

Customer Perception of Real-Time Pricing

Survey Findings from Southern California Edison Small Business Customers

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Executive summary

- To understand customer perceptions and preferences of Real-Time-Pricing (RTP), SCE/EPRI conducted an online survey via SCE business & residential customer panels in March 2021. The survey collected responses from 186 small business customers and 1,107 residential customers. **This report summarizes the results from small business respondents.** A separate report summarizes the results from the residential customers.
- **On enrollment intent:** Overall, about 25% of those surveyed indicate they would be “likely to enroll” in RTP based on the introductory description of RTP provided in the survey
 - Ownership of electric vehicle fleets or energy monitor/management systems correlates positively with intent to enroll: 100% of EV fleet owners and 75% of energy management system owners indicate they would be “likely to enroll” in RTP; the highest percentages among technology owner groups.
- **On appealing and unappealing aspects:** Bill saving is the most liked aspect of RTP while risk of high price and operational constraints are the top two dislikes: 44% indicate “Opportunity to save on bills” as appealing, followed by “taking advantage of lower rates” (35%). Both “risk of high prices” and “no equipment up for schedule changes” are equally unappealing aspects (47%).
- **On incentives:** Among the five incentive options presented in the survey (bill guarantee, high price protection, free smart thermostat, smart equipment rebate, and free load management device), bill guarantee and high price protection are the two most influential benefits that encourage sign-ups (64% and 56%, respectively). The influence level of the incentives is linked to current technology ownership:
 - Bill guarantee and high price protection are particularly influential to owners of smart outlets, energy storage systems, EV fleets, and smart speakers
 - Smart equipment rebate is particularly influential to owners of smart outlet and EV fleets
 - A free load management device is most attractive to owners of smart outlets and smart speakers
 - A free smart thermostat is most attractive to owners of smart speakers

Executive summary (cont.)

- **On price notification preferences:** Majority of customers (58%) prefer notification directly sent to themselves so that they can decide to whether adjust usage (referred as “price to self” customers). Only 13% customers prefer notification sent to their smart hub/device to then communicate with their end use equipment (“price to device”). An extremely small fraction of respondents (4%) prefer that prices be sent directly to the end use equipment (“price to equipment”)
 - Customers who prefer [“price to device” or “price to equipment”](#) are more likely to enroll RTP than the [“price to self”](#) customers
 - [Even among owners of smart equipment, 41% prefer the “price to self” option](#)
 - [Ownership percentages of smart outlets, smart speakers, and smart equipment are higher among “price to device/equipment”](#) customers than among “price to self” customers.
 - [Ownership percentages of solar panels or EV fleets are higher among “price to equipment” customers](#) than among “price to self” customers
- **On time intervals for price change:** Overall, respondents prefer lower time granularity: 47% voted for price change every two hours, 18% voted for hourly, only 2% voted for every 15-min and 1% voted for every 5-min.
 - [“Price to equipment” customers are most likely to prefer 15-min interval pricing:](#) (14% of “price to equipment” customers selected 15 -min pricing vs 2% of “price to self” customers)
 - [Owners of solar panels, EV fleets, and EV charging stations are more likely to favor hourly pricing](#)
 - [Customers who own energy monitor systems, EV fleets or EV charging stations have higher acceptance for 15-min pricing](#) than other tech owner groups
 - [Majority of voice assistant or smart speak owners prefer price change every two hours](#)
 - [41% of smart equipment owners are indifferent about the price time intervals;](#) this is the highest percentage among all technology groups.
- **On notification time horizons:** The greater the advance in price notification the greater the intent to enroll in RTP: 46% of respondents indicate they are likely or very likely to enroll in RTP based on Day-Ahead notification. The likelihood decreased to 33% for Day-of notification, and down to 27% for Hour-Ahead notification.

Content outline

Part I: Survey of business customers NOT on RTP

- [Results of overall population](#)
- Results by segments
 - [By notification preferences](#)
 - [By technology ownership](#)
- Appendix: [Panel firmographics](#)

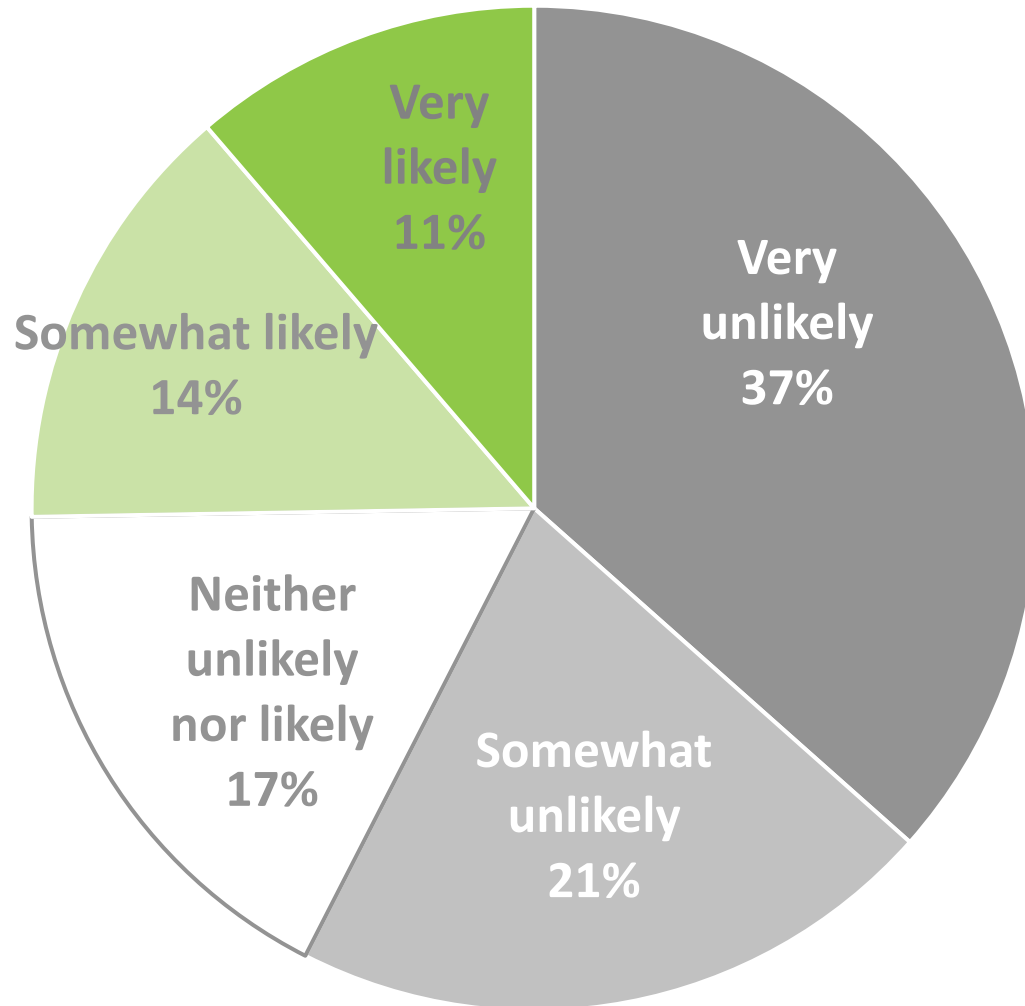
[Part II: Survey of current RTP customers](#)



Results of overall population

About 1/4 of respondents expressed positive interest in RTP

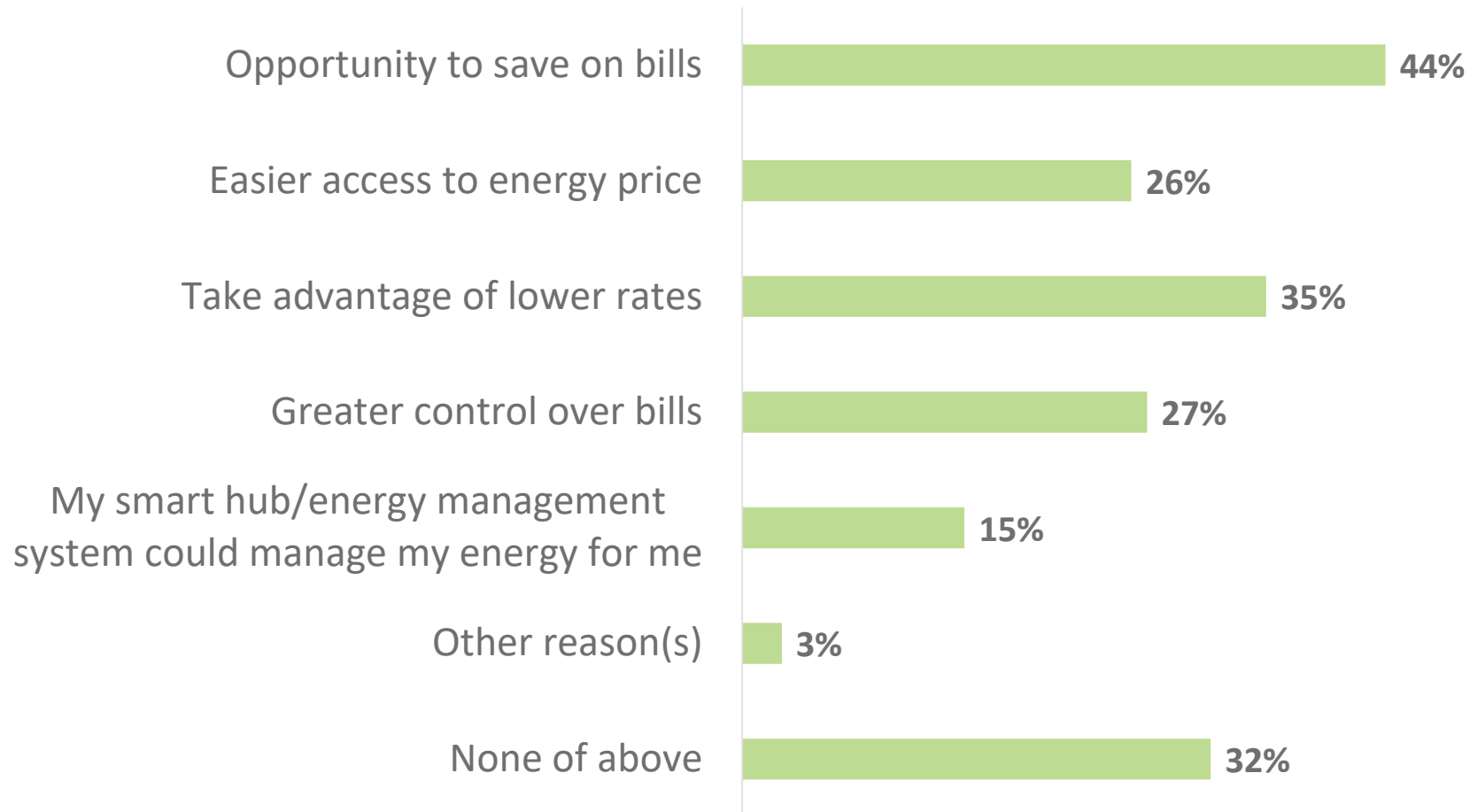
Q: How likely are you to sign-up for RTP?



- Total respondents: 186
 - 25% indicated very likely or somewhat likely to enroll in RTP
 - 58% indicated very unlikely or somewhat unlikely
 - 17% with neutral intent
- (Referred as “Likely”, “Unlikely”, “Neutral” in the rest of report)

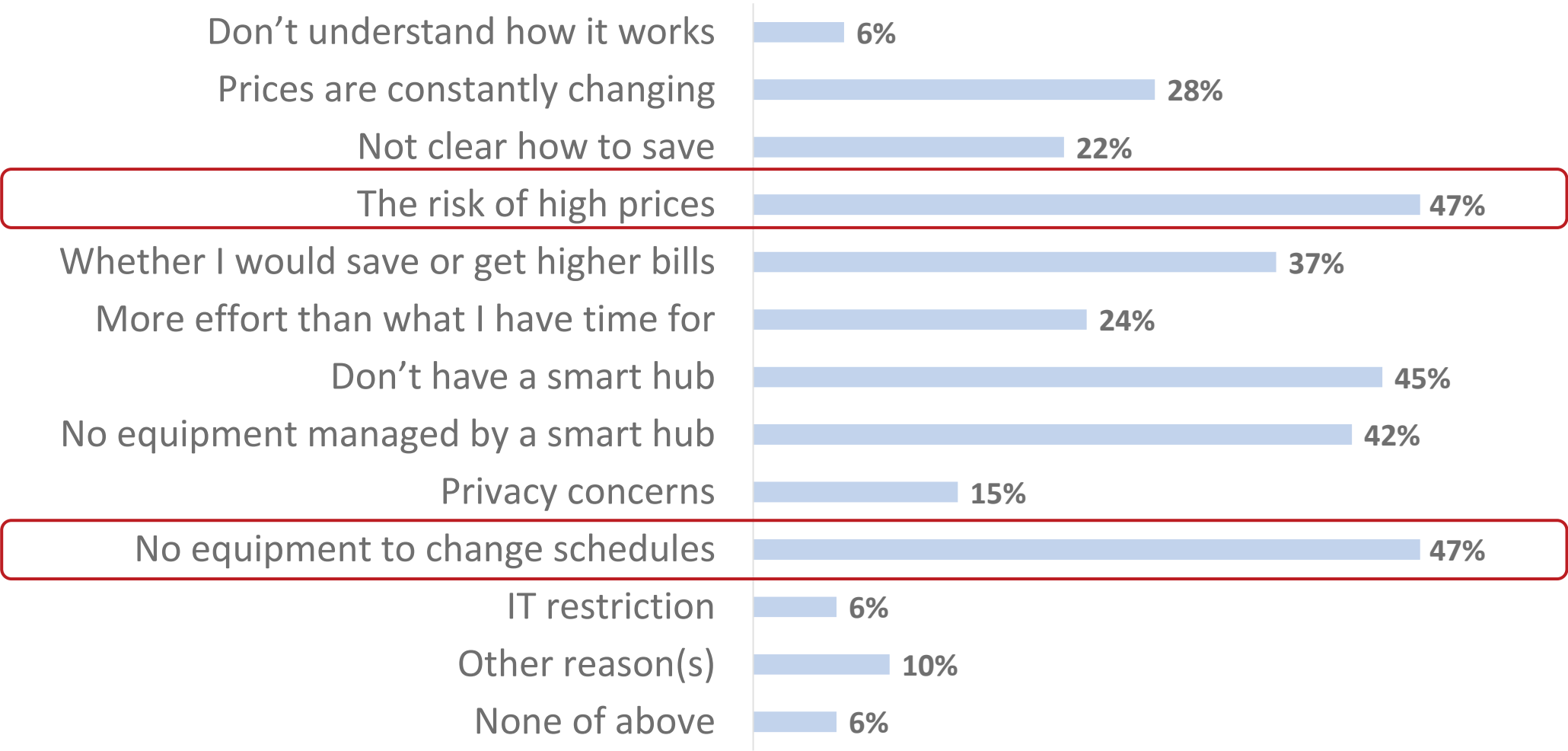
Opportunity to save on bills and taking advantage of lower rates are the two most appealing aspects of RTP

Q: What aspects of the RTP plan do you find appealing?



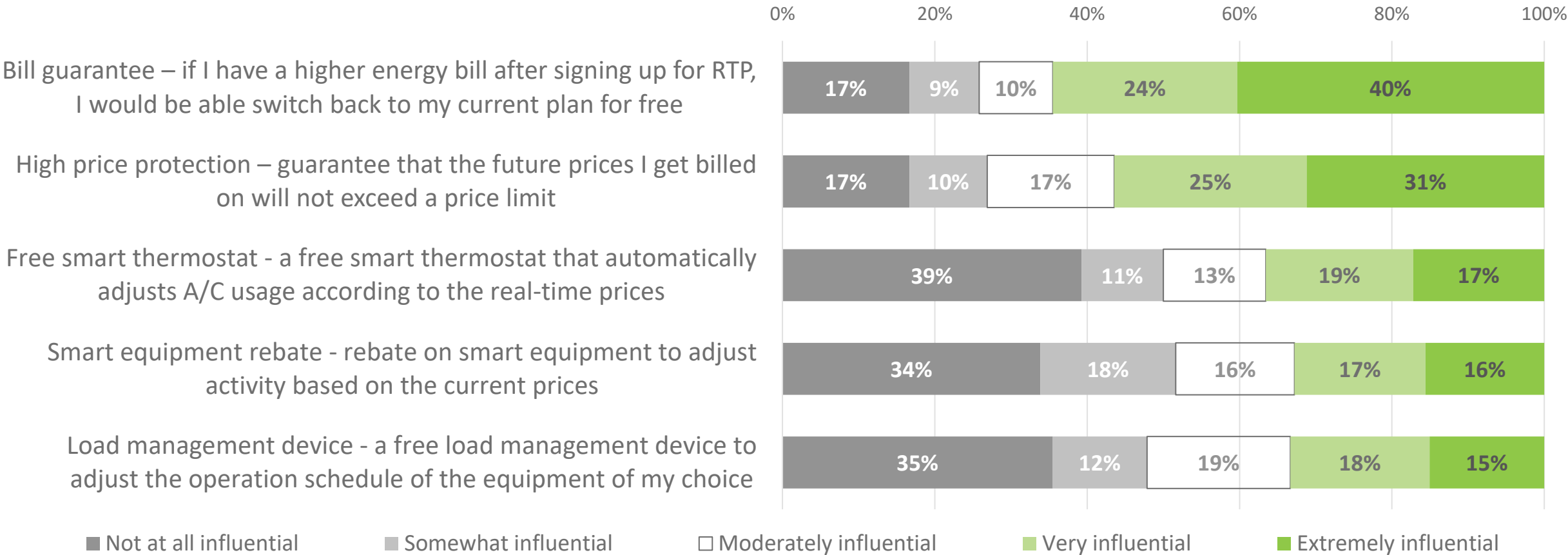
Risk of unexpected high prices and not having equipment that can change schedule are the two most unappealing aspects

Q: What aspects of the RTP plan do you find unappealing?



Bill guarantee and high price protection are the top two influential offers to encourage RTP sign-ups

Q: Below are some benefits that you would receive if you signed-up for the RTP rate plan. Please select how influential each benefit would be on your decision to sign-up for the RTP plan.



Only 4% prefer price notification sent directly to their equipment

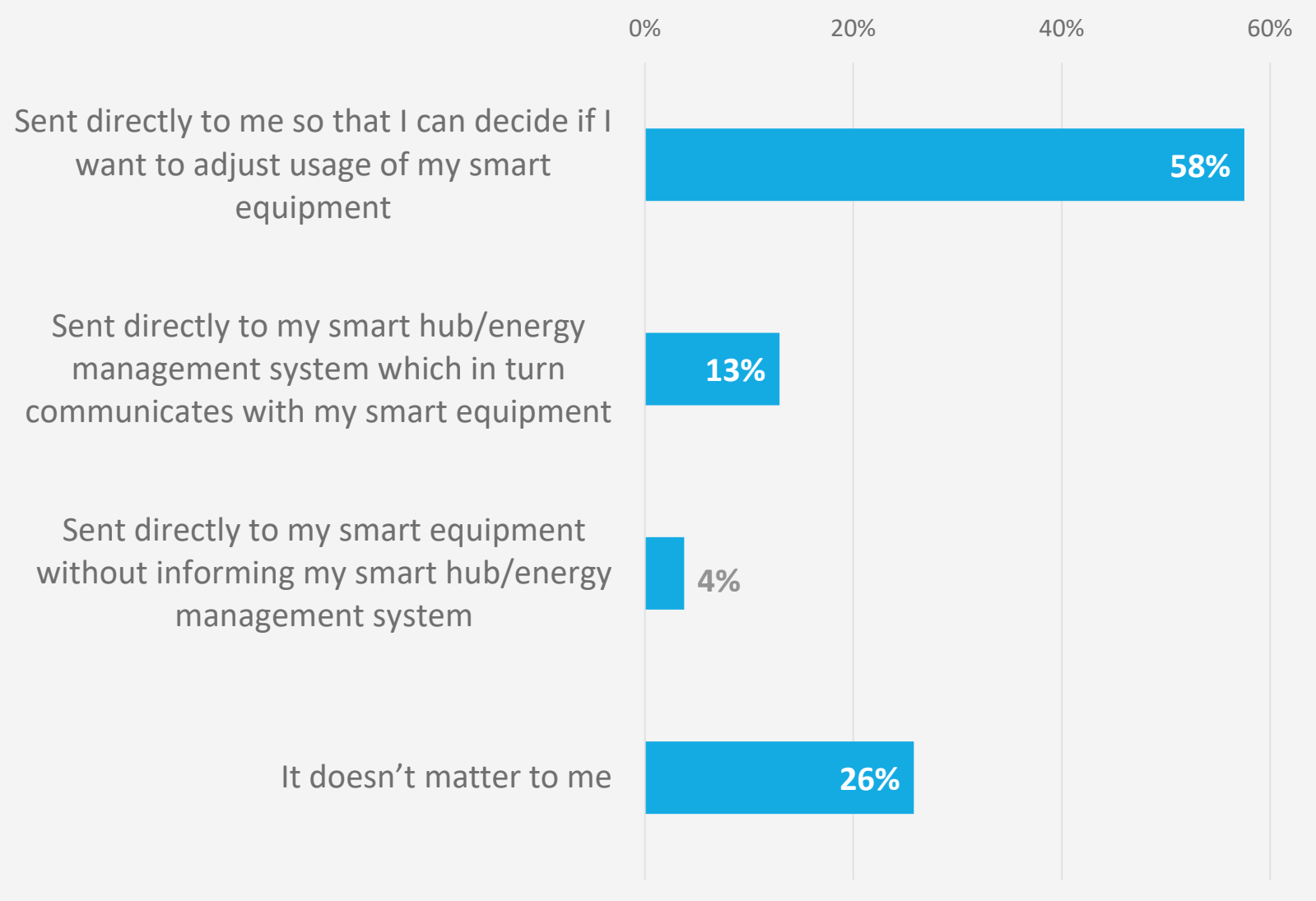
Q: If you were on the RTP rate plan, how would you prefer to receive price notifications?

Referred as “**price to self**” customers
in the rest of report

Referred as “**price to device**” customers
in the rest of report

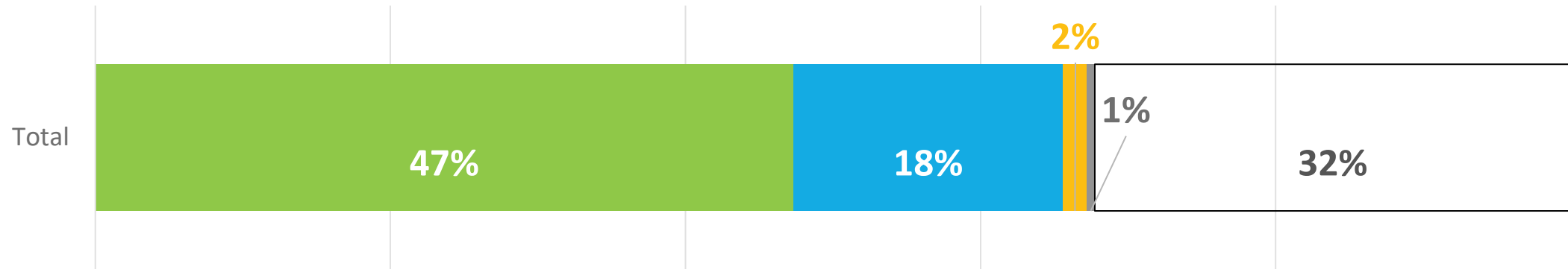
Referred as “**price to equipment**”
customers in the rest of report

Referred as “**notification indifferent**”
customers in the rest of report



The most preferred price change interval is every two hours

Q: If you were on the RTP rate plan, which time interval for the price changes would you prefer?



■ Price change every two hours

■ Price change hourly

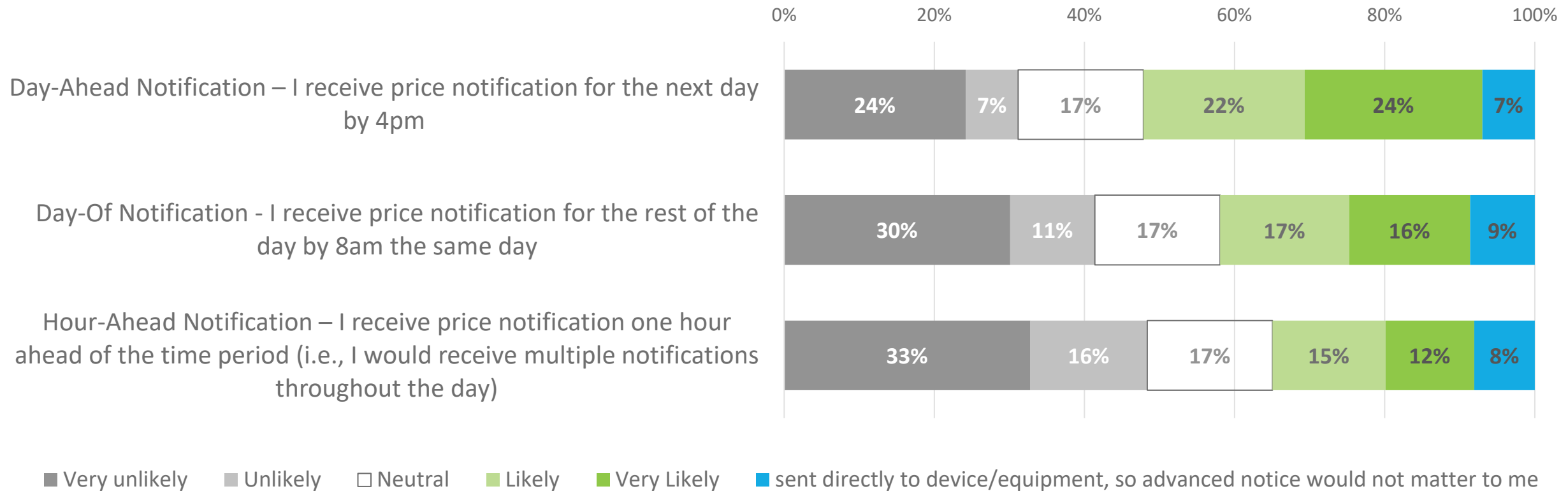
■ Price change every 15 minutes

■ Price change every 5 minutes

□ It doesn't matter

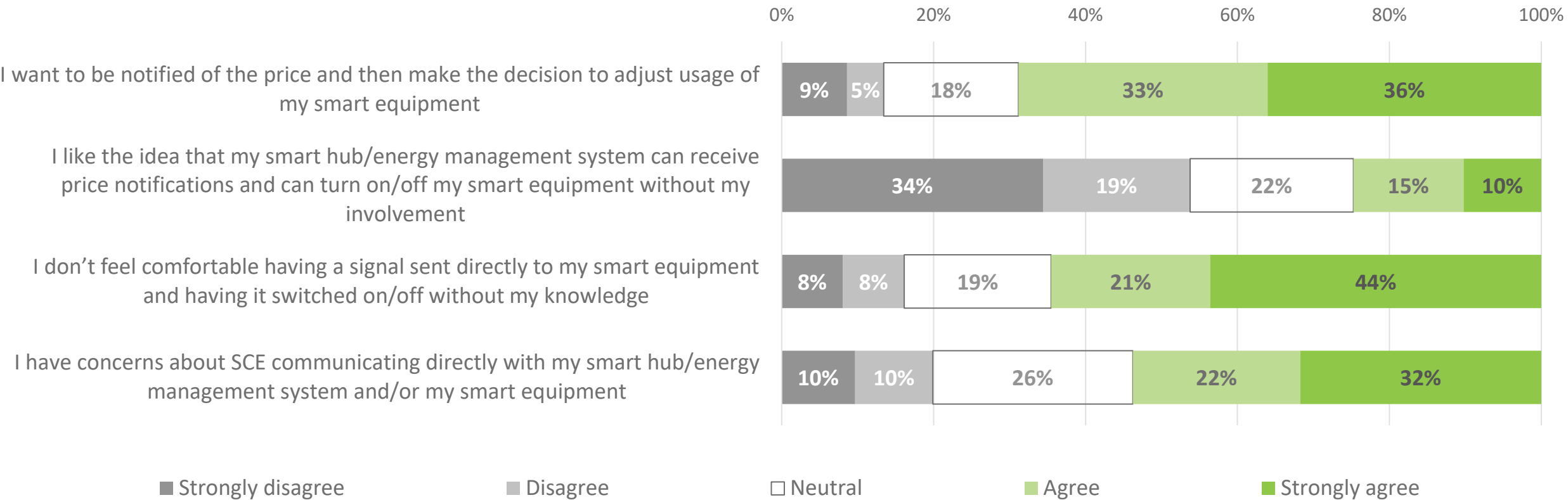
The most preferred price notification period is Day-Ahead

Q: Please rate your likelihood to participate in RTP based on each of the following price notification options



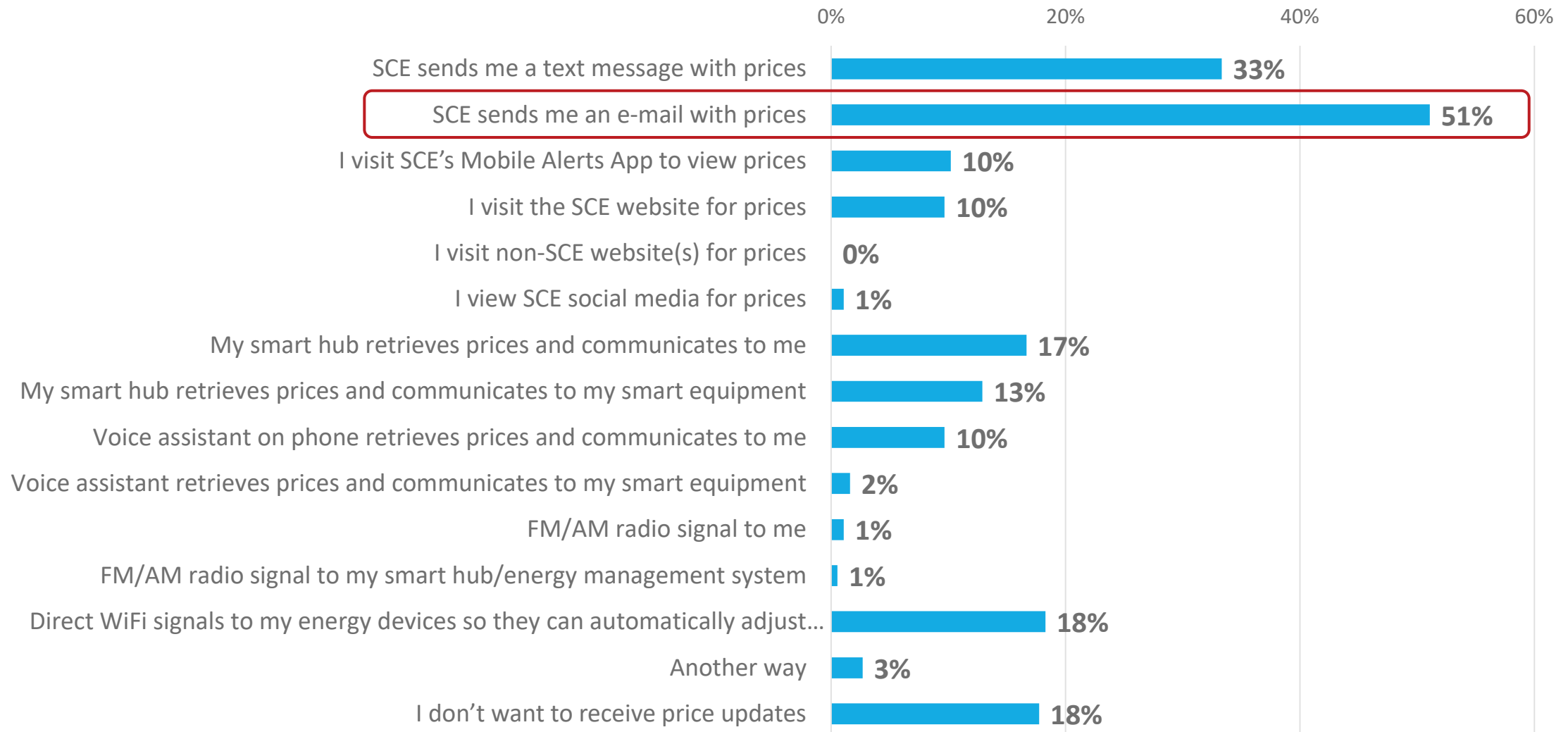
Majority prefers to be notified of the price to then make decisions, consistent with “price to self” designation

Q: Below are some statements about the RTP price notifications process. Please select how much you agree or disagree with each statement.



51% prefer receiving prices via email, consistent with “price to self” notification preference

Q: If you were on the RTP rate plan, how would you prefer to receive price notifications?



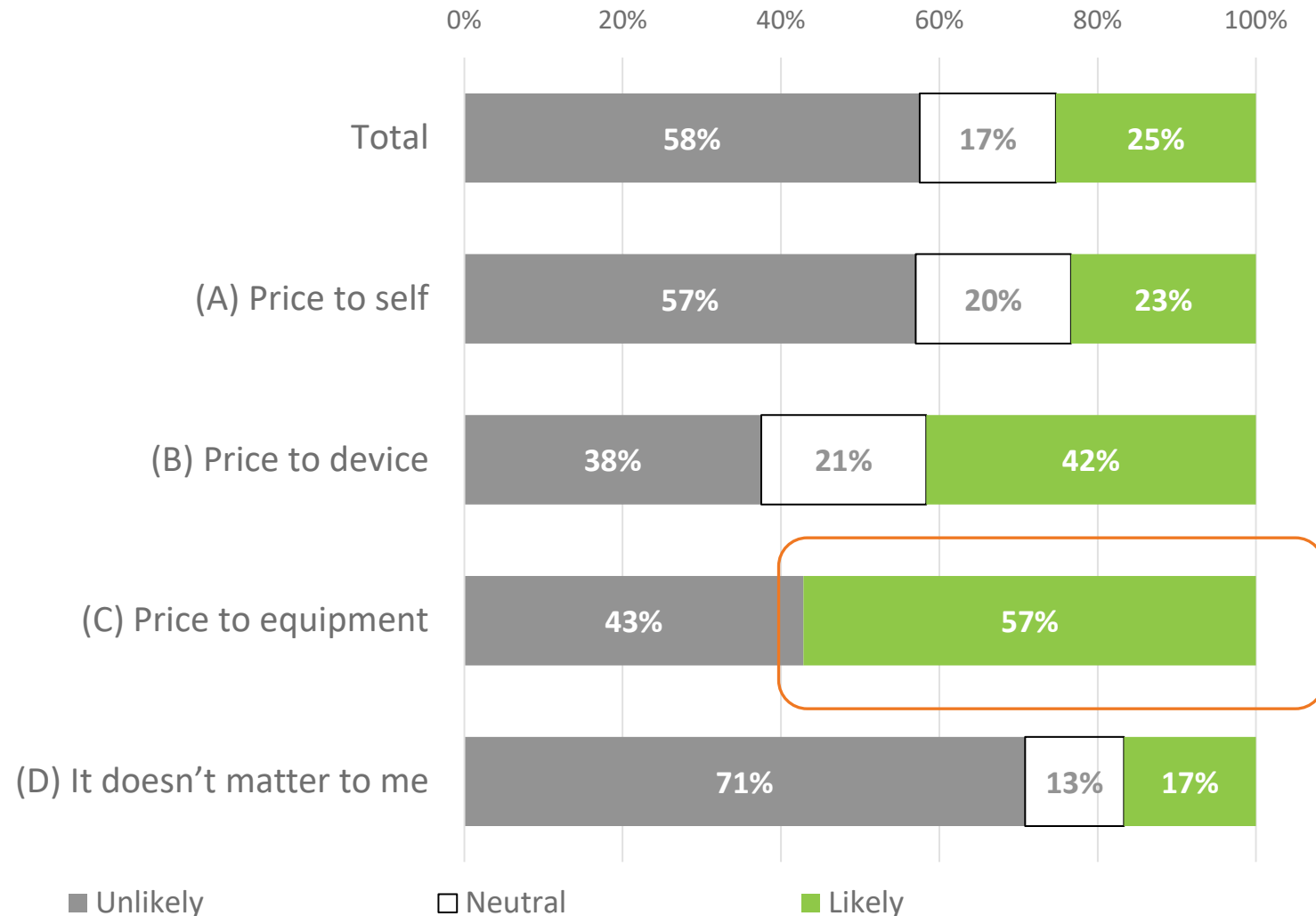


Results by notification preference segments

Customers who prefer “price to device” or “price to equipment” are more likely to enroll RTP

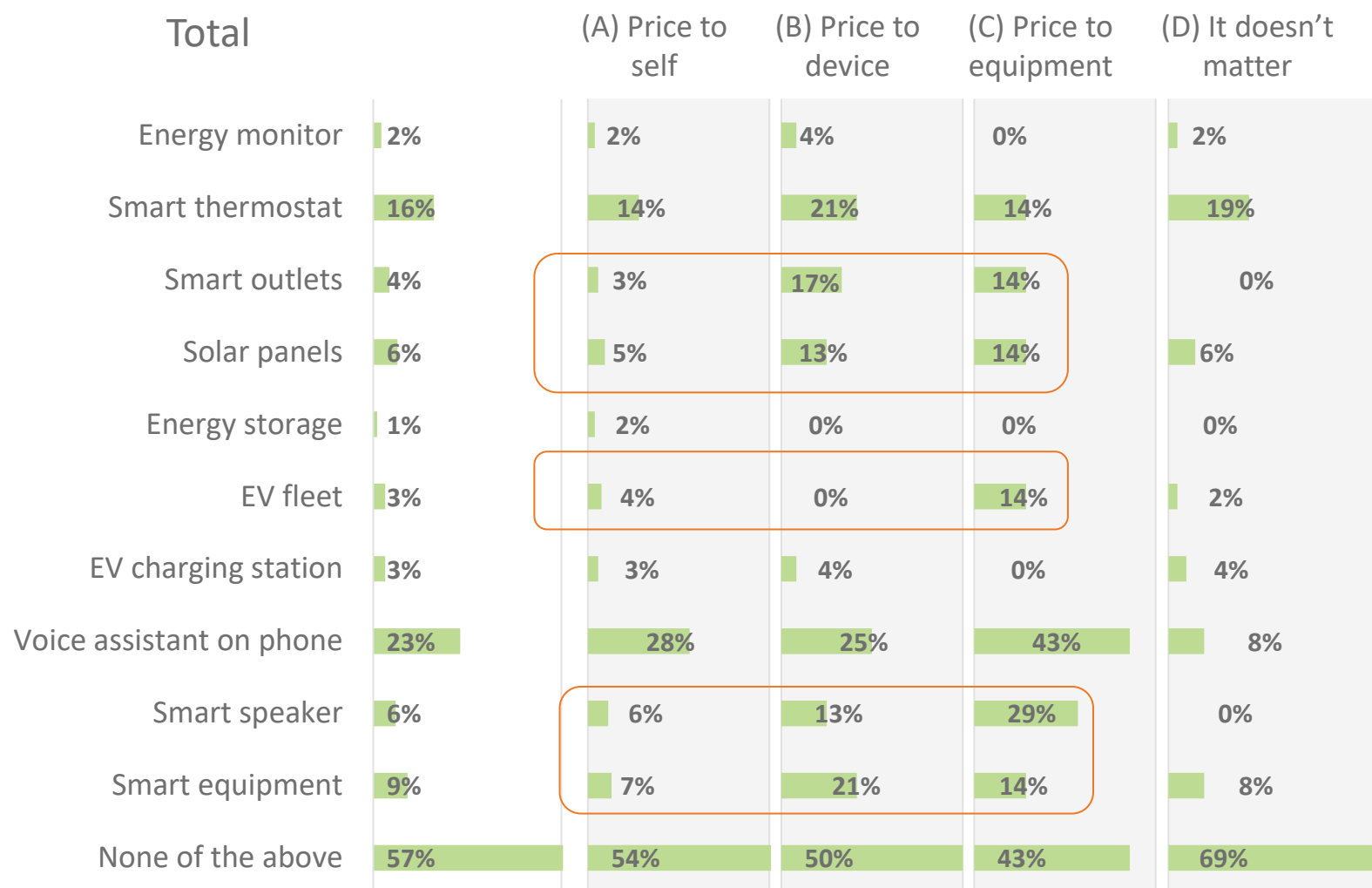
- 57% of the “**price to equipment**” customers indicated “likely to enroll” vs. only 23% of the “price to self” customers indicated such intent.
- Most of the customers indifferent about notification method are not interested in RTP.

Percentage of respondents selecting the enrollment likelihood level



Ownership percentages of smart outlets, solar panels, smart speakers, and smart equipment are higher among “price to device/equipment” customers than among “price to self” customers

Technology Ownership by Preferred RTP Notification Mechanism

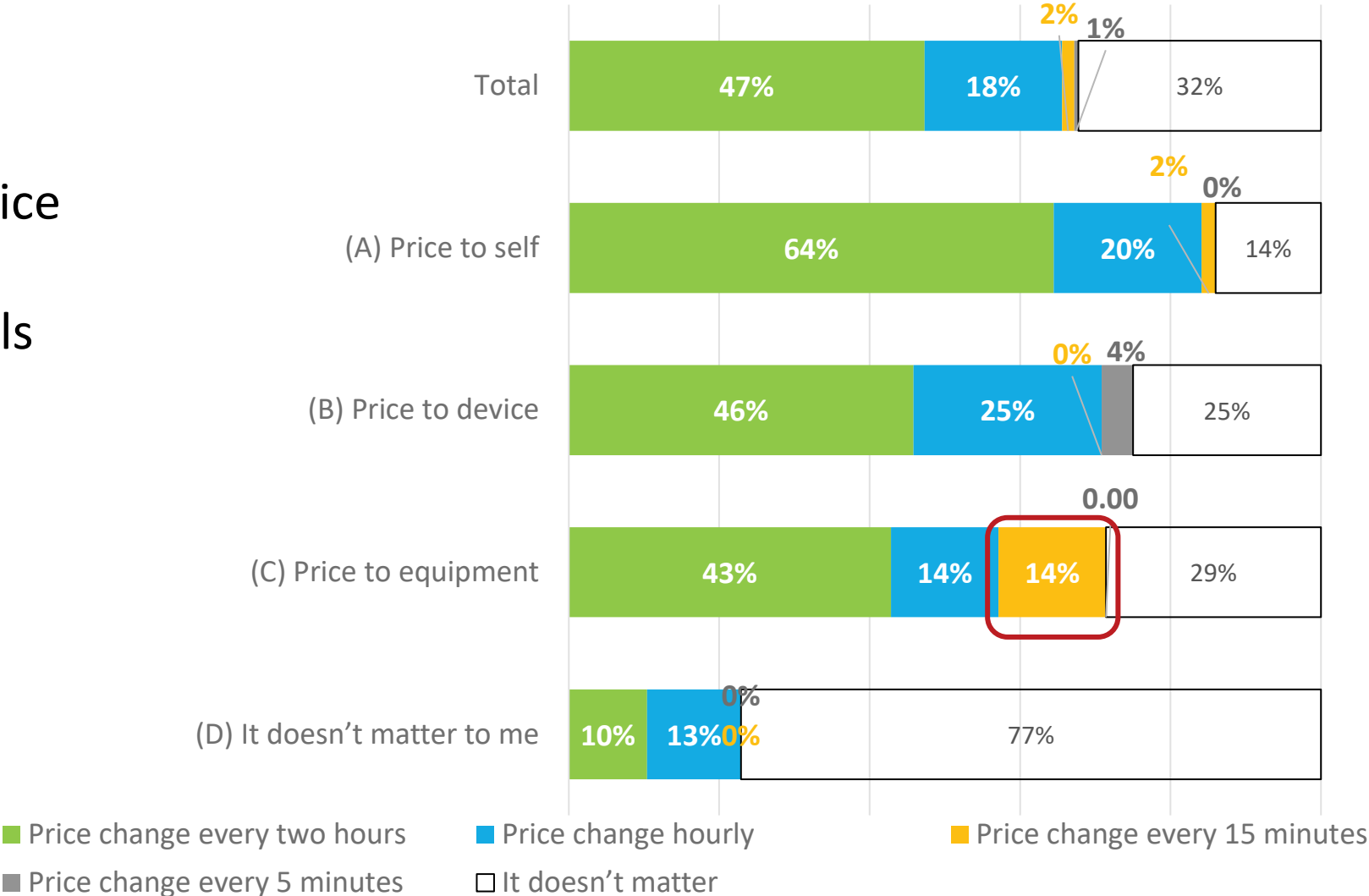


- 17% of “price to device” customers own smart outlets, vs. only 3% of “price to self” customers
- 29% of “price to equipment” customers own smart speakers, vs. only 6% of “price to self” customers
- 21% of “price to device” customers own smart equipment, vs. only 7% of “price to self” customers

Customers who prefer “price to equipment” show the highest acceptance of 15-min pricing intervals

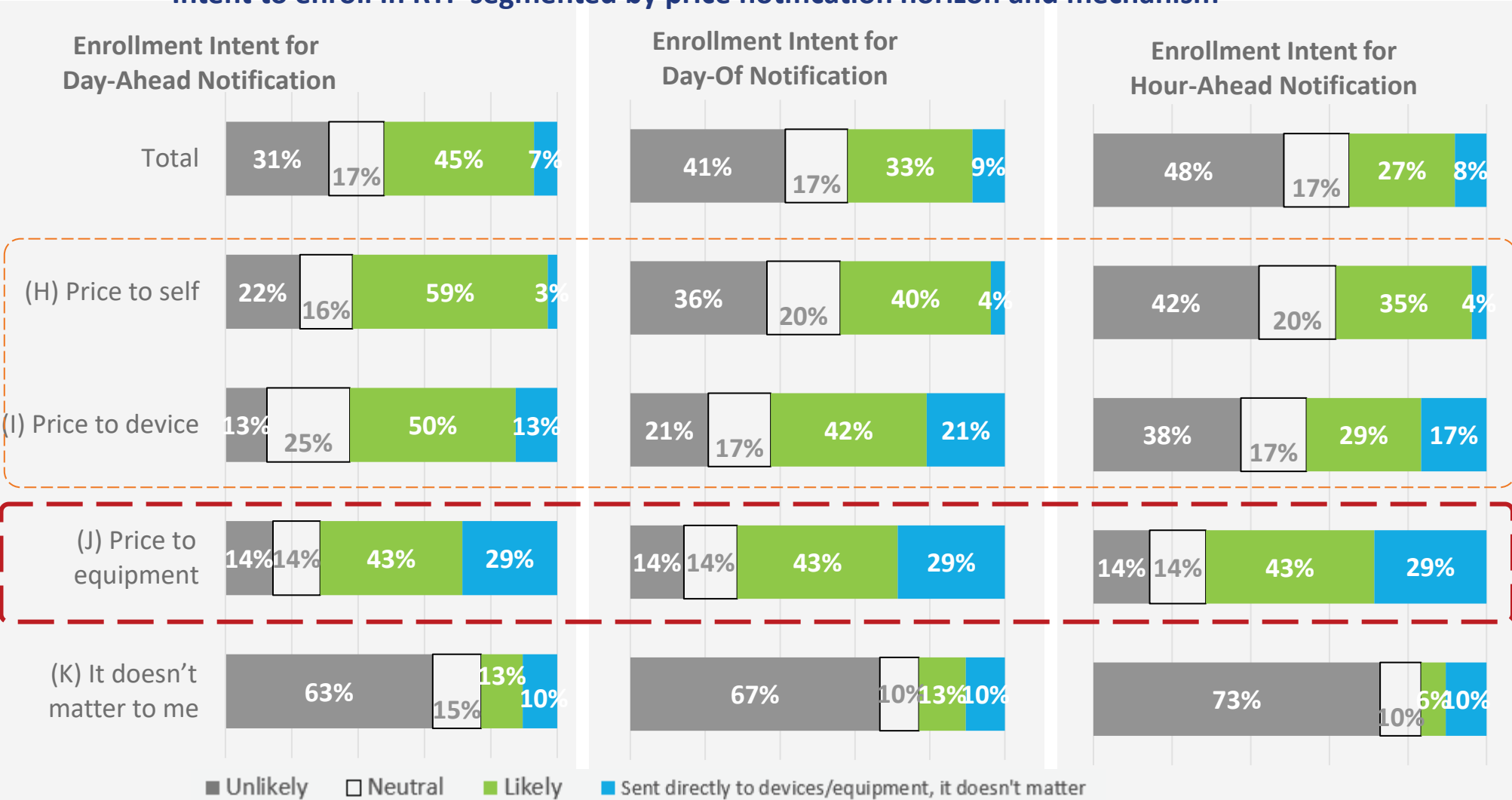
Preferences for RTP Intervals Segmented by Preferred Notification Mechanism

14% (one out of seven) “price to equipment” customers prefer 15-min price intervals



“Price to equipment” customers’ intent to enroll in RTP does not vary by notification time horizon

Intent to enroll in RTP segmented by price notification horizon and mechanism

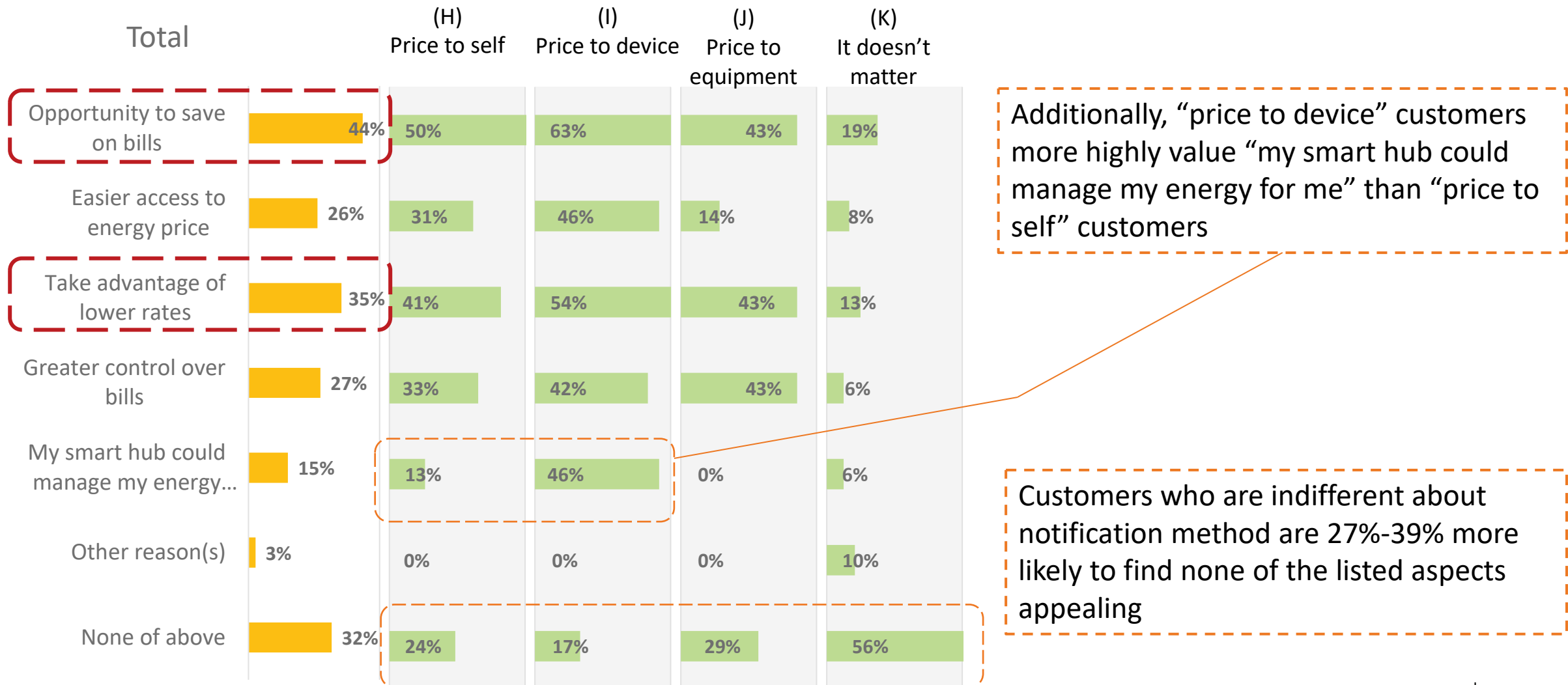


The shorter the notification time horizon, the less likely “price to self” and “price to device” customers are to enroll

Regardless of notification time horizons, 43% of “price to equipment” customers are likely to enroll and 29% do not care about time horizons

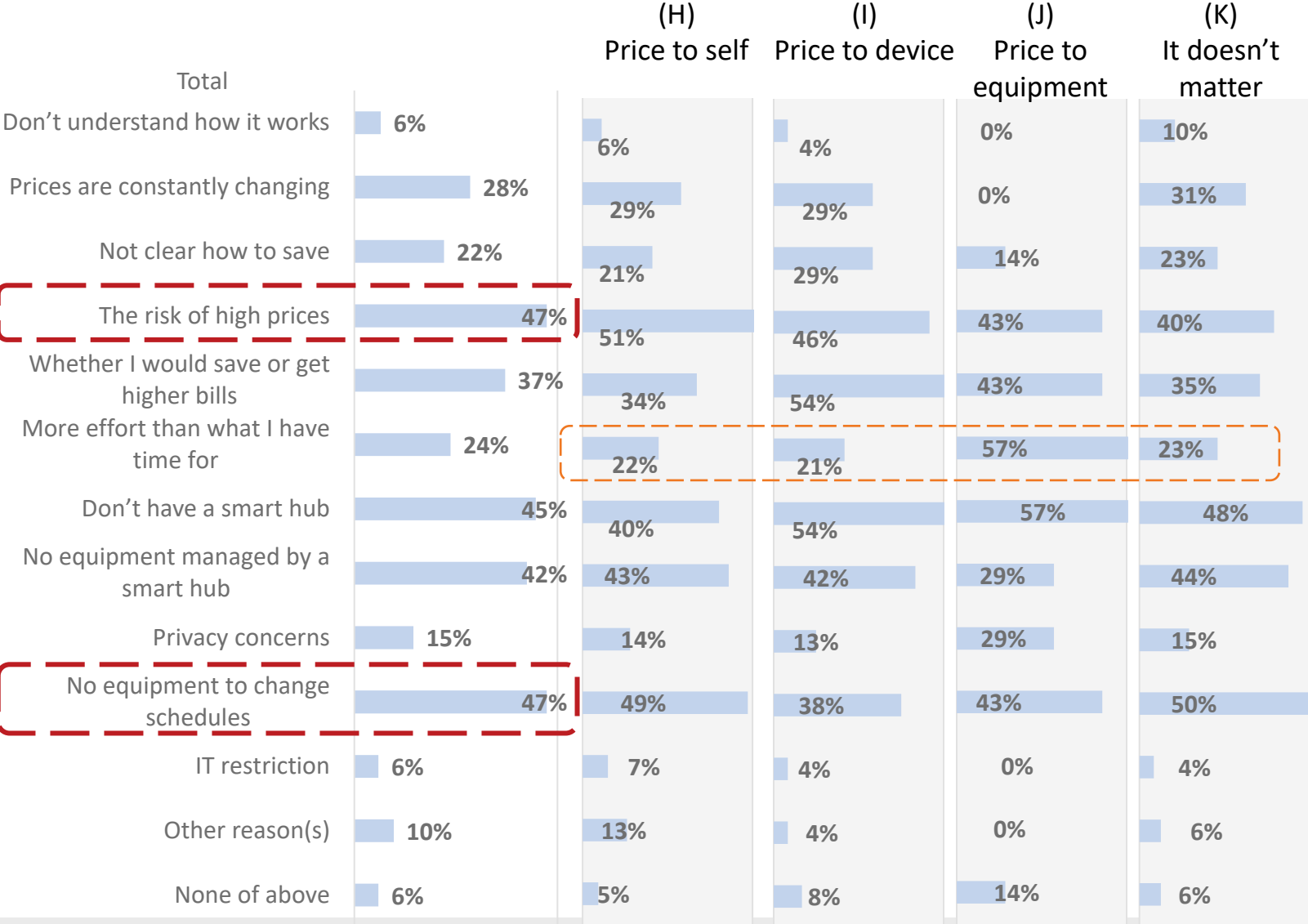
“Opportunity to save on bills” and “taking advantage of lower rates” are the two most appealing aspects of RTP

Appealing aspects of RTP, segmented by preferred price notification mechanism



“Risk of high prices” and “no equipment to change schedule” are the two most unappealing aspects of RTP overall

Unappealing aspects of RTP, segmented by preferred price notification mechanism



57% of “price to equipment” customers find “it seems more effort than I have for” unappealing, vs. only 22% of “price to device” customers (which may explain why they would prefer equipment automation)

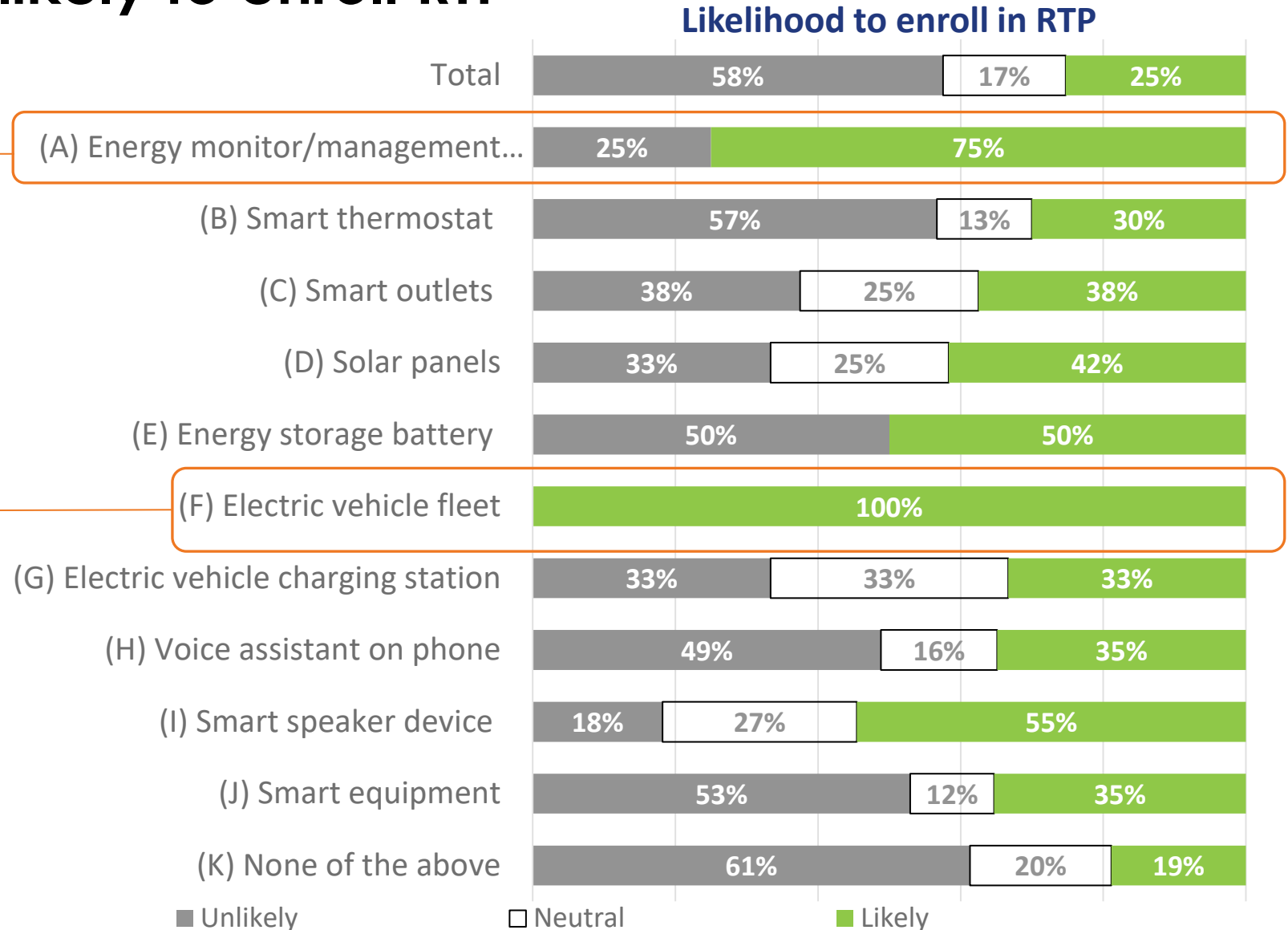


Results by technology ownership segments

Owners of electric vehicle fleets and energy management systems are the most likely to enroll RTP

75% of owners of energy management systems indicate they are “likely to enroll” in RTP

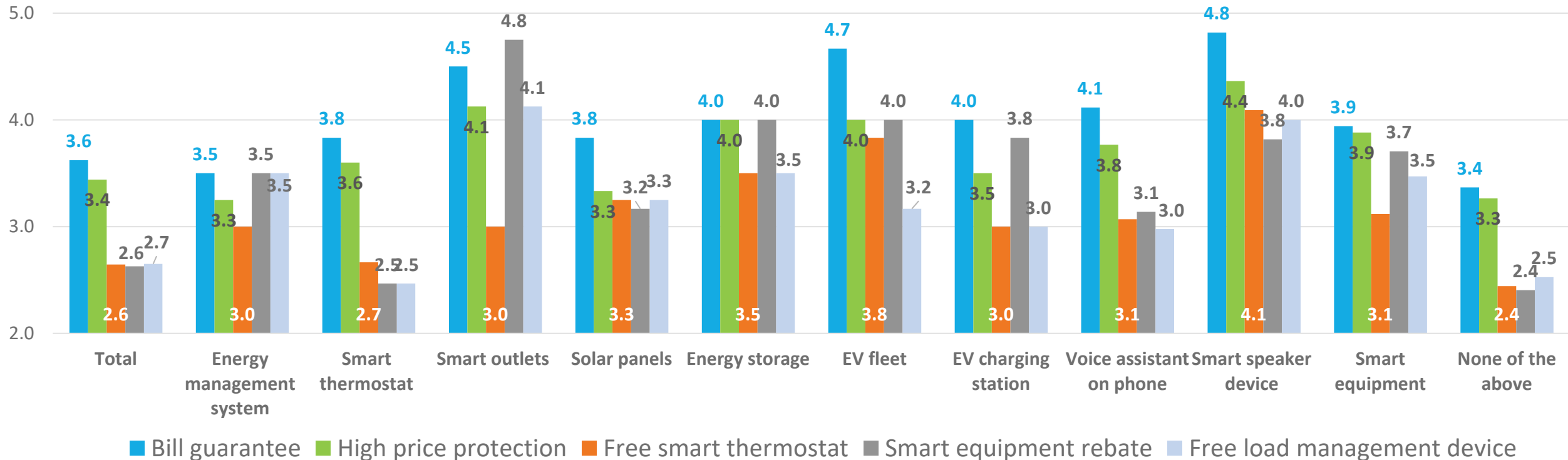
All owners of electric vehicle fleets indicate they are “likely to enroll” in RTP



Incentives are most influential to owners of smart outlets and smart speakers – four out of five incentive options are rated above “very influential” on average among these owners. The influence level of incentives also varies among different technology owner groups

- Bill guarantee and high price protection are very/extremely influential (rate > 4.0) to owners of smart outlets, energy storage systems, EV fleets, and smart speakers
- Smart equipment rebate is the most influential to owners of smart outlets and EV fleet but least influential to owners of smart thermostats
- Free load management device is most attractive to owners of smart outlets and smart speakers
- Free smart thermostat is most attractive to owners of smart outlets and smart speakers

1-5 rating scale adapted from influence ratings of “not at all/somewhat/moderate/very/extremely influential”

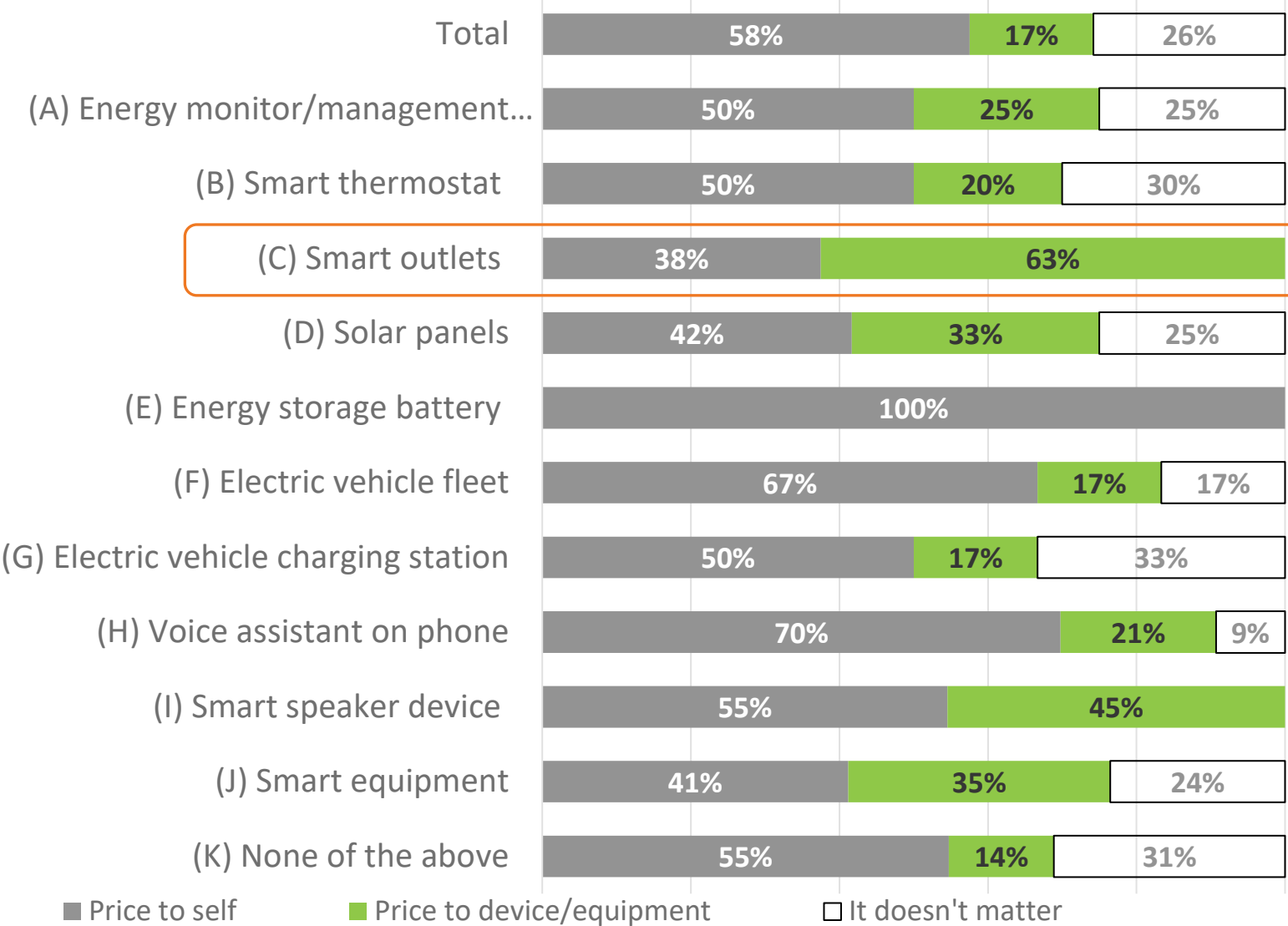


Owners of smart outlets show the highest acceptance of price notification sent directly to their devices/equipment

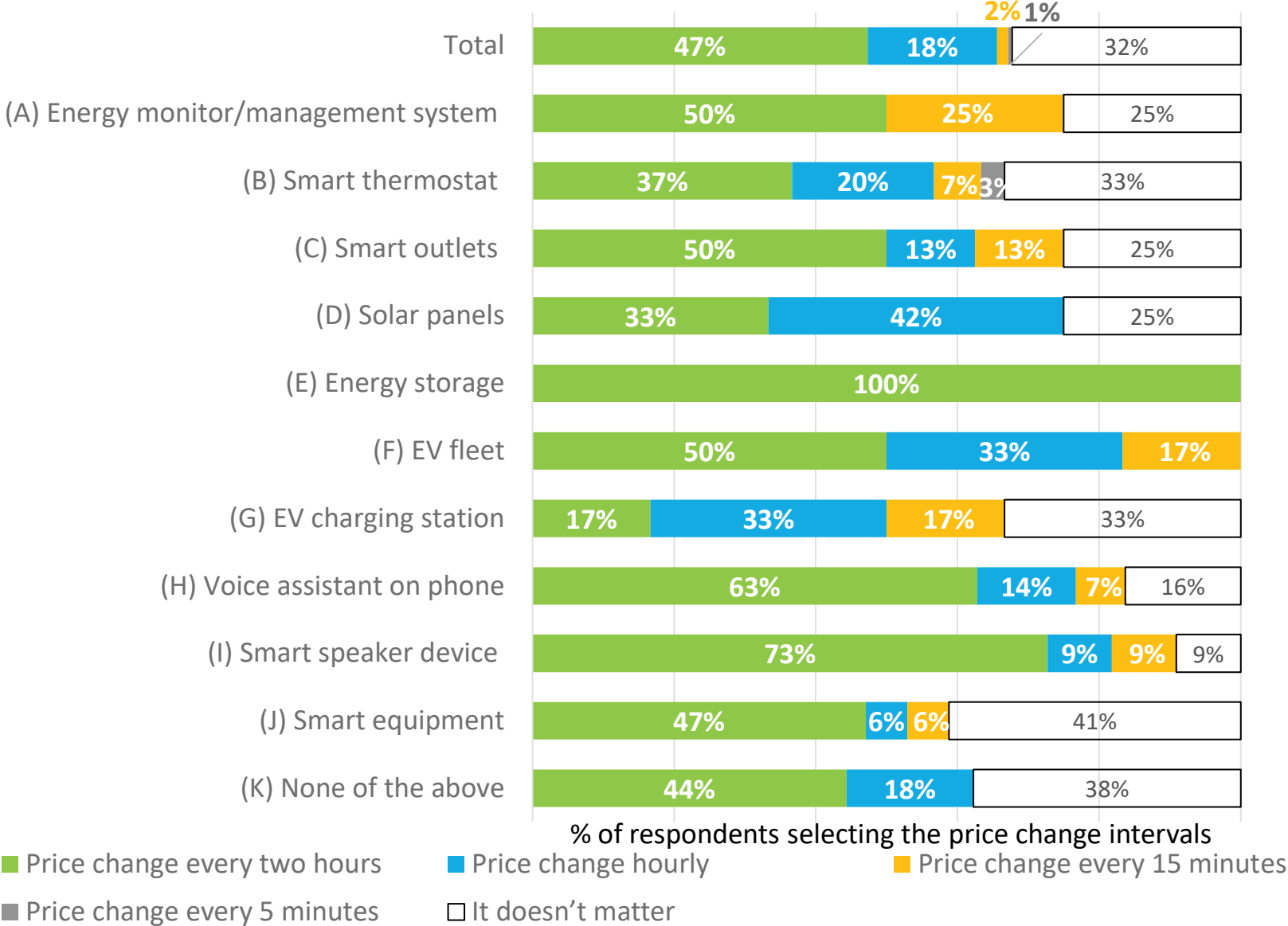
Preferred price notification method segmented by technology ownership

63% of smart outlet owners prefer the “price to device” or “price to equipment” notification method

This is significantly higher than for owners of smart thermostats or phone voice assistants



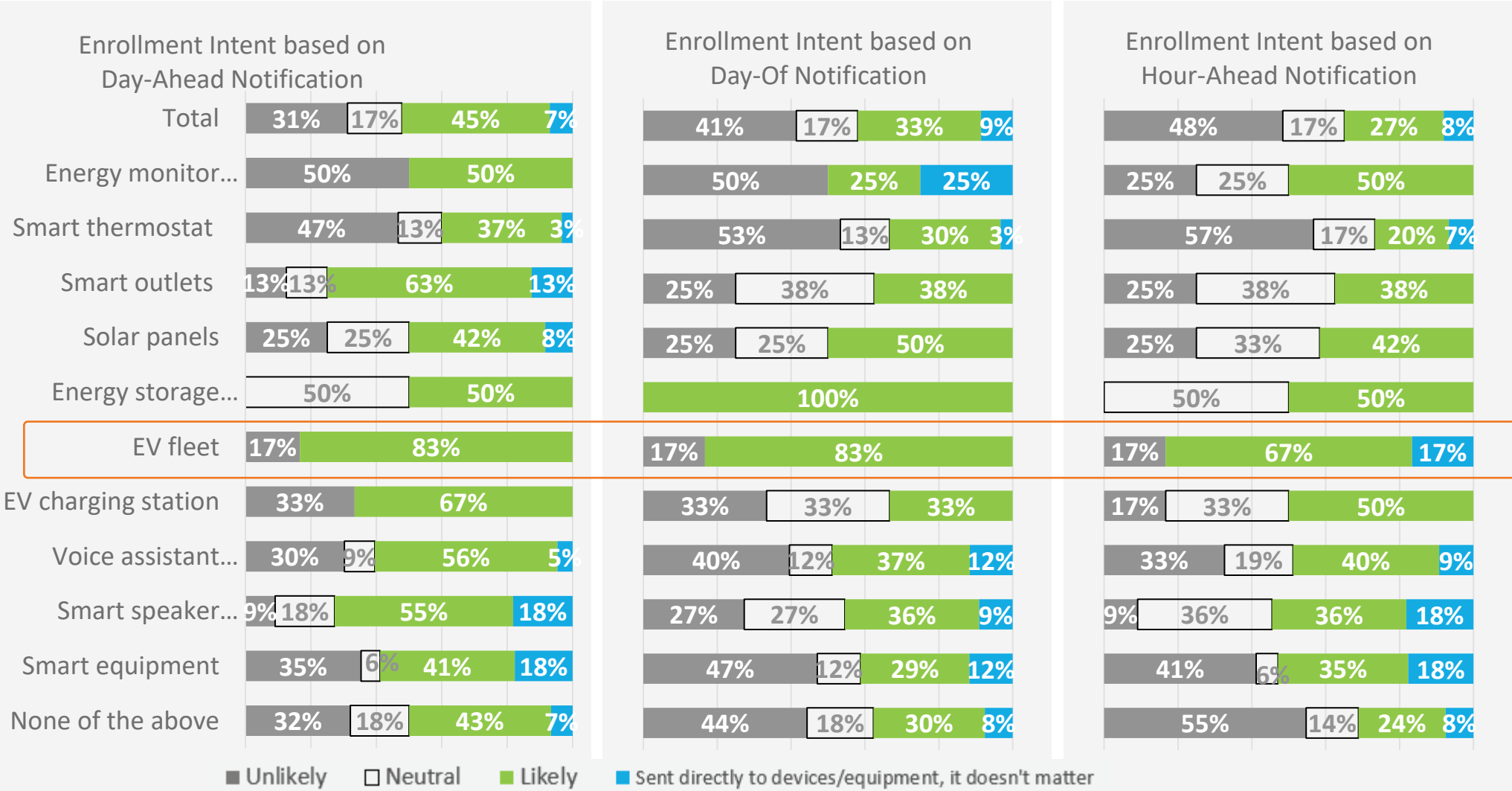
Customers who own energy monitor systems, EV fleets or EV charging stations have higher acceptance of 15-min price intervals than other tech owner groups



- Owners of solar panels and EV fleets & EV charging stations show the highest preference for hourly pricing (42% and 33%, respectively)
- Majority of voice assistant or smart speaker owners prefer two-hour pricing
- 41% of smart equipment owners are indifferent about price time intervals, which is the highest among all technology ownership groups

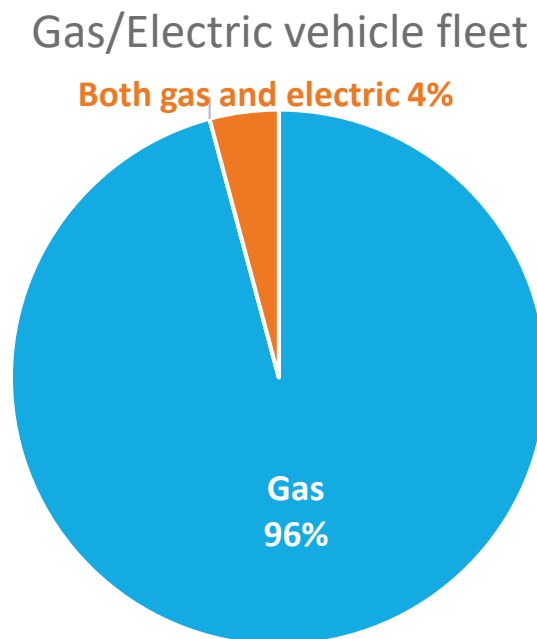
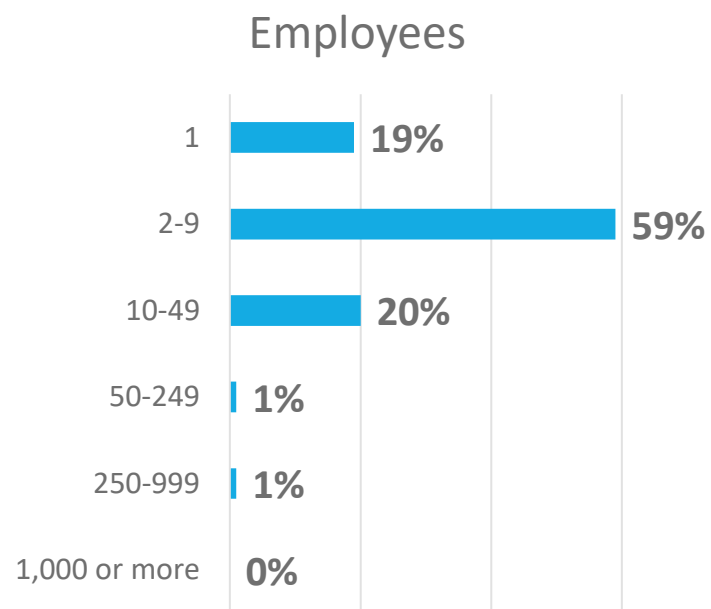
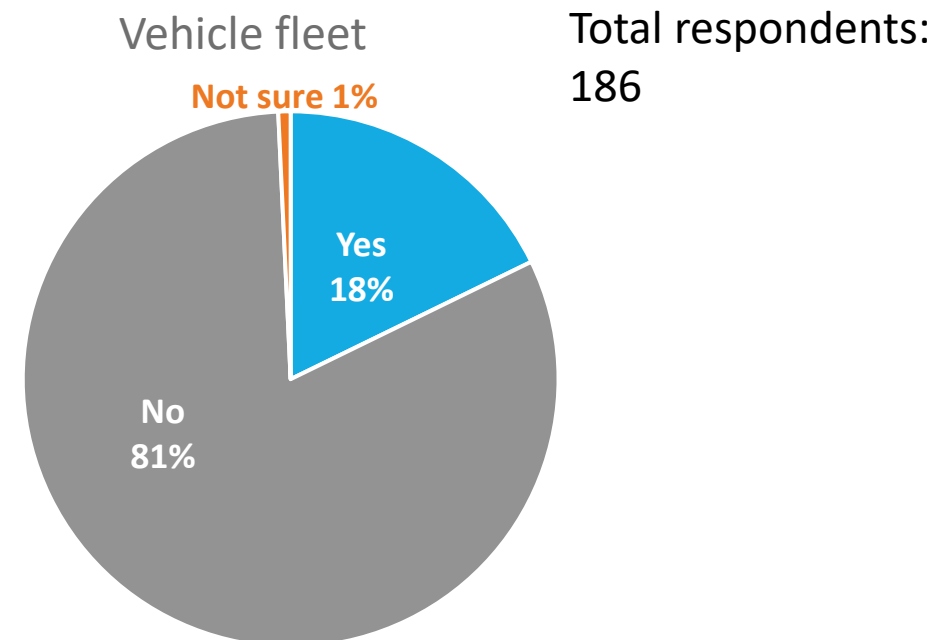
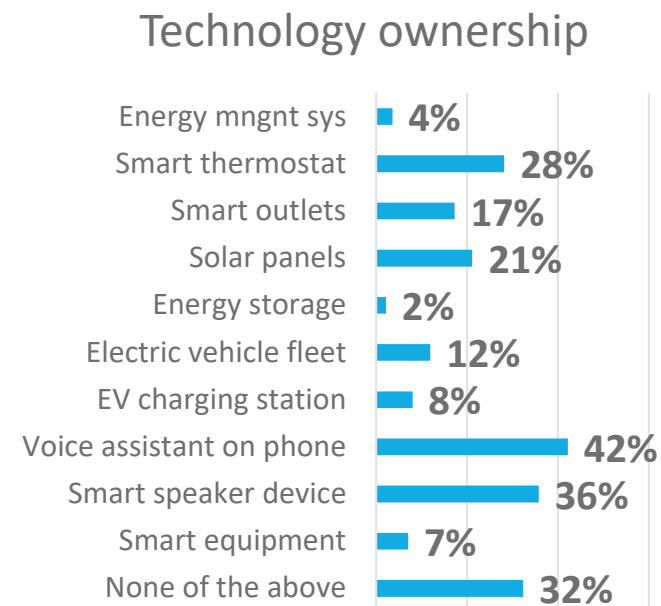
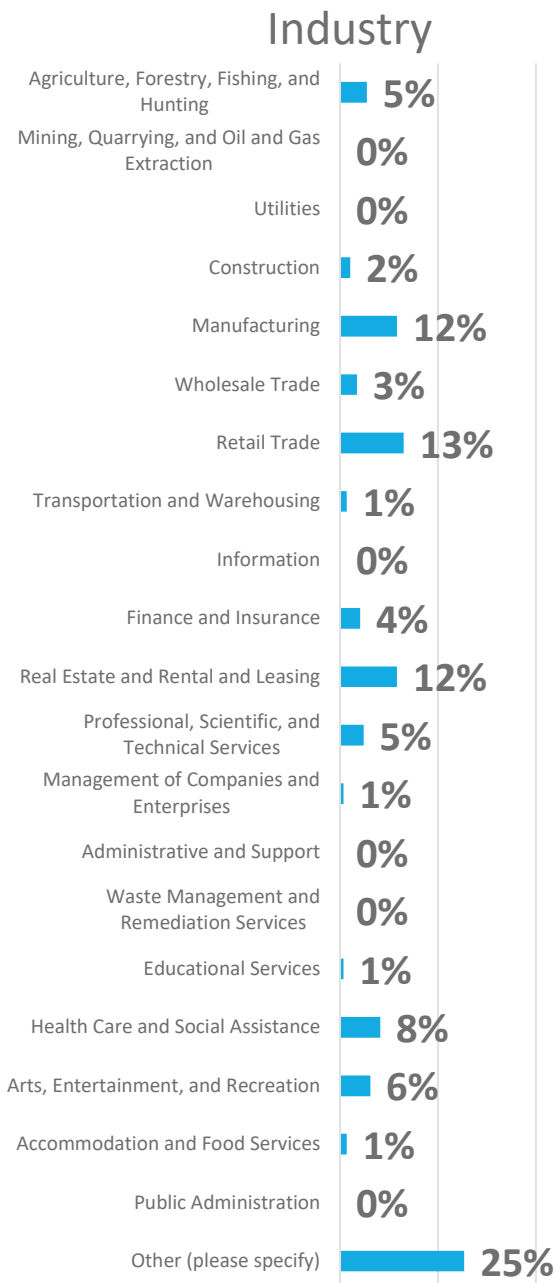
Business customers with EV fleets show the highest intent to enroll in RTP across all three price notification horizon options

Intent to enroll in RTP segmented by technology ownership and price notification horizon





Appendix – panel firmographics

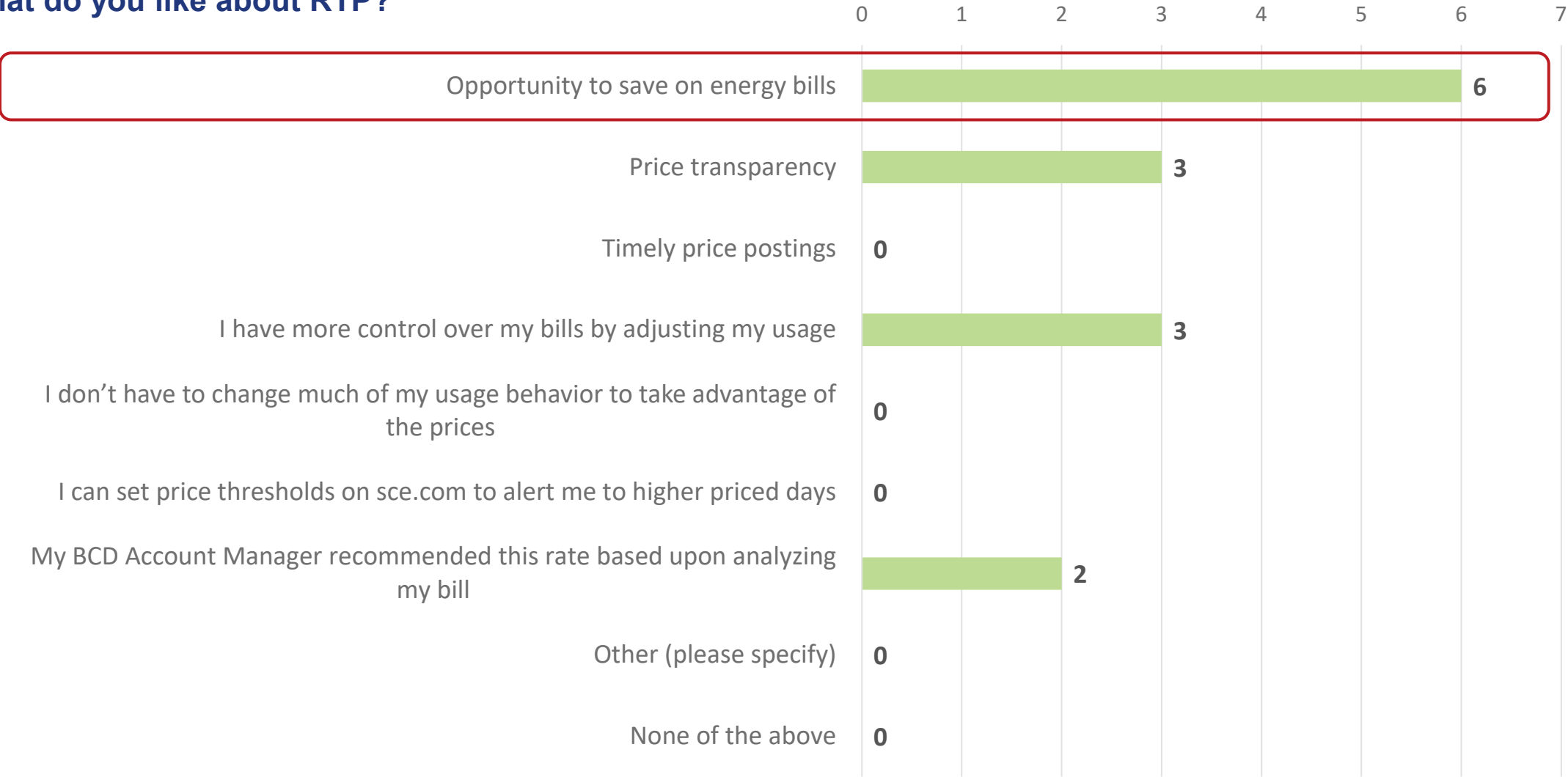




Results of Current and Recent RTP Customers Survey (7 completes)

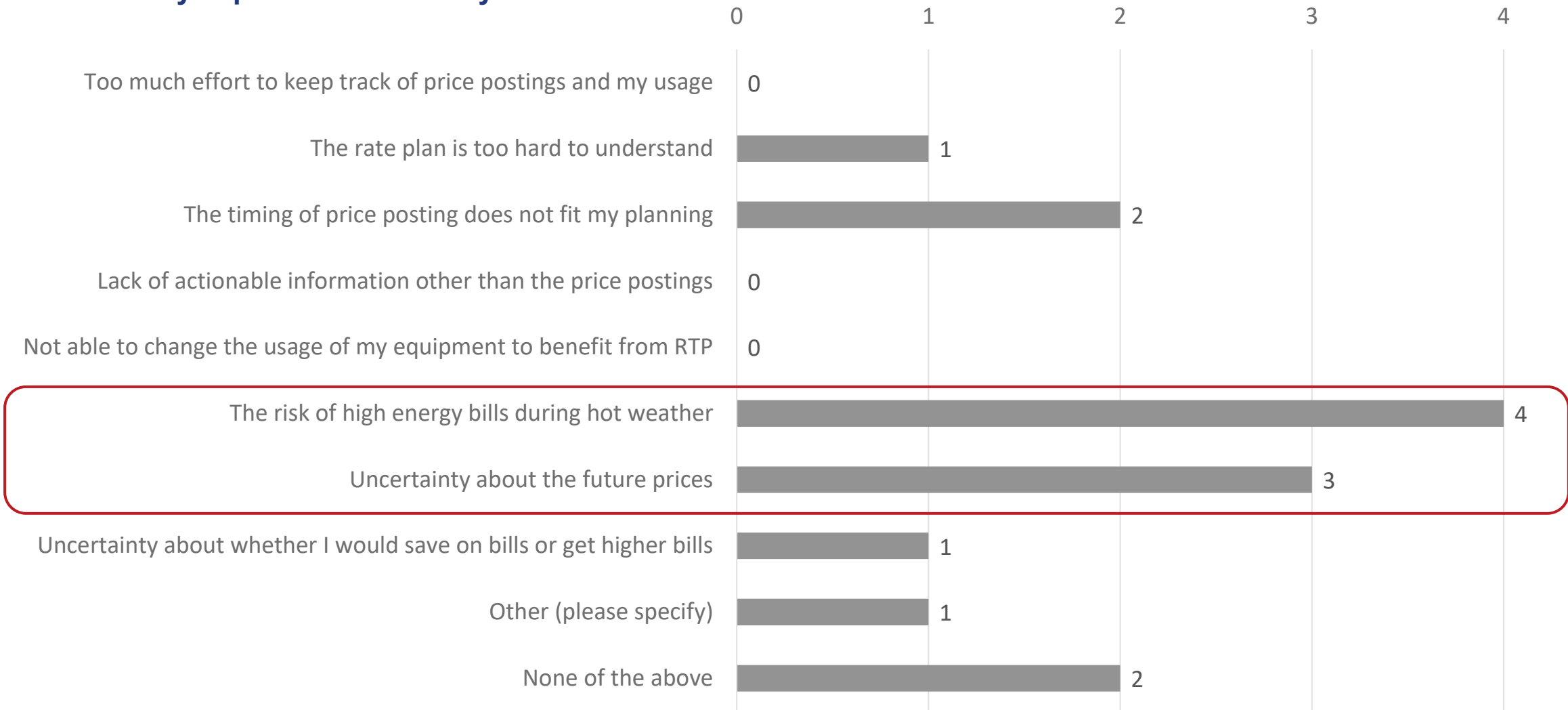
The most appealing aspect of RTP among current RTP customers is the opportunity to save on energy bills

Q: What do you like about RTP?



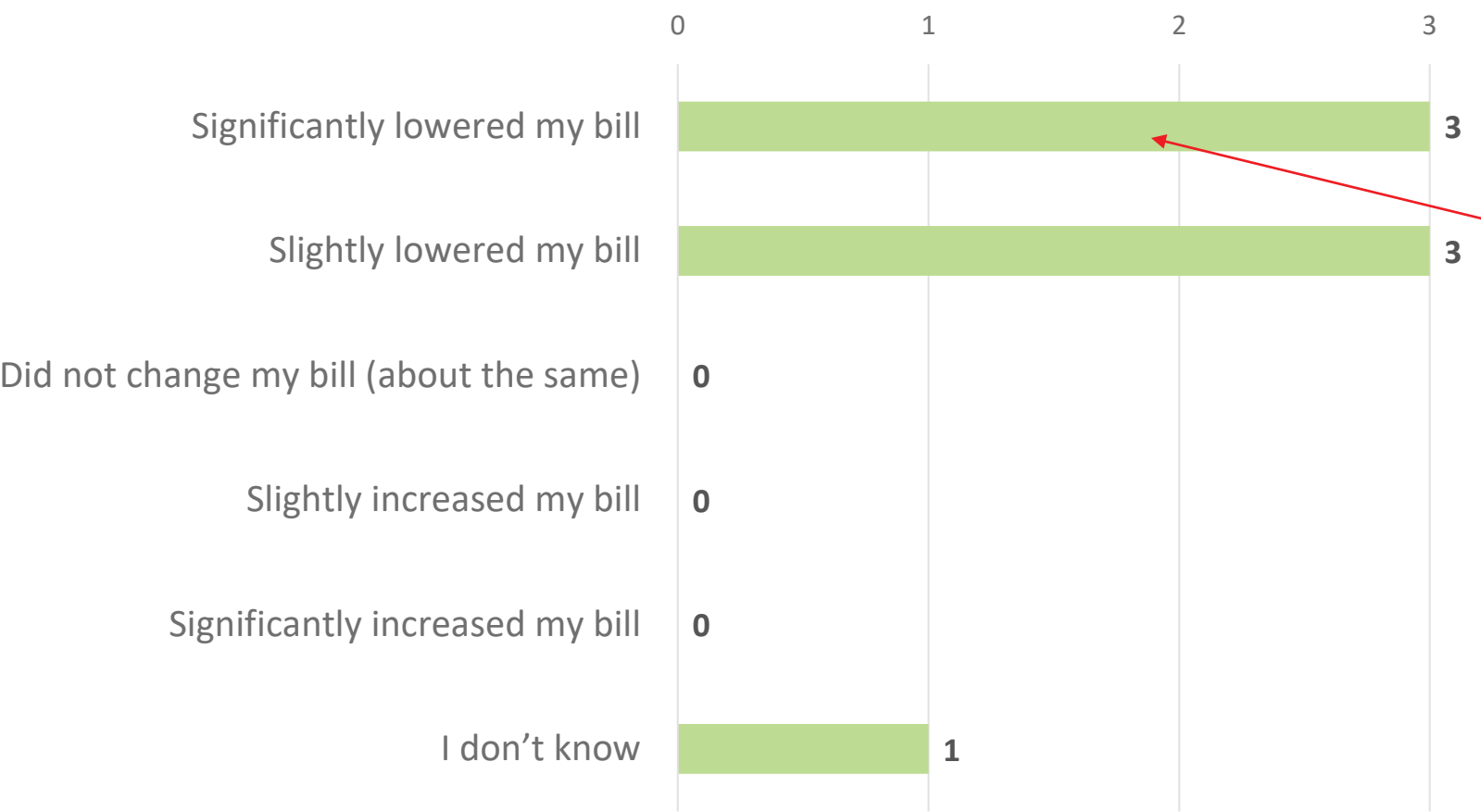
Current RTP customers most dislike the risk of high energy bills during hot weather, followed by the uncertainty of future prices

Q: Are there any aspects of RTP that you dislike?



Six out of seven respondents stated that RTP had lowered their bills

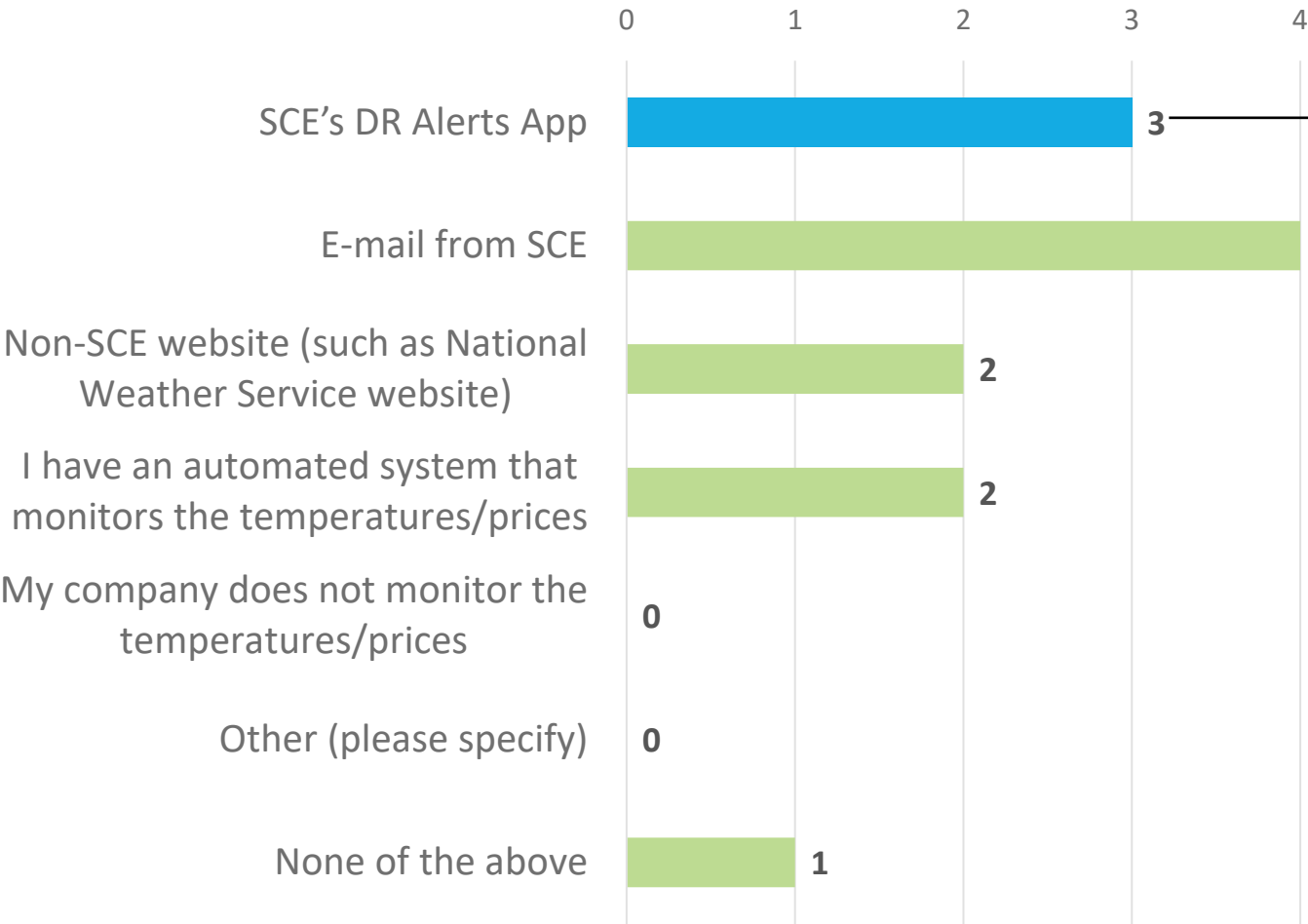
Q: Do you believe being on RTP reduced your monthly electricity costs?
Please select the option that best describes how RTP has affected your electricity bill.



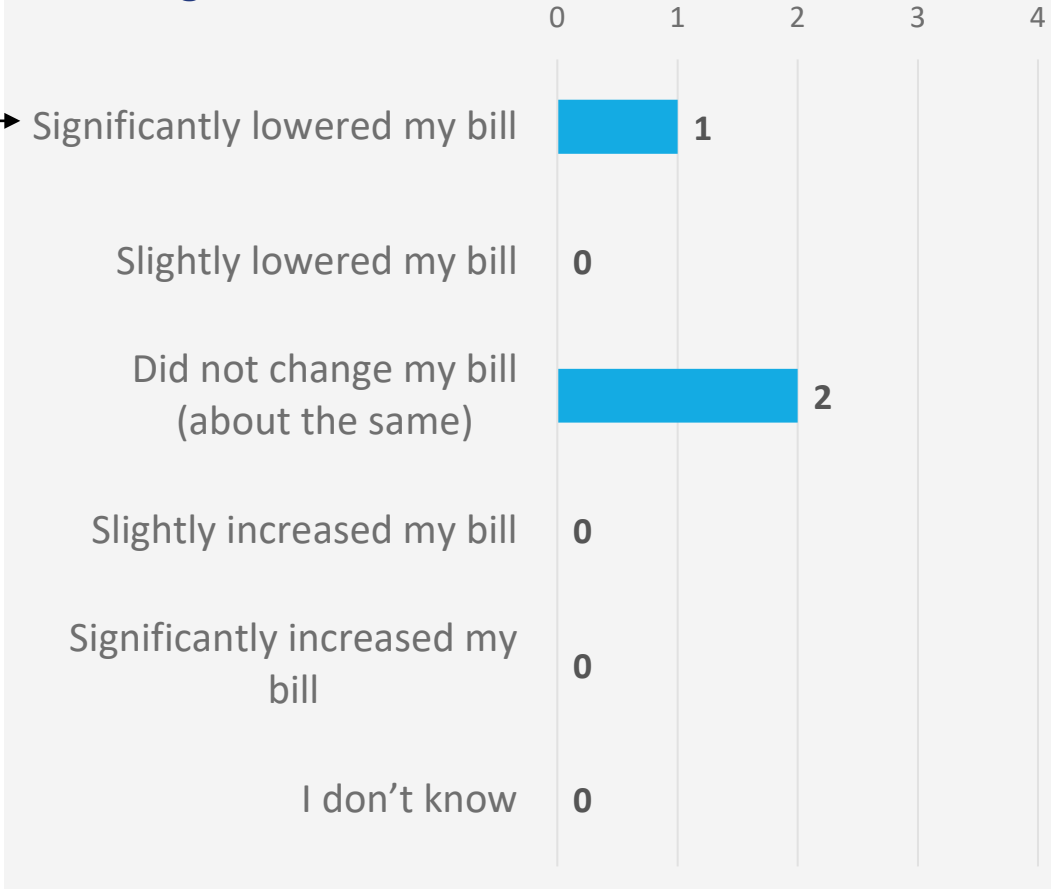
About the three customers who indicated “significantly lowered my bills”: two of them have an energy management system, one has an energy storage system to respond to RTP

Current customers mainly receive price notifications through email or DR alerts app

Q: How do you receive temperature/price information?

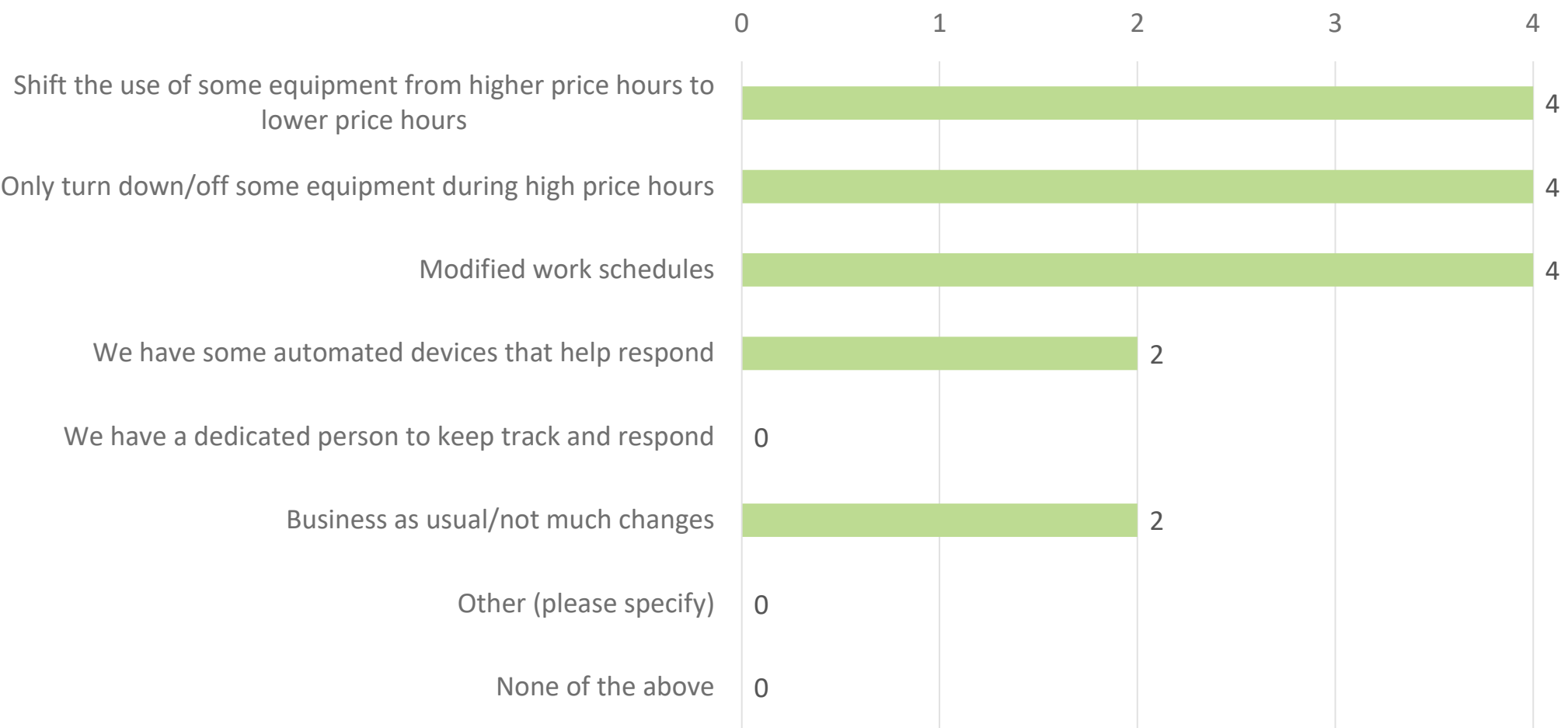


Q: If you receive temperature/price information via the DR Alerts App, did you find it beneficial to reducing bills?



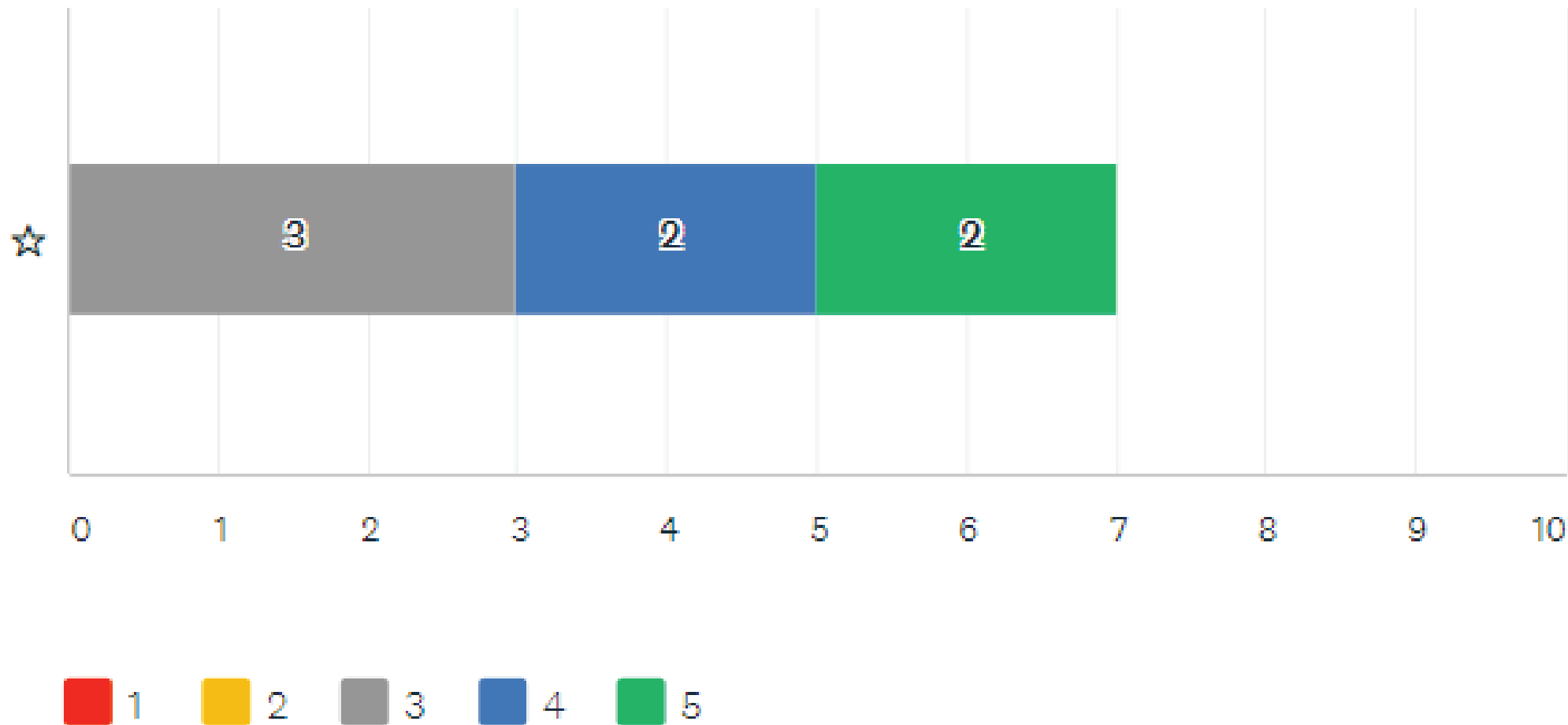
4 out of 7 respondents are able to shift equipment use or modify work schedules. Two respondents have automated devices to help respond

Q: Which of the following describe how you respond to real time price updates?



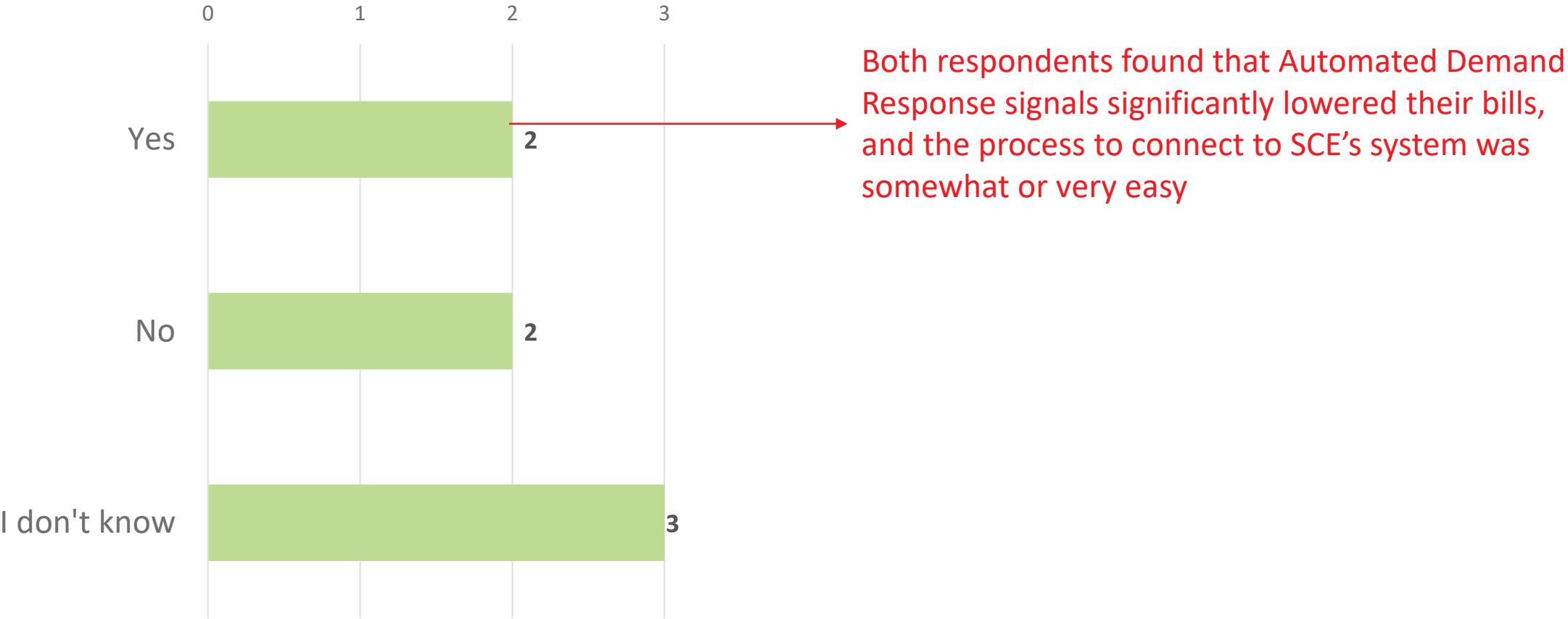
All respondents rated SCE RTP program equal or above 3 stars on satisfaction

Q: How satisfied are you being on RTP? Please rate on a scale of 1 to 5, with 5 being the highest satisfaction



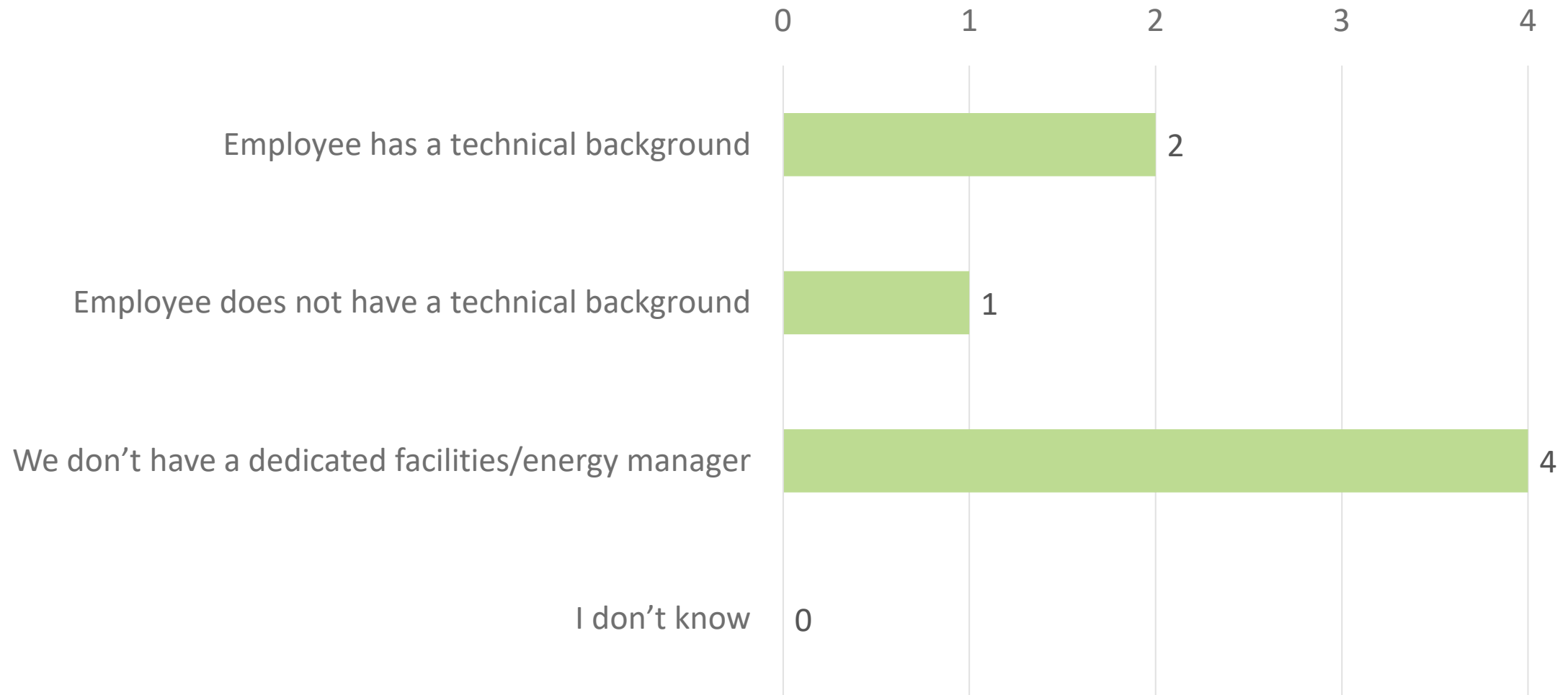
Two respondents confirmed a positive experience with Automated Demand Response signals

Q: Did you apply and install equipment with SCE to help shift and change loads based upon an Automated Demand Response signal from SCE?



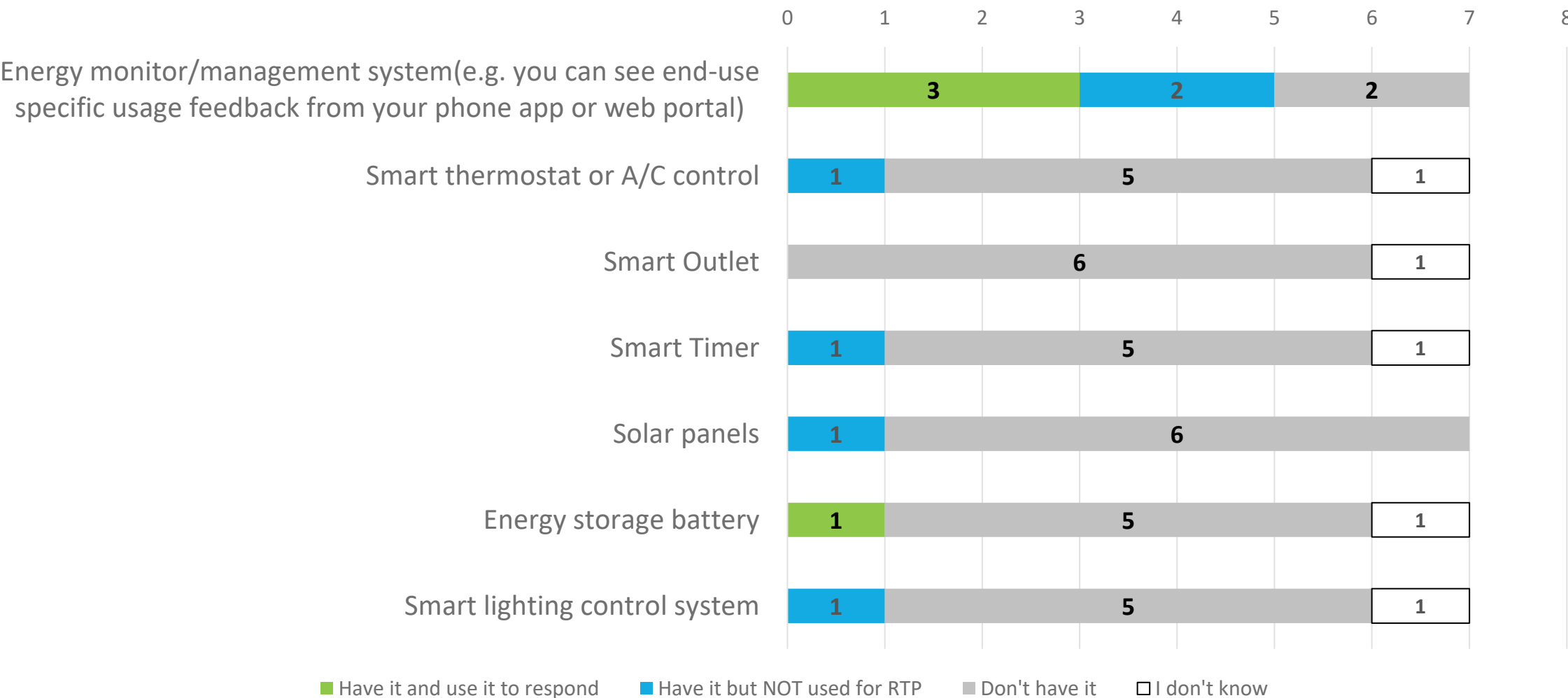
4 out of 7 respondents do NOT have a dedicated manager responsible for RTP responses

Q: How technical is the person at your facility responsible for shifting your facility's energy usage based upon the daily signals received?



Only two of five respondents who own energy management systems use them for RTP responses. Limited ownership observed for other technologies, and owners of smart timers, solar panels or smart lighting systems do not use these technologies for RTP.

Q: Which of the following technologies have helped you respond to real time price signals? Please select for each technology.



Four respondents who showed intent to enroll in market-based pricing either had assistance from technologies (energy management system or energy storage system), or already considered the RTP experience smooth and predictable

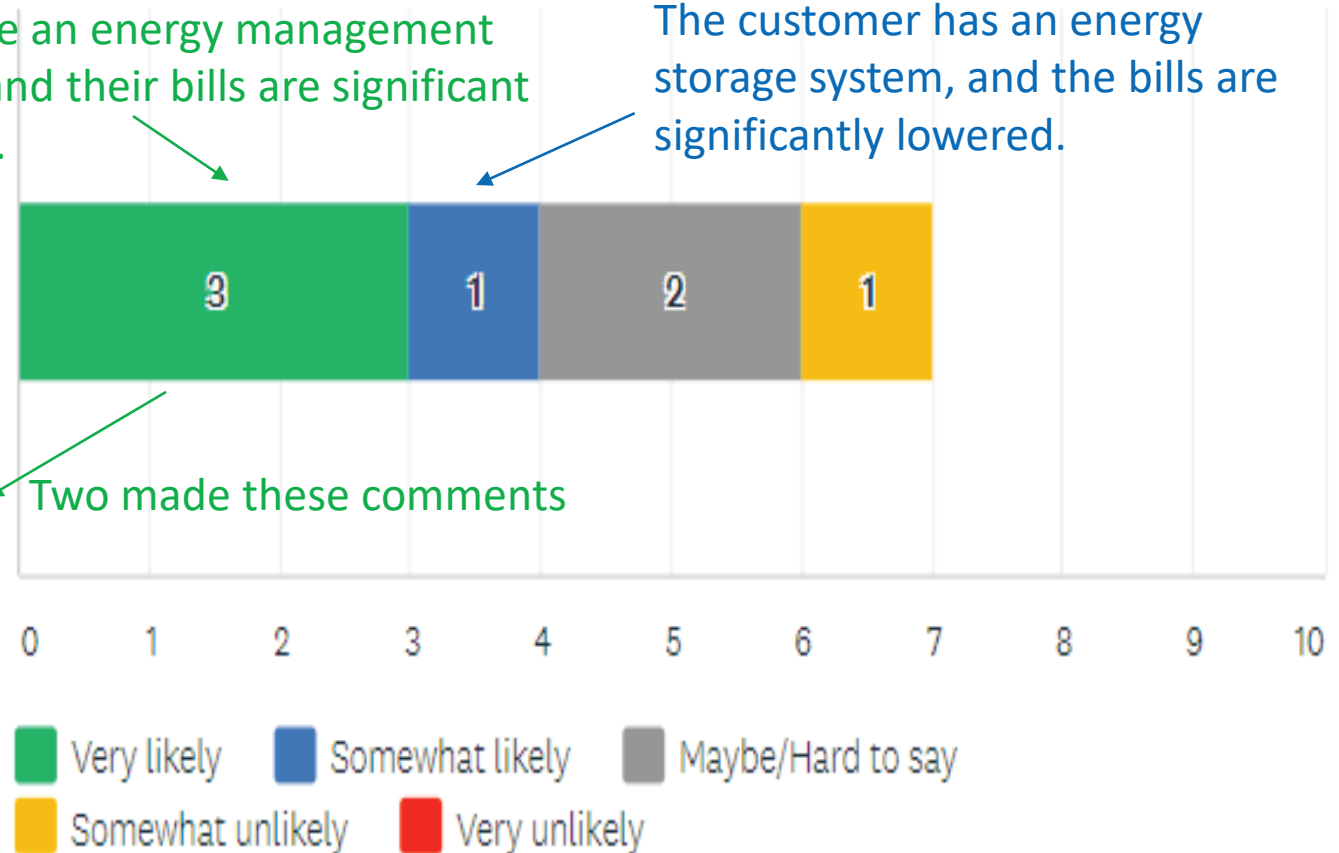
Q: Today's RTP pricing is based on a choice of one of seven pricing schedules. If the program were to change the format to more of a market-based pricing structure that varies according to energy market prices, up to a set maximum price cap, how likely would you be to still participate?

The reason behind your response:

- “Would need to understand more concerning the maximum price cap before making a decision.”
- “Don't know enough to make a decision.”
- “It has been working well here for years. It's now a lot smoother and more predictable” (this customer does not have any listed technologies, only with DR alerts app)
- “As a water utility, I like the ability to make daily changes as needed to reduce our energy bills”
- “Not sure what the market price will be and how that would impact our flexibility”

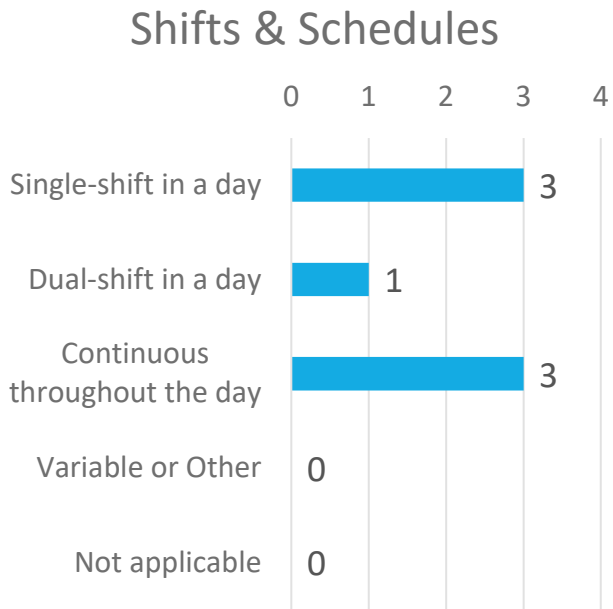
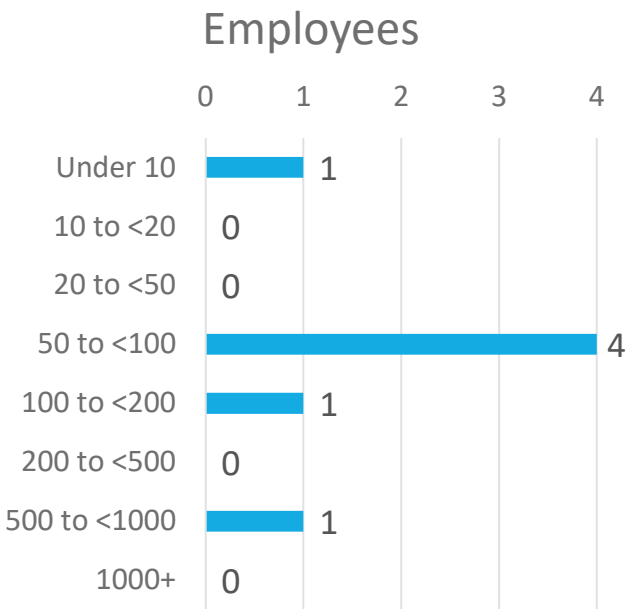
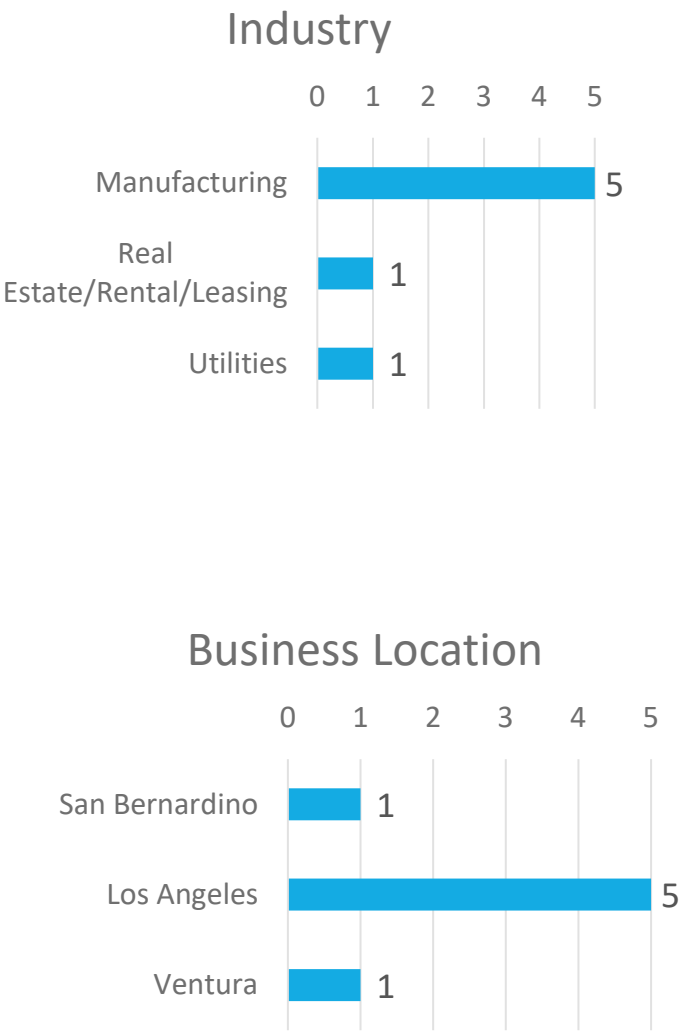
Two have an energy management system and their bills are significant lowered.

The customer has an energy storage system, and the bills are significantly lowered.



Respondent Firmographics

Total respondents: 7



A blue-tinted photograph of four people, two men and two women, standing in a row. They are all wearing white lab coats with the EPRI logo on the left chest. The woman on the far right is also wearing a blue hard hat. They are all smiling and looking towards the camera. The background is a solid blue color.

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