




## Overview of Duke Energy Ohio's Experience with Time Differentiated Rates

May 24, 2012

# All Customers with a Smart Meter have Access to Daily Usage Details


**Online Services**

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[Doe Family](#)
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[Add an Account](#)

**Account Number**  
12345-6789

**Address**  
125 Anonymity Lane

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[Compare Bills](#)

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[Learn about Energy](#)

**Moving**  
[Start Service](#)  
[Stop Service](#)

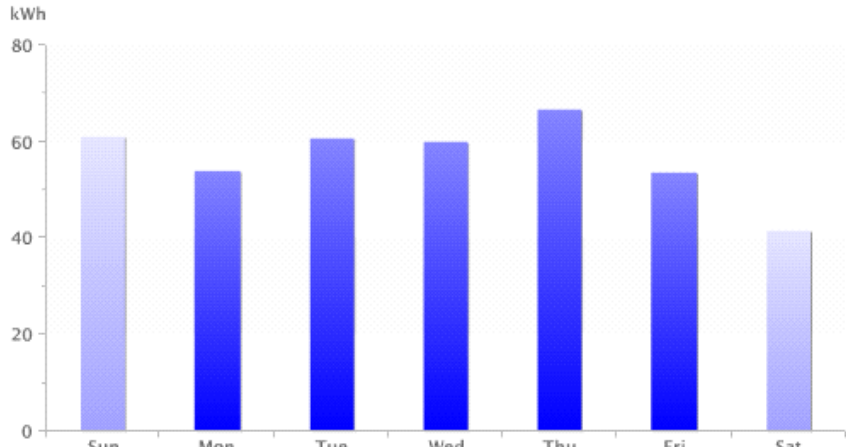
**Daily Energy Usage**  
To change Meter, Graph, or Date, make new selections from the options below.

**Meter:** Electric - 100264032 125 Anonymity Lane  
**Graph:** Average Energy by Day-of-Week **Date:** 12/12/2011

**Period:** ☐ Billing Cycle ☐ Month ☒ Week [Export Data](#)

Average Energy by Day-of-Week


■ Total



Day	kWh
Sun	60
Mon	55
Tue	60
Wed	60
Thu	65
Fri	55
Sat	40

Look for trends or irregularities. Are your weekdays pretty even or does one stand out? How about

# All Customers with a Smart Meter Have Access to Hourly Usage Details


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[View Bill](#)

**Billing & Payment**

[Payment Activity](#)  
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**Meter Reading**

[Submit Meter Reading](#)  
[How to Read Your Meter](#)

**Daily Energy Usage**

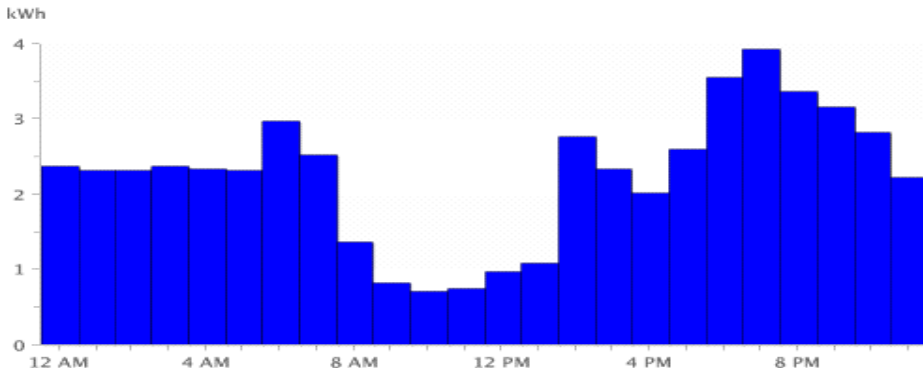
To change Meter, Graph, or Date, make new selections from the options below.

**Meter:** Electric - 100264032 125 Anonymity Lane  
**Graph:** Hourly Energy Usage **Date:** 12/12/2011

**Period:** ☐ Week ☒ Day [Export Data](#)

**Hourly Energy Usage**

■ Total

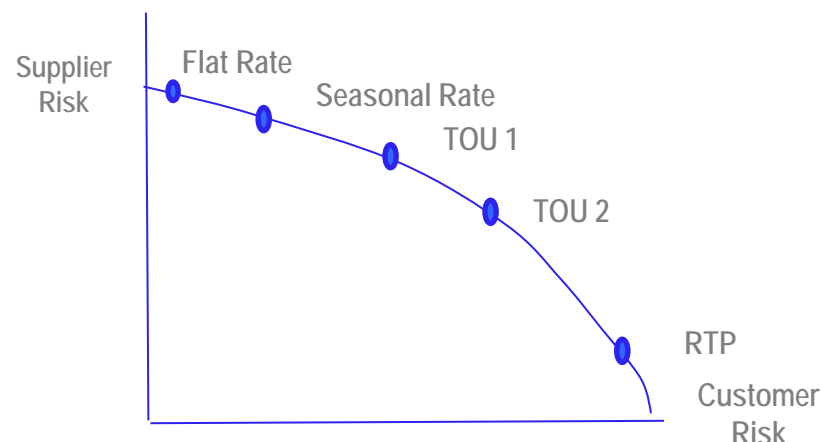


Use your daily charts first to identify the days with the highest energy usage, then continue to these hourly charts to identify key hours of energy usage.

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**Duke Energy embarked on a deliberate path of testing multiple Time Based Rates (TBRs) in an effort to answer a number of questions key to developing future products that are scalable and sustainable**

- What level of risk will customers accept
- What happens to customer bills
- What rate designs will generate widespread adoption of TBRs
- What are the residential TBR options that work for customers and can be considered cost justified
- What information tools are needed by customers and how should they be delivered
- What are the impacts of TBRs on customers' peak and total usage
- What impact do TBRs have on customer service and customer care



# 2010 Pilots



# Simultaneously with moving to time-differentiated rates, customers also need to become comfortable with a redesigned bill format

We value our relationship with you. It allows us to better understand your needs. And it helps us develop new and improved services that make your life easier and more energy efficient. You'll find one such improvement very soon.

## Welcome to your new, easy-to-use electric bill.

Regardless of whether you view your Duke Energy bill on paper or on a computer screen, you may notice something different – your bill has a brand new look that makes it easier to understand. Here's a glimpse of what's new:

- 1 **Usage and Analytics Comparison Table**  
See your energy use for the last four months, and compare your total and average usage to the same month last year.
- 2 **Online Energy Portal**  
Expanded summary of news and product offers available on your Duke Energy Online Services portal. You can also use Online Services to view your detailed usage information and interactive analytic tools.
- 3 **Streamlined Payment Enclosure**  
The total amount you owe and payment stub. Simply pay your bill online, or detach and return the bottom stub with your payment.
- 4 **Detailed Customer Information**  
Your account number and billing information are all in one place.
- 5 **Easy-to-Read Itemized Charges**  
Detailed and easy-to-understand explanation of your monthly service charges.

Leslie Brown  
1234 Main Street  
Cincinnati, OH 12345-6789

4

Your Account Number: 0000159008  
Statement Date: June 24, 2011  
Due Date: July 16, 2011  
Total Amount Due: \$339.10

Service Period: May 25, 2011 – June 24, 2011

### Your Detailed Duke Energy Statement

Gain access to easy-to-use tools that can help you save money and energy by signing up for Online Services. Visit us at [www.duke-energy.com](http://www.duke-energy.com) to learn more.

**Electric Usage**

Electricity Usage	This Month	Same Month Last Yr
Total kWh	3,455	2,015
Days	30	27
Avg kWh per Day	78	134
Avg Cost per Day	\$30.08	\$36.11

Summary of What You Owe

Amount owed on your Previous Statement...\$230.16

Payments Received – thank you.....-230.16

Balance Forwarded.....0.00

Adjustments to Previous Periods.....0.00

Miscellaneous Charges.....0.00

Current Charges and Credits:

Electricity Usage 323.89

Peak Time Rebate -9.79

**Total Amount Due.....\$314.10**

Amount Due After July 16, 2011.....\$318.81

Please visit us at [www.duke-energy.com](http://www.duke-energy.com) for details on:

- New Products
- Rate Schedule and Tariff
- Personal Time of Use
- Home Energy Management Systems

Please direct inquiries to: 800-777-8888 or P.O. Box 1090, Charlotte, NC 28201-1090. You can also visit us online at: [www.duke-energy.com](http://www.duke-energy.com)

### Duke Energy Payment Enclosure

Your Account Number: 0000159008  
Total Amount Due: \$314.10  
Due Date: July 16, 2011

Leslie Brown  
PO Box 1234  
Cincinnati, OH 12345-6789

HeatShare Contribution: \$

PO Box 70516  
Charlotte, NC 28272-0516

Total Amount Enclosed: \$

400 00000321752 00001590085 00000000005 00000321756

Leslie Brown  
1234 Main Street  
Cincinnati, OH 12345-6789

Your Account Number: 0000159008  
Statement Date: June 24, 2011  
Due Date: July 16, 2011  
Total Amount Due: \$339.10

Description	Charge Amount
<b>Electric Charges</b>	<b>36.51</b>
Base	31.51
Large	7.13
Usage Charge (Spring)	38.64
Base	26.86
Large	6.08
Usage Charge (Summer)	32.94
Base	93.95
Large	21.26
Usage Charge (Summer)	115.21
Adjusted Component Rider	8.80
Economy Purchased Power Rider	7.70
Dedication Rider	2.20
Reliability Tracker	6.60
Cost Recovery Rider	5.50
Energy Revolving Loan Program Rider	1.75
Tax Rider	4.40
Transition Charge Rider	4.89
Price Fund Rider	13.75
Future Modernization Rider	3.85
Competitiveness Fund Rider	5.90
Efficiency Recovery Rate	13.20
Billing Expense – Electric Distribution	4.95
	323.89
	-9.79
<b>Total Charges</b>	<b>\$314.10</b>

## Duke Energy Ohio “Time Based Rate” Pilot Program Design for 2010

Pilot Project	Overview
<p><b>TD-AM (Time of Use)</b></p> <p><b>Less than 15 participants</b></p>	<p>2 Season “Time of Use” Rate:</p> <ul style="list-style-type: none"> <li>• Summer (June-Sept) and Winter (Oct-May) seasons</li> <li>• Both Seasons have three time blocks per day (Peak, Off-Peak and Shoulder)</li> <li>• Customers will also have the option to participate in Peak Time Rebate</li> <li>• Summer Peak to Off-Peak ratio of 3.39 :1</li> <li>• Winter Peak to Off-Peak ratio of 2.95 :1</li> </ul>
<p><b>PTR (Peak Time Rebate)</b></p> <p><b>Less than 40 opt-in participants</b></p>	<p>Summer Season Demand Response Program</p> <ul style="list-style-type: none"> <li>• Up to 10 (8hr) Peak Rebate Events called from June-Sept on hot weekdays when high-demand is anticipated</li> <li>• Customers will be notified a day ahead of these peak events</li> <li>• If customers reduce their consumption during the peak events compared to an individually calculated usage baseline they will receive a credit of \$0.28 for each KWH they reduce</li> <li>• This rebate will appear directly on their electric bill</li> <li>• Used two baseline calculation methodologies</li> </ul>

## Duke Energy Ohio Time of Use Pilot Configuration Details

Pilot	TD-AM	PTR (opt-in)
Peak Event Timing	N/A	Up to 10 events during the Summer 8 hrs (12PM to 8PM)
Rate Plan Summer	On Peak (12PM-7PM): 18.00¢/kWh Shoulder Period (9AM-12PM & 7PM-10PM): 14.01¢/kWh Off Peak (10PM-9AM): 5.31¢/kWh	Standard RS Rate 9.6¢/kWh
Rate Plan Winter	On Peak (7AM-1PM & 5PM-10PM): 13.26¢/kWh Shoulder Period (6AM-7AM & 1PM-5PM): 7.01¢/kWh Off Peak (10PM-6AM): 4.50¢/kWh	Standard RS Rate 9.6¢/kWh
Rate Plan Spring/Fall	N/A	Standard RS Rate 9.6¢/kWh
Customer Incentive	N/A	Rebate of 28¢/kWh of load reduction during peak event
Participants	13	36



# 2011 Pilots

## Duke Energy Ohio “Time Based Rate” Pilot Program Design for 2011

Pilot Project	Overview
<b>TD-Lite, (Time of Use)</b>  <b>72 participants</b>	<b>4 Season “Time of Use” Rate:</b> <ul style="list-style-type: none"> <li>• Summer (June-Sept) and Winter (Dec-Feb) seasons will have more expensive On Peak rates and less expensive Off Peak rates during weekdays</li> <li>• Spring and Fall seasons will only have Off Peak</li> <li>• Customers will also have the option to participate in Peak Time Rebate</li> <li>• Summer Peak to Off-Peak ratio of 7.62 :1</li> <li>• Winter Peak to Off-Peak ratio of 2.95 :1</li> </ul>
<b>TD-Lite with HEM, (Home Energy Manager)</b>  <b>43 participants</b>	<b>4 Season “Time of Use” Rate with Home Energy Manager Equipment</b> <ul style="list-style-type: none"> <li>• Same rate structure as TD-Lite, but customers are also provided Wi-Fi enabled technology and in-home, touchpad displays that assist in controlling electric usage by HVAC, water heaters, pool pumps, etc.</li> </ul>
<b>CPP-Lite, (Time of Use Plus)</b>  <b>87 participants</b>	<b>4 Season “Time of Use” Rate with Critical Peak Pricing</b> <ul style="list-style-type: none"> <li>• Summer (June-Sept) and Winter (Dec-Feb) seasons will have more expensive On Peak rates and less expensive Off Peak rates during weekdays</li> <li>• Spring and Fall seasons will only have Off Peak</li> <li>• Up to 10 (4hr) Critical Peak Events can also be called during the Summer Season on hot weekdays where high-demand is anticipated</li> <li>• Customers are notified a day ahead and the per KWH price during the peak events is even greater than the On Peak price</li> </ul>
<b>PTR 2.0, (Peak Time Rebate)</b>  <b>198 opt-in participants</b> <b>219 opt-out participants</b>	<b>Summer Season Demand Response Program</b> <ul style="list-style-type: none"> <li>• Up to 10 (5hr) Peak Rebate Events called from June-Sept on hot weekdays when high-demand is anticipated</li> <li>• Customers will be notified a day ahead of these peak events much like the CPP-Lite program</li> <li>• If customers reduce their consumption during the peak events compared to an individually calculated usage baseline they will receive a credit of \$0.28 for each KWH they reduce</li> <li>• This rebate will appear directly on their electric bill</li> </ul>

## Duke Energy Ohio Time of Use Pilot Configuration Details

Pilot	CPP-Lite	PTR (opt-in)	PTR (opt-out)	TD-Lite	TD-Lite w/ Home Energy Manager
Peak Event Timing	Up to 10 events during the Summer 4 hrs (2PM to 6PM)	Up to 10 events during the Summer 5 hrs (2PM to 7PM)		Up to 10 events during the Summer 5 hrs (2PM to 7PM)	
Rate Plan Summer	On Peak (2PM-7PM): 23.2¢/kWh Off Peak(7PM-2PM): 7.6¢/kWh Critical Peak : 35¢/kWh	Standard RS Rate 9.6¢/kWh		On Peak (2PM-7PM): 40.4¢/kWh Off Peak (7PM-2PM): 5.3¢/kWh	
Rate Plan Winter	On Peak (7AM-1PM): 14.3¢/kWh Off Peak(1PM-7AM): 7.2¢/kWh	Standard RS Rate 9.6¢/kWh		On Peak (7AM-1PM): 35.4¢/kWh Off Peak (1PM-7AM): 4.5¢/kWh	
Rate Plan Spring/Fall	7.2¢/kWh	Standard RS Rate 9.6¢/kWh		4.5¢/kWh	
Customer Incentive	N/A	Rebate of 28¢/kWh of load reduction during peak event		Rebate of 28¢/kWh of load reduction during peak event	
Participants	87	198	219	72	43

# In-home technology helps to make conservation and savings back-of-mind

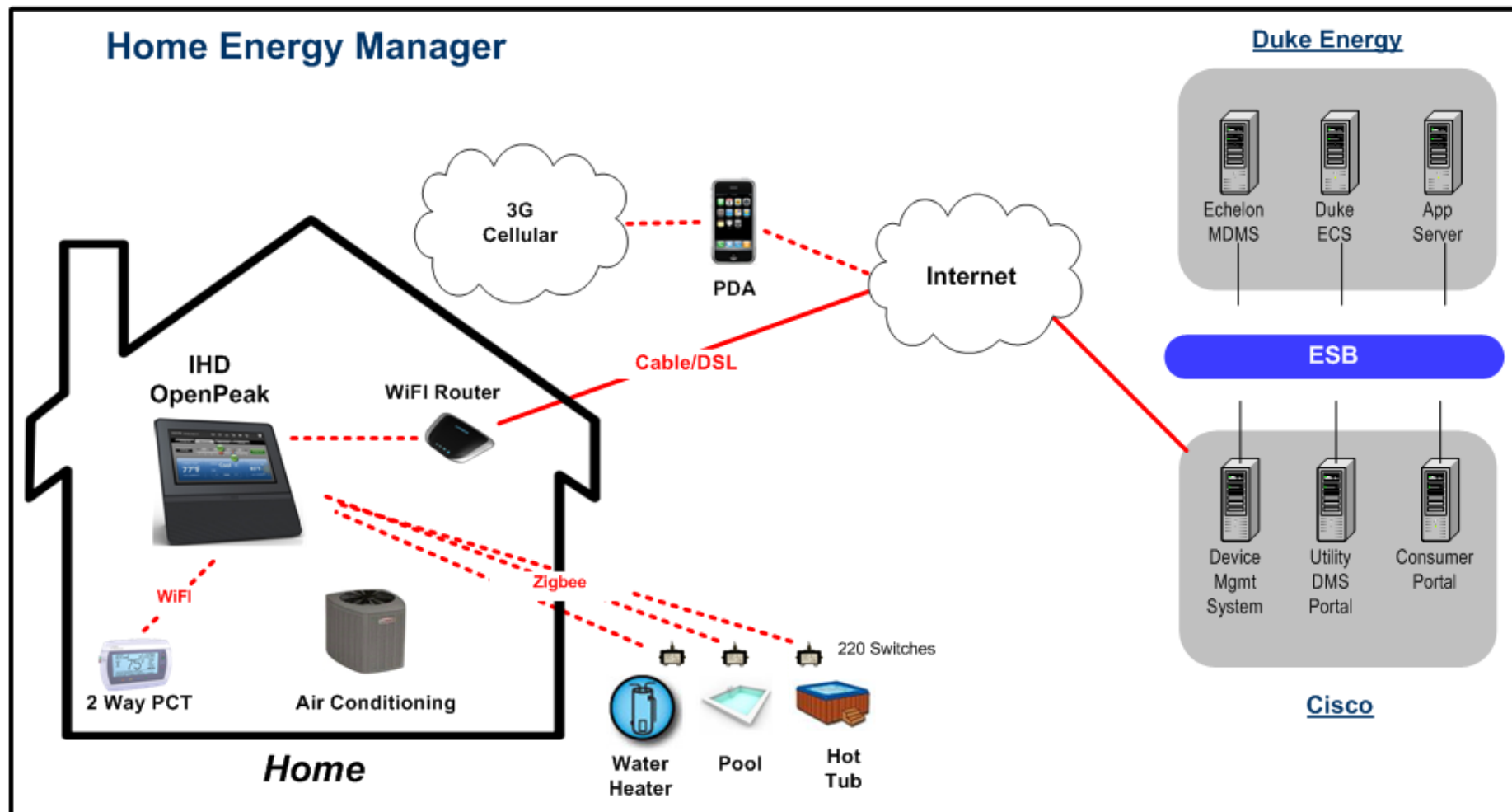
## In-home Technology provides:

- One time wizard for easy setup
- Two way programmable thermostat with Home, Away, Sleep and Savings modes
- Vacation and Home/Away mode – Put your house to “sleep” while you are away
- Savings mode – During Peak Time Rebate events, customer can set it and forget it for automatic savings
- Manage your house remotely via a PDA (iPhone or Android)




	Sun	Mon	Tue	Wed	Thu	Fri	Sat
Morning	9:00 AM 🏠	6:00 AM 🏠	6:01 AM 🏠	6:00 AM 🏠	6:00 AM 🏠	6:00 AM 🏠	8:00 AM 🏠
Day	10:00 AM 🚶	8:00 AM 🚶	8:00 AM 🚶	8:00 AM 🚶	8:00 AM 🚶	8:00 AM 🚶	10:00 AM 🚶
Evening	7:00 PM 🏠	6:00 PM 🏠	6:00 PM 🏠	6:00 PM 🏠	6:00 PM 🏠	6:00 PM 🏠	6:00 PM 🏠
Night	10:30 PM 🛏	10:00 PM 🛏	10:00 PM 🛏	10:00 PM 🛏	10:00 PM 🛏	10:00 PM 🛏	11:30 PM 🛏

# Home Energy Manager (HEM) High Level Design



# 2012 Pilots




## Duke Energy Ohio Time of Use Pilot Configuration Details

Pilot	PTR (opt-in)	PTR (opt-out)	<u>Base</u>	TD- 2012 <u>Plus</u>	<u>Max</u>
Peak Event Timing	Up to 15 events during the Summer (June-August) 5 hrs (2PM to 7PM)		N/A	N/A	N/A
Rate Plan Summer	Standard RS Rate 9.35¢/kWh		On Peak (2PM-7PM): 17.5¢/kWh Off Peak (7PM-2PM): 5.5¢/kWh	On Peak (2PM-7PM): 24.5¢/kWh Off Peak (7PM-2PM): 4.8¢/kWh	On Peak (2PM-7PM): 31.5¢/kWh Off Peak (7PM-2PM): 4.1¢/kWh
Rate Plan Winter	Standard RS Rate 9.35¢/kWh		On Peak (7AM-1PM): 15.2¢/kWh Off Peak (1PM-7AM): 5.5¢/kWh	On Peak (7AM-1PM): 21.2¢/kWh Off Peak (1PM-7AM): 4.8¢/kWh	On Peak (7AM-1PM): 27.3¢/kWh Off Peak (1PM-7AM): 4.1¢/kWh
Rate Plan Spring/Fall	Standard RS Rate 9.35¢/kWh		5.5¢/kWh	4.8¢/kWh	4.1¢/kWh
Customer Incentive	Rebate of 28¢/kWh of load reduction during peak event		N/A	N/A	N/A
Targeted Participants	250	250	250 +	250 +	250 +

Duke is trying to make the concept of time differentiated rates more real to customers by making the comparison to other everyday situation where pricing is differentiated on time




## Straightforward mail and e-mail communications utilize simple graphical depictions of the time to money relationship...and potential benefits

We're changing the face of energy rates. 


Select your Rate and Save!

**SUMMER RATES • JUN – AUG**

**OFF-PEAK RATE**  
7 pm - 2 pm




**PEAK RATE**  
2 pm - 7 pm




**WINTER RATES • DEC – FEB**

**PEAK RATE**  
7 am - 1 pm




**OFF-PEAK RATE**  
1 pm - 7 am



**SPRING, FALL, WEEKEND & HOLIDAY RATES**

**OFF-PEAK RATE**  
24 hours/day



Name,

**Shift** your energy use **to** off-peak hours and **save**.

Introducing **My Select Rate**, a new pilot program from Duke Energy, that enables you to save money just by changing when you use energy and using less energy during peak hours.

In this program **off-peak electric rates are lower** and peak rates are higher than your current flat rate. And peak rates only occur during certain hours in winter and summer, while spring and fall are always off-peak. So the majority of the year (92%), the rate you pay is **lower than what you pay now**. Duke Energy will also make it easier with tips and helpful info to shift or reduce your energy use.

**You have been selected to participate in this pilot program.** If you can shift away from or use less energy during peak times, you can save money.

Use the reference number below and **sign up by May 6** to participate. To learn more visit [duke-energy.com/MySelectRate](http://duke-energy.com/MySelectRate).

NOTE: My Select Rate is voluntary; however you must commit to participate for a full year. The program offers great potential for annual savings on energy; however, there is also potential for an annual increase if our customers do not manage energy use to shift from using it on away from peak hours.

# Questions