

# Best Practices for Standby Rates for CHP

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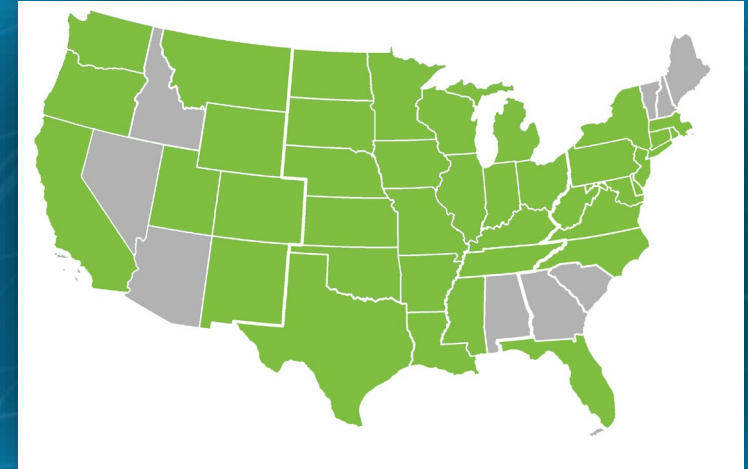


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- INCREASE ENERGY EFFICIENCY AND PRODUCTIVITY
- DECARBONIZE ELECTRICITY PRODUCTION
- ELECTRIFY THE ECONOMY AND ADOPT ZERO- AND LOW-CARBON FUELS
- CAPTURE CARBON FOR BENEFICIAL USE AND PERMANENT STORAGE



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# History of GPI Midwestern CHP Policy Work

Over the past five years:

- Supported the development of the “apples-to-apples” standby rate analytical tool to inform stakeholder comments in the Minnesota standby rates proceeding in 2015.
- Used the “apples-to-apples” comparison tool, supporting technical assistance in standby rate discussions in Michigan, Ohio, Indiana, and Illinois.
- Developed widely supported best practices for CHP stand-by rates



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RAP has described how technological change and the emergence of DERs affect rate design and Carl's 2018 Electricity Journal piece lays out how Non-Residential Rate Design should be structured.

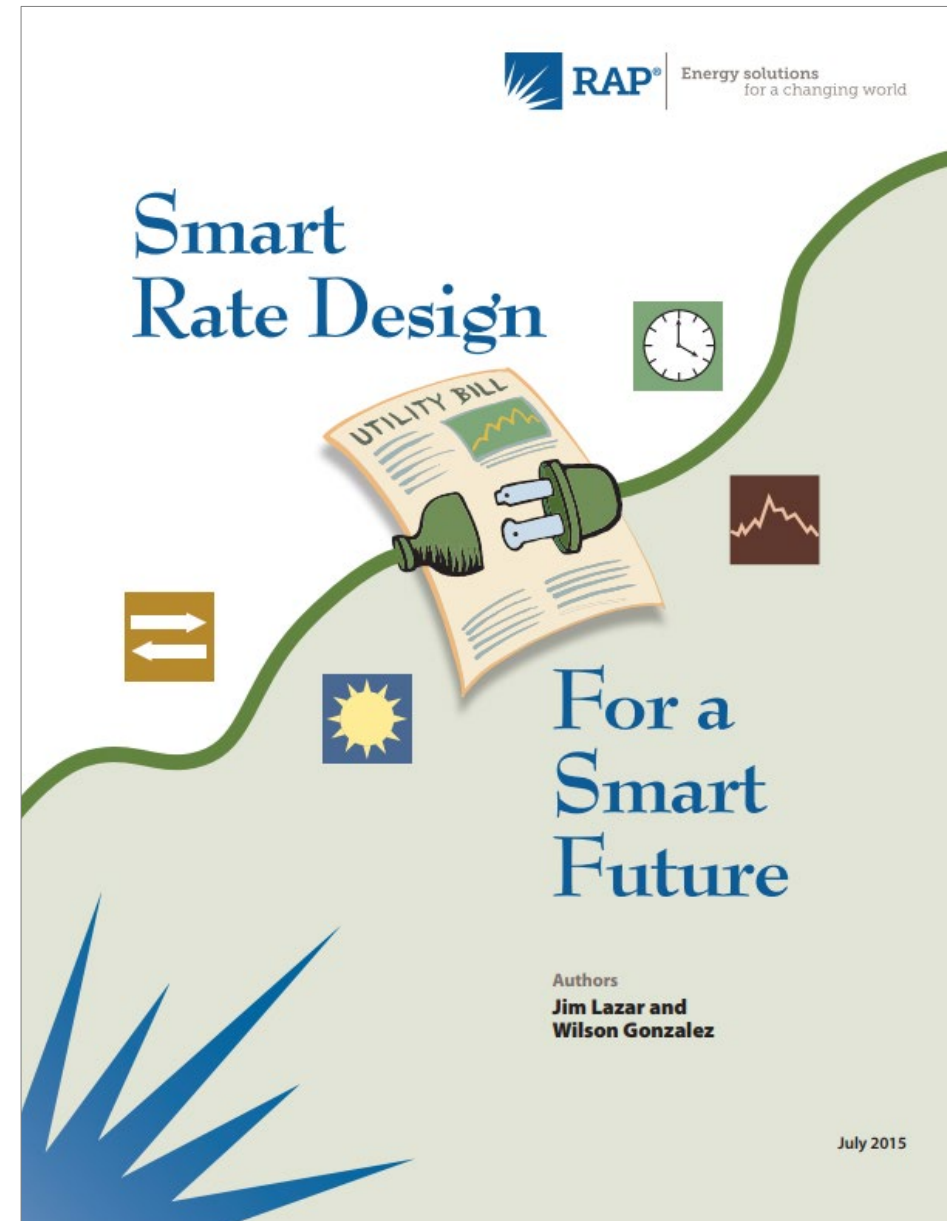


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# Smart Rate Design



## For a Smart Future

Authors  
**Jim Lazar and  
Wilson Gonzalez**

July 2015

# Non-Res Problems & Solutions

**Problem #1: Most non-residential rates do not align customer rates with system costs**

**Solution #1: Non-Coincident Peak (NCP) Demand Charges should be lower**

**Problem #2: Technological change and the emergence of DERs (including ZEVs) make improvement necessary**

**Solution #2: Time-of-Use Rate Design reflects system costs better than non-coincident (NCP) and coincident peak(CP) demand charges**



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# Non-Residential Rate Design Problems Illustrated

**Customer Charge: \$100/month**

**Demand Charge: \$10/kW**  
**Not Linked to System Conditions**

**Energy Charge: \$0.12/kWh**  
**Not Time-Differentiated**



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Rate design should make the choices the customer makes to optimize their **own bill** consistent with the choice we would make to minimize **system costs.**



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# Standby Rates for CHP

- Standby rates are charged to customers with on-site distributed generation (*i.e.*, generation sited close to its end-use) such as combined heat and power (CHP) systems.
- Intended to help the utility recover costs related to reserving and providing backup electricity during scheduled and unscheduled outages of the customer's CHP system.



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# Standby Rates Research

Best practices for standby rates have begun to emerge, but additional work was needed to further define and standardize these practices.

The purpose of this survey was to begin to critically examine these emerging recommended practices with interested stakeholders such as regulators, potential CHP users, developers, technical experts, and utilities.



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# Recommended Practices

Starting from a list of recommended practices compiled from previous research:

- Hunterston Consulting (2019) – Where Things Stand on Standby Rates, <http://hunterstonconsulting.com>
- Exergy Partners and Entropy Research (2018) - Standby/Capacity Reservation Charge Best Practices and Review, prepared for Pennsylvania PUC CHP Working Group, [http://www.puc.state.pa.us/Electric/pdf/CHPWG/Standby\\_Cap\\_Res\\_Best\\_Practices\\_Review-071618.pdf](http://www.puc.state.pa.us/Electric/pdf/CHPWG/Standby_Cap_Res_Best_Practices_Review-071618.pdf)
- U.S. EPA CHP Partnership (2018), CHP Utility Rates – Role of Standby Rates Webinar, <https://www.epa.gov/chp/chp-utility-rates-role-standby-rates-webinar-may-31-2018>



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# Recommended Practices (continued)

- RAP (2014) – Standby Rates for Combined Heat and Power Systems, <http://www.raponline.org/wp-content/uploads/2014/02/rap-standbyratesforchpsystems-2014-feb-18-updated.pdf>
- U.S. EPA (2009), Standby Rates for Customer-Sited Resources, [https://www.epa.gov/sites/production/files/2015-10/documents/standby\\_rates.pdf](https://www.epa.gov/sites/production/files/2015-10/documents/standby_rates.pdf)



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# Interviews and Focus Groups

- Following the online survey, there was an opportunity to provide additional feedback in a one-on-one interview or group setting.
- The survey and interview results informed the white paper on standby rate best practices for CHP.



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# Survey Results



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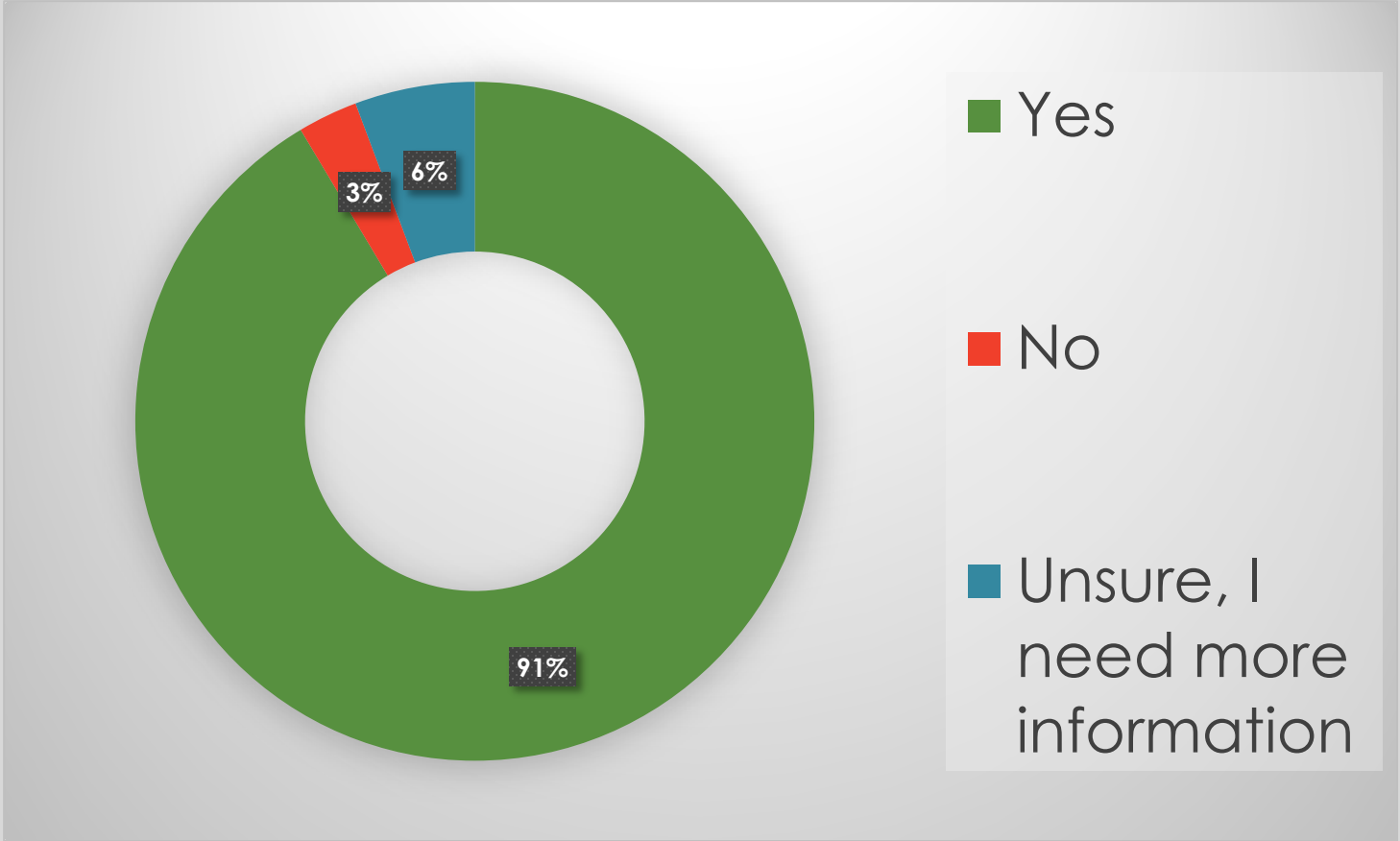
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## Question # 1

**Should it be considered a “best practice” for standby rates to be reasonably simple and transparent such that customers and third-parties can make informed decisions based on reading the published tariff (and any accompanying educational materials)?**

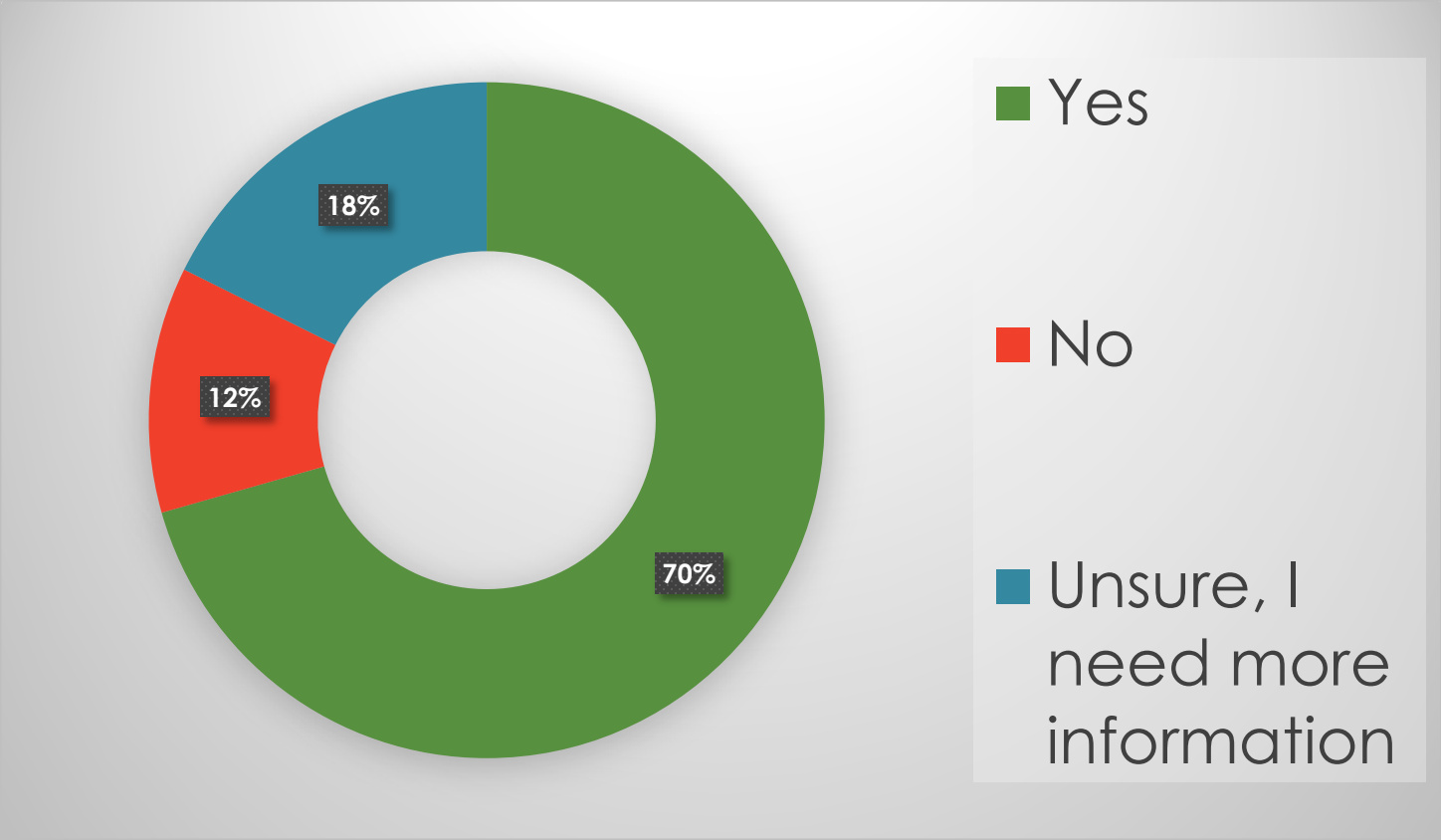
# Question # 1



## Question #2

**Should it be considered a “best practice” in standby rates to take into account both the utility’s cost and the forced outage rate of customers’ generators on the utility’s system?**

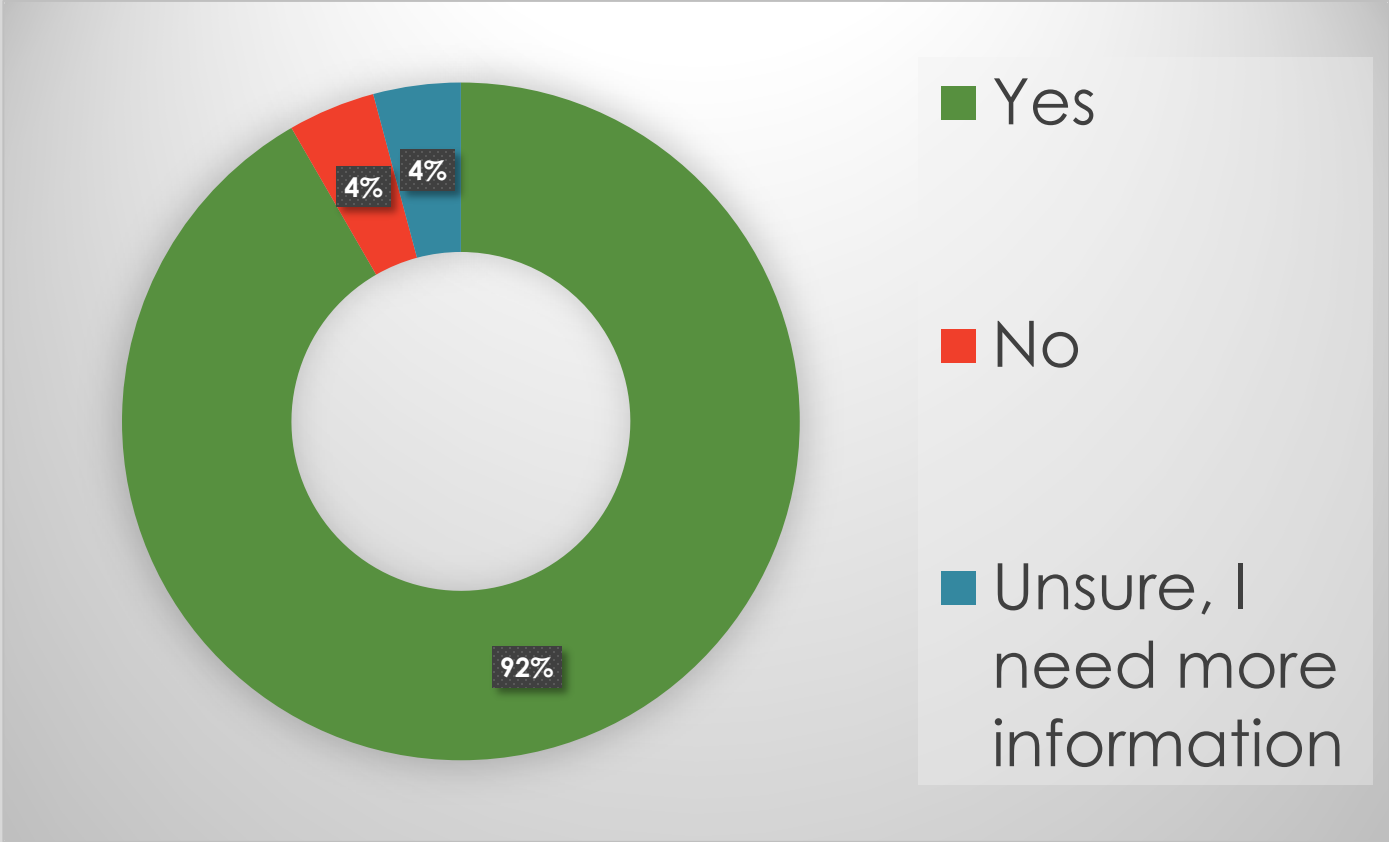
# Question #2



## Question #3

**Should it be considered a “best practice” for the energy component of standby rates to reflect time-of-use, for example by reference to locational marginal pricing (“LMP”)?**

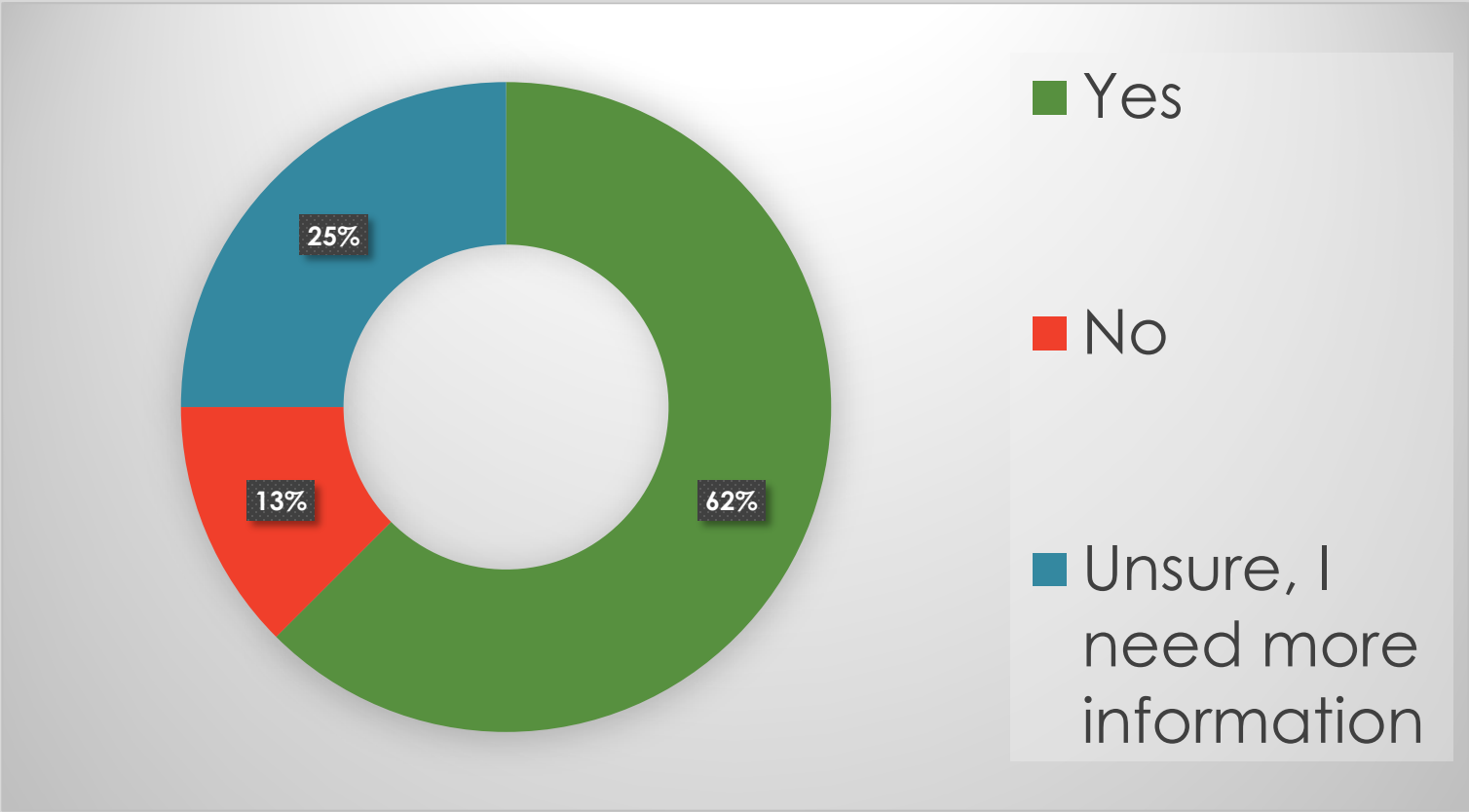
# Question #3



## Question #4

**Should it be considered a “best practice” in standby rates to use pro-rated, daily (or hourly) as-used demand charges for backup power?**

# Question #4

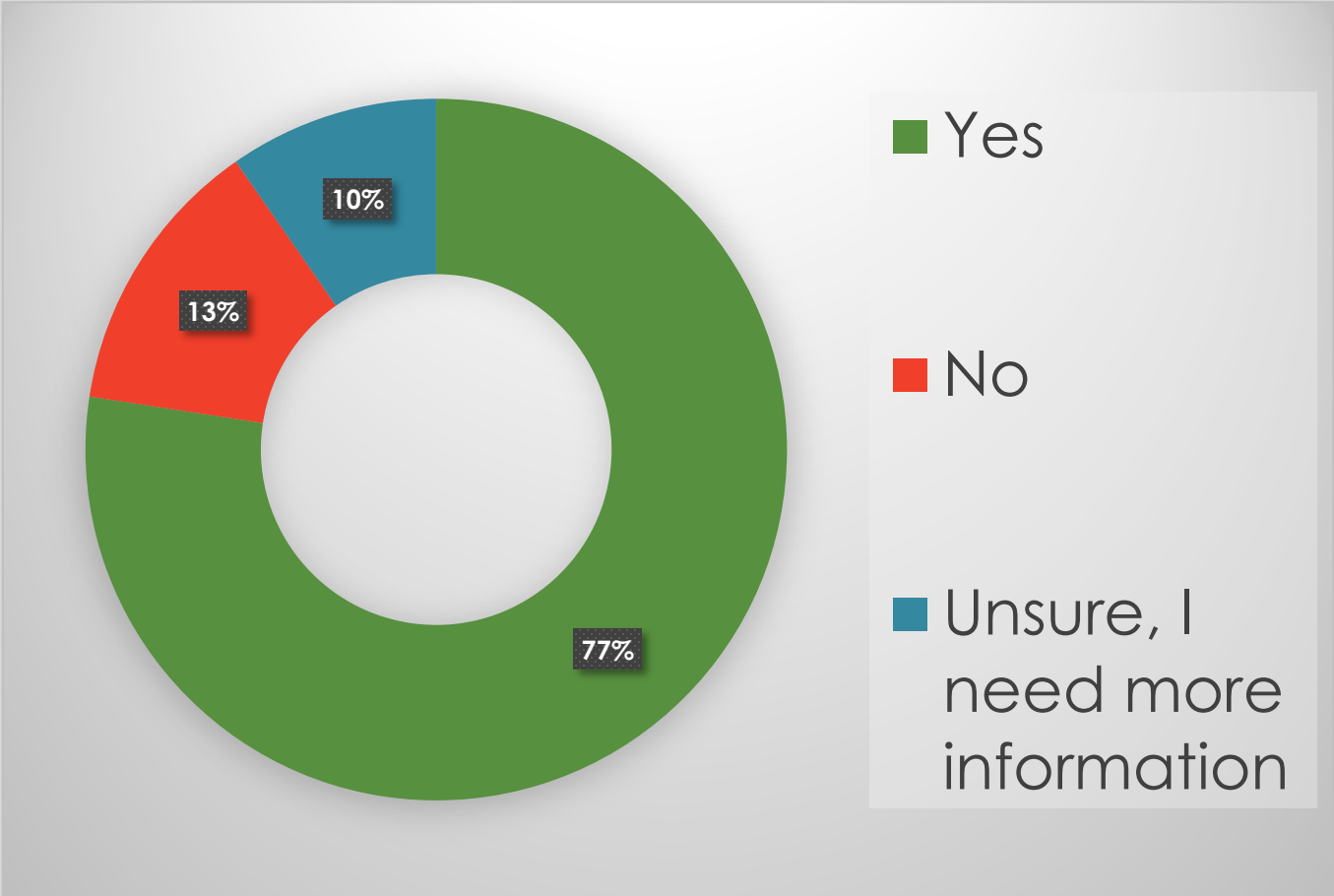




## Question #5

**Should it be considered a “best practice” in standby rates for maintenance demand charge rates to be discounted relative to backup demand charge rates to recognize the scheduling of maintenance service during periods when the utility generation requirements are low?**

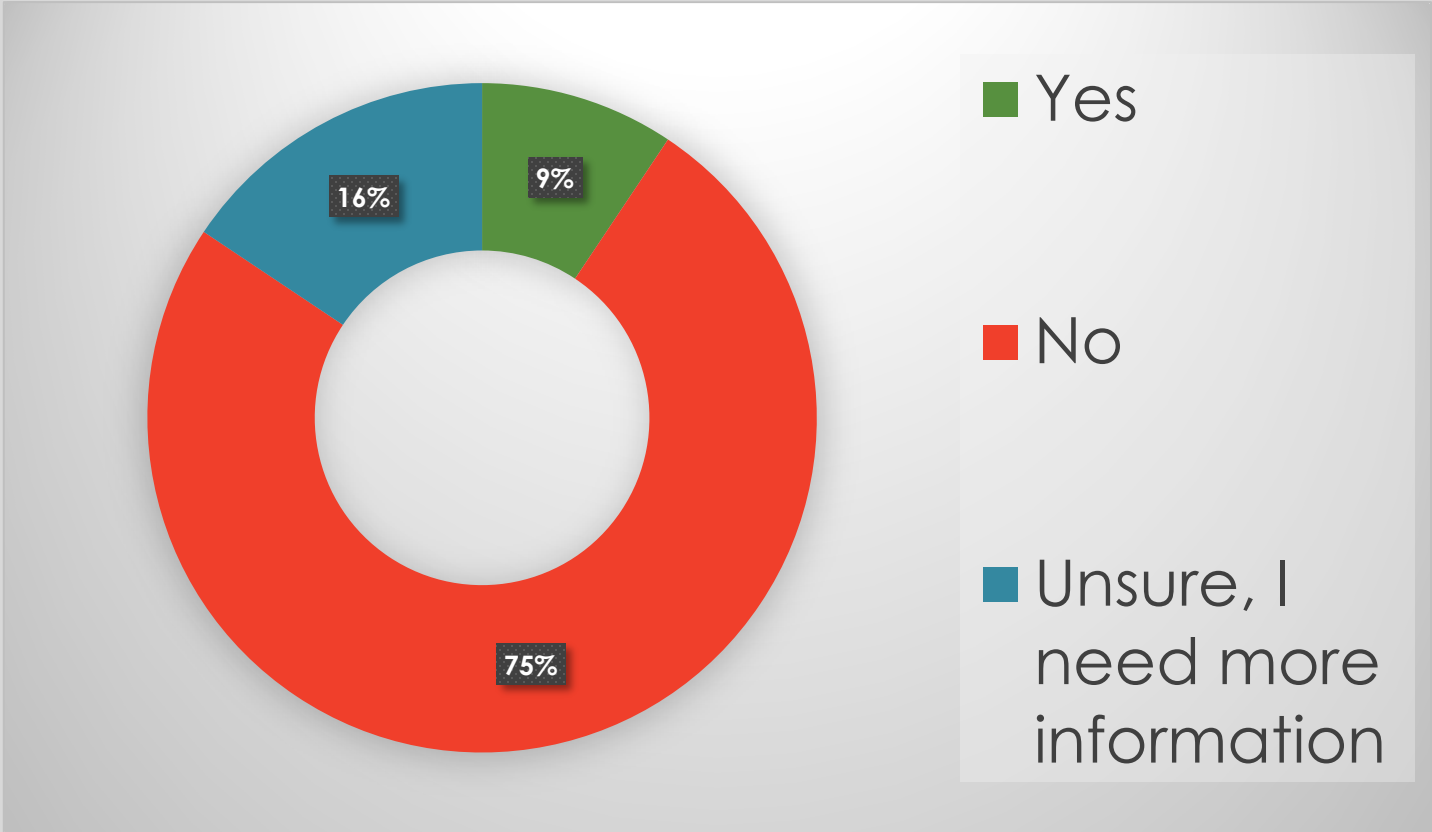
# Question #5



## Question #6

**Should it be considered a “best practice” in standby rates for a utility to recover fixed costs through the use of demand ratchets?**

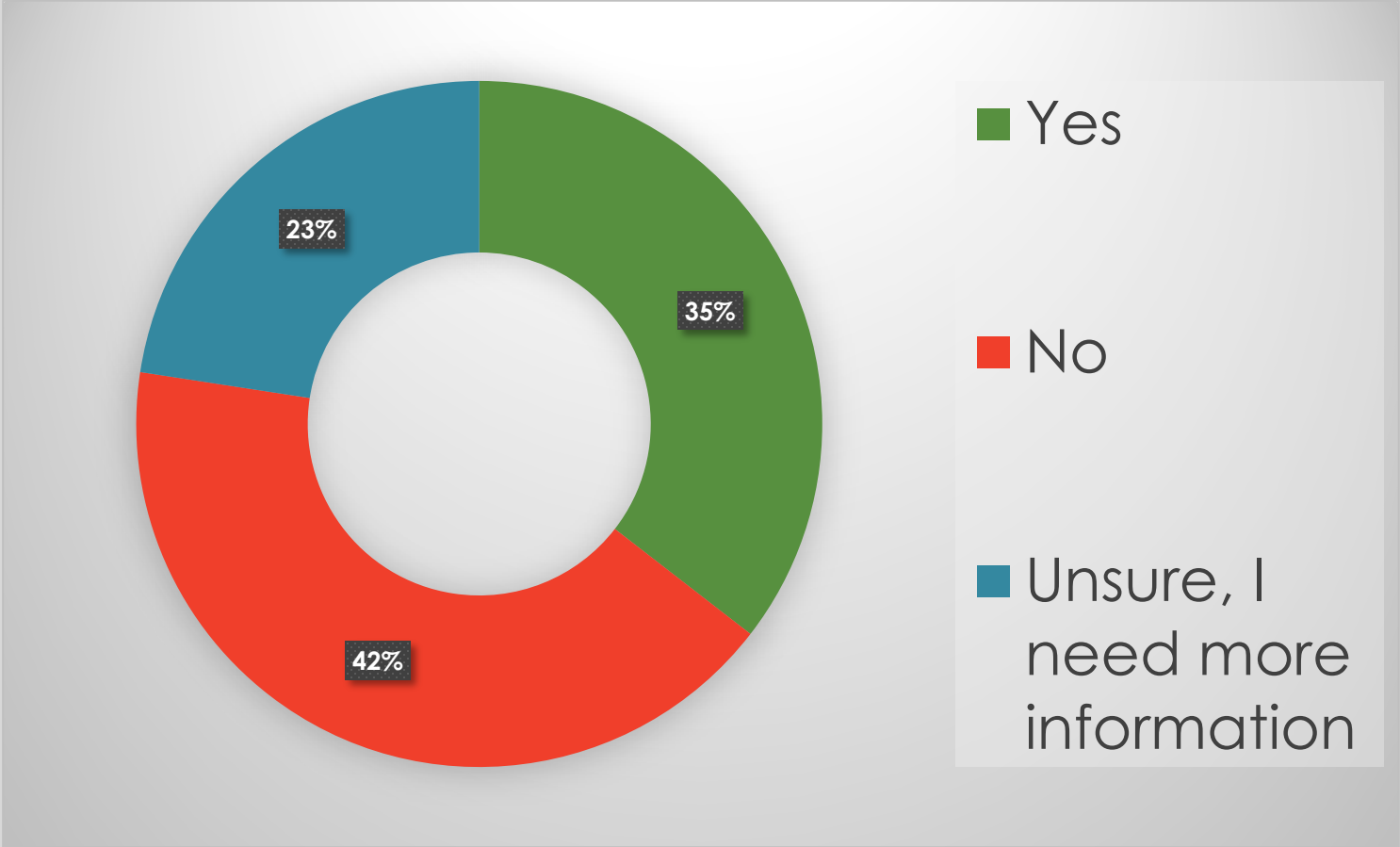
# Question #6



## Question #7

**Should it be considered a best practice in standby rates for demand charges to be assessed based on a facility's coincident peak?**

# Question #7



# Interview Themes



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# Transparency and Simplicity

- Overwhelming support for transparency and simplicity in standby rates.
- As Steve Huso of Xcel Energy Minnesota stated in his interview, “A limited amount of complexity is feasible, so we should use complexity where it does the most good.”



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# Demand Ratchets

- 75 percent of survey respondents disagreed that it should be considered a best practice in standby rates for a utility to recover fixed costs through the use of demand ratchets.
- A number of interviewees expressed doubts as to the fairness of demand ratchets, citing a strong preference for as-used demand charges, which were supported by 62 percent of survey respondents.



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# Distribution Charges

- Increases in distribution spending by utilities in the future may create elevated tension between utility and customer interests in standby rate design.
- May warrant a fresh look at how standby customers are charged for their partial and infrequent use of the distribution system.



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# Interconnection Standards

- Standardized interconnection rules are helpful in promoting safe and reliable parallel operation of distributed generation facilities.
- Interviewees remarked that the easier it is for system owners to navigate interconnection rules and procedures the easier it will be to realize the benefits of distributed generation such as CHP.



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# CHP DATA

- Access to real-world CHP data can help utilities, regulators, and other stakeholders better understand how CHP systems perform.
- With actual performance data, the benefits and risks of CHP operation can be analyzed and integrated into how customer standby charges are calculated, increasing the fairness and accuracy of cost-based rates.



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# Questions?



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# THANK YOU

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