OPPD
Omaha Public Power District

Removing the Declining Energy Blocks:

Rates 110 & 230

Removing the Declining Energy Blocks

Approach and Process

- The Finance Committee asked OPPD to examine the impact and make a recommendation on removing the declining blocks
- In June 2020, a cross-functional team was formed to perform the analysis following OPPD's product development framework taking a holistic product level approach to exploring the issue vs normal framework needed to organize and manage a pure rates project

Departments Involved within Project

- Pricing & Rates
- Product Development & Marketing
- Corporate Marketing & Communications
- Outreach & Education
- Customer Operations Technology
- Business Technology Data Intelligence
- Innovation

Product Development Process

- Concept Phase
  - Problem statement and vision
- Research Phase
  - Examined current state and researched past rate changes
  - Industry analysis and market research
    - Industry survey and interviews
    - Internal and external surveys and focus groups
- Analysis Phase
  - Data analysis and segmentation of impacted customers
  - Evaluated rate alternatives and product options
- Develop Phase
- Launch Phase

Removing the Declining Energy Blocks

What we heard and learned

- Customers have **limited understanding of rates** including the declining block rates
- **Interest in having choice** about how they are billed
- Want **transparency** about how and why they are billed
- Customers **want to be engaged,** but they **don't know how** because they lack understanding
- The **bigger the change the more outreach and education** needed
- They **want comparisons of their rates** with other areas (East Coast, West Coast, other Nebraska utilities)
- **Too many changes** over short period of time (several years) gives the impression that we are always changing their bills
- **Once informed and educated** about the declining block rates they were **perceived as not energy efficient**
- **Aware of impact to vulnerable populations,** do not just think of themselves; mentioned potential negative impact to low-income or large families

Rates Guiding Principles

SD-2: Rates

When considering making rate changes or structural changes to rates, we need to think about if and how they impact our Strategic Directives, especially SD-2: Rates.

Strategic Directive 2: Rates

- The principles that OPPD shall adhere to within SD-2 are:
  - Maintain fair, reasonable and non-discriminatory rates *(NE State Statute 70-655)*
  - Equitably assign costs across and within all customer classes
  - Monitor affordability indicators
  - Pursue rate process and structure changes to reflect the cost of energy when it is used
  - Offer flexibility and options
  - Be simple and easy to understand

Rates Guiding Principles

SD-2: Rates

- SD-2: Rates: Equitably assign costs across and within all customer classes
  - Dependent on rate structure, metering technology, and customer homogeneity
  - The service charge increase and the energy charge decrease for small commercial and residential classes was a step toward more equitably assigning costs within those classes.
  - The service charge recovers a portion of the demand costs for small commercial and residential rate classes and the remaining demand costs are recovered in the energy component of the rate.

	Industrial	Commercial	Residential
Customer Costs*	●	●	●
Energy Costs	●	●	●
Demand Costs*	●	Partial	Partial

**Service charge recovers a portion of the customer and distribution related costs for small commercial and residential rate classes.*

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Current Rate 110 and Rate 230

Residential Rate 110: Energy Charge

Energy Charge	Summer (June 1- Sept 30)	Non-Summer (Oct 1- May 31)
0-100 kWh	9.36 cents/kWh	8.63 cents/kWh
101-1,000 kWh	9.36 cents/kWh	7.46 cents/kWh
1,001+ kWh	9.36 cents/kWh	5.27 cents/kWh

Small Commercial Non-Demand Rate 230: Energy Charge

Energy Charge	Summer (June 1- Sept 30)	Non-Summer (Oct 1- May 31)
0-1,000 kWh	9.11 cents/kWh	7.89 cents/kWh
1,001-3,000 kWh	8.40 cents/kWh	7.89 cents/kWh
3,001+ kWh	8.40 cents/kWh	5.24 cents/kWh

Number of customers currently receiving service under:

- Rate 110 – 300,858
- Rate 230 – 38,035

Customers taking service under Rates 110 and 230 account for 85% of total customers.

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Definitions

TERM	DEFINITION
Chronic Disconnect Notice	Customer with 3 or more disconnect notices
Energy Assistance Payment	Customer who received Energy Assistance Payments through one of the programs supported by OPPD
Vulnerable Customer	Customer who received an Energy Assistance Payment and/or a Chronic Disconnect Notice
All Other	Customer not defined as vulnerable
All-Electric	Coded in the customer system as being All-Electric/Electric Heating

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Rate 110 Impact Analysis

- Analysis was performed using 2018 usage data on 233,841 Residential Rate 110 customers with 12 contiguous months of usage data
  - 34,630 customers identified as negatively impacted by removing non-summer blocks
  - Applying the same proportion of negatively impacted customers (roughly 15%) to the entire 290,000 Rate 110 customers, an additional 8,400 customers would be negatively impacted for an overall estimated total of 43,000 customers
  - The other 85% of customers will receive a slight monthly bill decrease between $0 to $4
  - This would be a revenue neutral change for OPPD. Based on the analysis, 250,000 of our residential customers on Rate 110 will be receiving a small decrease on their bill that will be offset by 43,000 negatively impacted customers.
  - 2018 data was used because it was determined to be a “worse case” scenario due to higher than normal extreme weather.

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Rate 110 Impact Analysis

- Even though an overwhelming number of customers will experience a favorable change (approx. 199k out of the 233k with contiguous data), **the favorable impact will be negligible** (less than $3/month).
- Of the 34,630 negatively impacted customers:
  - ~20% are **vulnerable** (6,702)
  - 21% are coded in the customer system as **all-electric** (7,422)
    - Account for 34% of the total impact
    - Account for 45% of those with an increase greater than $30/month
    - 16% are **vulnerable**
  - 35% are over the age of 60 (12,050)
    - 12% are **vulnerable**
- We identified a direct correlation between negatively impacted customers and the size and age of their home
  - This **remains generally true for vulnerable customers.** The age of the home increases, while the size and home values decrease.

Removing the Declining Energy Blocks

Initial opinions regarding the declining blocks:

- Perception that the declining block structure encourages increased consumption
- Assumption that removing the declining blocks will only impact larger homes that use more and therefore should pay more

Results found through data:

- Thorough analysis of the service territory was completed. To compete the analysis, we divided the service territory into 'sections' with equal customers in each section. The section data analyzed customer usage data, customer information as well as property attributes, a first for OPPD. Three findings emerged through the data:
  - *Older, smaller, less efficient homes will be affected just as much as larger homes*
  - *Demographic data shows larger homes, but there are still vulnerable customers affected*
  - *A change in blocks with no alternative offering will negatively impact all-electric customers by sending an inconsistent price signal that may discourage electrification*
- There is a stronger correlation between usage and thermodynamics than there is with usage and income
  - **Thermodynamic efficiency** – a physics principle that, within this context, would measure the overall efficiency of the home. A good measure of this would be the HERS rating, 'Home Energy Rating System' which is the residential housing industry standard that measures a home's energy efficiency.
- Because of the attributes of the customers who will be negatively impacted, removing the declining blocks will not result in the ultimate goal of reduced usage

Removing the Declining Energy Blocks

Rate 110 Impact Analysis- Finding #1

Older, smaller, less efficient homes will be affected just as much as larger homes

Section	Average Monthly Impact	Average Home Age	Average Home Value	Average Home Size
Section A	$6.42	23	$ 341,916	3,736
Section B	$6.18	75	$ 132,224	2,172

- Service territory is split into 8 sections. Each section has equal customers counts, around 49,000
- Compared two sections within our service territory
  - The average monthly bill increase was comparable
  - However, the property attributes were very different in each section
    - Home age difference was approximately 50 years
    - Home value difference was approximately $200,000
    - Home Size difference was approximately 1,500 sq feet.

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Rate 110 Impact Analysis- Finding #2

Demographic data shows larger homes, but there are still vulnerable customers affected

Section	Average Home Value	Average Home Size	Vulnerable Customers
Section C	$ 322,964	3,574	1,188
Section D	$ 132,942	2,290	1,451

- Compared two sections within our service territory
  - There are vulnerable customers with higher average home values and home sizes within the service territory
  - Vulnerable customers are spread out through our service territory in small, medium and larger homes

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Rate 110 Impact Analysis- Finding #3

A change in blocks with no alternative offering will negatively impact all-electric customers by sending an inconsistent price signal that may discourage electrification.

Total Negatively Impacted Customers	Negatively Impacted All-Electric Customers
34,630	7,422

- Encouraging conservation and electrification do not align if the blocks are removed without other rate offerings
- May discourage EV adoption and other electrification and community wide decarb-driven opportunities

Removing the Declining Energy Blocks

District Wide Customer Count Impact – Rate 110

Number of Customers Negatively Impacted by Category and Impact									
Annual Average Monthly Impact	Category								
	LIHEAP	LULI	EAP	Disconnect Notice (1)	Chronic DN (+3)	Known Vulnerable	All Other	All-Electric	Total
0 - 3%	475	215	601	4,423	3,443	3,663	14,361	2,113	**18,024**
3 - 9%	316	83	397	2,886	2,244	2,386	10,301	3,330	**12,687**
+>9%	96	14	110	786	603	653	3,266	1,979	**3,919**
Total	**887**	**312**	**1,108**	**8,095**	**6,290**	**6,702**	**27,928**	**7,422**	**34,630**

Number of Customers Negatively Impacted by Category and Impact									
Annual Average Monthly Impact	Category								
	LIHEAP	LULI	EAP	Disconnect Notice (1)	Chronic DN (+3)	Known Vulnerable	All Other	All-Electric	Total
$0-$10	685	290	865	6,166	4,794	5,106	20,243	3,826	**25,349**
$10-$30	176	22	212	1,691	1,320	1,403	6,548	2,995	**7,951**
>$30	26	-	31	238	176	193	1,137	601	**1,330**
Total	**887**	**312**	**1,108**	**8,095**	**6,290**	**6,702**	**27,928**	**7,422**	**34,630**

- 6,702 negatively impacted customers received an Energy Assistance Payment and/or a Chronic Disconnect Notice
- 7,422 negatively impacted customers are system flagged as All-Electric. This subset of customers are some of the most impacted.
- 1,979 will pay more than 9% more annually.
- 601 all-electric customers will be impacted more than $30 per month.
- 193 vulnerable customers will be negatively impacted by more than $30 per month

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Example Households – Rate 110

Family 1

(Average of $30/month for the year)

Home Characteristics

Home Size: 1,456 SQFT
Home Age: 31

Usage Profile

Annual kWh:	48,353
Summer kWh:	17,895
Winter kWh:	30,458

Monthly Bill Charges

Current Bill	New Bill
SUM: $449	SUM: $449
WNT: $254	WNT: $299

← $45/month during Non Summer months

Family 2

(Average of $10/month for the year)

Home Characteristics

Home Size: 2,851 SQFT
Home Age: 45

Usage Profile

Annual kWh:	25,224
Summer kWh:	8,207
Winter kWh:	17,017

Monthly Bill Charges

Current Bill	New Bill
SUM: $222	SUM: $222
WNT: $165	WNT: $180

← $15/month during Non Summer months

- 'WNT' denotes "Non Summer" months
- Fuel & Purchased Power is excluded in this household comparison

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Rate 230 Impact Analysis

- Analysis performed using 2018 usage data for 28,294 Small Commercial Rate 230 customers with 12 contiguous months of usage data
  - 1,522 customers identified as negatively impacted by removing the summer and non-summer declining blocks
  - Total Rate 230 customers in 2018 was approximately 37,080
  - Applying the same proportion of negatively impacted customers (5.4%) to the entire 37,080 Rate 230 customers, an additional 480 customers would be negatively impacted for an overall estimated total of 2,002 customers
  - This would be a revenue neutral change for OPPD. Based on the analysis, 35,000 of our small commercial customers on Rate 230 will be receiving a decrease on their bill that will be offset by 2,000 negatively impacted customers.

Removing the Declining Energy Blocks

Customer Counts by Impact Level – Rate 230

Number of Customers Negatively Impacted			
PERCENT IMPACT			
Monthly Impact	Disconnect Notice (1)	Chronic DN (+3)	Total Customers
0 - 3%	60	24	670
3 - 9%	47	30	712
+>9%	15	4	140
Total	**122**	**58**	**1,522**

Number of Customers Negatively Impacted			
DOLLAR IMPACT			
Monthly Impact	Disconnect Notice (1)	Chronic DN (+3)	Total Customers
$0 - $10	49	22	509
$10 - $30	39	19	537
>$30	34	17	476
Total	**122**	**58**	**1,522**

- While commercial customers are not eligible for Energy Assistance Payments, there are a number of small commercial customers that received at least one disconnect notice and some that received three or more disconnect notices
- Changing the block structure without an additional rate offering would further challenge these businesses.

Removing the Declining Energy Blocks

Conclusions

The process has yielded a number conclusions to inform the decision to potentially change the structure of energy blocks at this time. The primary conclusions are listed below:

- Larger than expected negative impacts to customers who are vulnerable
  - Thousands of customers who are receiving utility assistance and repeated disconnect notices will be negatively impacted with no alternative solution in place to help them transition.
- Limited customer knowledge of blocks and a desire for greater choice
  - Customers are uninformed about the existence of energy blocks and high uncertainty remains about a change in blocks and the expected change in behaviors.
  - Customers would like greater choice in how they are billed and the services they do or do not receive from OPPD.
- Removing the blocks sends mixed messages on electrification and decarbonization
  - Encouraging conservation and electrification do not align if the blocks are removed without other actions
  - Discourages EV adoption and other electrification and community wide decarb-driven opportunities
  - Will not change usage behaviors as intended for negatively impacted customers, as they do not have the means or ability to make changes

Removing the Declining Energy Blocks

Recommendations

Based on the findings, defer removing the energy blocks in pursuit of a more robust and comprehensive review of Rate 110 and Rate 230. Continue with the in-process strategic initiative work and inform that work with the conclusions of the energy block analysis as well as the pending findings from other noteworthy projects, including:

- All-electric rate
  - Need time to research and analyze this option for both residential and commercial customers
- Energy Burden Solutions
  - This project is currently underway and could help negatively impacted vulnerable customers

The Electric System Evaluation and Modernization, Customer Engagement for the Future and Technology Platform strategic initiatives will provide better data and enhanced capability to increase customer choice and the personalization of energy solutions.

These initiatives will specifically enable personalized interactions with customers to better tailor their energy solutions. The potential deployment of Advanced Metering Infrastructure as one outcome of these three Strategic Initiatives, along with other complimenting and required grid systems, is being evaluated and would improve the data, communications and robustness of the offerings to our customers.

A Look Ahead

Removing the Declining Blocks and More; a tentative and conceptual schedule

Strategy and Foundation | Outreach and Decisions | Build and Develop | Implement and Continually Refine

2021	Year 1	Year 2-3	Year 4-5	Year 6+
As part of existing strategic initiatives, commit to: • Plan an intelligent energy ecosystem designed to benefit customer experience and enable innovative products and solutions over the next 30 years. • Commit to explore advanced metering infrastructure that will immediately transmit data between the customer's meter and utility. Customer benefits include more timely communications, accurate power status and proactive insights on energy usage. • Identify technologies and processes to enhance the quality, timeliness and preferences of communications with and solutions for customers.	• Customers engaged and provide feedback on viable solutions and pricing implications of advanced metering infrastructure. • Eligible customers participate in a pilot program to reduce energy burden. • Evaluate and engage stakeholders on possible modifications to the service charge. • Enable the organization for future technological advances. • Assess capabilities of various customer-facing technologies and finalize business cases and customer requirements. • Decision made on advanced metering infrastructure.	• Phased implementation of advanced metering infrastructure begins, assuming approvals received. • Begin development of multiple solutions, technologies and processes designed to improve the customer's experience, such as outage maps, text capabilities, mobile applications and more. • Customers pay a more equitable service charge on a tiered level based on their energy usage. • Customers can choose how they receive communications from OPPD and which proactive insights are relevant to receive.	• Customer service location(s) updated with advanced meters offering instant data transmission between the customer and utility. • Customers can interact with OPPD through multiple channels with ease. • Evaluate, engage customers and develop products and pricing models† based on customer contribution of resources and market demand. • Using a variety of engagement platforms, customers can provide insights which are funneled into the strategic planning process to define future products, services and pricing models.	• Customers can choose solutions which focus on their personalized needs and how they use the energy OPPD produces. • Customers will have pricing reflective of what they value, communicated through biennial rate updates. • Customers receive real-time updates on projects, installations and outages affecting their service location(s). • Customers can report an outage, check a status, complete transactions, schedule support and more, on-the-go, with a modern app.

Illustrative, for discussion purposes only

†Pricing is fair, reasonable and non-discriminatory and in adherence to state statues

Omaha Public Power District

Questions