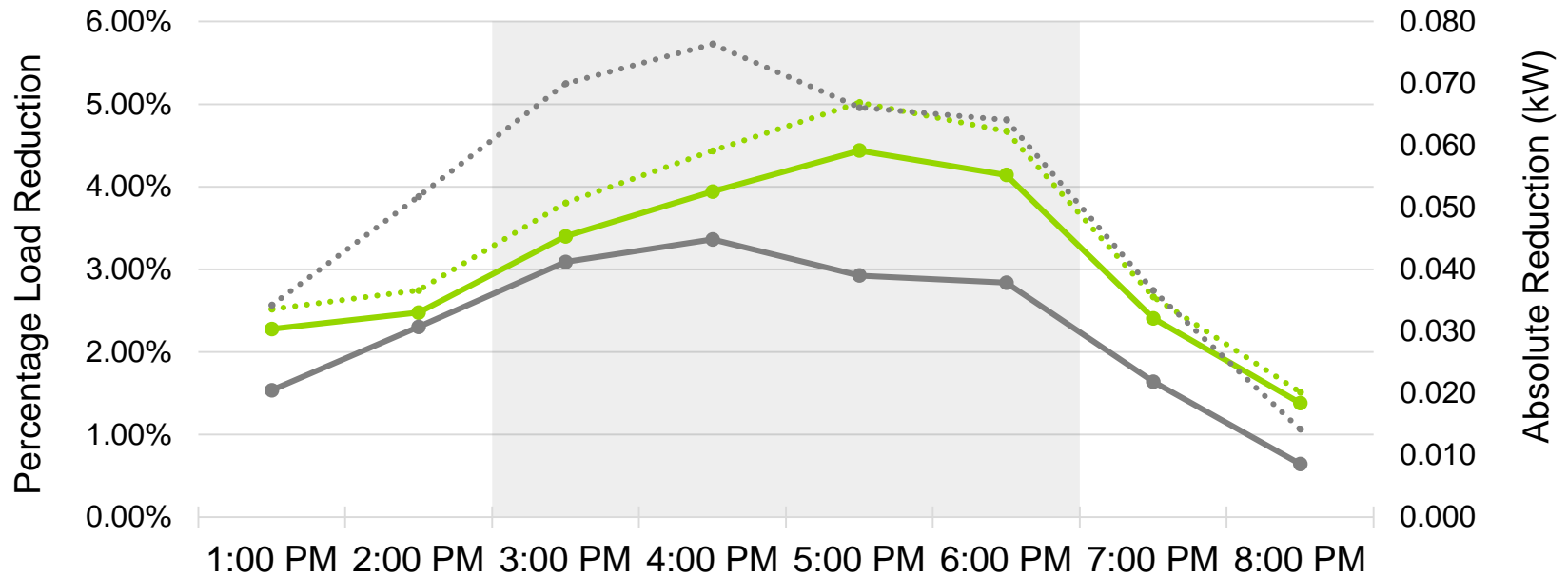
3

What are BDR plus HER demand savings?



1. WHAT ARE BDR DEMAND SAVINGS?

Figure 4. BDR Demand Savings



- Event Hours
- 2015 Cohort % Load Reduction in 2015
- 2016 Non-HER Cohort % Load Reduction in 2016
- 2015 Cohort Absolute Load Reduction in 2015
- 2016 Non-HER Cohort Absolute Load Reduction in 2016

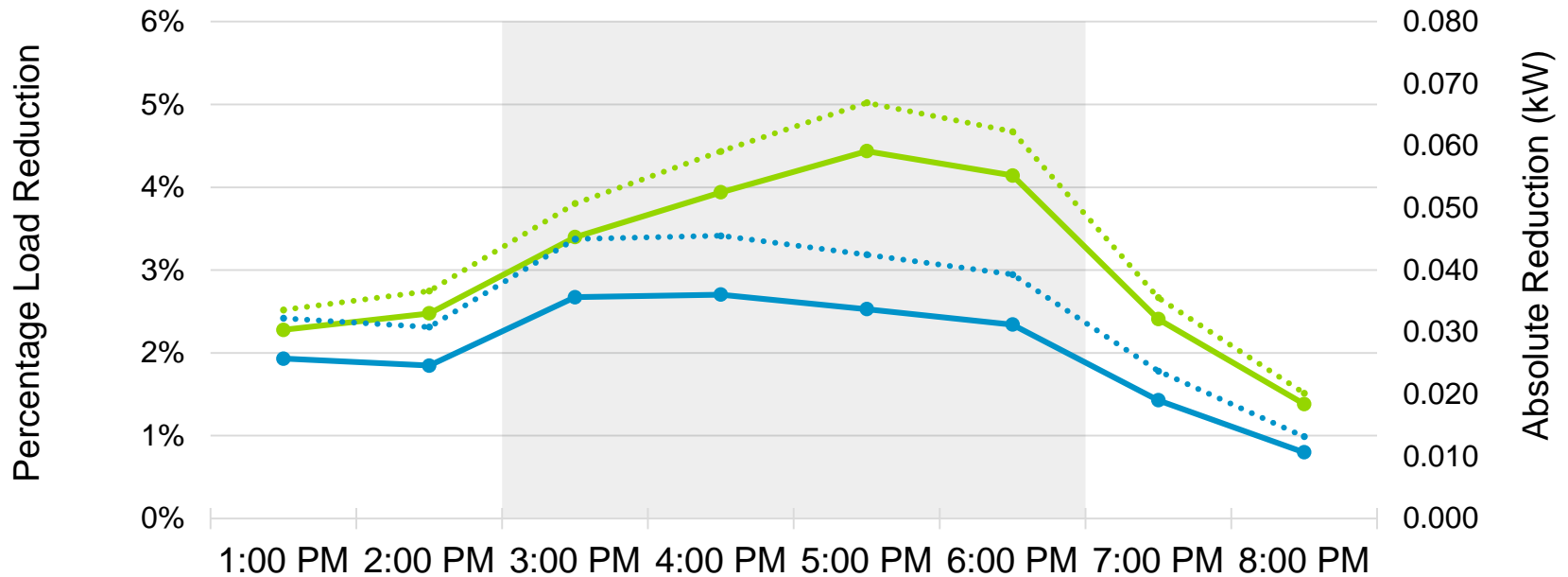
0.06 kW or 4.0%

0.07 kW or 3.1%

Source: Navigant analysis

2. DO BDR SAVINGS CHANGE YEAR-OVER-YEAR?

Figure 5. Year-over-Year BDR Demand Savings



- Event Hours
- 2015 Cohort % Load Reduction in 2015
- 2015 Cohort % Load Reduction in 2016
- 2015 Cohort Absolute Load Reduction in 2015
- 2015 Cohort Absolute Load Reduction in 2016

0.06 kW or 4.0%

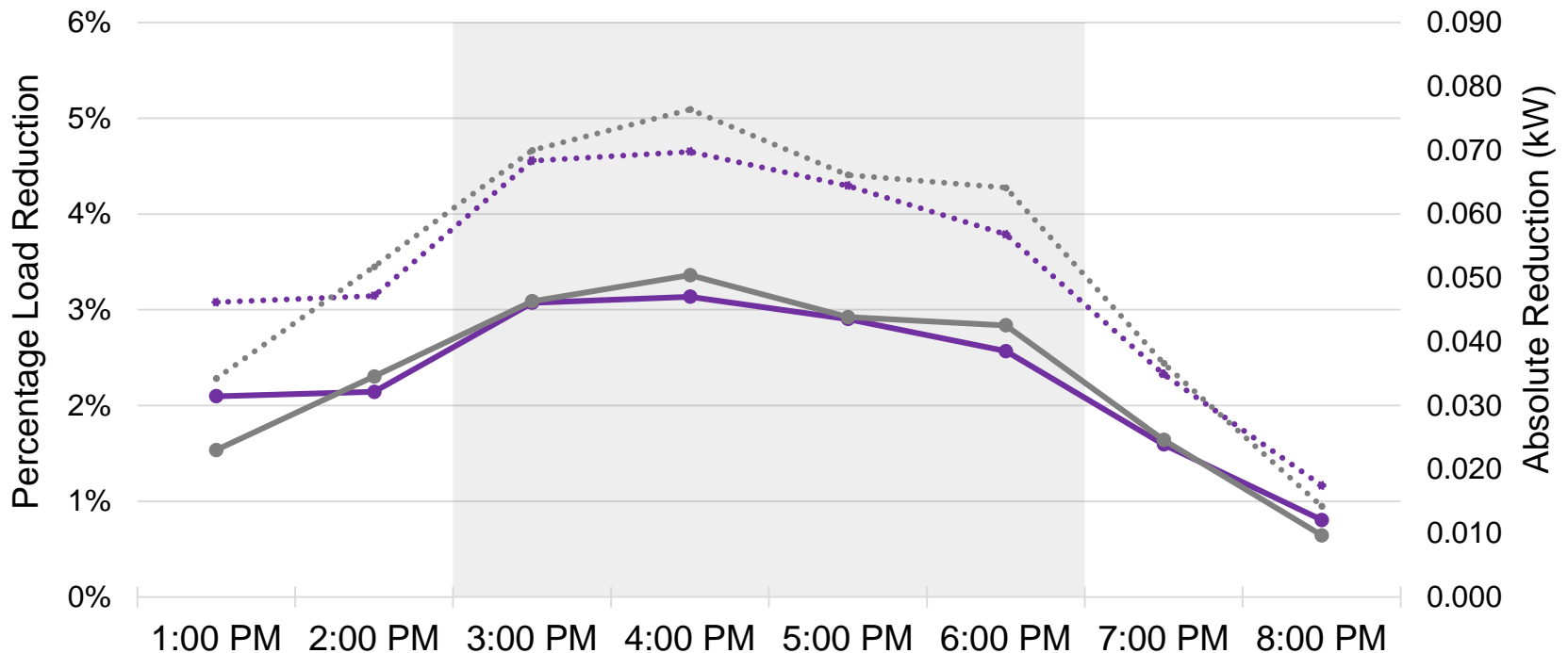
0.04 kW or 2.6%

Source: Navigant analysis



3. WHAT ARE BDR PLUS HER DEMAND RESPONSE SAVINGS?

Figure 6. BDR and BDR+HER Demand Savings



- Event Hours
- 2016 HER Cohort % Load Reduction
- 2016 Non-HER Cohort % Load Reduction
- 2016 HER Cohort Absolute Load Reduction
- 2016 Non-HER Cohort Absolute Load Reduction

0.06 kW or 2.9%

0.07 kW or 3.1%

Source: Navigant analysis

CONCLUSIONS

1

What are BDR demand savings?

2

Do BDR demand savings change year-over-year?

3

What are BDR plus HER demand savings?



CONCLUSIONS

1

What are BDR demand savings?

Average BDR demand savings of 0.05 kW per participant. Though small, BDR can achieve sizeable reductions when aggregated over a large number of customers – at a relatively low cost



CONCLUSIONS

2

**Do BDR demand savings
change year-over-year?**

**BDR demand savings in the second year,
though smaller (0.06 to 0.04 kW, or 4.0% to
2.6%)**



CONCLUSIONS

3

What are BDR plus HER demand savings?

BDR demand savings is slightly lower for HER recipients (0.06 kW to 0.07 kW, or 2.9% versus 3.1%) though this difference is not statistically significant



CONTACTS

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