BEFORE THE NEW MEXICO PUBLIC REGULATION COMMISSION

IN THE MATTER OF SOUTHWESTERN PUBLIC SERVICE COMPANY'S APPLICATION FOR: (1) AUTHORIZATION TO ESTABLISH THE VOLUNTARY SOLAR*CONNECT COMMUNITY PROGRAM ("SOLAR*CONNECT") AND ENTER INTO A PURCHASED POWER AGREEMENT FOR THE PURCHASE OF 1.98 MW OF NOMINAL SOLAR CAPACITY AND ASSOCIATED ENERGY FOR SOLAR*CONNECT; (2) APPROVAL OF THE PROPOSED METHODOLOGY FOR CALCULATING AND ANNUALLY ADJUSTING THE SOLAR*CONNECT RATE; AND (3) AUTHORIZATION TO FLOW THROUGH ALL SOLAR*CONNECT COSTS AND REVENUES THROUGH THE SOLAR*CONNECT RIDER AND ITS FUEL AND PURCHASED POWER COST ADJUSTMENT CLAUSE,	)	**CASE NO. 18 -00_____-UT**
SOUTHWESTERN PUBLIC SERVICE COMPANY,	)	
APPLICANT.	)	

DIRECT TESTIMONY

of

RYAN A. MATLEY

on behalf of

SOUTHWESTERN PUBLIC SERVICE COMPANY

September 28, 2018

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GLOSSARY OF ACRONYMS AND DEFINED TERMS

Acronym/Defined Term	Meaning
ac	Alternating Current
kW	Kilowatt
kWh	Kilowatt-hour
MW	Megawatt
MWh	Megawatt-hour
REC	Renewable Energy Certificate
SoCore	SoCore Clovis 1 LLC
SoCore Solar Facility	1.98 MWac solar powered electric generating facility
Solar*Connect	Solar*Connect Community
SPS	Southwestern Public Service Company, a New Mexico corporation
XES	Xcel Energy Services Inc.
Xcel Energy	Xcel Energy Inc.

LIST OF ATTACHMENTS

Attachment	Description
RAM-1	New Mexico Renewable Interest Survey
RAM-2	New Mexico Windsource Customer Survey

Case No. 18-_____-UT
Direct Testimony
of
Ryan A. Matley

I. WITNESS IDENTIFICATION AND QUALIFICATIONS

Q. Please state your name and business address.

A. My name is Ryan A. Matley. My business address is 1800 Larimer Street, Suite 1500, Denver, Colorado 80202.

Q. On whose behalf are you testifying in this proceeding?

A. I am filing testimony on behalf of Southwestern Public Service Company, a New Mexico corporation ("SPS"), a wholly-owned subsidiary of Xcel Energy Inc. ("Xcel Energy").

Q. By whom are you employed and in what position?

A. I am employed by Xcel Energy Services Inc. ("XES"), the service company subsidiary of Xcel Energy, as Product Development, Team Lead.

Q. Please briefly outline your responsibilities as Product Development, Team Lead.

A. I currently manage the development of new voluntary green power programs for Xcel Energy. My responsibilities include overseeing product development and pilots for new renewable energy and energy storage products and ensuring the viability of the program design of new renewable programs, including customer research, marketing approaches, and program economics.

Q. Please describe your educational background.

A. I graduated from the University of Pennsylvania in 2002 with a Bachelor of Science degree in Chemical Engineering.

Q. Please describe your professional experience.

A. Prior to XES, I was employed at Pacific Gas & Electric Company from 2007-11, and at the Rocky Mountain Institute from 2011-13. I came to XES in 2013 as an Associate Product Developer. In that role, I was responsible for developing new energy efficiency and renewable products. From 2014 to today, I have worked as Product Development, Team Lead.

Q. Have you attended or taken any special courses or seminars relating to public utilities?

A. Yes, I attended EUCI's Introduction to Cost of Service Concepts and Techniques for Electric Utilities in March 2017.

II. ASSIGNMENT AND SUMMARY OF TESTIMONY AND RECOMMENDATIONS

Q. Please summarize the purpose of your testimony.

A. As explained by SPS witness Ruth M. Sakya, SPS is requesting New Mexico Public Regulation Commission authorization to replace its existing voluntary renewable energy purchase program, Windsource, with a new program, Solar*Connect Community ("Solar*Connect"). My testimony supports SPS's request by: (1) describing the market demand for the proposed Solar*Connect program; (2) explaining the program design; (3) discussing SPS's marketing plan for the Solar*Connect program and the related consumer education program on the benefits of renewable energy; and (4) providing an overview of the projected administrative costs associated with the program.

Q. Please summarize the conclusions reached in your testimony.

A. My testimony demonstrates that: (1) there is sufficient demand in SPS's New Mexico service territory to support the proposed Solar*Connect program; (2) SPS's proposed marketing and customer education plan is prudent and will facilitate SPS's goal of fully subscribing the program within a reasonable time period; and (3) SPS's planned consumer education program complies with Rule 572.

Q. Is Attachment RAM-1 a true and correct copy of the Renewable Interest Study you discuss later in this testimony?

A. Yes.

Q. Was Attachment RAM-2 prepared by you or under your direct supervision and control?

A. Yes.

III. CUSTOMER DEMAND

Q. Please describe how SPS determined its New Mexico retail customers' preferences for a renewable energy replacement for the Windsource program.

A. SPS conducted two market research surveys to determine customer interest in, and motivation for, purchasing renewable energy and their preferences for program attributes, including pricing, payment structure, contract term, and treatment of renewable energy certificates ("RECs"). The first survey, entitled "Renewable Interest Study," surveyed New Mexico retail customers generally. Please see Attachment RAM-1 for a copy of the Renewable Interest Study. The second survey, which I refer to as the "Windsource Survey," was limited to Windsource customers. Please refer to Attachment RAM-2 for a copy of the Windsource Survey.

Q. Please describe the Renewable Interest Study.

A. The Renewable Interest Study was an online survey of 423 residential and 109 business customers randomly selected from SPS's New Mexico retail customers with email addresses. The objectives of the survey were to better understand a number of topics regarding renewable energy, including customer familiarity, use,

interest, perceptions, motivations, and preferences. The survey was conducted in 2016 by EMI Consulting, a third-party market research firm contracted by Xcel Energy.

Q. What does the Renewable Interest Study indicate as to retail customers' interest in participating in a solar renewable program?

A. The results of the Renewable Interest Study indicate that 71% of residential and 64% of business customers prefer solar energy compared to all other energy sources including other renewable sources. In addition, the survey found that 36% of residential and 33% of business customers are likely or very likely to consider buying a portion of their energy from renewable resources in the next two years.

Q. Did the Renewable Interest Study indicate what factors are important to customers when participating in a premium renewable program such as Solar*Connect?

A. Yes, the Renewable Interest Study asked respondents their preference between two hypothetical renewable energy programs. When asked why respondents preferred one versus the other, the attributes most cited by business and residential customers were: the opportunity to save money in the future should rates increase (69% Residential/84% Business); the ability to purchase solar or

renewable energy (74% Residential/71% Business); the presence of renewable energy in the community (50% Residential/59% Business); and a short-term (or no) commitment (49% Residential/50% Business).

Q. Please describe the Windsource Survey.

A. The Windsource Survey was an online survey of 316 residential and 11 business Windsource participants with email addresses. The survey ran from October through December 2017 and was conducted by Xcel Energy's Customer Insights team. The objectives of the survey were to determine: (1) what factors were important when the customers decided to participate in Windsource; (2) how interested Windsource customers are in a voluntary solar purchase program and, if interested, at what price; (3) Windsource customers' familiarity with RECs; (4) Windsource customers' familiarity with their bill and subscription levels; and (5) communication preferences.

Q. What did the Windsource Survey reveal as to those customers' interest in participating in a solar renewable program in lieu of the existing Windsource program?

The Windsource Survey indicated a strong interest in a solar program. Specifically, 73% of the Windsource customers surveyed are interested in a voluntary solar purchase program. In addition, over one-third of those who are

not interested in a solar program cited a higher perceived cost as the reason. Furthermore, the majority of respondents cited their preferred price of a solar program as one penny less than Windsource is today.

Q. Did the surveys provide insight into how New Mexico retail customers prefer to hear from SPS regarding opportunities to participate in renewable programs?

A. Yes, in the Windsource Survey 58% of respondents preferred email communications, followed by bill onserts (18%), and flyer/mailer (15%).

Q. What did the totality of the customer research lead you to conclude?

A. That many retail customers, including Windsource and non-Windsource customers, in New Mexico would find a new solar program at a lower cost than the current Windsource program particularly attractive. This conclusion lead to the development of the Solar*Connect program, which is further described in the next section.

IV. DESIGN OF THE SOLAR*CONNECT PROGRAM

Q. Please generally describe the Solar*Connect program.

A. The Solar*Connect program will be available as an option to all New Mexico retail customers who wish to purchase additional solar energy above the renewable energy currently in SPS's system resource portfolio. The specific terms and conditions for participation in the Solar*Connect program are set forth in the proposed Solar*Connect Rate Rider, which is Attachment RMS-2 to Ms. Sakya's direct testimony.

A. Resource Selection & Program Size

Q. Please discuss why SPS is proposing a solar-only program as opposed to a mix of solar and other renewable resources.

A. As discussed above, SPS's customers have indicated a preference for solar energy. SPS did consider extending the Windsource program with a new wind resource or changing the Windsource program by blending solar and wind resources together. SPS determined that it could not add a new wind resource without substantially raising the premium above what the market can bear given the realities of wind generation and the size of the proposed program. In the decades since SPS implemented the Windsource program, average wind turbine size has grown dramatically from the 0.6 megawatt ("MW") turbines used to

supply the Windsource program to the 2 MW turbines typical of SPS's recently-approved Sagamore and Hale wind projects.[1] The ideal sized wind resource to supply a 2 MW program would be a single turbine, and the fixed costs of the project (permitting, financing, interconnection, electrical balance of systems, and civil work) make a single turbine wind farm uneconomic. Simply put, solar resources are more capable of being cost-effectively scaled down to the size of the proposed program than wind generation.

Q. How did SPS determine the size of the Solar*Connect program?

A. In sizing the Solar*Connect program, SPS considered: (1) customer interest as revealed through market studies discussed above; (2) the size of the existing Windsource program (1.98 MW); (3) the need to balance market demand for a new program with non-participant subsidization; and (4) the experience of SPS's sister operating companies with similar programs in other states. Based on this analysis, SPS estimates that the total market for a premium renewable product in its New Mexico service territory is roughly 4 MW. The Solar*Connect program

[1] *In the Matter of Southwestern Public Service Company's Application Requesting: (1) Issuance of a Certificate of Public Convenience and Necessity Authorizing Construction and Operation of Wind Generation and Associated Facilities, and Related Ratemaking Principles Including an Allowance for Funds Used During Construction for the Wind Generation and Associated Facilities; and (2) Approval of a Purchased Power Agreement to Obtain Wind-Generated Energy*, Case No. 17-00044-UT, Final Order Adopting Certification of Stipulation with Modification (Mar. 21, 2018).

is sized to meet approximately half of this market demand or 1.98 MW. As I discuss below, SPS estimates that it will take between two and three years to fully subscribe the 1.98 MWac Solar*Connect program.[2] Thus, SPS's program sizing approach reasonably fills a market demand while minimizing the risk of unsubscribed energy.

Q. How will SPS source the solar energy to supply the Solar*Connect program?

A. To supply the Solar*Connect program, SPS executed the "Solar*Connect PPA" with SoCore Clovis 1 LLC ("SoCore"), which involves the purchase of all of the net energy from a 1.98 MWac solar powered electric generating facility that will be developed by SoCore (the "SoCore Solar Facility") near Clovis, New Mexico.

B. Solar*Connect Subscriptions

Q. Please explain how the Solar*Connect program allows customers to purchase solar energy.

A. Customers will have the option to purchase a subscription for a minimum 0.5 kilowatt ("kW") generation share (with 0.1 kW increments available above the minimum) of the 1.98 MWac SoCore Solar Facility. Customers will be charged a

[2] The current Windsource and proposed Solar*Connect program are both served by a 1.98 MW resource. However, the Windsource resource produces approximately 4,000 megawatt hours ("MWh") of energy annually, while the Solar*Connect resource is expected to produce 5,747 MWh in its first year of production. Therefore, on an energy basis the Solar*Connect program is approximately 40% larger.

monthly premium for the solar energy generated from their Solar*Connect subscription, in addition to base charges for the appropriate retail rate for the subscribing customer's service and Fuel and Purchased Power Cost Adjustment Clause charges. The forecasted premium for energy purchases under the Solar*Connect program in year one is approximately $13.76/MWh ($0.01376/kilowatt hour ("kWh")). Ms. Sakya describes the Solar*Connect premium calculation methodology in her direct testimony.

Q. How much energy is a 0.5 kW generation share of the SoCore Solar Facility expected to generate?

A. A 0.5 kW share of the SoCore Solar Facility is expected to produce 1,451 kWh of energy during the first full year of operation.[3]

Q. What is the basis for the minimum 0.5 kW Solar*Connect subscription share?

A. The minimum subscription share balances the desire to encourage customer participation by allowing for small enough subscriptions (and premiums) to meet the needs of a wide range of potential subscribers with the desire to minimize customer acquisition costs and program administrative costs. The 0.5 kW

[3] The calculation of the expected generation from a 0.5 kW share of the SoCore Facility is derived by taking the expected output of the facility in Year 1, which is 5,747,000 kWh (5,747 MWh), divided by the generation capacity of the facility, which is 1,980 kW (1.98 MWac). This demonstrates that 1 kW of generation capacity equals 2,902 kWh. This amount divided by two yields the expected generation, 1,451 kWh, of a 0.5 kW share of the SoCore Solar Facility.

minimum subscription will generate, on average, approximately 14.6% of an average Residential Service customer's annual usage, at a cost of $1.66 per month. Each customer will have a relatively consistent customer acquisition cost, so setting a minimum subscription size reduces the number of customers who must be acquired to fully subscribe the program. Reducing the number of customers required also reduces program administrative costs as those costs are typically incurred on a per customer basis.

Q. What would it cost the average residential customer to subscribe for 100% of monthly energy consumption?

A. In 2017, the average monthly energy consumption for a customer on the Residential Service rate in SPS's New Mexico service territory was 831 kWh. A customer with a 3.4 kW Solar*Connect subscription will generate, on average, 822 kWh a month,[4] with more generation in the summer months than the winter months. SPS forecasts that the total cost for a 3.4 kW subscription in the first year of the Solar*Connect program would be $11.31 per month on average. The calculation of the premium is shown in detail in Attachment RMS-3 (page 1) to Ms. Sakya's direct testimony.

[4] Building on the calculation shown in footnote 2, if a 1 kW subscription were to generate 2,902 kWh annually, then a 3.4 kW subscription would generate 9,867 kWh annually, or 822 kWh per month on average.

V. MARKETING PLAN AND CONSUMER EDUCATION PROGRAM

A. Windsource to Solar*Connect Transition Plan

Q. Has SPS developed a plan for noticing and transitioning then-existing Windsource customers to the proposed Solar*Connect program?

A. Yes. On October 1, 2020, SPS will begin notifying then-existing Windsource customers of the Solar*Connect program. This notice will inform the Windsource customers that:

- the Windsource program will terminate effective at the end of the day on December 14, 2020;
- Windsource customers have the right to opt-out of participation in the Solar*Connect program;
- Windsource customers who do not opt-out by December 1, 2020 will be automatically enrolled in the new Solar*Connect program with subscriptions that are equal or lesser on a total annual energy basis than their Windsource subscriptions;
- the Solar*Connect program will begin on or around January 1, 2021 (the actual date will depend on the completion of the solar resource construction);
- Solar*Connect subscriptions will be based on generation shares (kW);
- their estimated Solar*Connect subscription size, and its average monthly cost, if their Windsource subscription were transferred into a Solar*Connect subscription on an equal or lesser total annual energy basis; and

- further information concerning the Solar*Connect program will be provided on the website, xcelenergy.com.

On November 1, 2020, SPS will provide Windsource customers with a second notice containing the same information described above.

Q. How will SPS determine the capacity subscription shares for Windsource customers that are automatically enrolled in the Solar*Connect program?

A. Such customers will have their Windsource subscriptions transferred into an equal or lesser Solar*Connect subscription on an energy basis. For example, a customer who is subscribed to 10,000 kWh of Windsource on an annual basis will be placed into a 3.4 kW Solar*Connect generation share subscription, which is expected to produce 9,868 kWh on an annual basis. The next highest capacity increment (3.5 kW, or 0.1 kW more) has an annual forecasted energy generation of 10,158 kWh which would be more than the customer's current Windsource subscription.

Q. Is the proposed notification and opt-out process reasonable?

A. Yes. In the Windsource Survey, which I describe above, 71% of respondents indicated a preference for a "new enrollment/sign up process with opportunity to review." The proposed notice and opt-out process provides existing Windsource customers the first opportunity to participate in the Solar*Connect program.

Further, because the new Solar*Connect program is forecasted to be less expensive than Windsource, with the same overall terms and conditions, this automatic transfer process is a reasonable approach that balances participant interests against the risk and cost of unsubscribed energy.

Q. Do you expect existing Windsource customers to subscribe to the Solar*Connect program?

A. Yes. The Windsource Survey showed that approximately 94% of current Windsource customers are interested in participating in a voluntary solar purchase program if the price was one penny less than the existing Windsource premium. Thus, given that the proposed Solar*Connect program premium is forecasted to be approximately 1.6¢/kWh less expensive than Windsource (approximately 1.4¢/kWh for Solar*Connect compared to 3.0¢/kWh for Windsource), I believe the vast majority of Windsource customers will be interested in the new Solar*Connect program. SPS estimates that current Windsource customers will account for approximately 1.3 MW (65%) of the 1.98 MWac SoCore Solar Facility's generation.

I explain below how SPS plans to fill the remainder of the program after the Windsource customer transition to the new program.

B. Solar*Connect Marketing and Consumer Education Plan

Q. What is the goal of SPS's marketing and education plan?

A. The goal of the marketing plan is to motivate customers to enroll in the Solar*Connect program by: (1) raising customer awareness of the Solar*Connect program, the program's customer-specific benefits, and how to enroll; and (2) educating customers on what community-scale solar is, how it works, and its benefits.

Q. Please describe the features of SPS's proposed marketing and education plan.

A. The features of the proposed marketing/education plan can be broken into three distinct elements: awareness, education, and enrollment. In awareness marketing, the intent is to raise customers' interest and provide them with a tangible action to take. SPS will use multiple channels such as radio, print, email, social media, and digital advertising to raise awareness of the availability of the Solar*Connect program. The marketing will encourage customers to visit the xcelenergy.com website to learn more about the program.

For the education phase, SPS will use the website to provide customers information on how the Solar*Connect program works, how to enroll, how much

the program costs, and where the solar energy supplying the program is delivered from. The website will also have general educational information about all the renewable energy on the SPS system.[5]

In the enrollment phase, the website will encourage customers to log-in to their "My Account" secure portal where they can enroll for the program online.

Q. When will SPS begin actively marketing the Solar*Connect program?

A. SPS will begin actively marketing the program no earlier than the October 1, 2020 notification date to existing Windsource customers, and no later than early January 2021. The exact start date will be determined to balance the timeliness of communications relative to enrollment availability (too early and prospective enrollees will not remember to take action when the program is available) and the prospect of breaking through to customers relative to other communications in the market (e.g., the holiday season can be a busy time for email marketing). This will provide extra time to start securing capacity reservations in the program, to reduce the risk and cost of unsubscribed energy. Once the program is fully subscribed, the marketing approach will likely be limited to email-based outreach designed to maintain subscription levels.

[5] *See* https://www.xcelenergy.com/energy_portfolio/renewable_energy

Q. Has SPS developed a renewable energy education program as required by Rule 572?

A. Yes, SPS has designed, and will implement in conjunction with its marketing plan, a customer education program concerning the benefits and availability of its voluntary renewable energy program, Solar*Connect.

Q. What are the objectives of SPS's renewable energy education program?

A. Similar to the proposed marketing plan, SPS's renewable education program has four main objectives:

- increase the awareness of, interest in, and knowledge of renewable energy availability among SPS's New Mexico customers, including renewable supply on the grid and customer voluntary purchase options;
- educate customers about the use of renewable energy and the role it plays in preserving the quality of the environment;
- educate customers about SPS's generation mix and the emissions resulting from the generation of electricity; and
- inform customers about the opportunities available for participating in SPS's Solar*Connect program.

Q. Will SPS provide its marketing and educational materials in both English and Spanish?

A. Yes.

Q. Is it reasonable to expect SPS to be able to fully subscribe the Solar*Connect program?

A. Yes. In 2009, sales in the Windsource program were 8,640 MWh, or 50% larger than the size of the Solar*Connect program. This is despite the Windsource program being more than twice the cost ($0.03/kWh compared to $0.01376/kWh) of the proposed Solar*Connect program. This subscription level is indicative of a market for a premium renewable product that provides confidence that SPS will fully subscribe the new Solar*Connect program.

Q. Has SPS incorporated any lessons learned from SPS's marketing efforts for Windsource or similar marketing efforts in other Xcel Energy jurisdictions into its marketing plan for the Solar*Connect program?

A. Yes. Recent experience in marketing similar programs in other Xcel Energy jurisdictions has provided two key lessons. The first lesson learned is that email marketing is a particularly valuable tool to encourage customer enrollments. A second lesson learned is that customers need to hear the message of program availability multiple times and from multiple sources before making a decision to enroll. For example, efforts to focus follow-up email marketing on customers who opened previous emails, but did not click through to the website or did not enroll proved successful in converting those customers into program participants.

Q. What are the expected costs to implement the proposed marketing and education plan?

A. SPS estimates that the marketing/education plan will cost approximately $75,000 in the first year, $20,000 annually in years two and three, and $5,000 annually for the remaining year(s) after program inception.

VI. ADMINISTRATIVE COSTS

Q. Please describe the administrative costs SPS anticipates will be needed for the new program.

A. SPS estimates administrative costs to be $17,000 in the first year, and $14,000 each year after that. These costs are separate from the costs of the marketing/education plan, and capture the costs of internal staff to manage customer subscriptions, marketing, questions, and communications.

Q. How did SPS develop this estimate?

A. SPS developed the estimate based on the assumption that the program will take 10-15% each of one program manager and one marketing assistant to administer. Some features of the program, such as the lack of contracts for long-term contracts, have the effect of helping to keep administrative costs down.

Q. Are SPS's administrative costs expected to be stable or will the costs vary from year to year?

A. The costs are expected to be relatively stable year to year, particularly in the later years of the program.

Q. Does this conclude your pre-filed direct testimony?

A. Yes.

VERIFICATION

STATE OF COLORADO)
) ss.
COUNTY OF DENVER)

Ryan A. Matley, first being first sworn on her oath, states:

I am the witness identified in the preceding testimony. I have read the testimony and the accompanying attachment(s) and am familiar with their contents. Based upon my personal knowledge, the facts stated in the direct testimony are true. In addition, in my judgement and based upon my professional experience, the opinions and conclusions stated in the testimony are true, valid, and accurate.

Ryan A. Matley

SUBSCRIBED AND SWORN TO before me this 24 day of September, 2018.

AMANDA CLARK
Notary Public
State of Colorado
Notary ID # 20164004880
My Commission Expires 02-05-2020

Notary Public, State of Colorado
My Commission Expires: 2/5/20

Xcel Energy
Renewable Energy Research
2016

New Mexico

RESULTS

August 21, 2018

EMI CONSULTING

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EMI CONSULTING

METHODS

- EMI Consulting conducted an online survey with residential and business customers in New Mexico using the Qualtrics online survey platform.

Completes by sector

Residential	Business
423	109

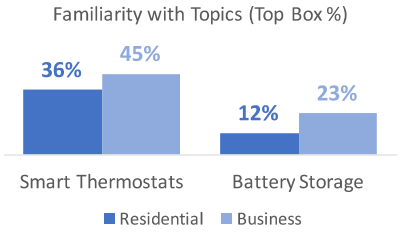
- The objectives of the survey were to better understand a number of topics regarding renewable energy, including customer familiarity, use, interest, perceptions, motivations, and preferences.
- Where appropriate, results are reported in the Top 3 box.
- Percentages are percent of respondents unless otherwise noted.
- Overall, the estimated confidence and precision values for this survey are 95% confidence with a relative precision +/- 4.75% for the residential sector and +/- 9.31% for the business sector.[1]

EMI CONSULTING

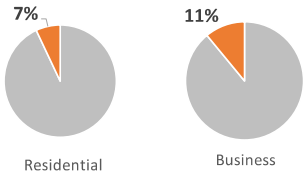
[1] *Overall confidence and precision values were estimated using a residential population value of 89,269 and a commercial population value of 7,097. Confidence and precision values were computed using an assumed response distribution of 50% (proportional) for key variables. Values may be different for questions where fewer responses were recorded.*

New Mexico Executive Summary (1/3)

FAMILIARITY AND USAGE

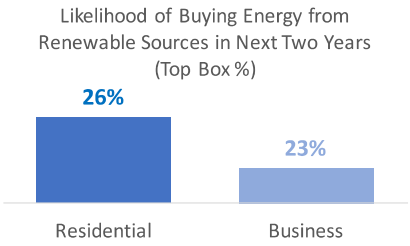


Familiarity: Both residential and business customers are most familiar with **smart thermostats** and least familiar with **battery storage**.

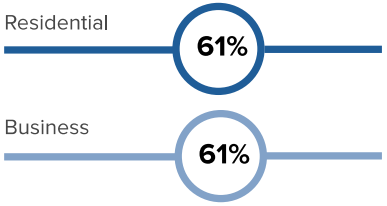


Usage: Only about **7%** of residential customers and **11%** of business customers report using renewable energy outside that provided by Xcel. Of these customers, **solar energy** was the cost commmon type reported.

INTEREST



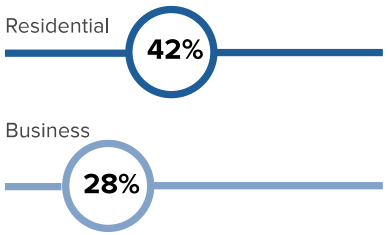
Interest: 26% of residential customers and **23%** of business customers reported they were likely or very likely to purchase energy from renewable sources in the next two years.



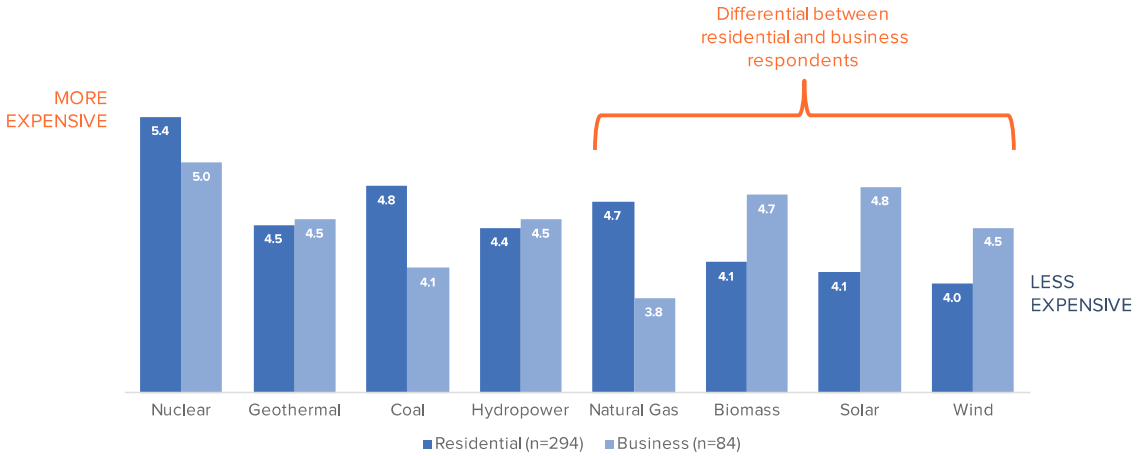
Provider Preference: 61% of residential customers and **61%** of business customers prefer Xcel Energy as their provider of renewable energy.

PERCEIVED VALUE AND COST

Value: Residential respondents were more likely than business respondents to value renewable energy (42% vs. 28% top box).



Cost: Residential and business respondents had differing perceptions regarding the cost of energy from different sources.



EMI CONSULTING

New Mexico Executive Summary (2/3)

PREFERENCES

Residential respondents generally preferred solar and wind energy sources (top box %)

71%

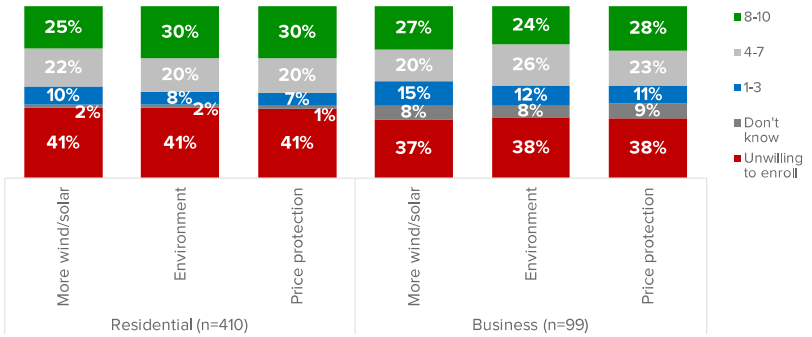
62%

Business respondents also preferred solar and wind (top box %).

64%

62%

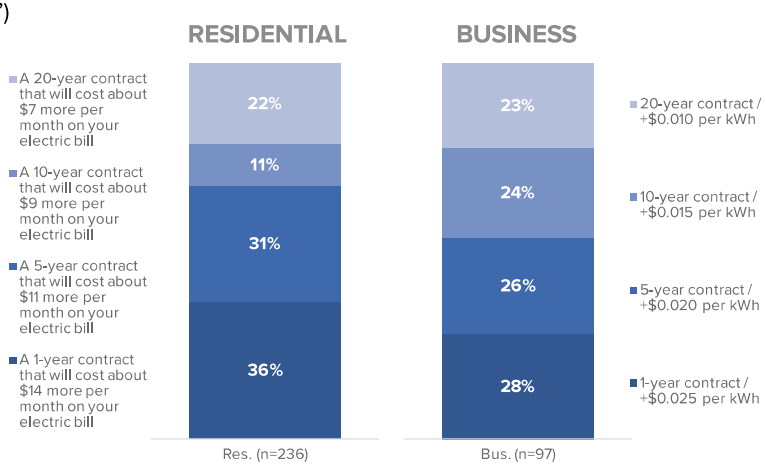
MOTIVATIONS



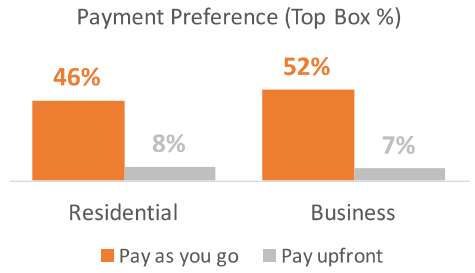
Motivations: A large percentage of residential and business respondents indicated they would be unwilling to enroll in a program that necessitates paying higher rates. Among those respondents who were willing to respond, motivations were fairly evenly distributed.

PROGRAMS AND PRICING

Contract Preference: Residential and business customers both preferred a contract period with a 1-year term over a 5-year term. (Note: residential responses were re-normalized to not include "none of the above.")

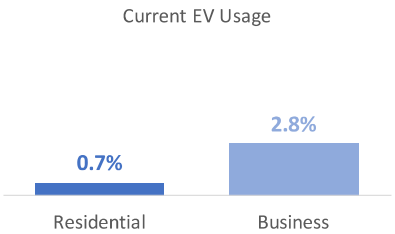


Payment Preference: Residential and business customers both preferred a "pay as you go" option over a "pay upfront" option.

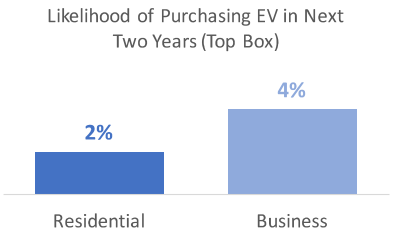


New Mexico Executive Summary (3/3)

ELECTRIC VEHICLES

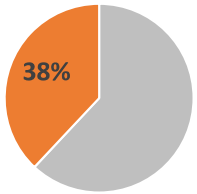


Current Usage: Few residential and business customers currently own electric vehicles.

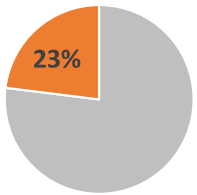


Intent to Purchase: Relatively few residential and business customers seem likely to purchase EVs in the next two years, though these self-reported values are higher than the current baseline.

BATTERY STORAGE



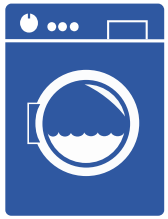
Interest in Tesla Powerwall. Despite the fact it is not yet widely available on the market, **38%** (top box) of residential respondents said they would be interested in obtaining a Powerwall for their home.



Interest in Investing in Business Battery Storage. Business respondents did not appear highly interested in investing in battery storage as part of their reliability plans (only **23%** top box).

CONNECTED HOMES

Willingness to Pay More for a "Smart" Device: 32% of residential respondents would pay up to 2x as much money for a smart thermostat and **32%** would pay up to 2x as much for a smart LED bulb (compared to the traditional models).



Willingness to Buy Products from an Xcel Energy Online Store: Despite the fact that only **28%** of respondents say they would typically make a purchase of home appliances from the Internet, **57%** indicated they would consider purchasing these products from an Xcel Energy online store.

CONNECTED BUSINESSES

Interest in DR Programs. **39%** (top box) of business respondents indicated they may be interested in participating in a demand response program paired with an EMS, such as a smart thermostat.

Rate Discount Required to Shift Energy Use. **41%** of business respondents said they would need a 5-10% rate discount or less in order to consider shifting their energy use to a different time.

DETAILED RESULTS

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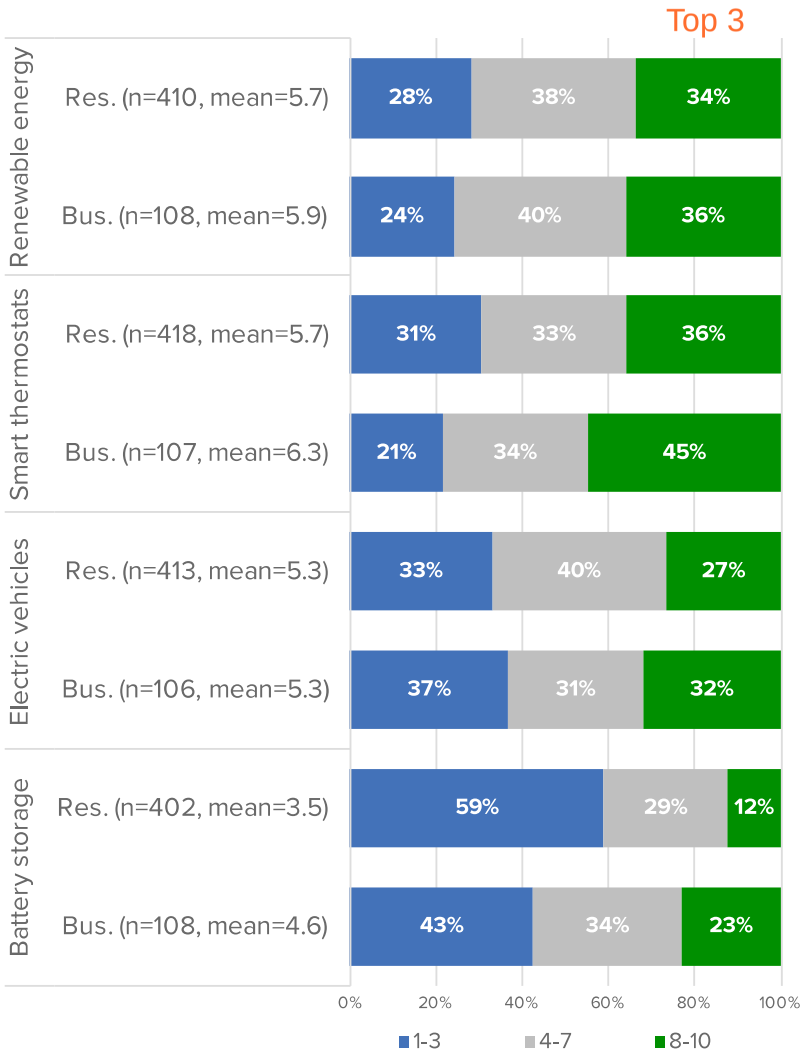
RENEWABLE ENERGY – FAMILIARITY

RESIDENTIAL: New Mexico residential respondents were least familiar with home battery storage, and most familiar with smart thermostats.

BUSINESS: Compared to residential respondents, business respondents reported themselves to be more familiar with all topics.

In general, how familiar are you with the following topics? (NEW1, 10-pt Likert)



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RENEWABLE ENERGY – USAGE

Overall, renewable energy use by New Mexico respondents is very low.

RESIDENTIAL: Only **7%** of residential respondents indicated they some KB2 of renewable energy outside of what Xcel Energy already provides as part of its portfolio (Q3). Of these respondents, **most (29%) indicated the use solar power, while 11% used wind and 11% use biomass.** Several additional respondents indicated they use energy from sources that are not typically considered "renewable" (e.g., natural gas). (Q5)

Q5: What kind of renewable energy sources do you use? Select all that apply.

	NM (n=28)
Solar	29%
Wind	11%
Geothermal	4%
Biomass	11%
Hydropower	4%
Rechargeable batteries	7%
Propane	4%
Natural gas	21%
Other	11%

BUSINESS: **11%** of business respondents indicated they use any KB3 of renewable energy beyond what Xcel Energy provides (Q3), namely solar, wind, and geothermal energy (Q5)

Q5: What kind of renewable energy sources does your business use? Select all that apply.

	NM (n=10)
Solar	60%
Wind	20%
Geothermal	20%
Biomass	0%
Hydropower	0%
Other	10%

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Slide 9

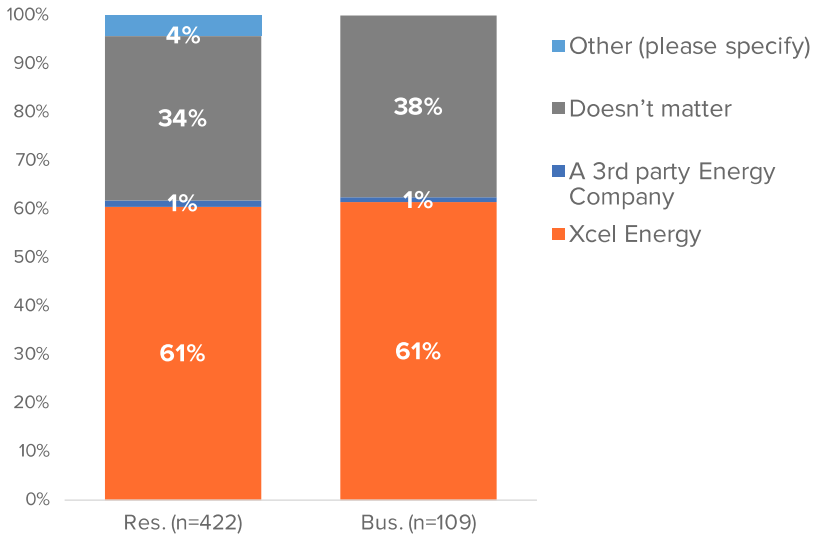
KB2 missing verb. used?
Krys Buckendahl, 8/22/2016

KB3 recommend "some", not "any"
Krys Buckendahl, 8/22/2016

RENEWABLE ENERGY – USAGE/INTEREST

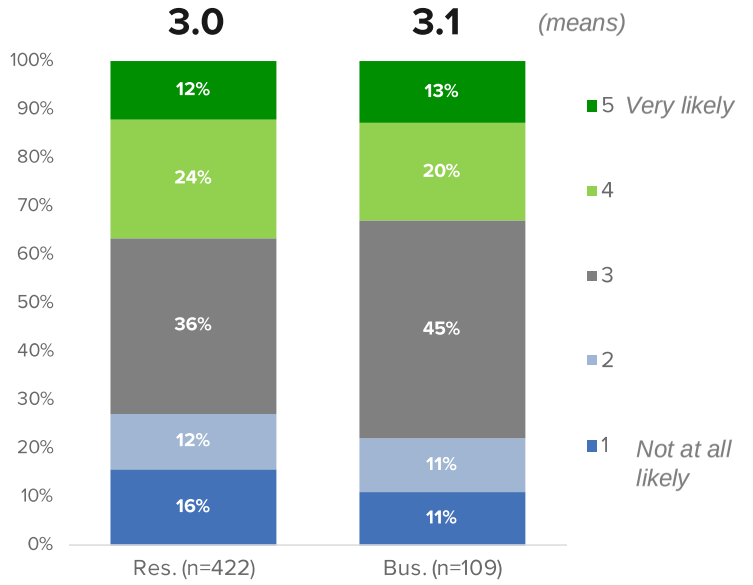
RESIDENTIAL/BUSINESS: New Mexico respondents in both sectors preferred Xcel Energy over the "doesn't matter" option. Only 1% or less in each sector indicated they would prefer a third party company. (Q20)

Preference for renewable energy providers (Q20)



RESIDENTIAL/BUSINESS: Residential and business respondents were nearly identical in their reported likelihood of buying a portion of their energy from renewable sources in the next two years. (Q2)

How likely are you to consider buying a portion of your energy from renewable energy resources in the next two years? (Q2)



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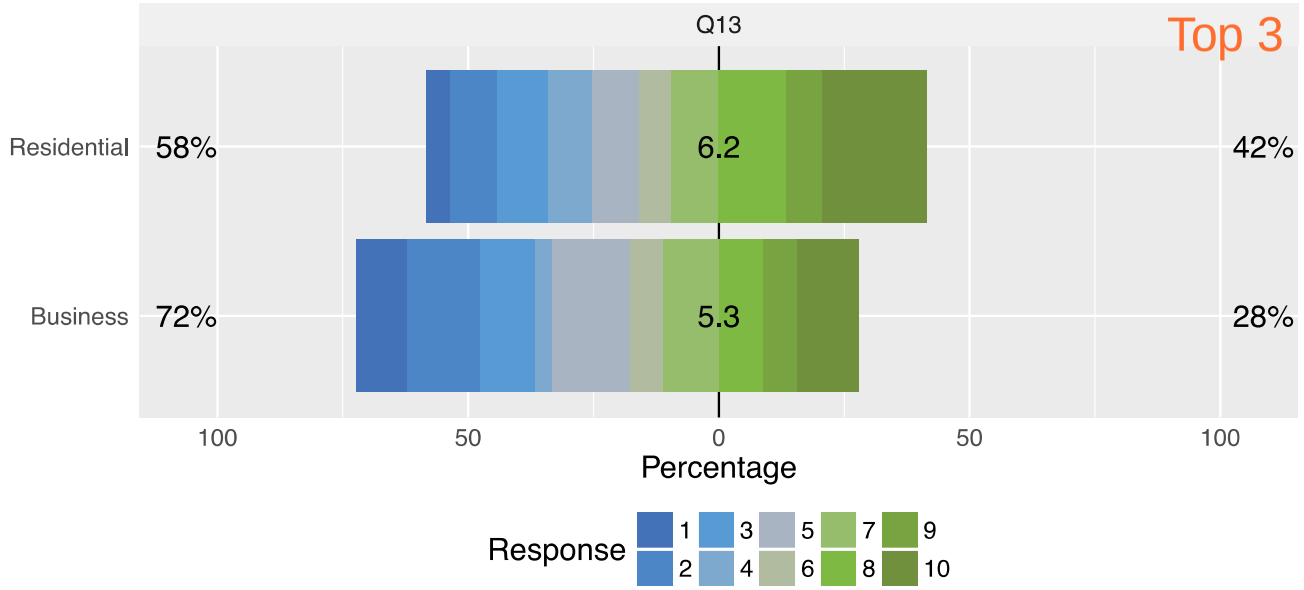
RENEWABLE ENERGY – PERCEIVED VALUE

RESIDENTIAL: Residential respondents were more likely than business respondents to perceive renewable energy as valuable (top box 42% residential vs. 28% business).

BUSINESS: Compared to residential respondents, fewer business respondents rated renewable energy in the top 3 box on a 10-point scale in terms of value. (Q13) However, business respondents from New Mexico were generally in line with business respondents from other states.

Please indicate how valuable renewable energy is to you/your business. (Q13)



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RENEWABLE ENERGY – PERCEIVED VALUE

RESIDENTIAL: Residential respondents cited **environmental reasons** when asked about the value of renewable energy (76% of cases), though a number of respondents also cited the importance of **saving money** (67% of cases) or the importance of **self sufficiency** (50%).

Why is renewable energy valuable to you? (Q14)

	Res. (n=228)
I care about the environment	**76%**
I believe renewable energy costs are/will be lower than traditional fuels and I want to save money	**67%**
I want to be self-sufficient	**50%**
I want increased fuel diversity/security	36%
I want improved power quality and system reliability	31%
Other (Please specify)	2%
Don't know	1%

BUSINESS: Fewer business respondents answered this question than residential respondents (due to a lower rating of renewable energy in a previous question). However, those that did answer the question tended to rate **environmental reasons** highly (61% indicated "we care about the environment.")

Why is renewable energy valuable to your business? (Q14)

	Bus. (n=41)
We care about the environment	**61%**
We believe renewable energy costs are/will be lower than traditional fuels and I want to save money	**49%**
We want protection against future electric utility rate increases	**39%**
We have environmental or social responsibility goals	22%
We want improved power quality and system reliability	24%
We want to be self-sufficient	32%
We want the tax incentives	24%
We want increased fuel diversity/security	24%
Our customers place importance on my business' use of clean energy and impact on the environment	7%
We want the Renewable Energy Credits (RECs)	12%
Other	2%
Don't know	0%

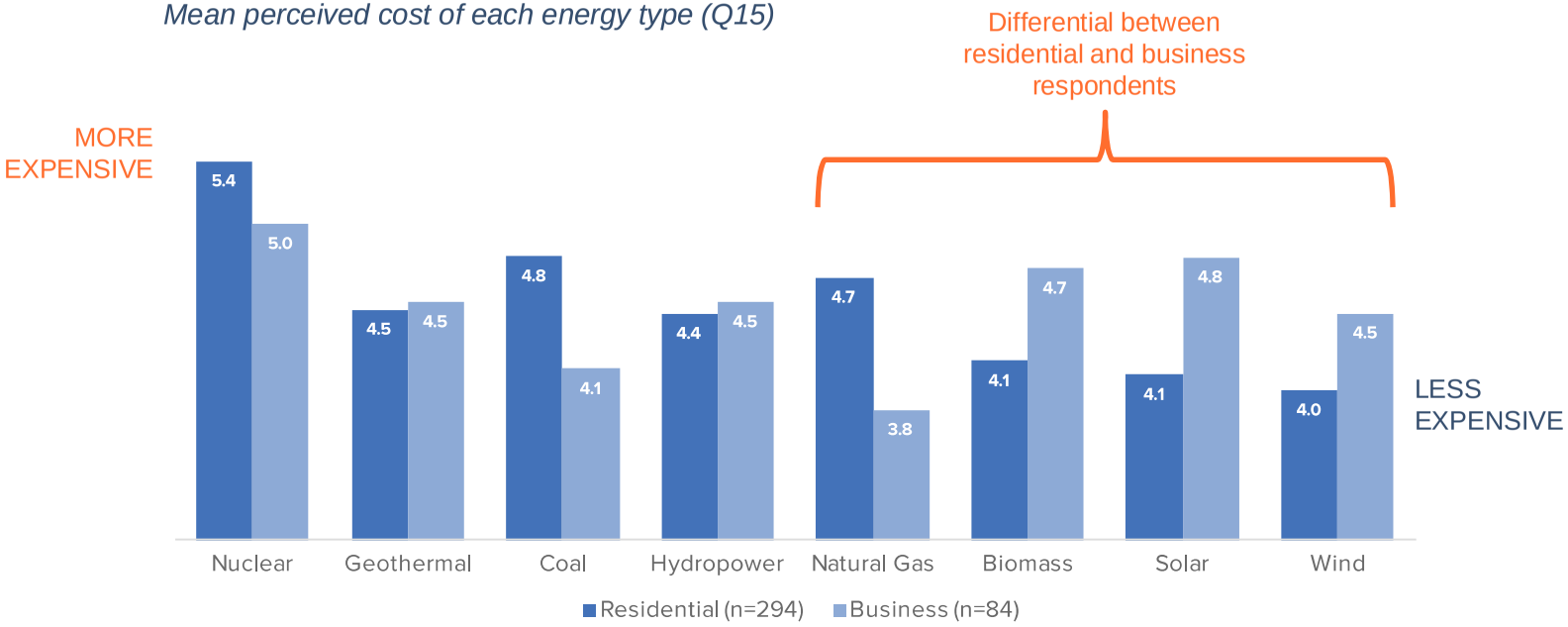
EMI CONSULTING

RENEWABLE ENERGY – PERCEIVED COST

RESIDENTIAL: Respondents perceived **nuclear energy** to be somewhat more expensive than other sources. (Q15) Solar energy and wind energy were perceived as the cheapest energy sources.

BUSINESS: Business respondents believed **nuclear** and **geothermal** to be expensive, but also indicated that they thought **solar** and **biomass** were expensive relative to **natural gas** and **coal**.

Mean perceived cost of each energy type (Q15)



NOTE THAT THE RANKING SCALES WERE INVERTED FOR THESE GRAPHS SO THAT A HIGHER VALUE REPRESENTS A HIGHER ESTIMATED COST.

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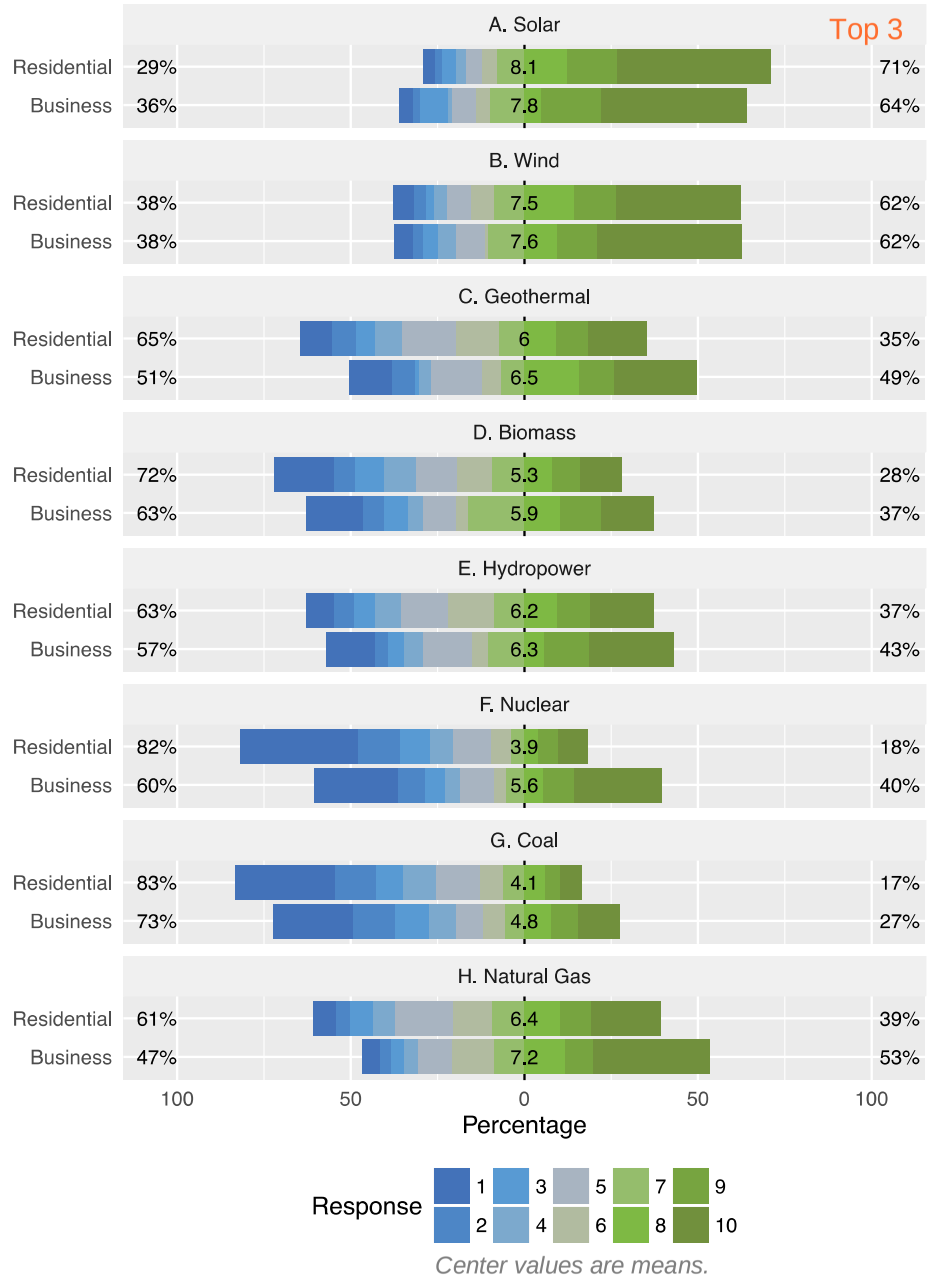
Renewable Energy – Preferences

- When not considering cost, New Mexico **residential respondents** provided the highest ratings to solar and wind power (71% and 62% top box).
- New Mexico **business respondents** rated solar and wind favorably (64%, and 62%, respectively). Business respondents additionally provided high ratings to natural gas (53% top box).
- **Both sets of respondents rated nuclear and coal poorly.**

Please rate your preference for each source of energy below, assuming price is not a factor. (Q17)



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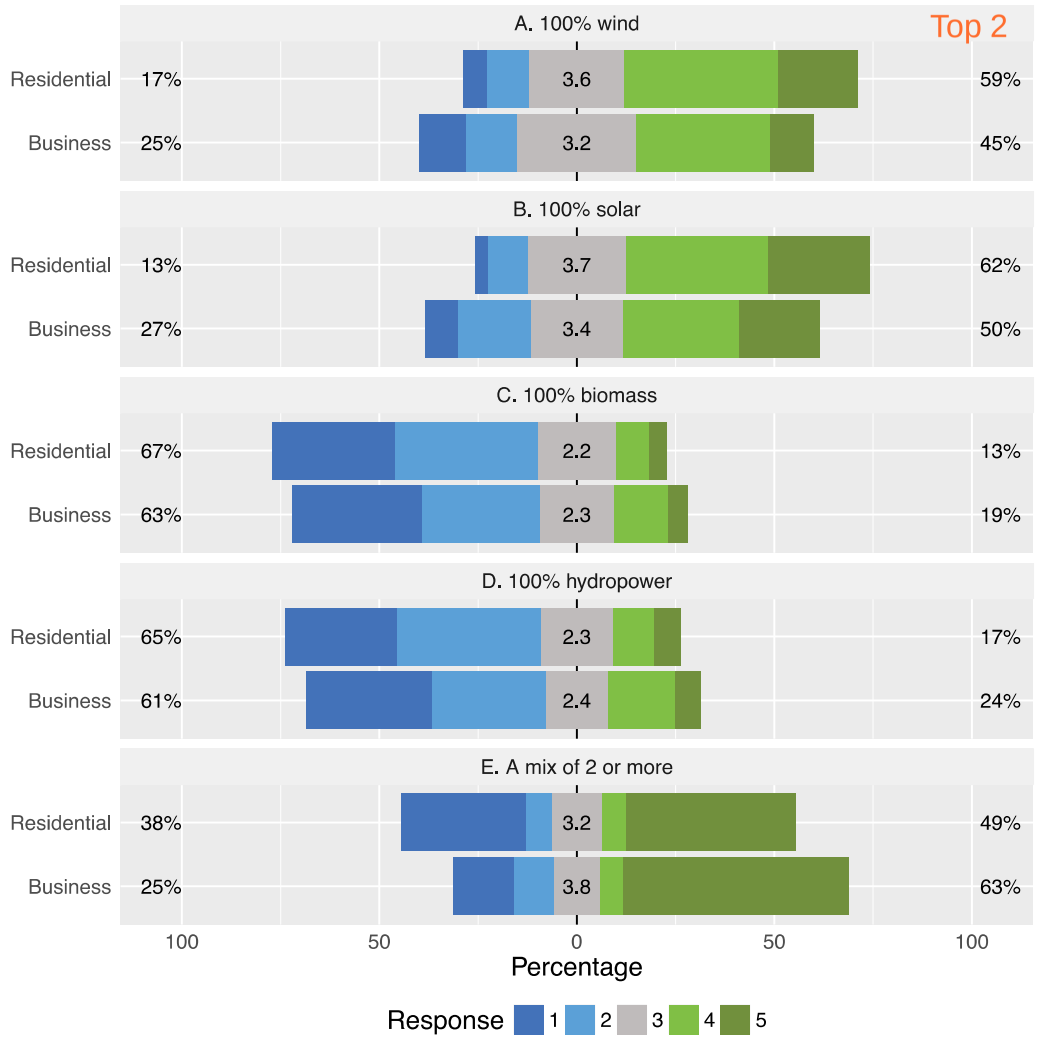
Renewable Energy – Preferences

- When asked about different sources of renewable energy, residential and business respondents ranked a **"mix of two or more renewables"** highly but there was a group that did not appear interested (i.e., ranked it near the bottom).

- Residential and business respondents expressed a much greater preference for **100% wind** and **100% solar** options than for biomass or hydropower.

Please rank the following based on your current preference. (Q18)

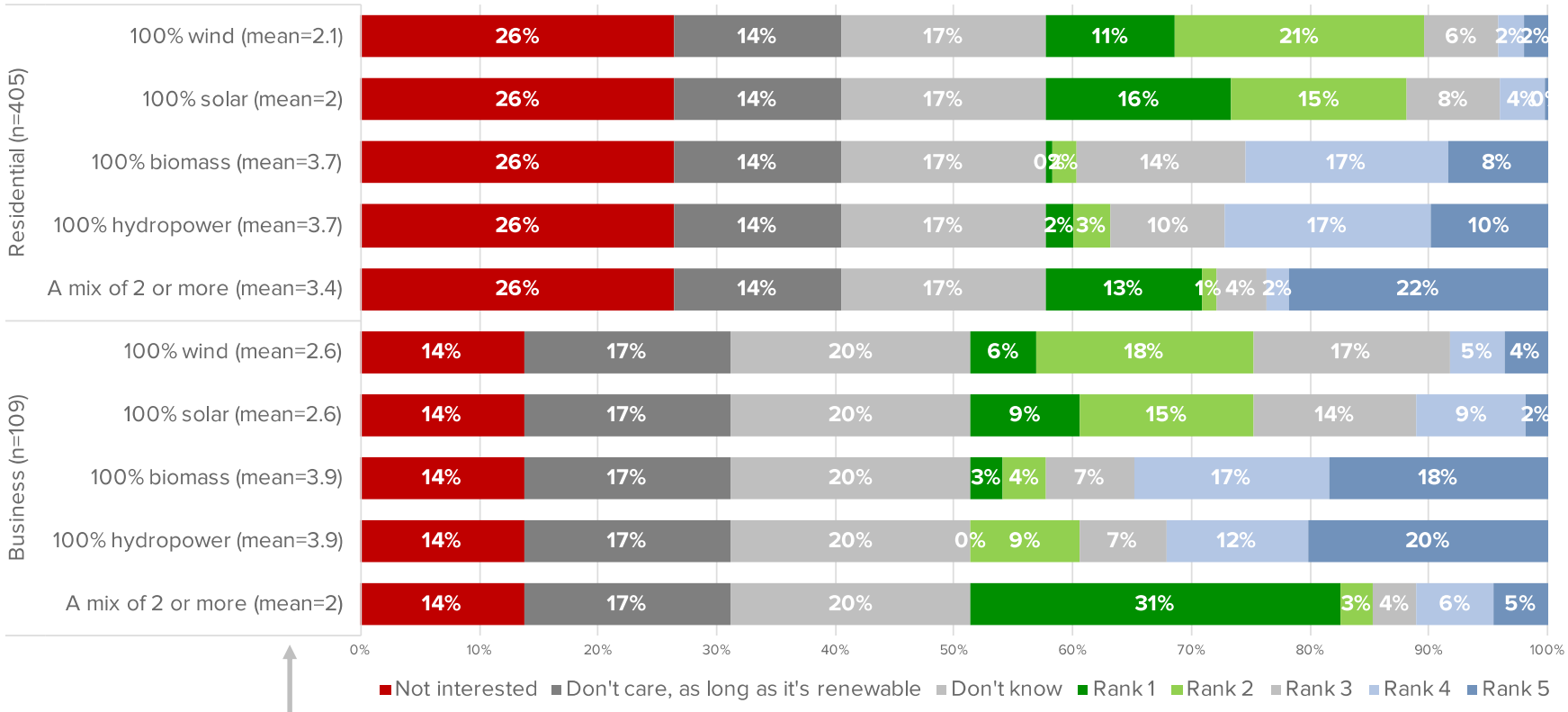


Center values are means.

NOTE THAT THE RANKING SCALES WERE INVERTED FOR THESE GRAPHS. '5' IS MOST DESIRABLE.

Renewable Energy – Preferences

Please rank the following based on your current preference. (Q18)



NOTE THAT THE THESE RANK SCORES WERE NOT INVERTED; THUS A LOWER MEAN IS MORE DESIRABLE.

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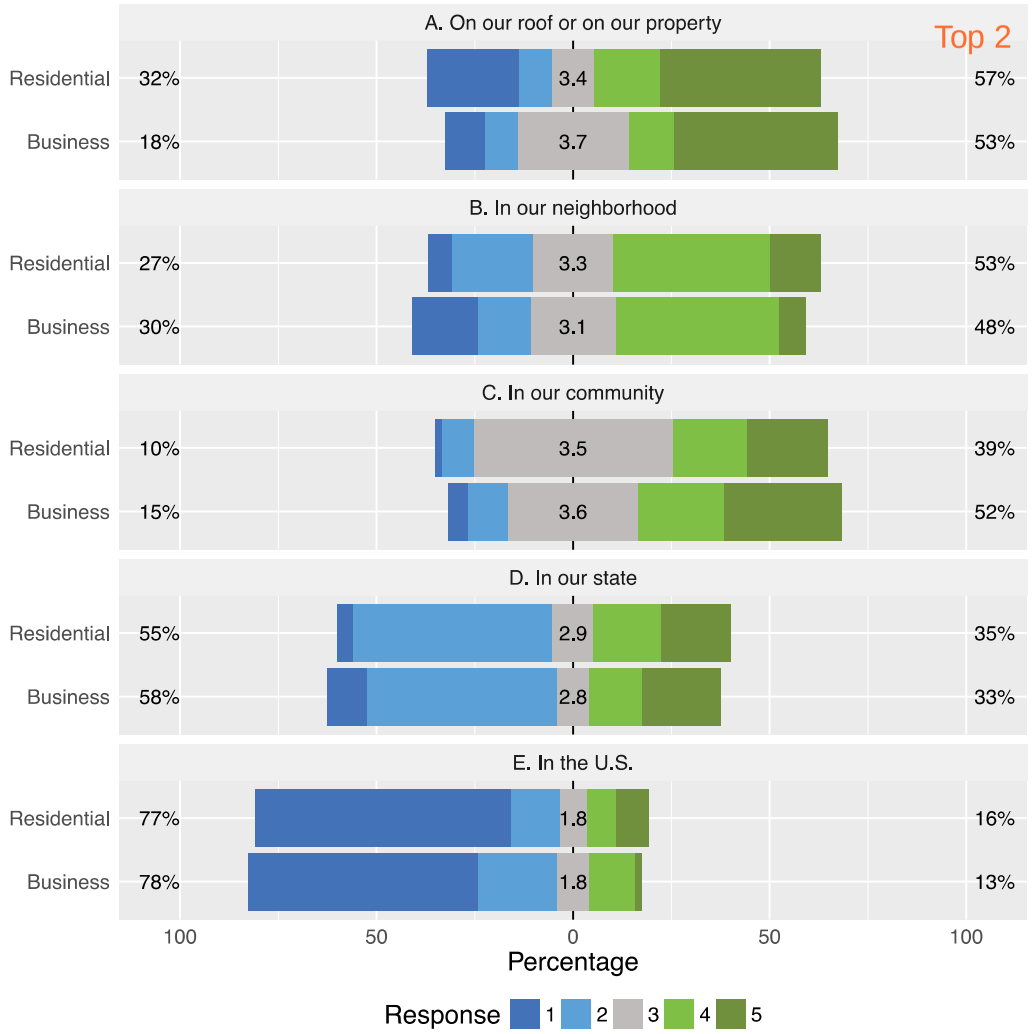
Renewable Energy – Preferences

- When asked where they might like to see renewable energy resources, **residential respondents provided the highest scores to "on my/our roof or on my/our property"** while **business respondents also gave high scores to "in our community"**.

- Residential and business residents particularly disliked the idea of citing resources cited "In the U.S."

Please rank your current preference from most preferable to least preferable, assuming price is not a factor, for the location of a renewable energy resource that supplies you renewable energy. (Q19)



Center values are means.

NOTE THAT THE THESE RANK SCORES WERE INVERTED; THUS A HIGHER MEAN IS MORE DESIRABLE.

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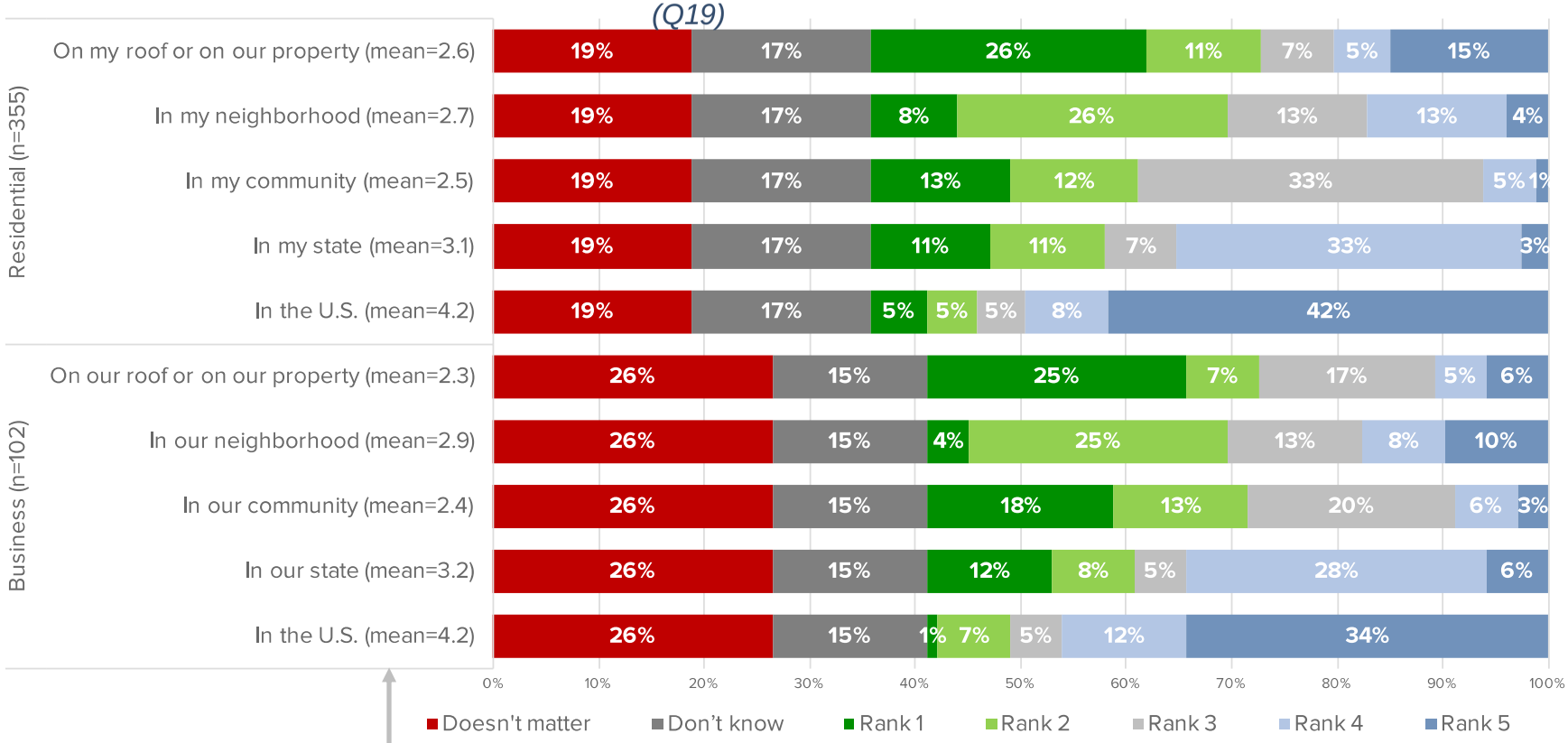
KB4

Renewable Energy – Preferences

Please rank your current preference from most preferable to least preferable, assuming price is not a factor, for the location of a renewable energy resource that supplies you renewable energy. (Q19)



NOTE THAT THE THESE RANK SCORES WERE NOT INVERTED; THUS A LOWER MEAN IS MORE DESIRABLE.

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Slide 18

KB4 what is the value of showing Both slides 13 and 14 (same with slides 11 & 12). The question asked is the same for each slide in the pair, with the second slide showing the non ranked options. Why show the slide with JUST the ranked options if they are also included in the slide with the other options. My assumption is that I'm just missing something

Krys Buckendahl, 8/22/2016

Renewable Energy – Motivations

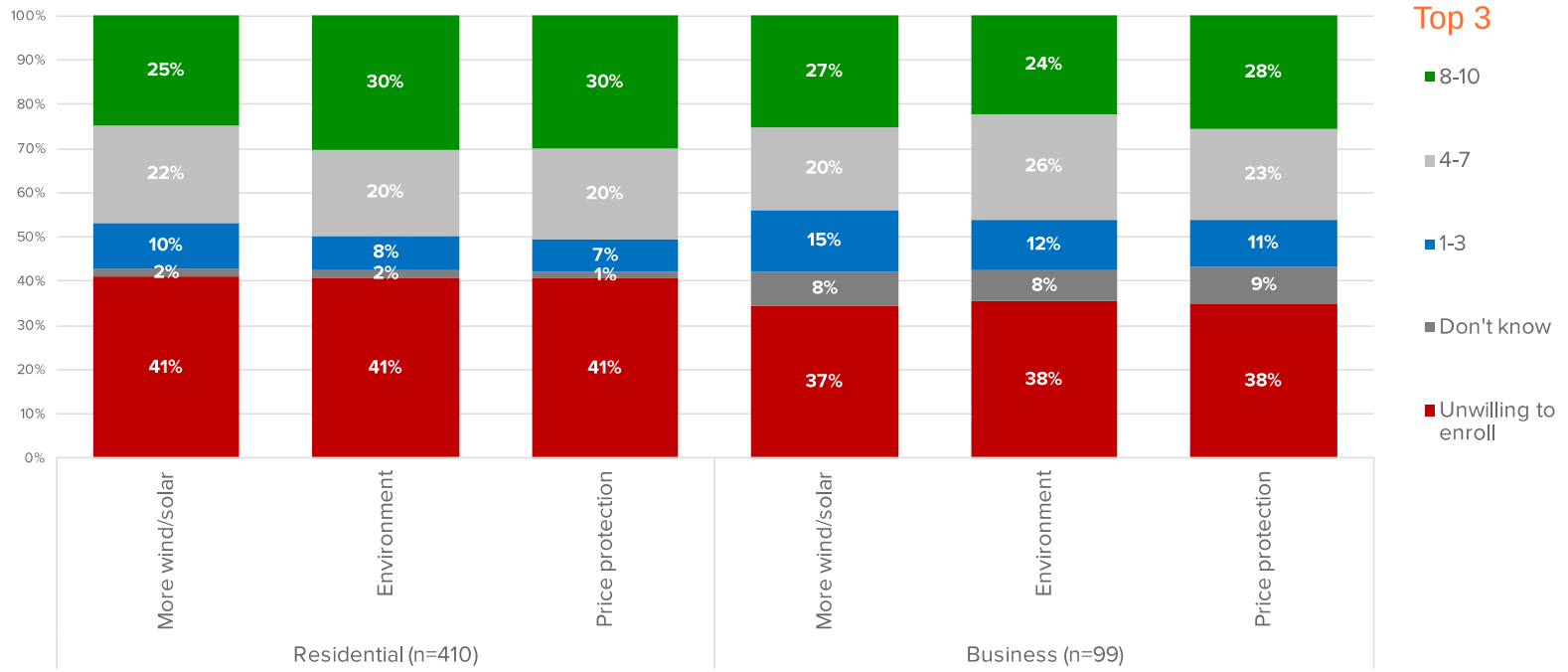
- Residential and business respondents followed **similar patterns** in their willingness to pay for renewable energy.

Please indicate how much you agree/disagree with the following statements: I am willing to pay a small premium today (additional amount over standard electricity rates)… (A4.C)

*1. …to ensure **more solar and wind** renewable resources are added to the system.*

*2. …because renewable energy is better for the **environment**.*

*3. …to guarantee that I am **protected against potential future price increases**.*



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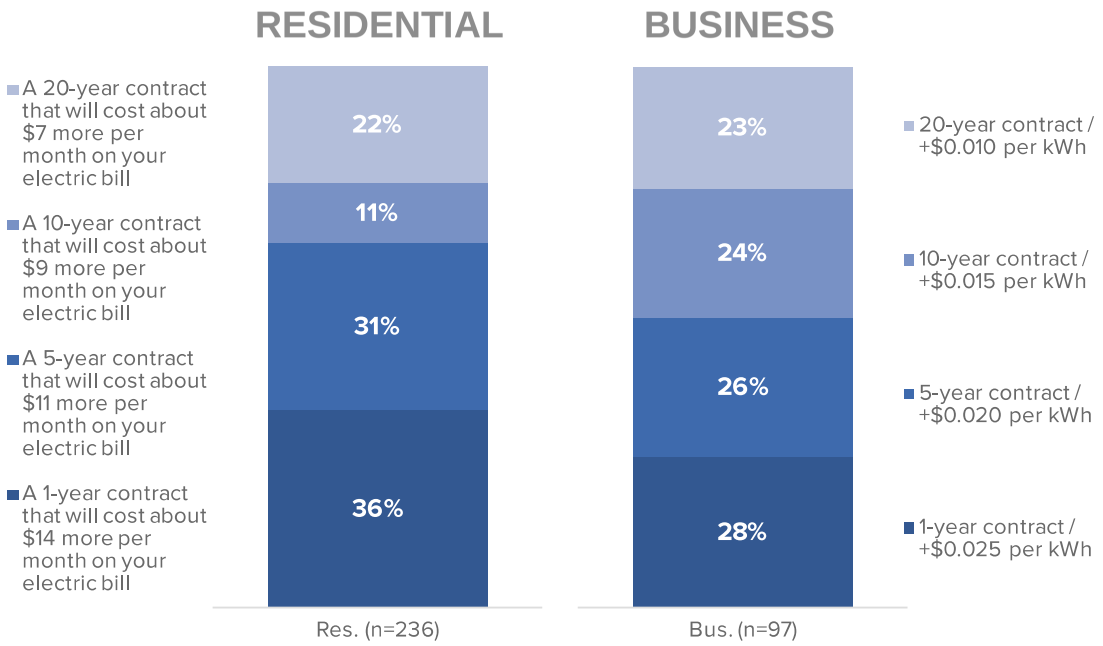
RENEWABLE ENERGY - PRICING

RESIDENTIAL: A majority of residential respondents (**44%**) indicated they did not prefer any of the contract options presented (removed from graph for comparison purposes). However, the **1-year contract** ($14 more per month) was the second most popular option (36% of eligible respondents).

BUSINESS: Respondents were closely split among all four options. Note that business respondents were not offered a "no contract" option. KB5

If the following contract terms were available, please indicate which one you would prefer most. (NEW3)



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Full question wording: "All renewable energy projects require a contract that sets the payment terms and contract length. Often, longer-term contracts can mean lower pricing for the customer. If the following contract terms were available, please indicate which one you would prefer most."

Slide 20

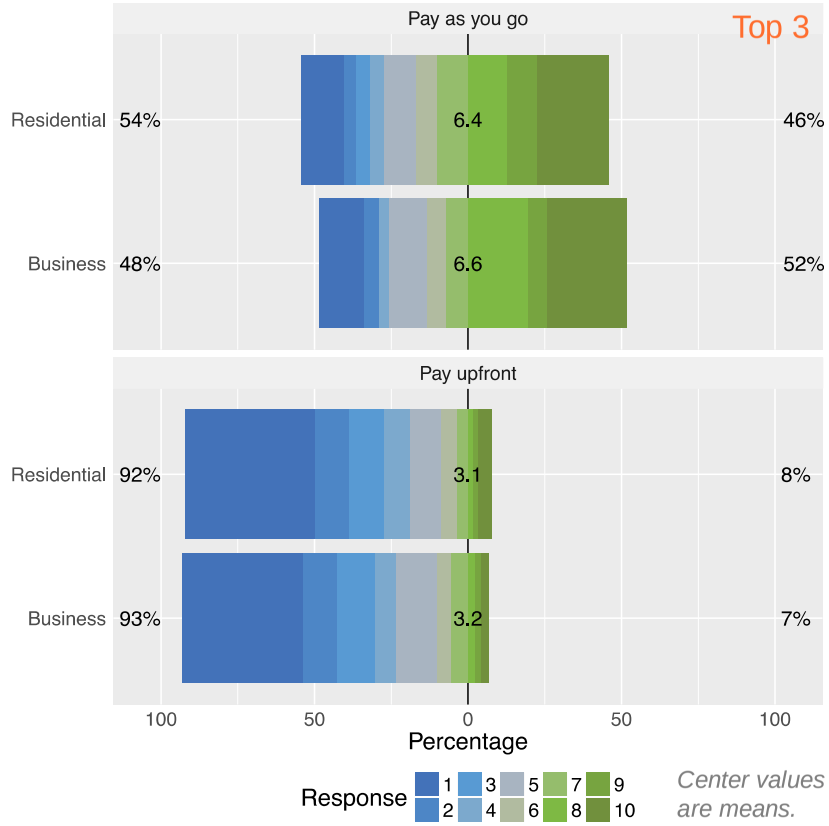
KB5 Business is on larger font

Krys Buckendahl, 8/22/2016

RENEWABLE ENERGY – PRICING

When given the option of paying monthly or paying up-front for renewable energy, both residential and business respondents were **far more interested in the "pay as you go" option**, with at least 46% rating this option as an "8" or higher (NEW4).

Likelihood of participating:



Center values are means.

Residential and business respondents both reported being willing to pay about **$10-$50 per month** for the "pay as you go" option, or about **$50-$150** for the "pay up-front" option.

Willingness to pay (with $0 values / without $0 values)

	Residential	Business
n	268/214	77/54
Median	$10/$10	$10/$50
Trimmed Mean	$10/$13	$31/$61
St Dev	$15/$15	$834/$984
% Paying $0	20%	30%

	Residential	Business
n	105/67	37/25
Median	$50/$100	$100/$150
Trimmed Mean	$91/$195	$476/$941
St Dev	$758/$919	$4,587/$5,444
% Paying $0	36%	32%

Note: Trimmed means are 95% symmetrical trimmed means, where the lowest 2.5% and highest 2.5% of values are removed. Standard deviations refer to non-trimmed means. Extreme outliers were removed prior to analysis.

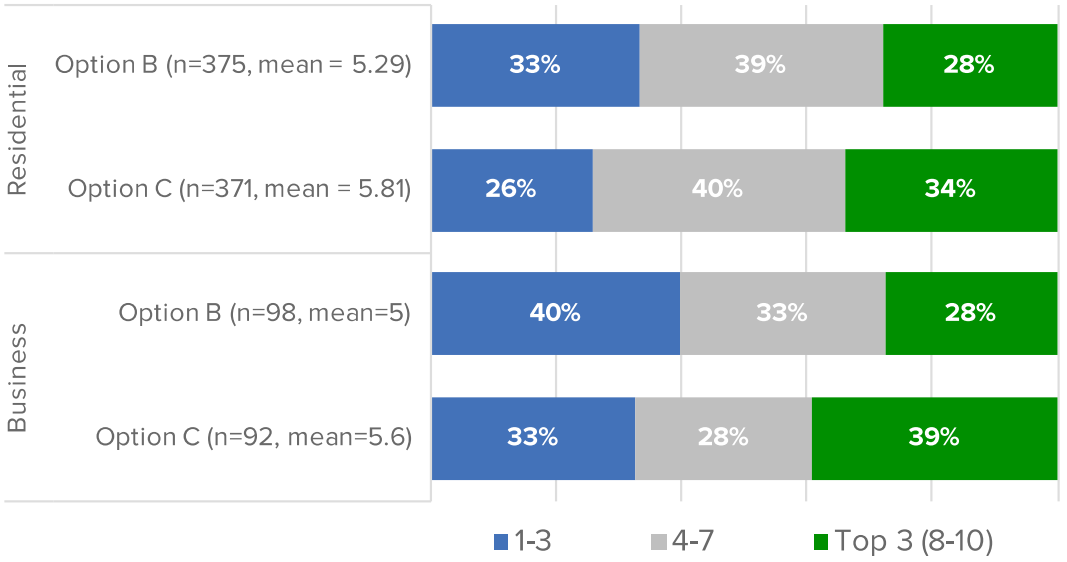
RENEWABLE ENERGY – PROGRAMS

When presented with two program options with differing payment and contract details, neither residential nor business respondents differered greatly in their ratings of program options, though **program option C was slightly preferred by both groups**.

Program option B: community solar / monthly payments with 10-year contract.

Program option C: mix of wind and solar / monthly payments with 1-year contract.

Comparison of program preferences (NEW6A and B)



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RENEWABLE ENERGY – PROGRAMS (RES.)

PROGRAM OPTION B (RESIDENTIAL)

- When residential respondents who rated this program option poorly were asked why this program was not appealing, they cited not wanting to spend extra money, concern over not recouping their costs, and concern that the commitment is too long.

- When residential respondents who rated this program option highly were asked why this program was appealing, they cited the appeal of saving money and a preference for solar energy.

Why is program not appealing? (NEW6B1)

	NM (n=148)
Don't want to spend extra money	**56%**
Don't want to risk continuing to pay a premium if electricity rates stay below my fixed renewable price	**43%**
The commitment is too long	**40%**
Waiting until the technology is more advanced	24%
The contract structure and pricing is confusing	24%
Don't want or care about renewable energy	12%
I'd prefer rooftop solar	14%
I'd prefer to support a different kind of renewable energy (such as wind or geothermal)	5%
Not interested in having something built in my community	5%
Other	3%

Why is program appealing? (NEW6B2)

	NM (n=224)
I like the idea of potentially saving money if electricity rates exceed my fixed renewable price	**80%**
I like solar energy	**61%**
I like that solar will be in my community	**55%**
No need for solar panels on my roof	34%
No up-front cost	0%
Other	<2%

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RENEWABLE ENERGY – PROGRAMS (RES.)

PROGRAM OPTION C (RESIDENTIAL)

- When residential respondents who rated program option B poorly were asked why this program was not appealing, they cited not wanting to pay extra money, not wanting to pay the premium if rates stay low, and concern that the contract structure is confusing.

- When residential respondents who rated this program option highly were asked why this program was appealing, they cited the appeal of solar and wind energy, the potential to save money, and the 1-year contract term.

Why is program not appealing? (NEW6C1)

	NM (n=116)
Don't want to spend extra money	**72%**
Don't want to risk continuing to pay a premium if electricity rates stay below my fixed renewable price	**41%**
The contract structure and pricing is confusing	**28%**
Waiting until the technology is more advanced	27%
The commitment is too long	24%
Don't want or care about renewable energy	16%
Don't like the particular energy mix (solar, wind, etc.)	11%
I want the renewable resources to be visible near my residence or in my community	4%
Other	<6%

Why is program appealing? (NEW6C2)

	NM (n=251)
I like the mixture of solar and wind energy	**74%**
I like the idea of potentially saving money if electricity rates exceed my fixed renewable price	**69%**
1-year contract term	**49%**
No need for solar panels on my roof	35%
I like that the resources would not be visible near my residence or in my community	17%
No up-front cost	0%
Environmental reasons/ clean energy	1%
I like renewables	0%
Other	1%

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RENEWABLE ENERGY – PROGRAMS (BUS.)

PROGRAM OPTION B (BUSINESS)

- When respondents who rated this program option poorly were asked why this program was not appealing, they cited not wanting to spend extra money, concern that the commitment is too long, and not wanting to pay a premium if rates stay low.

- When respondents who rated this program option highly were asked why this program was appealing, they cited the possibility of saving money and a preference for solar energy.

Why is program not appealing? (NEW6B1)

	NM (n=40)
Don't want to spend extra money	**85%**
The commitment is too long	**35%**
Don't want to risk continuing to pay a premium if electricity rates stay below our fixed renewable price	**33%**
Waiting until the technology is more advanced	23%
The contract structure and pricing is confusing	20%
Don't want or care about renewable energy	5%
We'd prefer to support a different kind of renewable energy (such as wind or geothermal)	13%
We'd prefer rooftop solar	15%
Other	15%
Not interested in having something built in our community	0%

Why is program appealing? (NEW6B2)

	NM (n=56)
We like the idea of potentially saving money if electricity rates exceed our fixed renewable price.	**93%**
We like that solar will be in my community	**59%**
We like solar energy	**64%**
No need for solar panels on our roof	21%
Other	0%

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RENEWABLE ENERGY – PROGRAMS (BUS.)

PROGRAM OPTION C (BUSINESS)

- When respondents who rated this program option poorly were asked why this program was not appealing, they cited not wanting to spend extra money, not wanting to pay the premium if rates stay low, and a concern that the contract structure is confusing.

- When respondents who rated this program option highly were asked why this program was appealing, they cited the potential to save money, the appeal of solar and wind energy, and the 1-year contract term.

Why is program not appealing? (NEW6C1)

	NM (n=35)
Don't want to spend extra money	**80%**
Don't want to risk continuing to pay a premium if electricity rates stay below our fixed renewable price	**46%**
The contract structure and pricing is confusing	**29%**
Waiting until the technology is more advanced	26%
The commitment is too long	20%
Don't want or care about renewable energy	9%
Don't like the particular energy mix (solar, wind, etc.)	6%
We want the renewable resources to be visible near our business or in my community	6%
Other	17%

Why is program appealing? (NEW6C2)

	NM (n=56)
We like the idea of potentially saving money if electricity rates exceed our fixed renewable price.	**84%**
We like the mixtures of solar and wind energy	**71%**
1-year contract term	**50%**
No need for solar panels on our roof	38%
We like that the resources would not be visible near our business or in our community	20%
Other	2%

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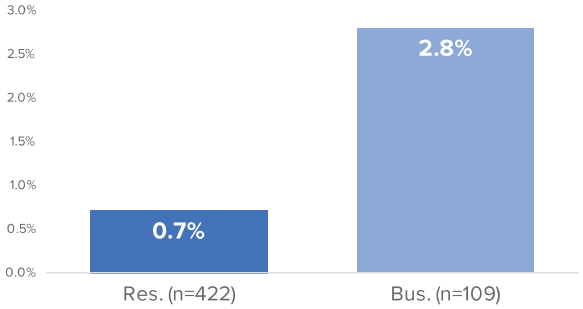
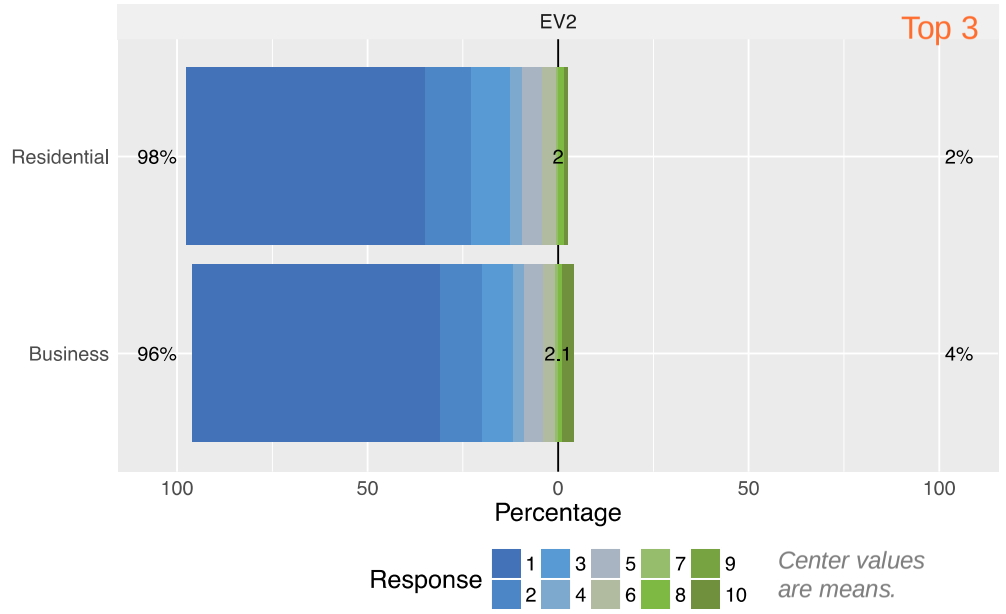
ELECTRIC VEHICLES – USAGE

Business respondents were significantly more likely than residential respondents to report owning an EV, though **neither group appeared very likely to purchase an EV in the next two years**.

Does your household/business own an electric vehicle? (EV1)



How likely is it that your household/business will consider purchasing an electric vehicle in the next two years? (EV2)



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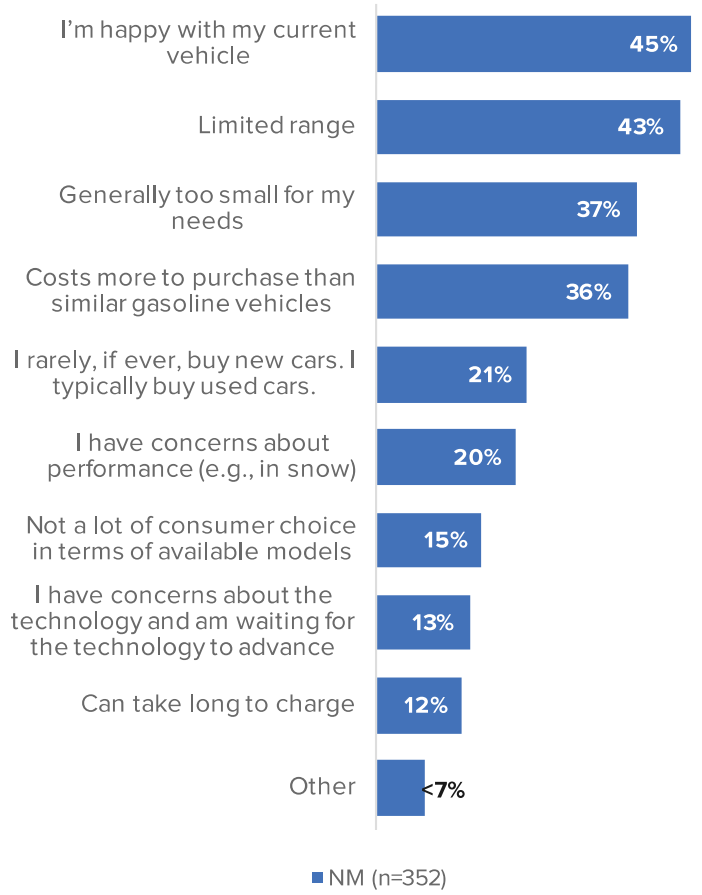
KB7

ELECTRIC VEHICLES – INTEREST (RES.)

RESIDENTIAL: Residential respondents cited a number of reasons why they were not interested in purchasing an EV, including **satisfaction with their current vehicle** and the **limited range of EVs.**

Why is your household not interested in purchasing an electric vehicle? (EV3)



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Slide 28

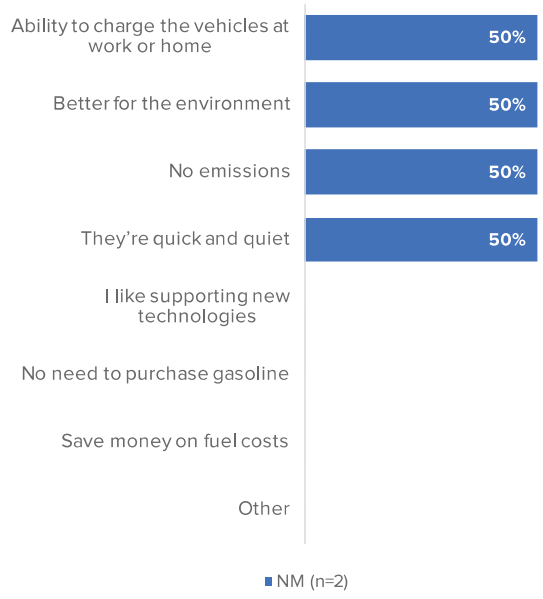
KB7 is there a way to right-align the text in the graphic? The centered text looks awkward
Krys Buckendahl, 8/22/2016

ELECTRIC VEHICLES – INTEREST (RES.)

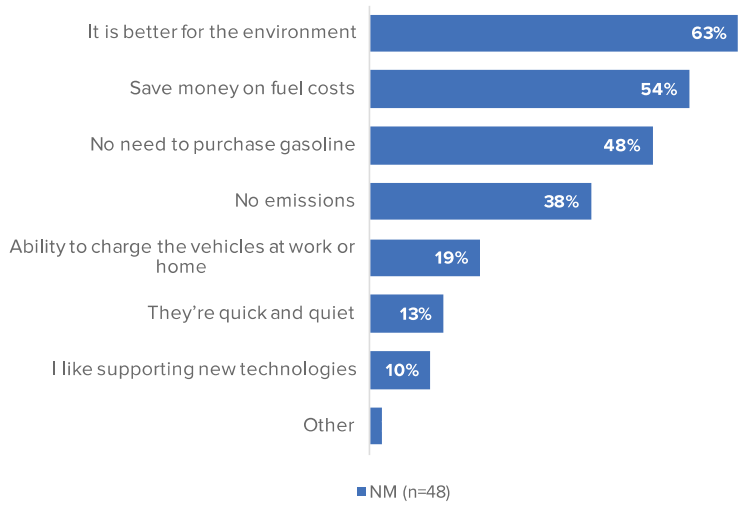
RESIDENTIAL: Of the two residential respondents who already owned EVs, they cited a number of reasons why they had purchased an EV. (EV4A)

Among residential respondents who were interested in purchasing an EV, respondents commonly cited **environmental reasons and saving money**. (EV4B)

Why did your household purchase an electric vehicle? (EV4A)



Why is your household interested in purchasing an electric vehicle? (EV4B)



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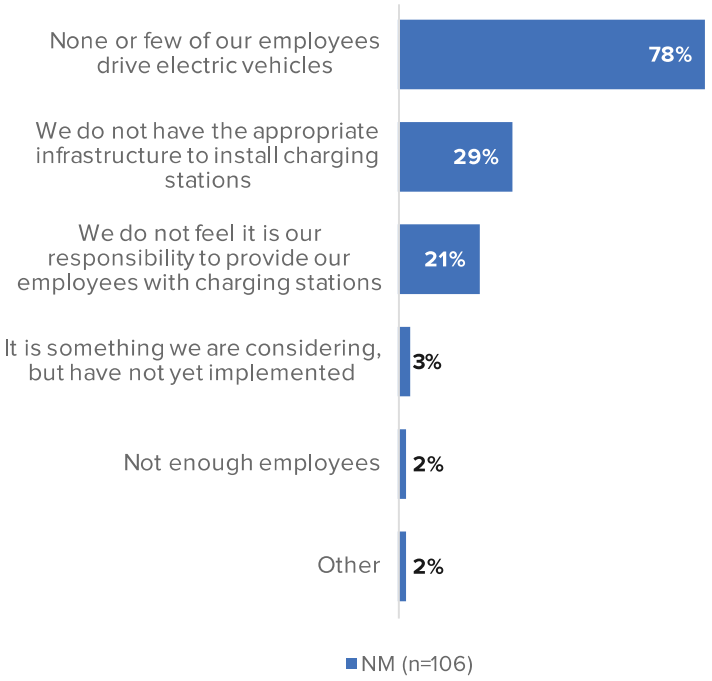
ELECTRIC VEHICLES – INTEREST (BUS.)

BUSINESS: Nearly 80% of respondents indicated they did not provide charging stations because **few or none of their employees drive EVs**. (EV7)

Why does your business not provide charging stations for employees? (EV7)



BUSINESS: Only **1 business respondent** indicated their business provides charging stations to employees with EVs. (EV3) This respondent said it was simply done for "convenience."

Why does your business provide charging stations for employees? (EV7B)

- *"Convenience"*

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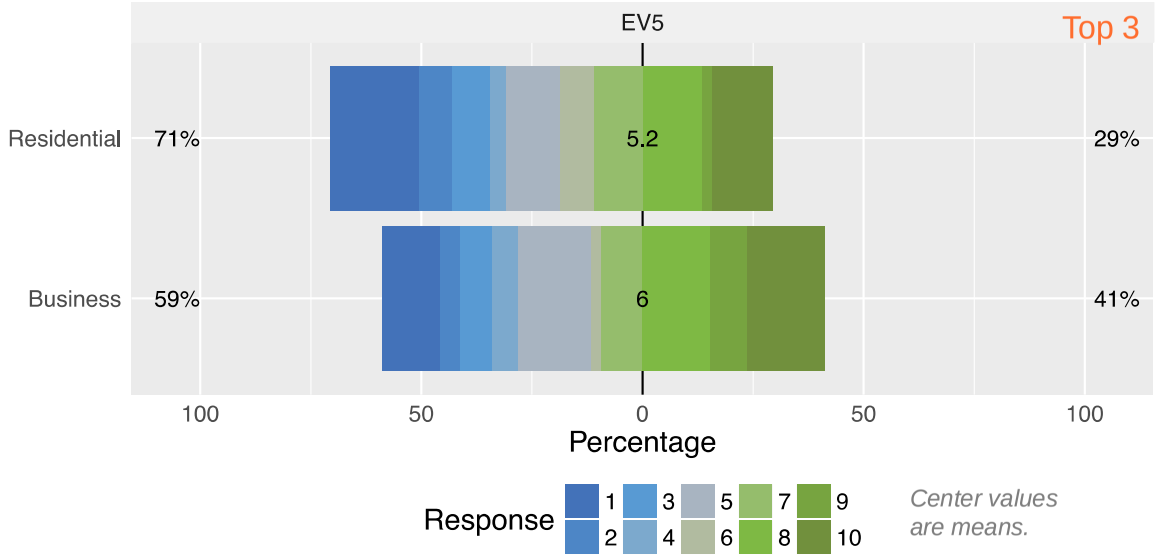
ELECTRIC VEHICLES – PREFERENCES

Residential and business respondents were **similar** in their beliefs that Xcel Energy should offer an optional EV rate plan (means of 5.2 and 6.0, respectively), though **business respondents were slightly more supportive (41% top box).**

Please indicate how much you agree with the following statement. Xcel Energy should offer an optional electric vehicle rate plan. (EV5)



Note this description was provided to respondents: "Xcel Energy is considering offering an optional electric vehicle rate plan which would enable customers to save money and also benefit the grid system by alleviating energy demand. This could entail a lower electric rate for charging vehicles at night and a higher rate for charging vehicles during the day, when demand for energy and costs are typically higher."

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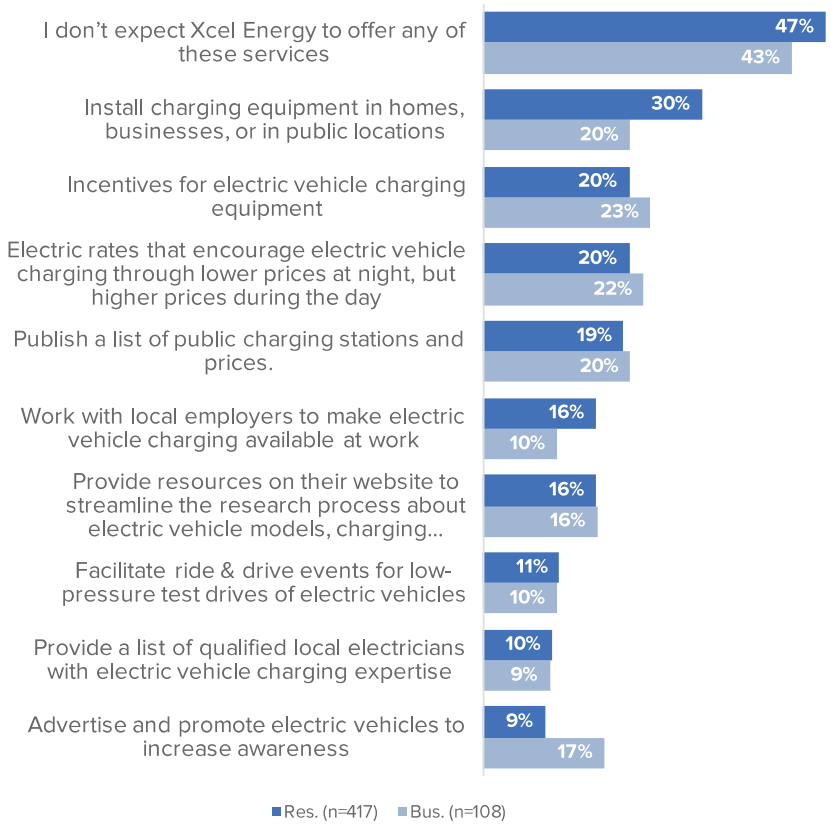
ELECTRIC VEHICLES – PREFERENCES

- Residential and business respondents were similar in their beliefs regarding the types of services that they think Xcel Energy should offer regarding EVs, **though over 47% of residential respondents and 43% of business respondents did not expect Xcel to offer any of the services listed.**
- Residential respondents were slightly more interested in **having charging equipment installed in homes, businesses, and public locations.**
- Business respondents were slightly more interested in **incentives for charging equipment** and in **advertising.**

Please indicate which of the following services you want Xcel Energy to provide. Please select the three services you would want most. (EV6)



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CONNECTED HOMES – USAGE (RES.)

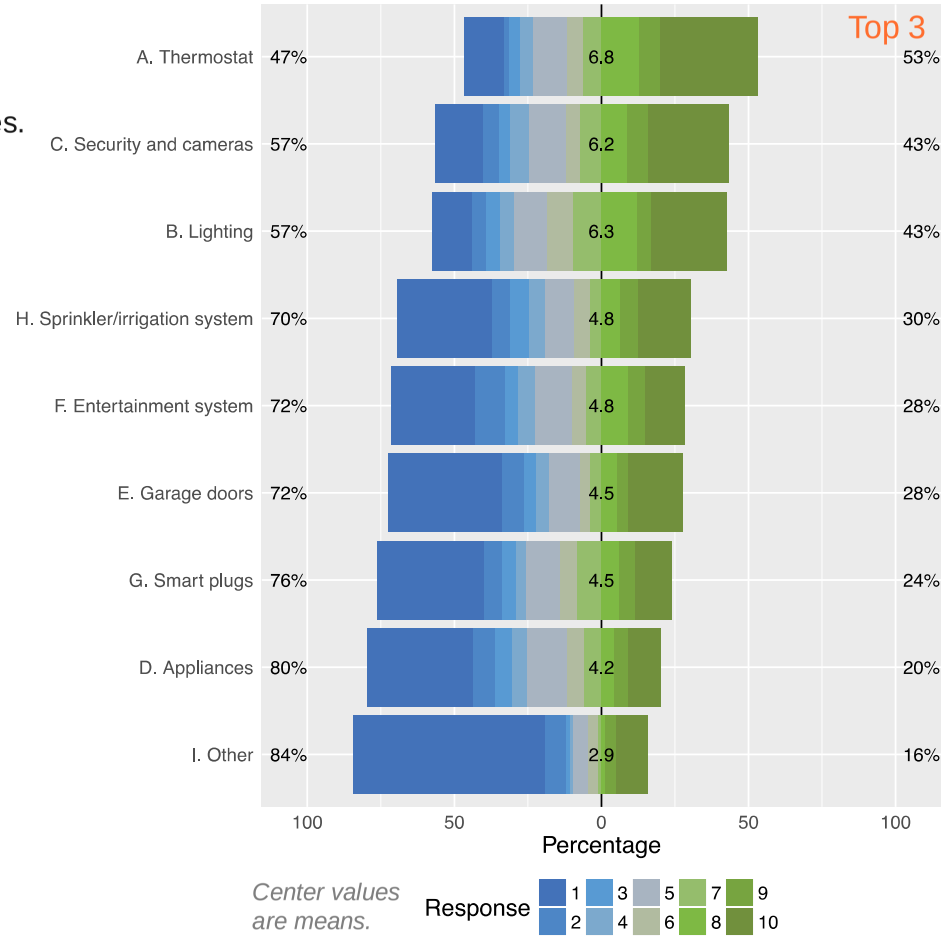
RESIDENTIAL: A majority of respondents indicated they did **not have any smart/connected devices in their homes currently (53%)**, though 24% did have security/camera systems and 24% had smart entertainment systems. (CH2)

- Thinking ahead, residential respondents were most interested in obtaining **smart thermostats** for their homes. (CH3)

Which, if any, of the following connected or smart devices do you currently have in your home? Remember that smart devices can be controlled with a smartphone, tablet, or computer. Select all that apply. (CH2)

	NM (n=416)
I do not currently have any connected or smart devices in my home	**53%**
Security and cameras	**24%**
Entertainment system (TVs and stereos)	**24%**
Thermostat	21%
Lighting	10%
Garage doors	7%
Sprinkler/irrigation system	5%
Smart Plugs	4%
Appliances	3%
Other	<2%

How interested are you in obtaining each of the following connected or smart devices for your home? (CH3)



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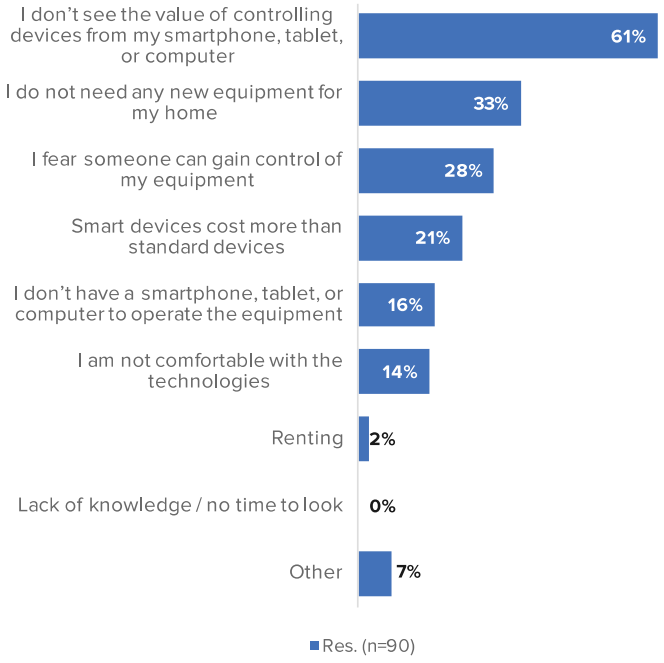
CONNECTED HOMES – PREFERENCES (RES.)

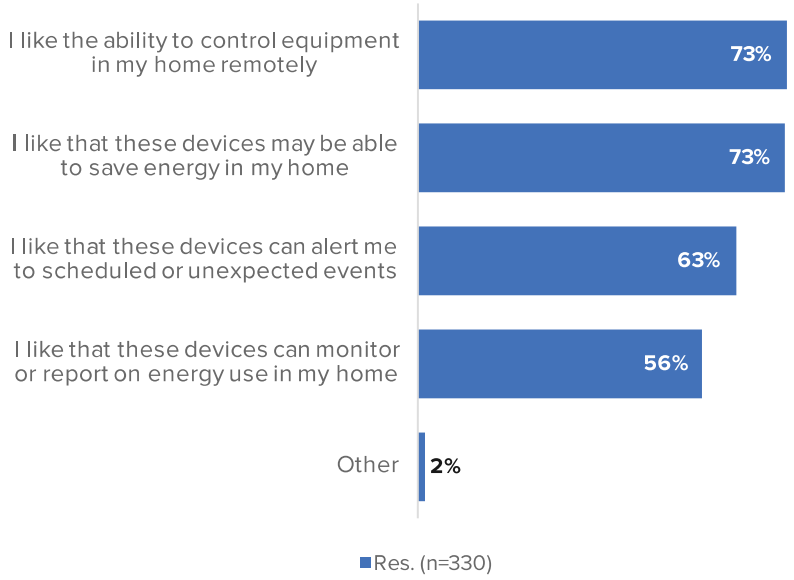
RESIDENTIAL: When asked why they were not interested in smart devices for their home, most respondents (61%) said they simply **didn't want new equipment or didn't see the value in controlling devices remotely.**

Why are you not interested in obtaining any of the smart or connected devices for your home? Please select all that apply. (CH3B)



RESIDENTIAL: Among respondents who were interesting in smart devices, **remote control of equipment** and **energy savings** were the most commonly-cited motivating factors, though all were popular.

What aspects of smart or connected devices are appealing to you? Please select all that apply. (CH3C)



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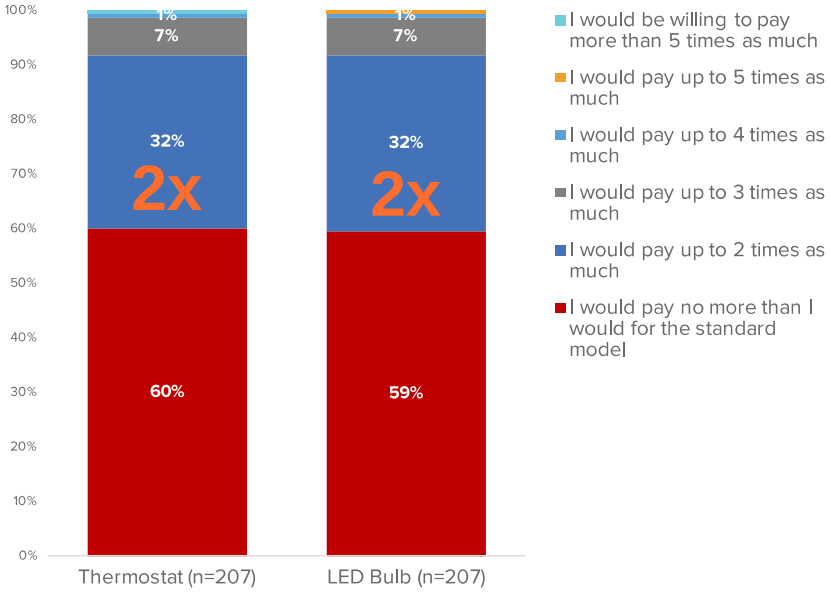
CONNECTED HOMES – PREFERENCES (RES.)

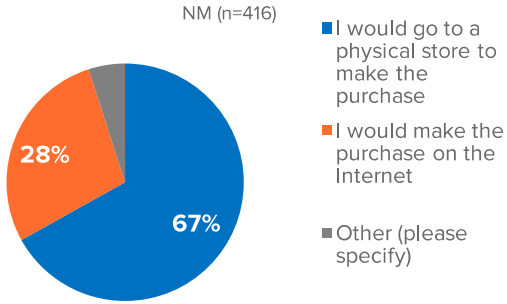
Over half of residential respondents said they were unwilling to pay any more money for a smart thermostat or smart LED bulb over a standard model (60% and 59% respectively). **Yet between 32% said they would pay twice as much.** (CH4A/B)

In general, how much more would you be willing to pay for the connected or smart model? (thermostat or LED bulb)

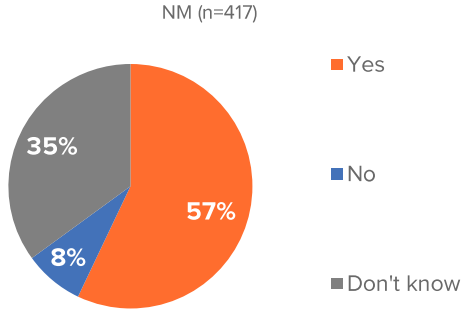


Residential respondents reported being more likely to purchase an electronic device or appliance in a physical store (67%) than online (28%) (CH5); however, **over half of respondents (57%) said they would be willing to buy products from an Xcel Energy online store**. (CH6)

Where would you typically go to purchase electronic devices or appliances for your home? (CH5)



Would you be willing to purchase products from Xcel Energy's new online store? (CH6)

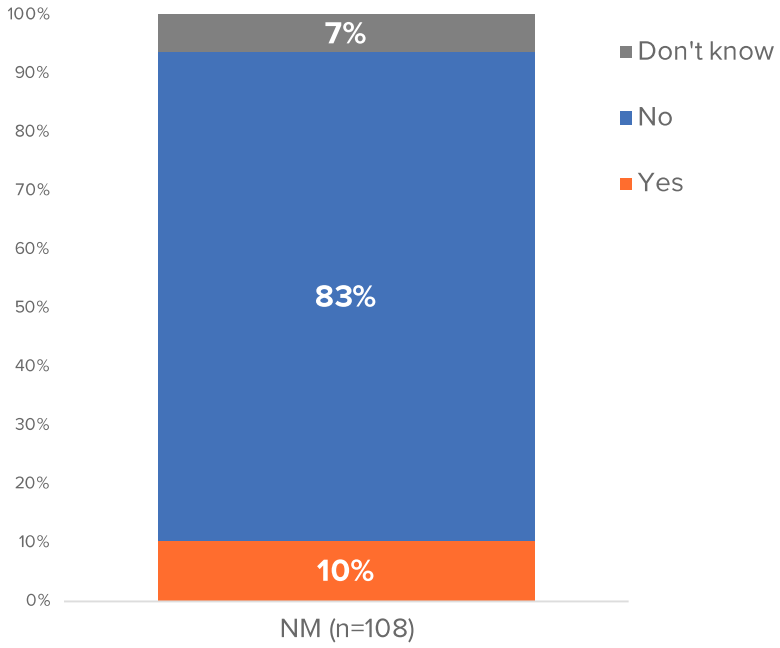


EMI CONSULTING

CONNECTED BUSINESSES – USAGE

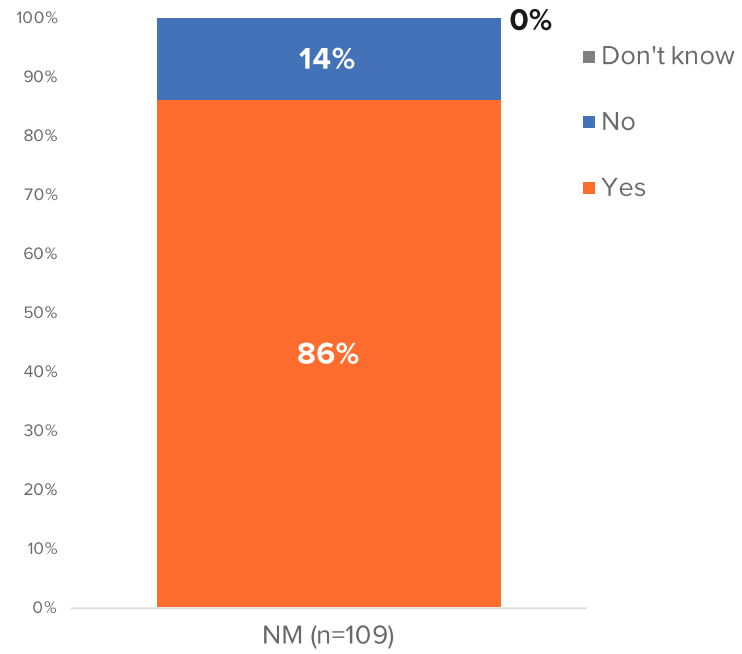
Only about **10%** of business respondents indicated their businesses employed an **energy management system (EMS)**.

Does your business have an energy management system? (CB1)



Conversely, **86%** of business respondents indicated their businesses had an **air conditioning system**.

Does your facility have an air conditioning system? (CB2)



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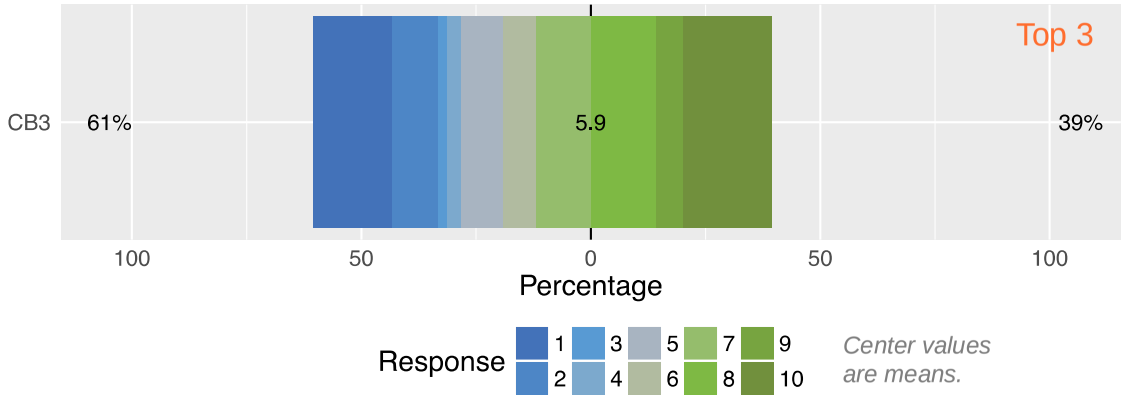
CONNECTED BUSINESSES – INTEREST

- **39%** (top box) of ND business KB8 respondents appeared interested in participating in a demand response program paired with an EMS.

How interested would your business be in participating in a demand response program paired with an energy management system, such as a smart thermostat? KB9



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Slide 37

KB8 are these right stats and just need to change ND to NM? or are they still wrong numbers?
Krys Buckendahl, 8/23/2016

KB9 needs the question number inserted
Krys Buckendahl, 8/23/2016

CONNECTED BUSINESSES – INTEREST

Among business respondents who were not willing to participate in a DR program, **59%** indicated they were unwilling to give up controls of their equipment. **38%** were worried about how turning off air conditioning may affect their business operations.

Why would your business not be interested in participating in a demand response program paired with an energy management system, such as a smart thermostat? (CB4)

	NM (n=29)
We would be unwilling to give control of any of our equipment to Xcel Energy	59%
We are concerned about how turning off our air condition might affect business operations	38%
We have no ability to shift any of our energy use to different times of the day.	21%
We feel it is Xcel Energy's job to maintain the supply of energy, and we as customers, should not concern ourselves with the issue	21%
Other	14%

Among business respondents who said they might be interested, **78%** cited the appeal of price reductions or discounts while **51%** cited the convenience of having a smart thermostat. **49%** mentioned the benefits of automation.

Why would your business be interested in participating in a demand response program paired with an energy management system, such as a smart thermostats?

(

	Business (n=65)
The price reductions or discounts are appealing	78%
We'd value the convenience and efficiency of an energy management system/smart thermostat	51%
We'd be excited about the technology and automation of an energy management system/smart thermostat	49%
We feel it is our responsibility to do our part to contribute to a stable and predictable energy supply	31%
Our business operations are flexible and could shift energy use to a non-peak period relatively easily	34%
Other	2%

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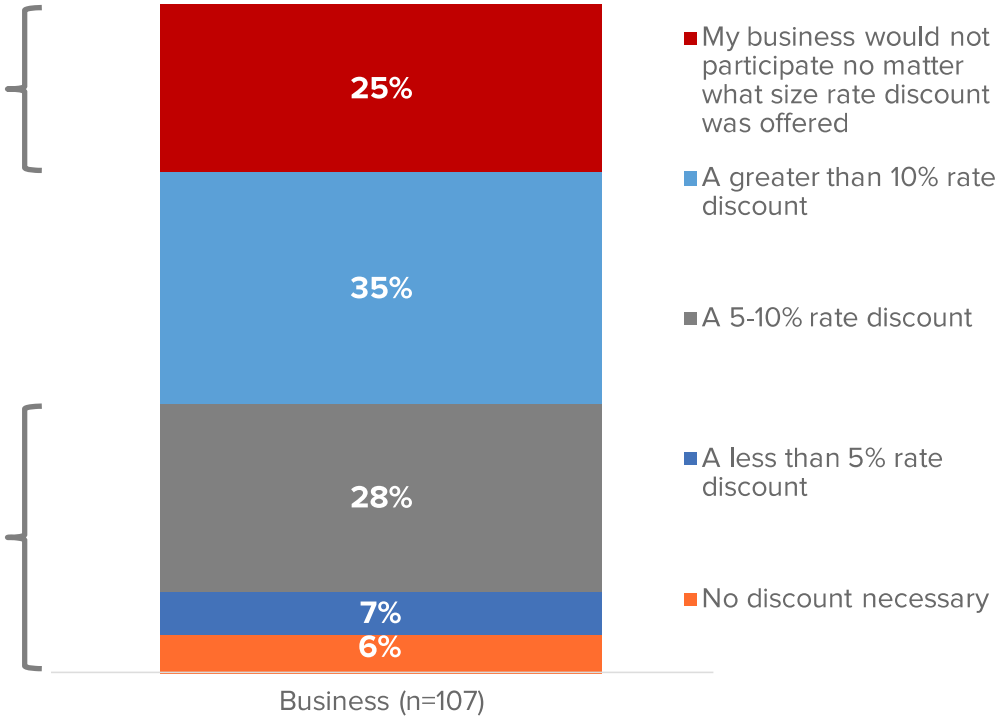
CONNECTED BUSINESSES – INTEREST

25% of business respondents indicated they would not consider shifting their use at all.

Roughly **40%** of business respondents indicated they would need a 5-10% discount rate or less in order to consider shifting their energy use.

How much of a rate discount would be required for your business to consider shifting some of your use? (CB6)



Numbers do not sum to 100% due to rounding.

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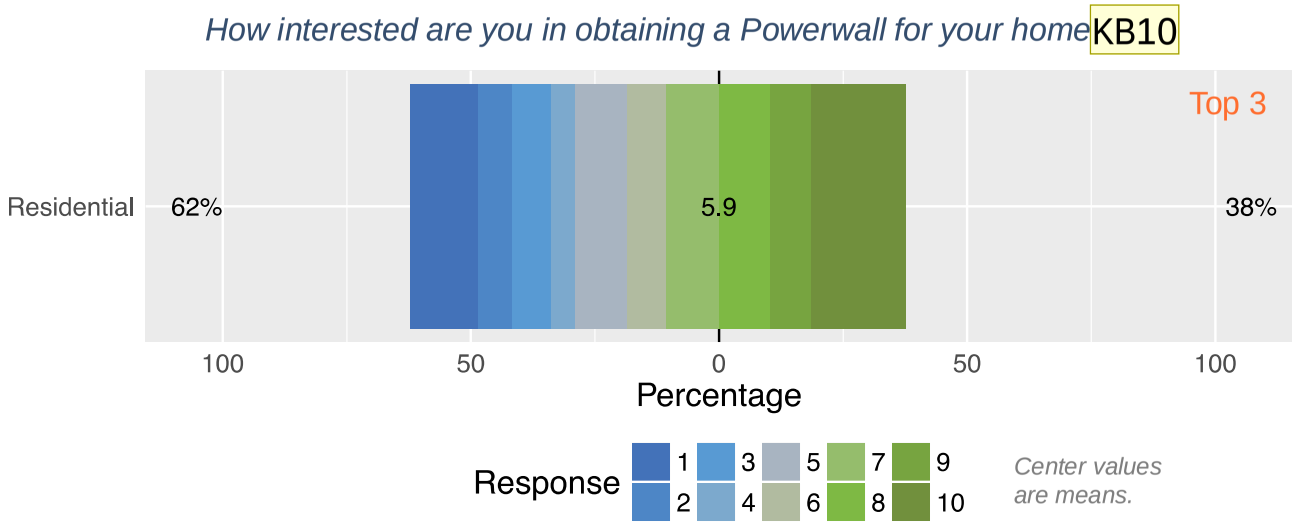
HOME BATTERY STORAGE

Residential respondents appeared interested in obtaining a Tesla Powerwall for their homes (38% top box). Considering that Powerwalls are not yet available on the mass market, and judging by their reported familiarity with battery storage technologies, **it is possible this number may increase once respondents become more familiar with this type of technology.**



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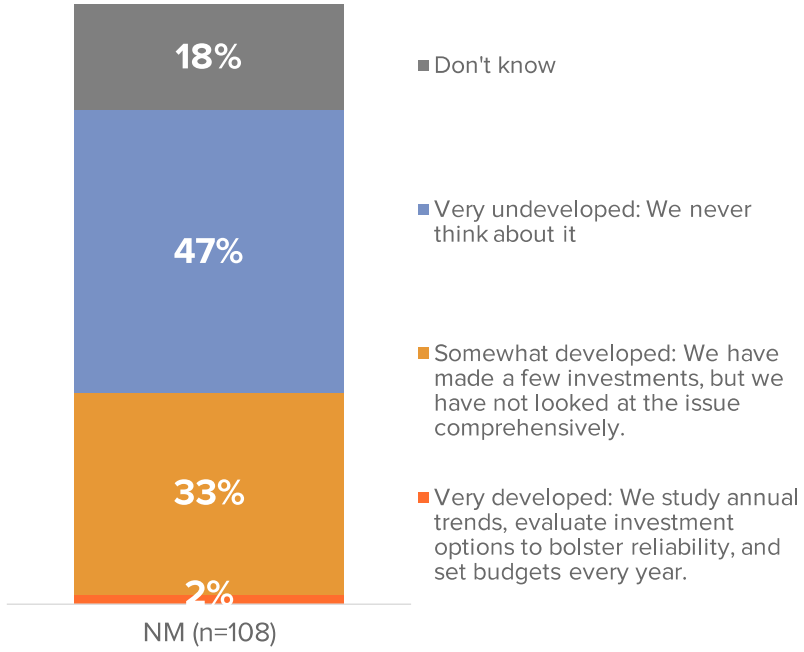
Slide 40

KB10 need to insert question number
Krys Buckendahl, 8/23/2016

BUSINESS BATTERY STORAGE

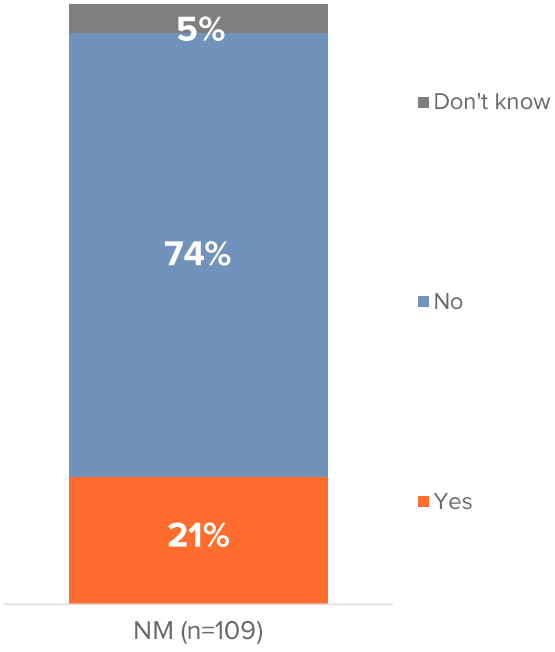
Only **2%** of business respondents' power outage plans are "very developed."

Please describe how developed your company's plans are to deal with power outages. (BB1)



Yet **21%** of business respondents indicated they use some type of battery storage for back-power during outages.

Does your business use any battery storage to provide back-up power in the event of a power outage? (BB2)



This result may be high due to respondents' varying definitions of "battery storage," which may include simple devices such as computer backup supply power.

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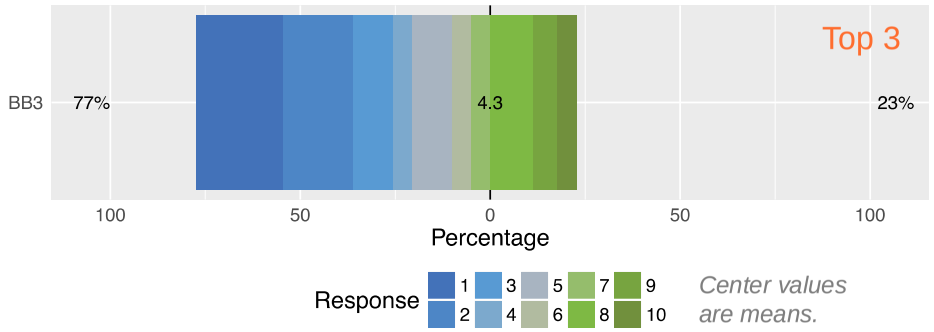
BUSINESS BATTERY STORAGE

Business respondents were **not generally interested in investing in battery storage** as part of their reliability plans, with only **23%** in the top 3 box (on a 10-pt scale).

How interested would your business be in investing in battery storage as part of your reliability plans? (BB3)



Most respondents (73%) indicated it was the **CEO or owner** who would be responsible for developing such plans.

Who is or would be responsible for developing reliability plans and budgets within your business? Please select all that apply. (BB4)

	NM (n=108)
CEO/owner	**73%**
Building manager/operator	11%
Finance	7%
Board of directors / external board / commission	5%
Energy manager	5%
Other admin	2%
Other	10%
Don't know	7%

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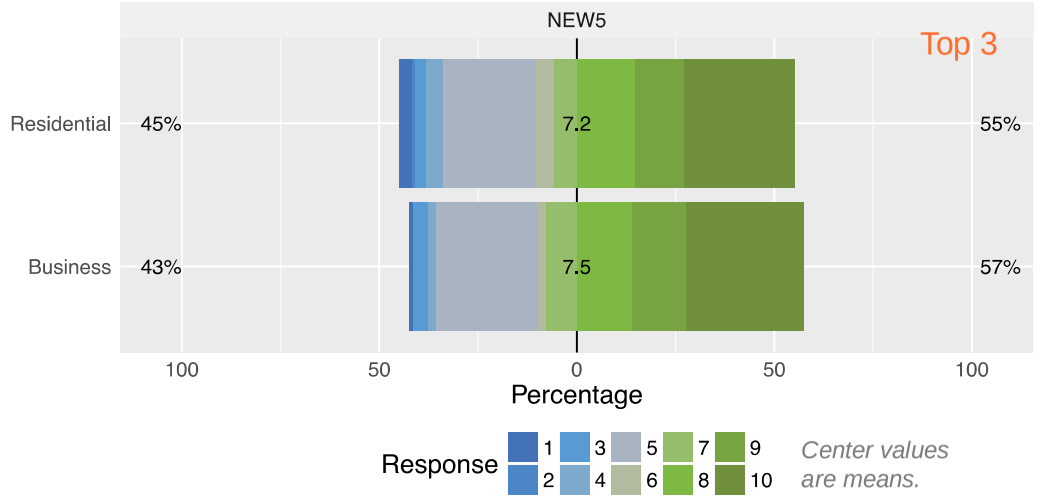
Xcel Energy Reputation

Residential and business respondents were very similar in their likelihood of recommending Xcel Energy (55% and 57% top box, respectively). **In both sectors, a large number appeared neutral (i.e., '5').**

How likely are you to recommend Xcel Energy to a friend, relative, or colleague? (NEW5)



Net Promoter Scores (based on NEW5) were **similar across both sectors, though** business respondents' scores were slightly higher.

Net Promoter Scores by Sector

	Detractors (1-6)	Passive (7-8)	Promoters (9-10)	NPS
Residential (n=405)	39%	21%	40%	1%
Business (n=101)	35%	22%	44%	9%

Note: NPS scores were computed using a 1-10 scale.

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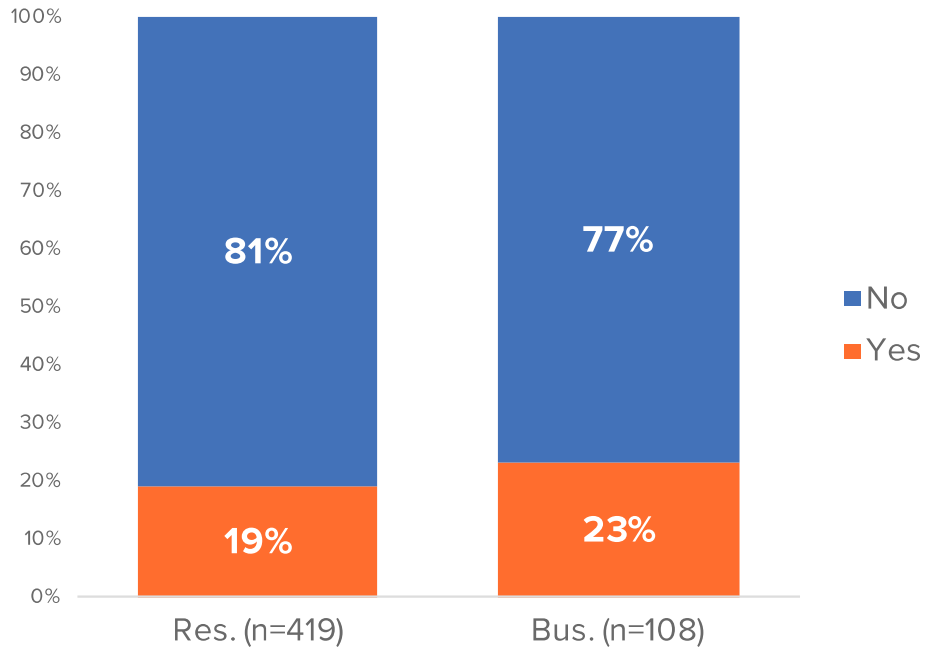
Xcel Energy Reputation

Most respondents were not aware of Xcel Energy's status as the #1 Wind Provider in the country for the past 12 years. Residential and business respondents were similar in their awareness levels.

Are you aware that Xcel Energy has been the #1 Wind Energy Provider in the country for the past 12 years? (Q12)



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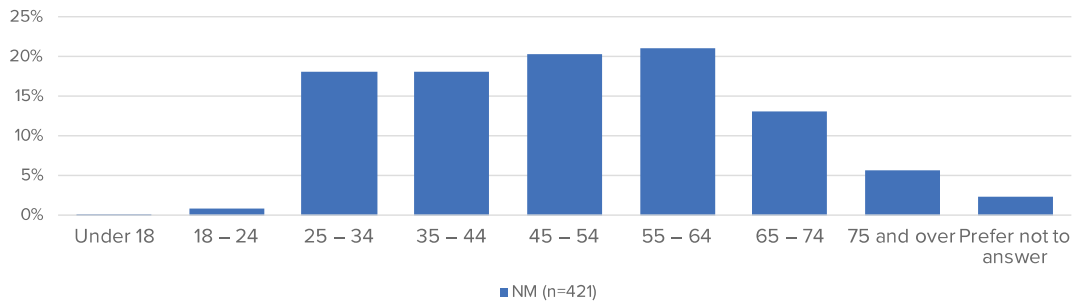
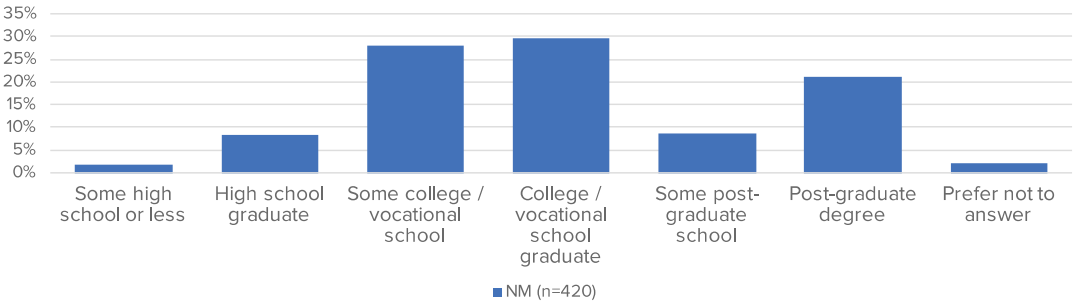
DEMOGRAPHICS

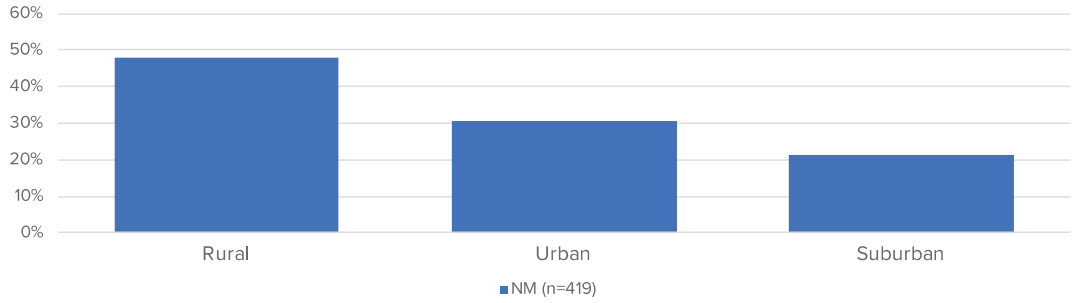
Age



Education



Location



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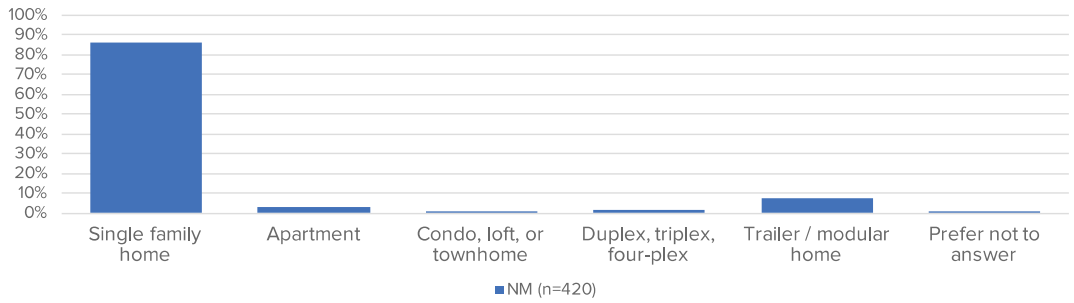
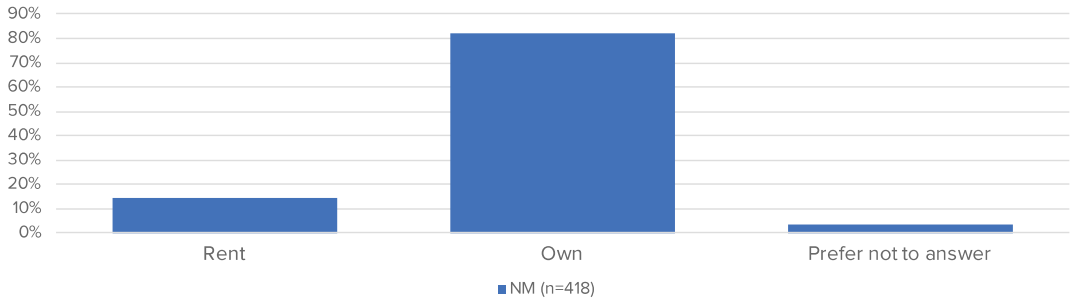
DEMOGRAPHICS

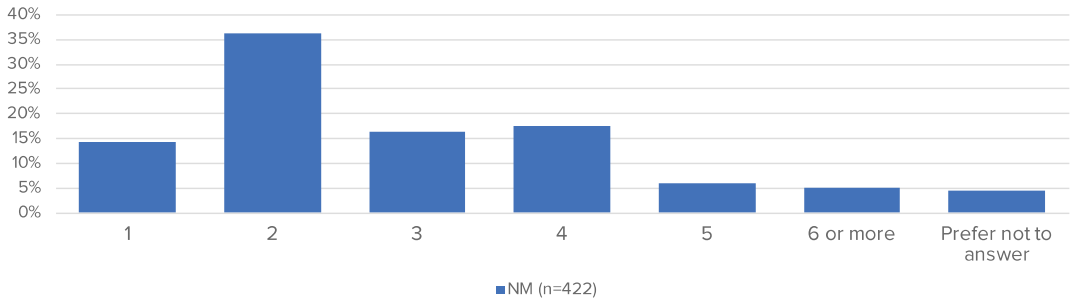
Home type



Home ownership



Number of people in household



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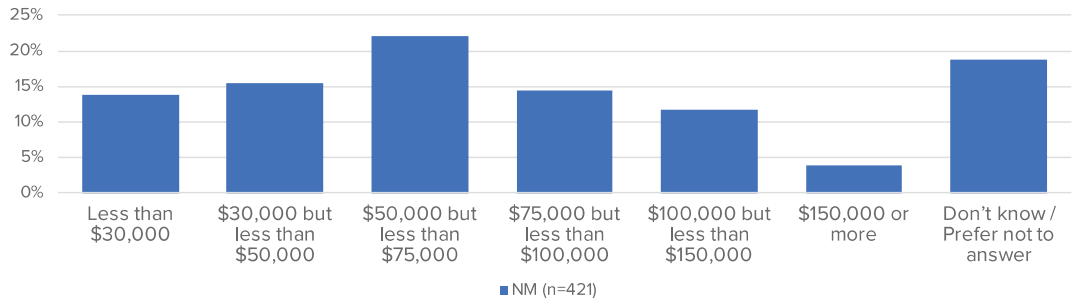
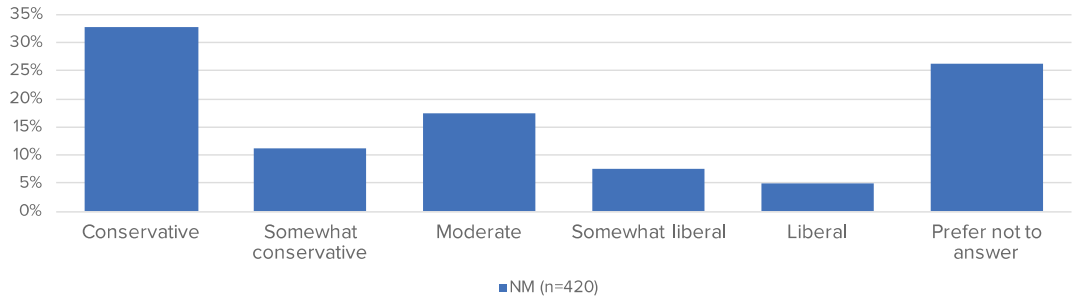
DEMOGRAPHICS

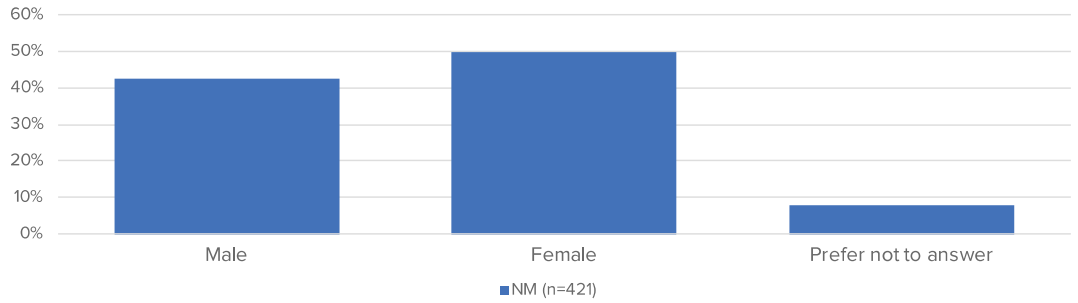
Income



Political Views



Gender



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FIRMOGRAPHICS

Industry

Exact industry / Area of Business	NM	
	Count	Column N %
Agriculture, Forestry or Fishing	14	12.8%
Mining	2	1.8%
Construction	6	5.5%
Manufacturing	1	0.9%
Transportation	1	0.9%
Communications	0	0.0%
Sanitary	0	0.0%
Wholesale	2	1.8%
Retail - Big Box	0	0.0%
Retail - Grocery	0	0.0%
Retail - Convenience	1	0.9%
Eating or drinking place	4	3.7%
Finance	2	1.8%
Insurance	3	2.8%
Real estate	9	8.3%
Multifamily	1	0.9%
Services	27	24.8%
Health services	4	3.7%
Education	7	6.4%
Membership organization (includes churches)	5	4.6%
Government	3	2.8%
Horticulture	2	1.8%
Other (please specify)	1	0.9%
Entertainment	1	0.9%
Nonprofit	2	1.8%
Hospitality	3	2.8%
Distribution	0	0.0%
Rental properties	0	0.0%
Storage	1	0.9%
Small retail	5	4.6%
Oil/gas exploration	1	0.9%
Country club	0	0.0%
Gallery	1	0.9%
TOTAL	**109**	

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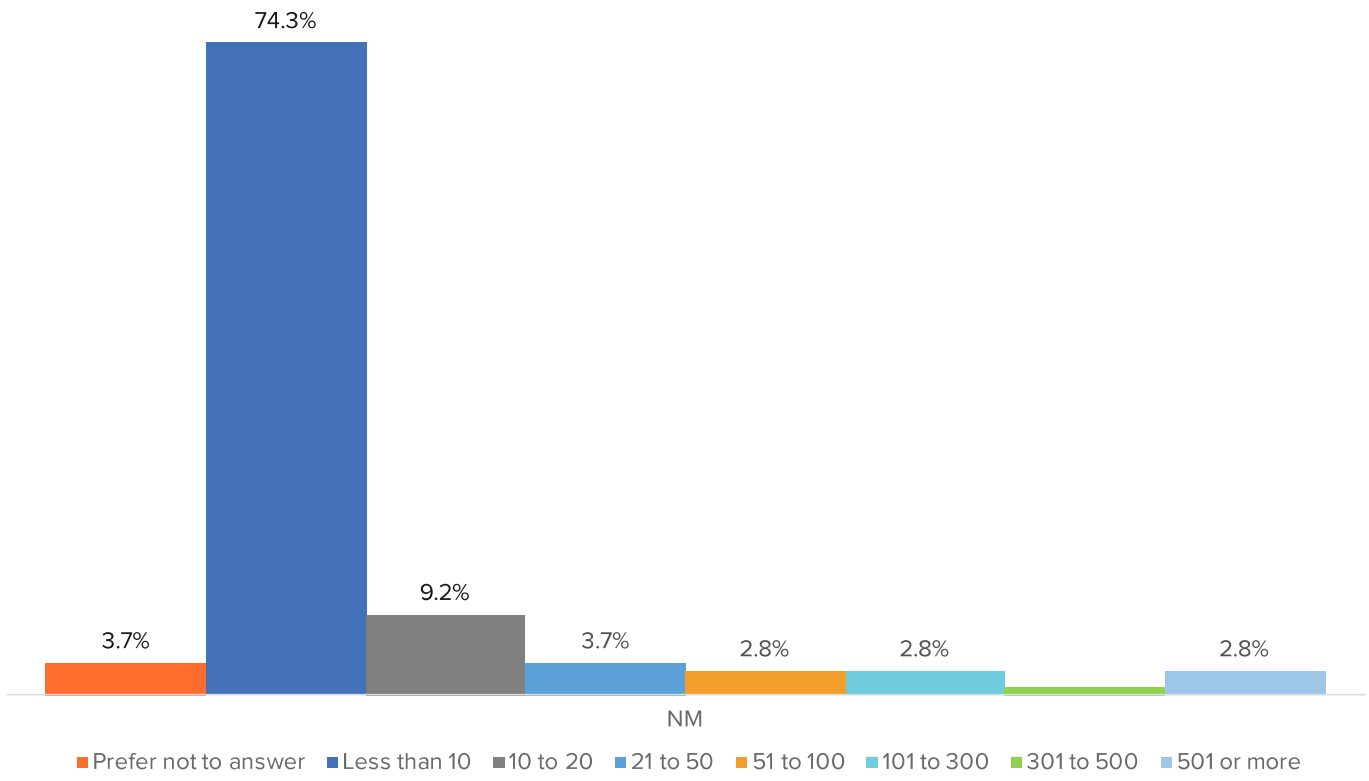
FIRMOGRAPHICS

Number of employees at location



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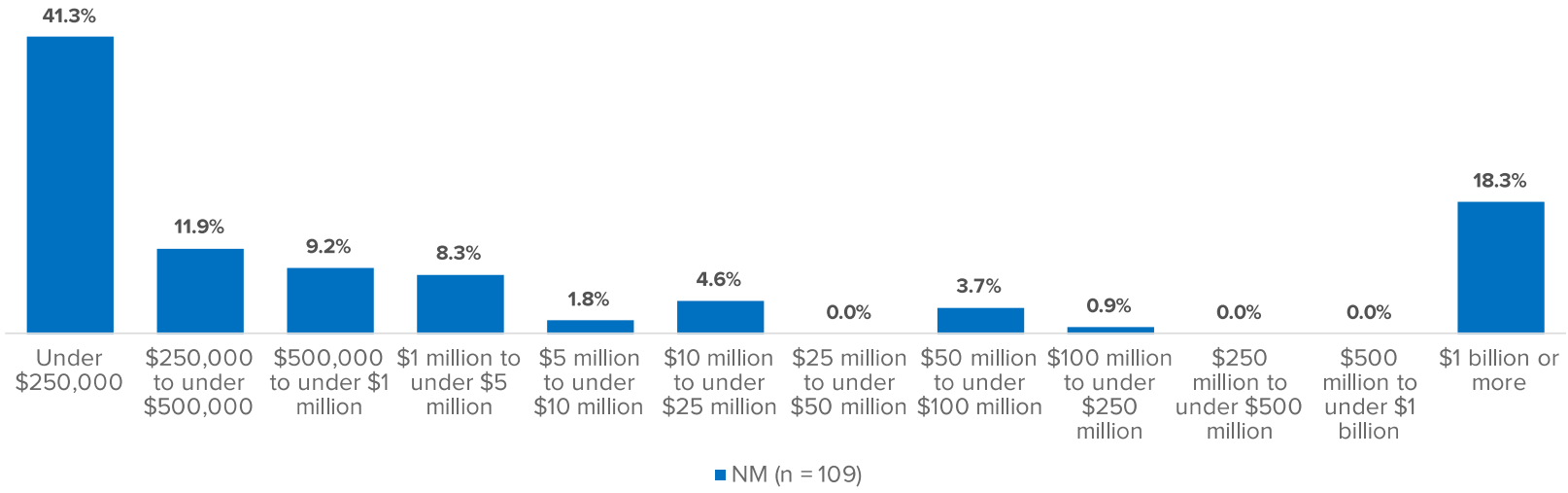
FIRMOGRAPHICS

Revenue



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New Mexico Windsource Customer Survey

Customer Insights

Publication Date: December 20, 2017

Objectives: What Did We Want to Learn?

Program Drivers	What factors are most important to customers when deciding whether to participate in the Windsource program?
Interest	How interested are customers in a community solar gardens program in lieu of Windsource? What about price?
RECs Awareness	How familiar are customers with Renewable Energy Credits (RECS)? How important are RECs?
Knowledge of Bill	How aware are customers about their Windsource bill? Have block customers modified their subscriptions since enrollment? What changes were made?
Satisfaction	How satisfied are customers with Xcel Energy?
Communications	How do customers prefer to hear from Xcel Energy about renewable programs?

Results: What We Learned

Program Drivers	New Mexico customers who sign up for Windsource are motivated primarily by a desire to reduce their environmental impact and to use renewable energy to power their homes.
Interest	The majority of Windsource customers are interested in a community solar gardens program, especially current 100% wind customers. The favored price is 2 cents/kWh compared to current Windsource price.
RECs Awareness	Most customers are unfamiliar with Renewable Energy Credits. Among those who are familiar, most consider RECs important.
Knowledge of Bill	The majority of customers read their Windsource bill a few timesa year and are somewhat familiar with Windsource charges and credit line items. Most block customers have not modified their subscription to add/delete blocks.
Satisfaction	Satisfaction with Xcel Energy as a service provider is very high.
Communications	When hearing about a new renewable program, such as Solar Gardens, customers prefer an email from Xcel Energy. Before transitioning to a new program, most customers want an opportunity to review pricing, terms and conditions before committing to the program.

Methodology: Online Customer Survey

Launch survey	10/19/2017
Close survey	12/7/2017
Number of emails	327
Response rate	23.5%
Incentive	$500 Visa gift card

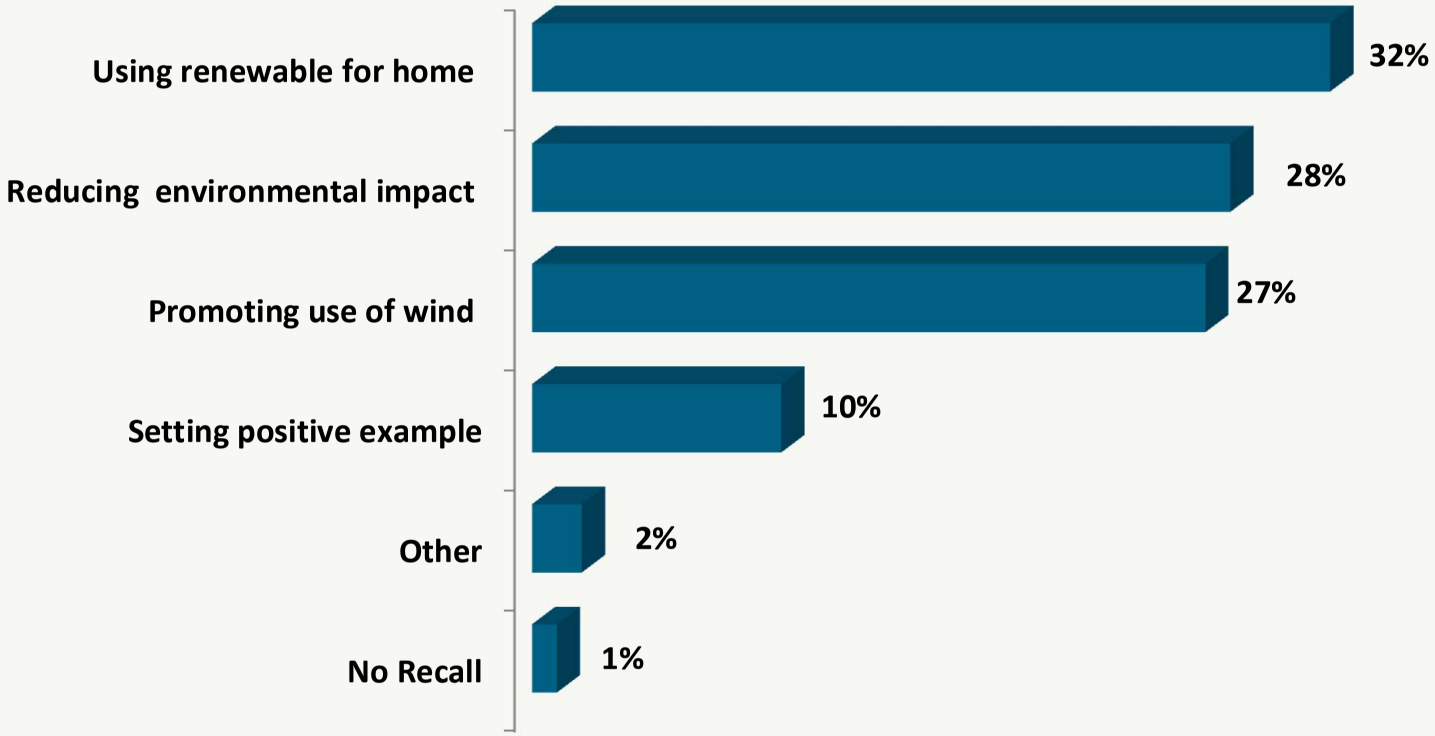
New Mexico Windsource Customers

New Mexico Segments	# email recipients	# of Completes	Rate
2017 NM Windsource – ALL 55 Prior Respondents	42	22	52%
2017 NM Windsource – Residential (Other Than 55) Block	229	34	10%
2017 NM Windsource – Residential (Other Than 55) 100%	45	10	22%
2017 NM Windsource – Business 100%	6	1	17%
2017 NM Windsource – Business Block	5	0	

4

Why Windsource?

Top Reasons: Using Renewable to Power Home & Reducing Environmental Impact

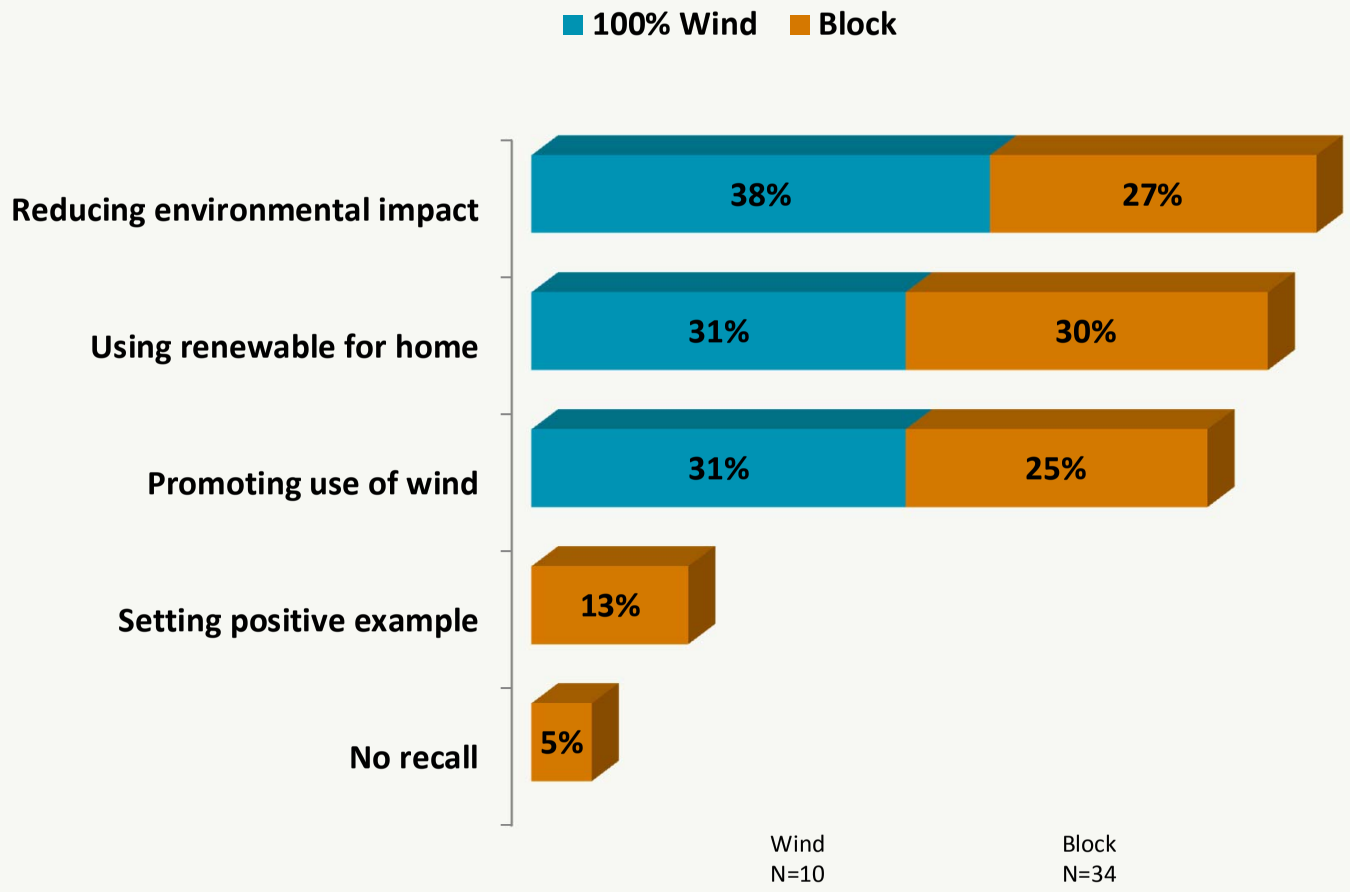


N=66

Q. In thinking about your decision to participate in Xcel Energy's Windsource program, what were the two most important reasons for choosing Windsource? Please select up to two reasons.

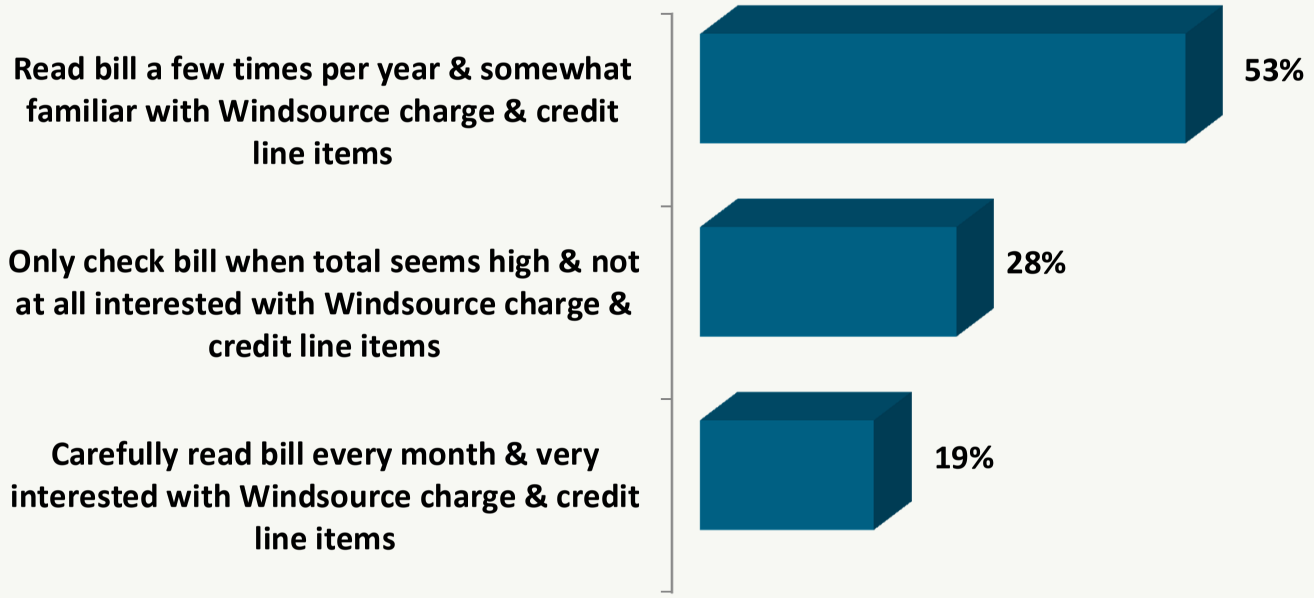
Xcel Energy®

Top Reasons: Reducing Environmental Impact & Using Renewable to Power Home



Q. In thinking about your decision to participate in Xcel Energy's Windsource program, what were the two most important reasons for choosing Windsource? Please select up to two reasons.

Over 50% Respondents Read Windsource Bill a Few Times each Year

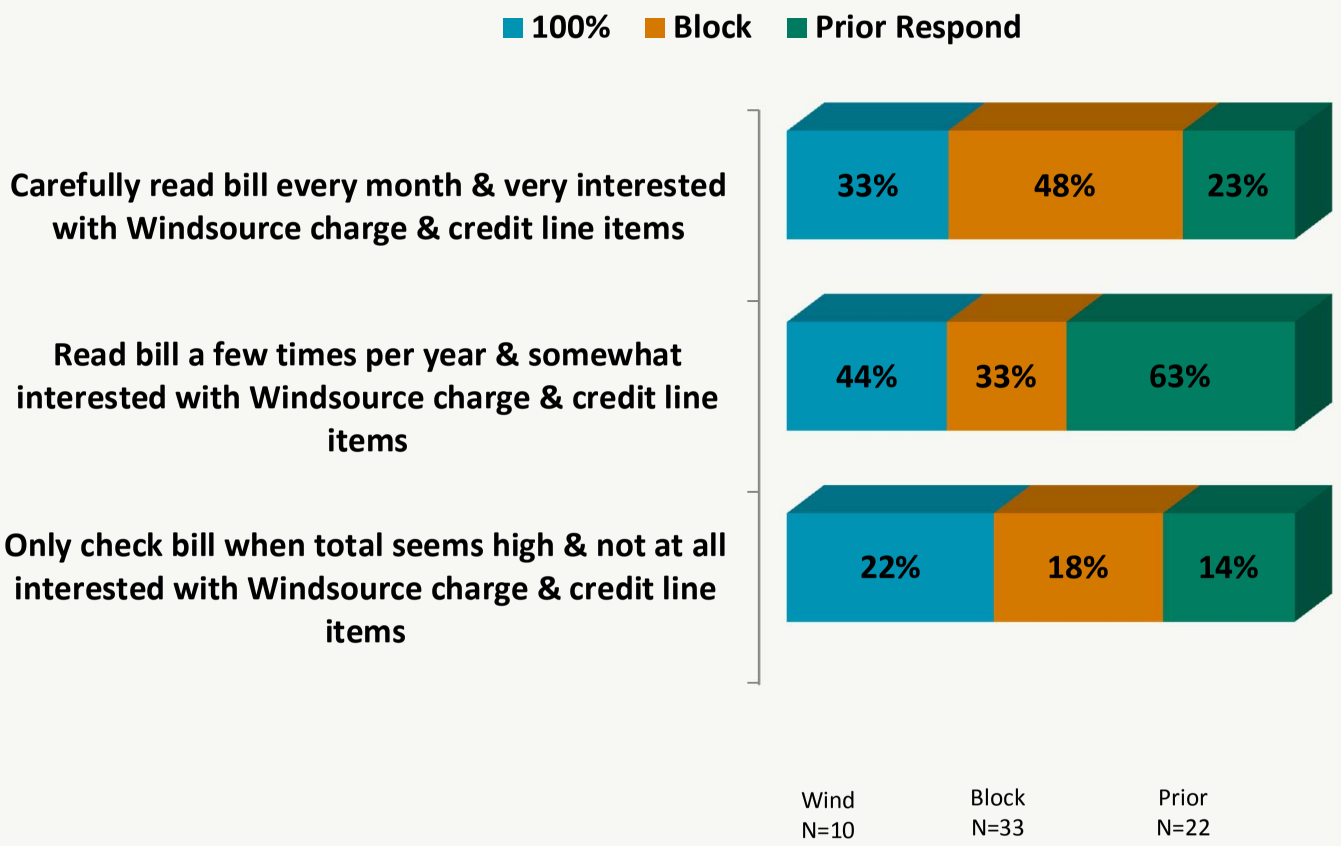


N=64

Q. Please select the option that best describes your familiarity with your Windsource bill

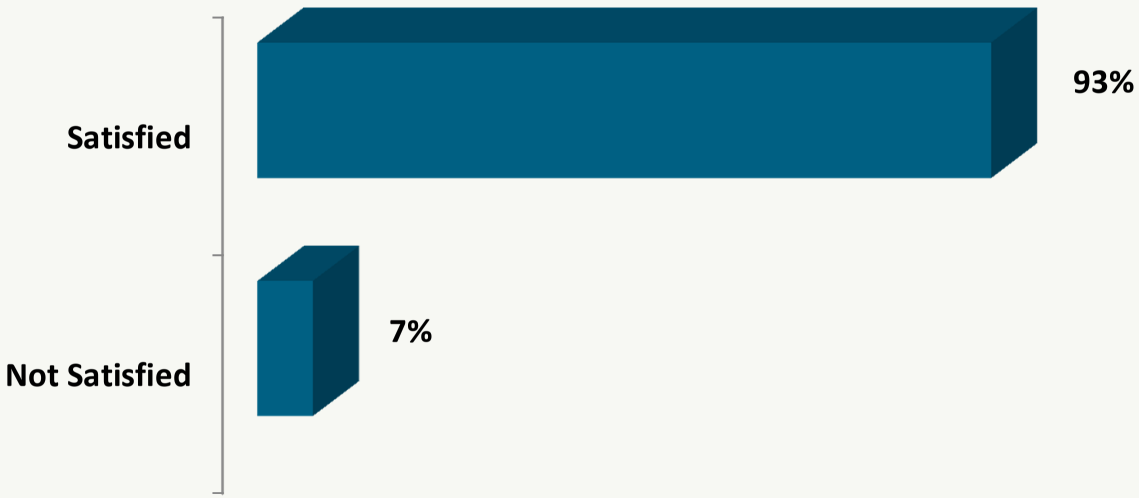
Xcel Energy®

100% Wind & Prior Respondents More Likely to Read Windsource Bill a Few Times each Year



Q. Please select the option that best describes your familiarity with your Windsource bill

High Rate of Satisfaction among Windsource Customers

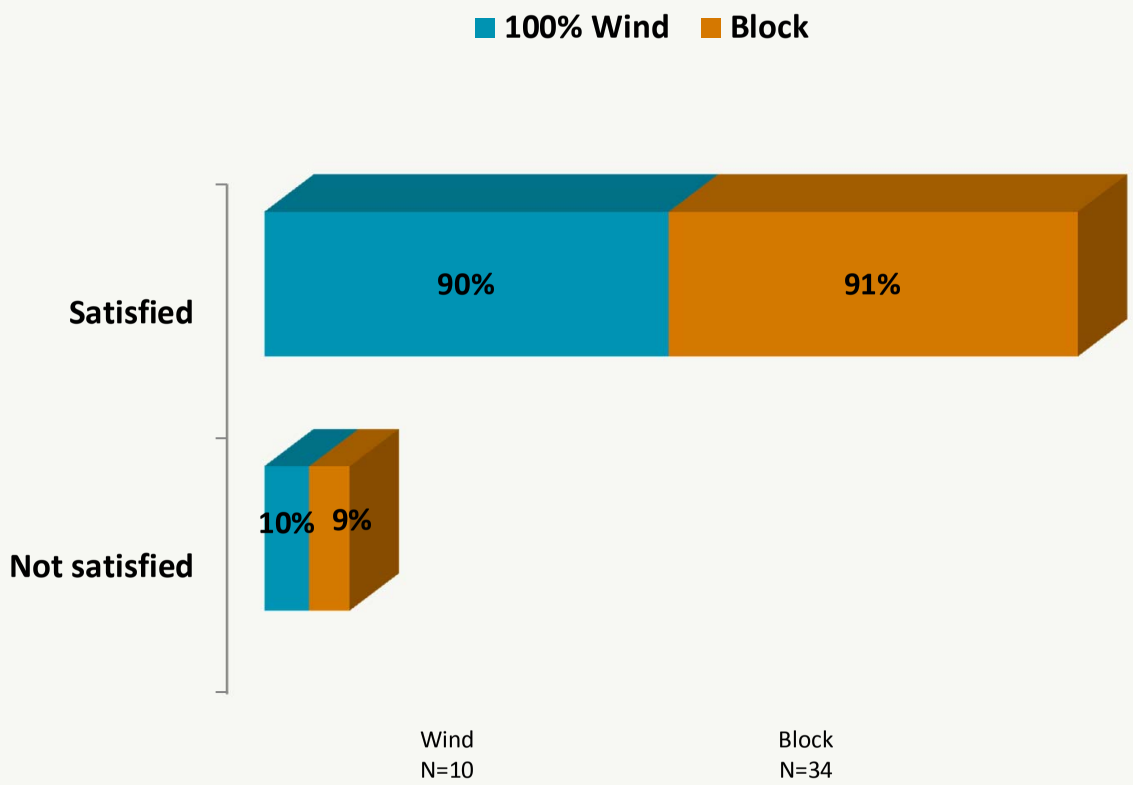


N=44

Q. Based on your overall experience with Xcel Energy, how satisfied are you with us as your energy provider?

Xcel Energy®

High Rate of Satisfaction among Windsource Customers



Q. Based on your overall experience with Xcel Energy, how satisfied are you with us as your energy provider?

Windsource Customers | NPS

NET PROMOTER SCORE

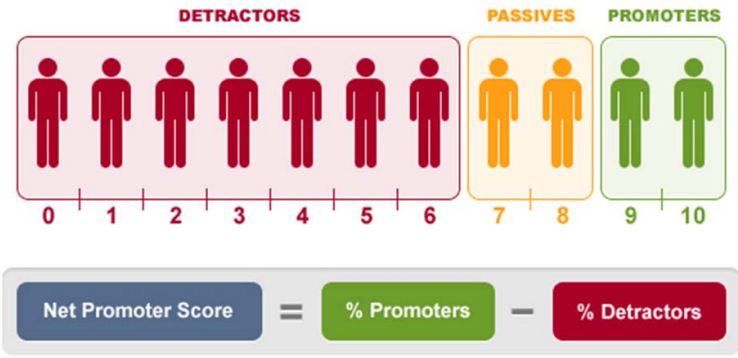
"How likely are you to recommend Xcel Energy to a friend, relative or colleague?"

100% Wind
NPS=70

N=10

Block
NPS=18

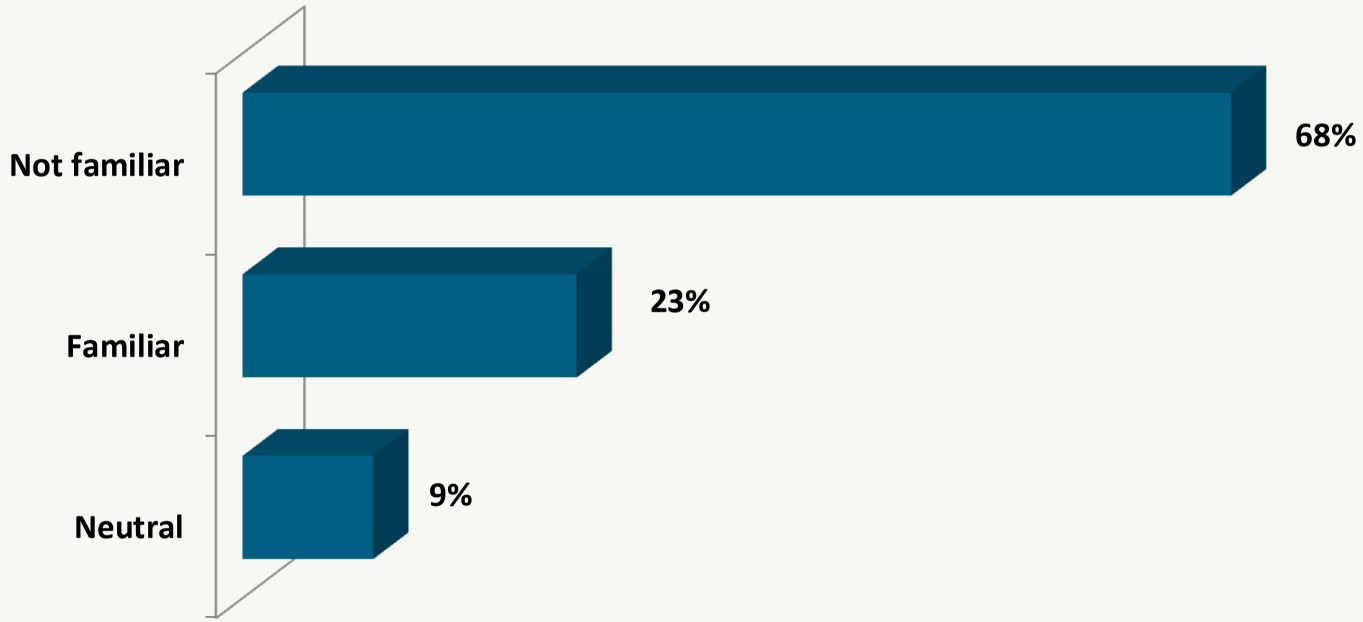
N=34



Overall NPS score ranges from -100 to +100

Renewable Energy Credits

Majority of Customers are Unfamiliar with Renewable Energy Credits

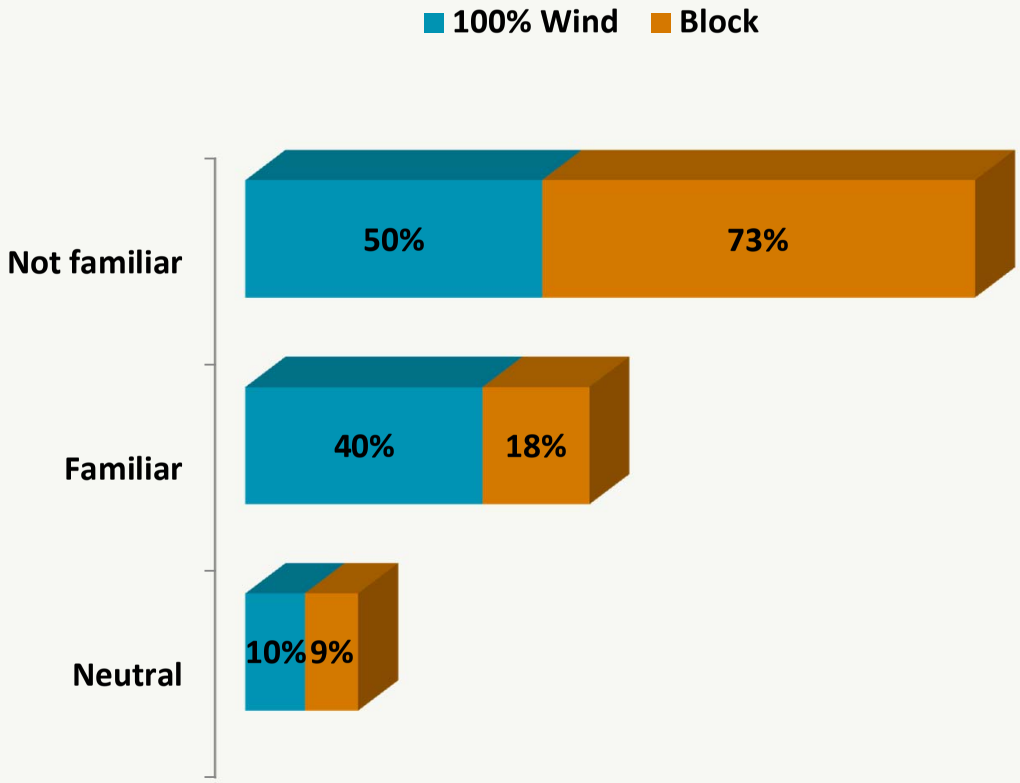


N=44

Q. Renewable Energy Credits (RECs) are the currency used to measure the energy produced by a renewable resource, such as Windsource. Credits are used to meet renewable energy goals. How familiar are you with RECs?

Xcel Energy®

Majority of Customers are Unfamiliar with Renewable Energy Credits

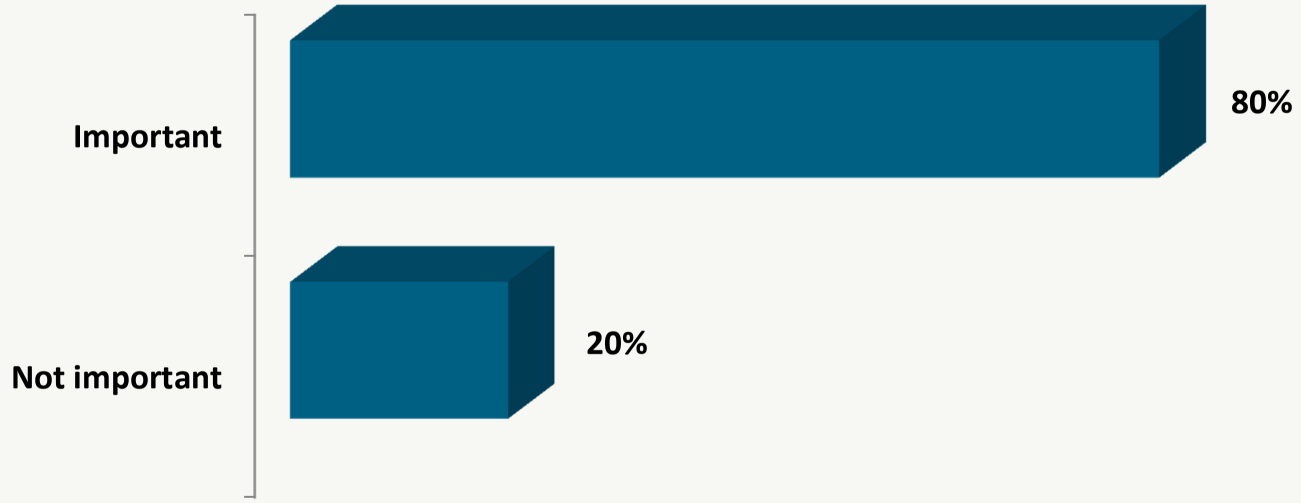


Wind N=10 | Block N=34

Q. Renewable Energy Credits (RECs) are the currency used to measure the energy produced by a renewable resource, such as Windsource. Credits are used to meet renewable energy goals. How familiar are you with RECs?

Xcel Energy®

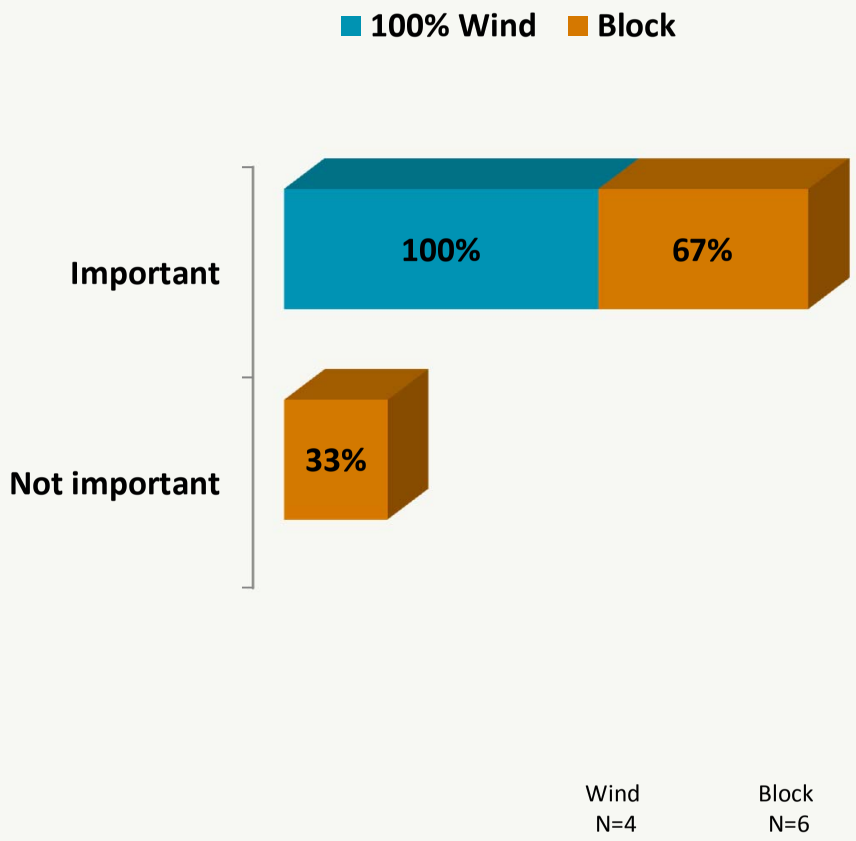
Renewable Energy Credits are Important to Those Familiar with RECS



N=10

Q. How important are Renewable Energy Credits to you?

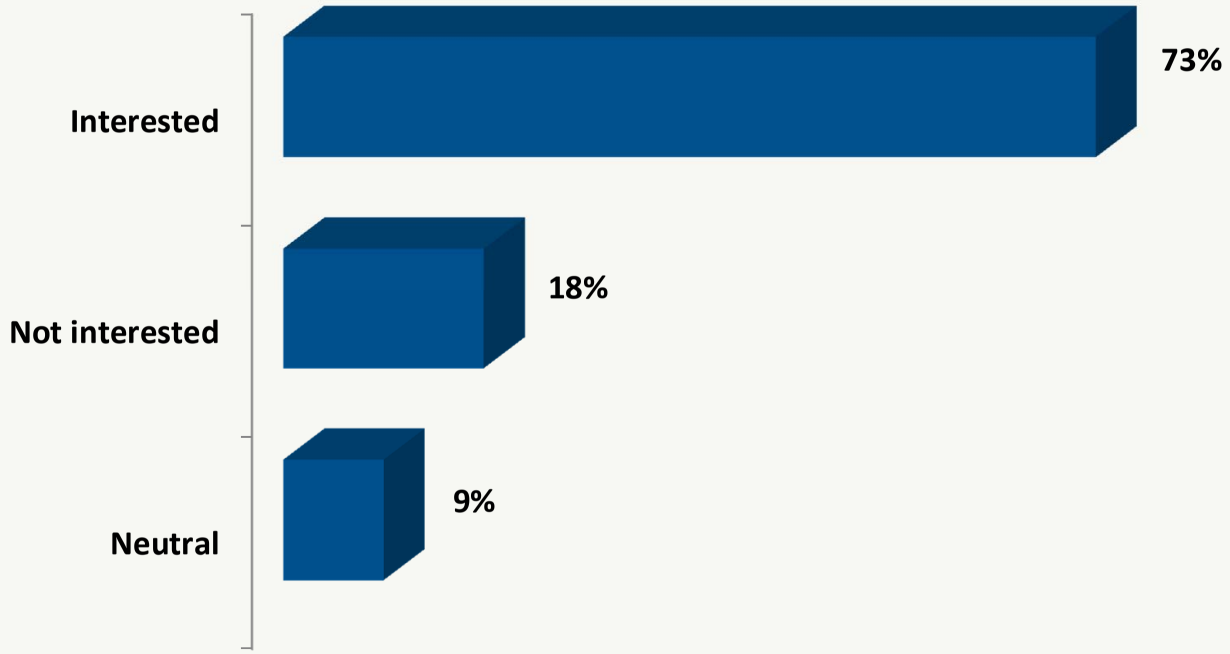
Renewable Energy Credits are Important to Those Familiar with RECS



Q. How important are Renewable Energy Credits to you?

New Program Interest:
Community Solar Gardens

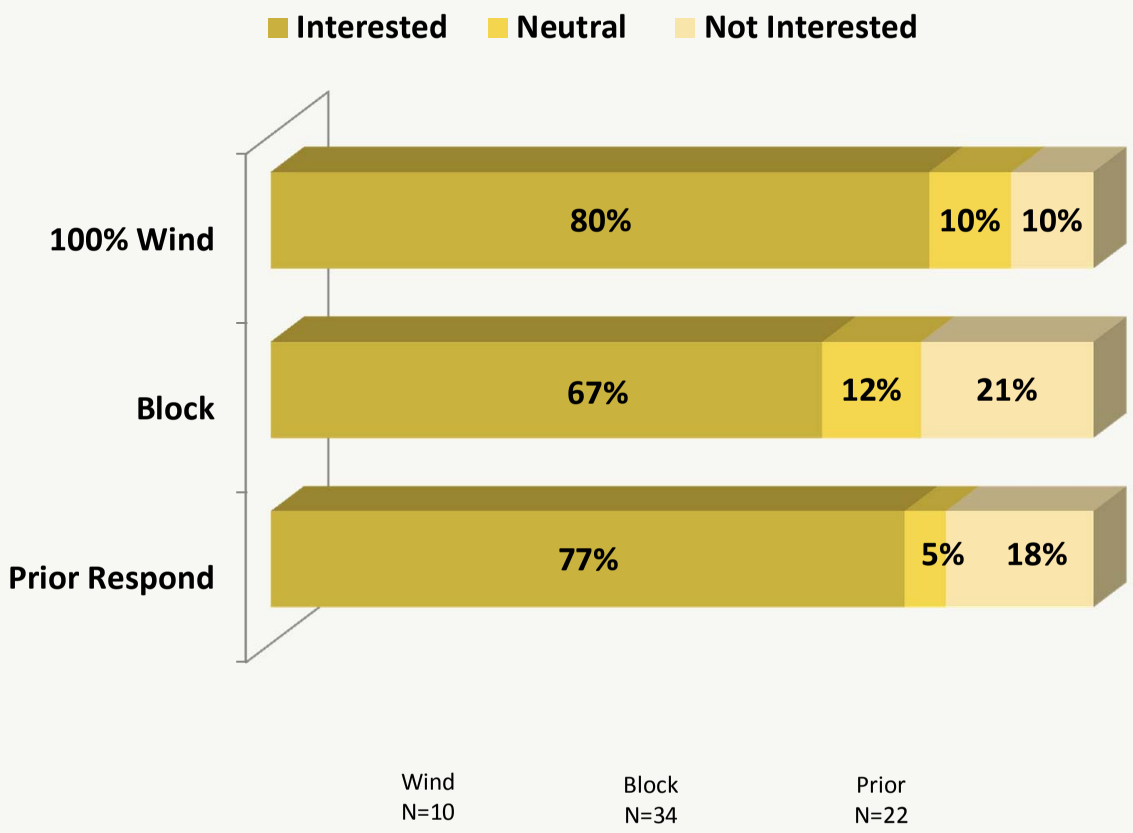
Strong Interest in Community Solar Gardens



N=66

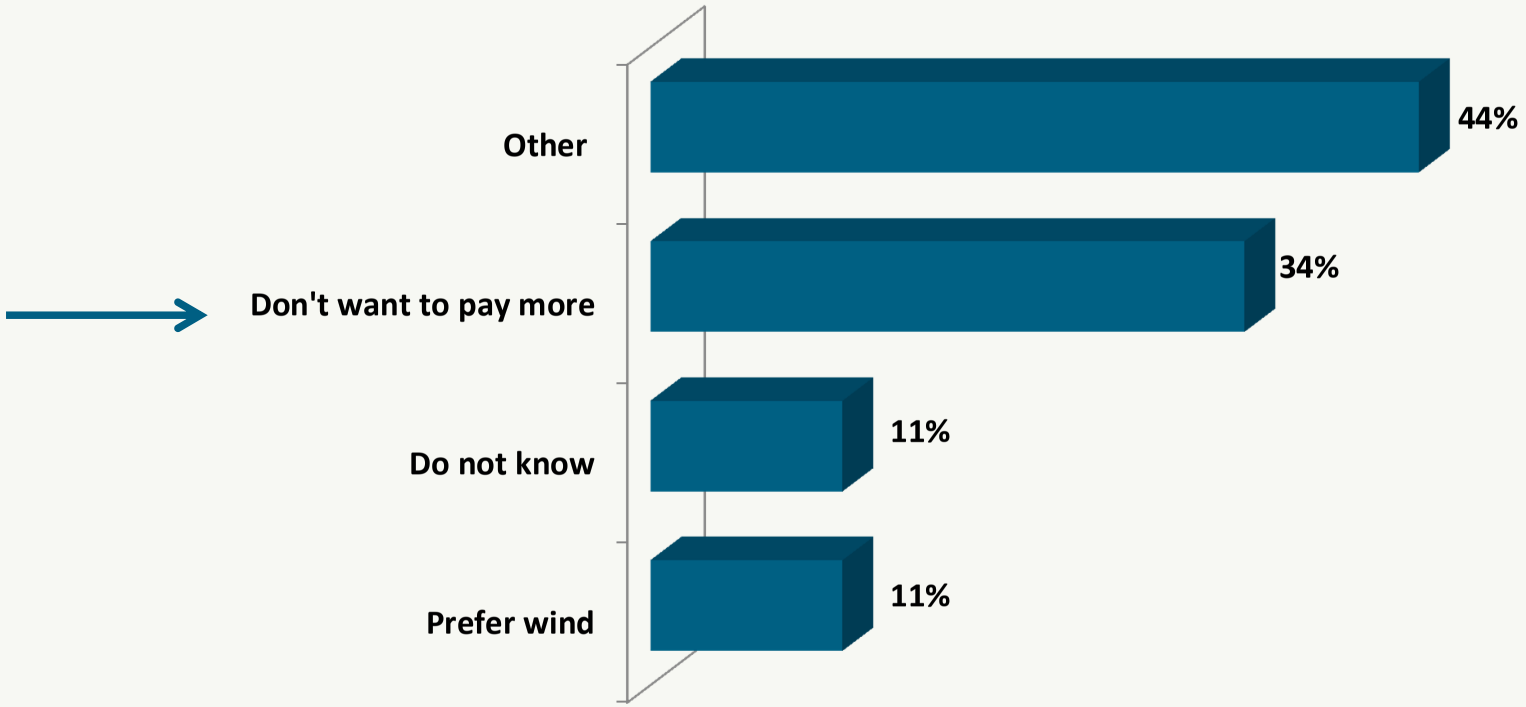
Q. If Xcel Energy offered a community solar gardens program in New Mexico to replace Windsource, how interested would you be in participating in this new program?

Strong Interest in Community Solar Gardens



Q. If Xcel Energy offered a community solar gardens program in New Mexico to replace Windsource, how interested would you be in participating in this new program?

Cost is an Important Reason for Lack of Interest in Solar Gardens

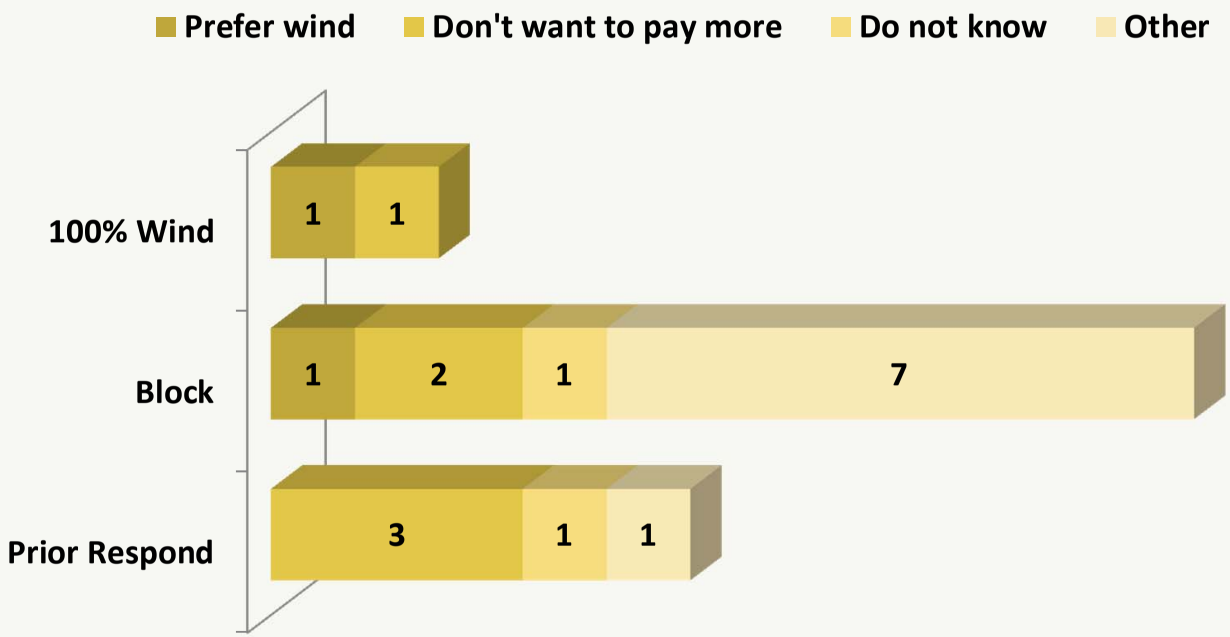


N=18

Q. Why aren't you interested in a community solar gardens program?

Xcel Energy®

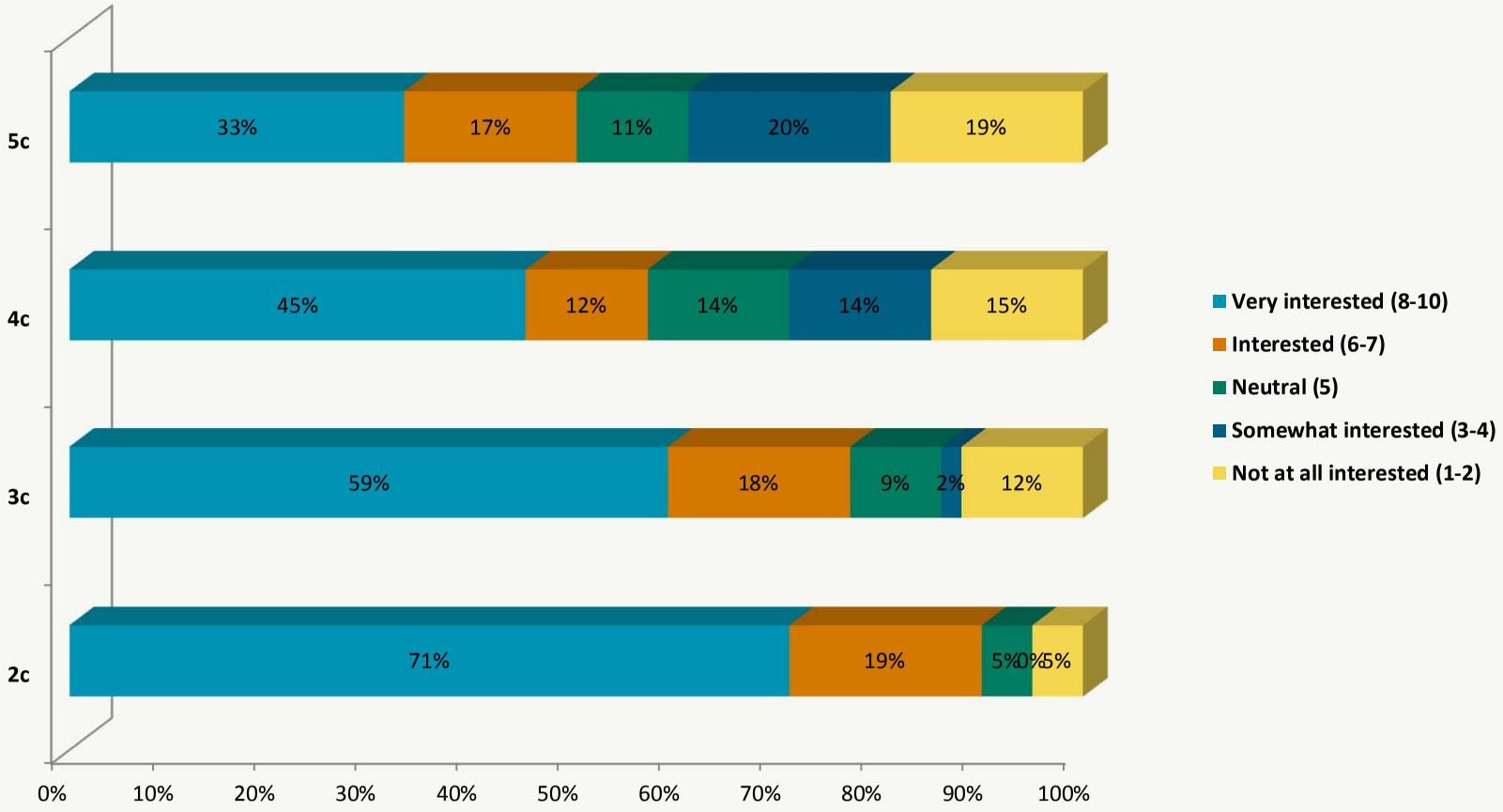
Reasons for Lack of Interest in Solar Gardens



Wind	Block	Prior
N=2	N=11	N=5

Q. Why aren't you interested in a community solar gardens program?

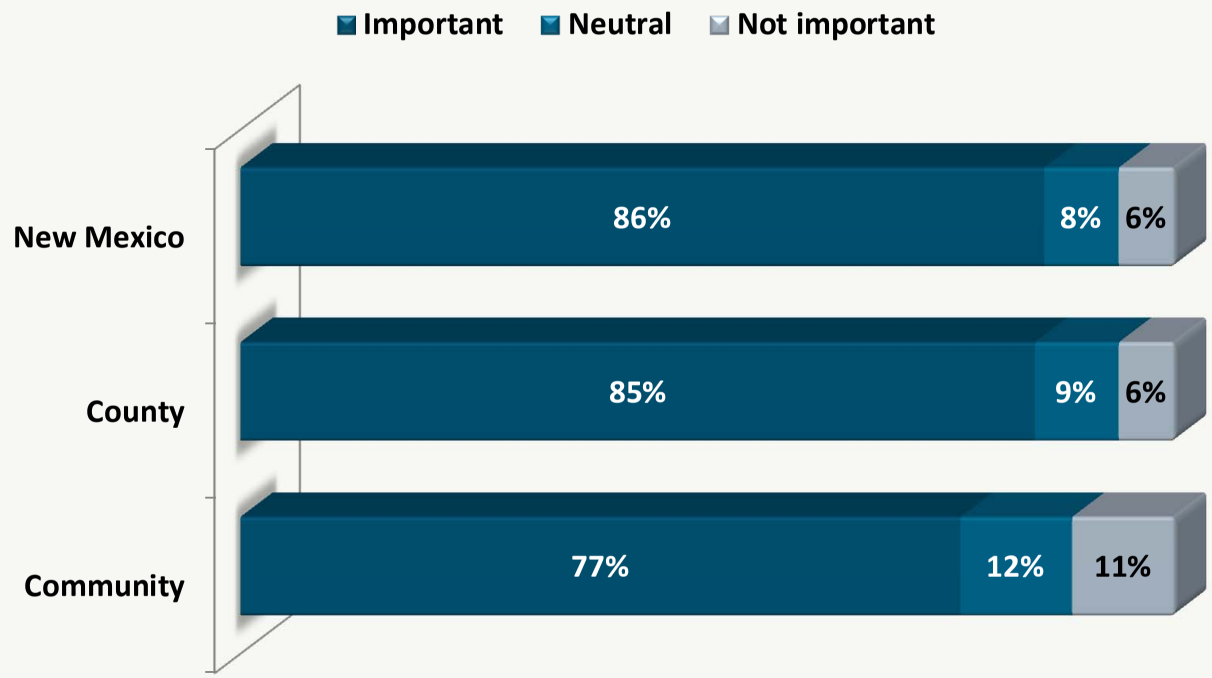
Preferred Price of Solar Gardens is One Penny Less than Windsource today



Q. How interested would you be in participating in a community solar gardens program if your electric bill was a little less or little more than your current Windsource subscription?

Xcel Energy®

Customers Prefer Solar Gardens Location in NM or in County – Community Not Quite as Important

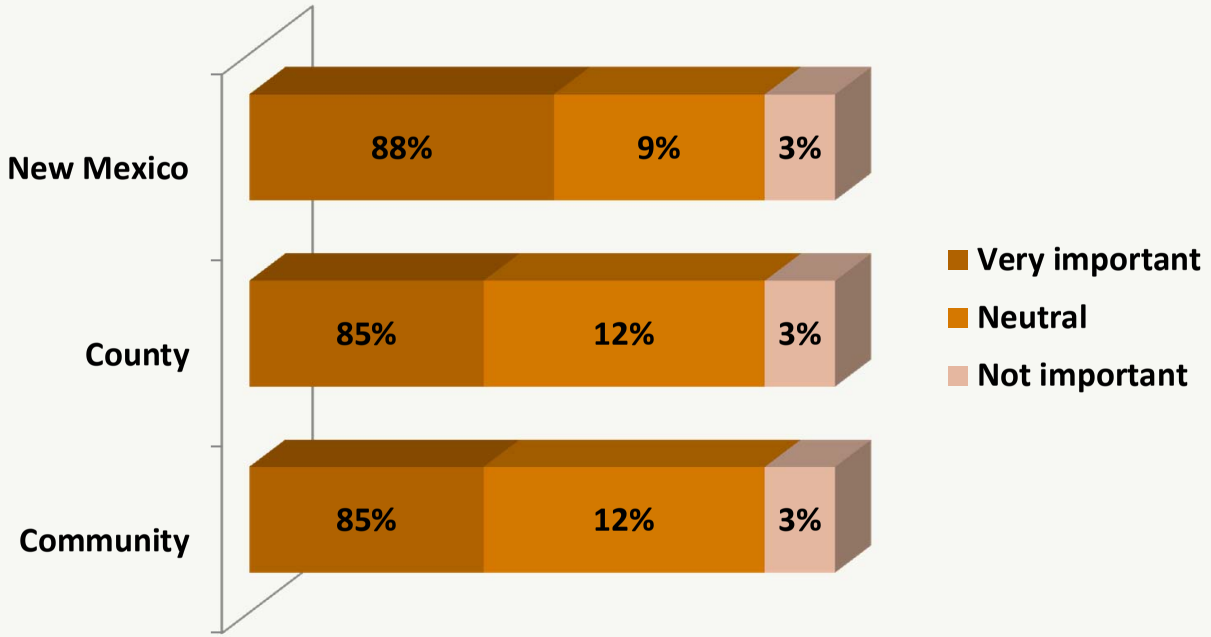


N=66

Q. Unlike the rural windfarm that supports the Windsource program, community solar gardens are intended to be centrally located near/around the communities that they serve. How important is it to you that your energy is being sourced from local resources?

Xcel Energy®

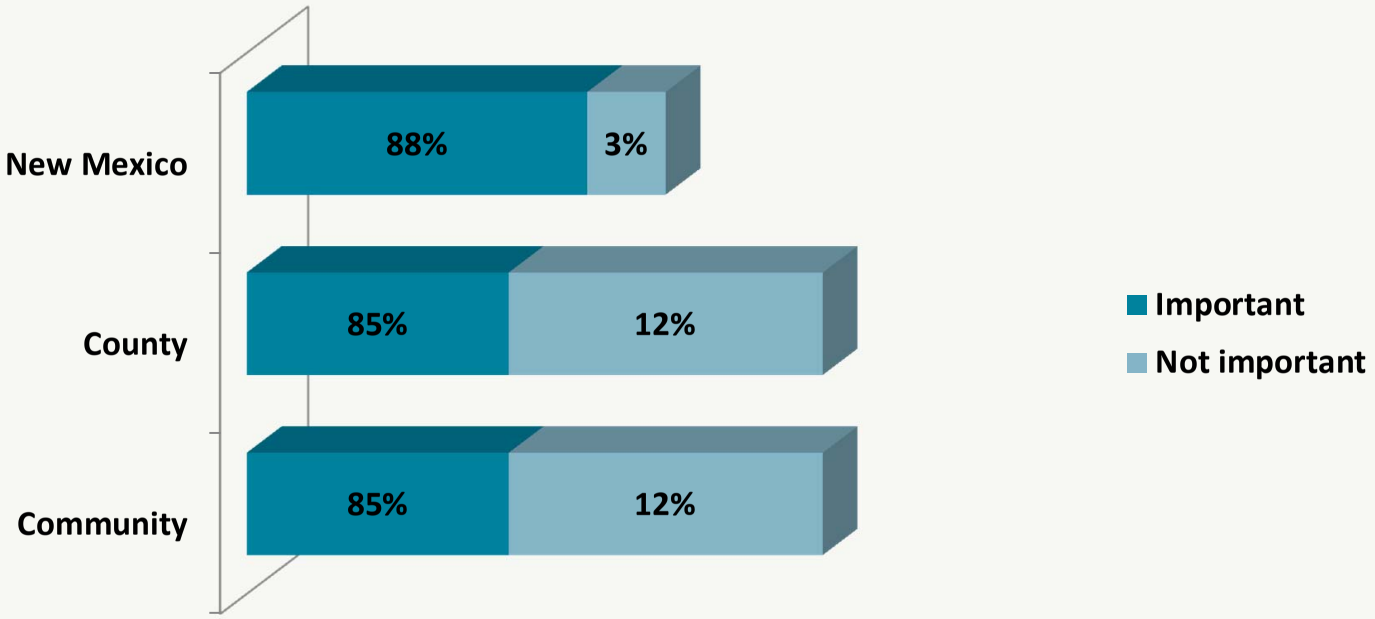
Block Customer Preference for Location of Solar Gardens



N=34

Q. Unlike the rural windfarm that supports the Windsource program, community solar gardens are intended to be centrally located near/around the communities that they serve. How important is it to you that your energy is being sourced from local resources?

100% Wind Customer Preference for Location of Solar Gardens



N=10

Q. Unlike the rural windfarm that supports the Windsource program, community solar gardens are intended to be centrally located near/around the communities that they serve. How important is it to you that your energy is being sourced from local resources?

Xcel Energy®

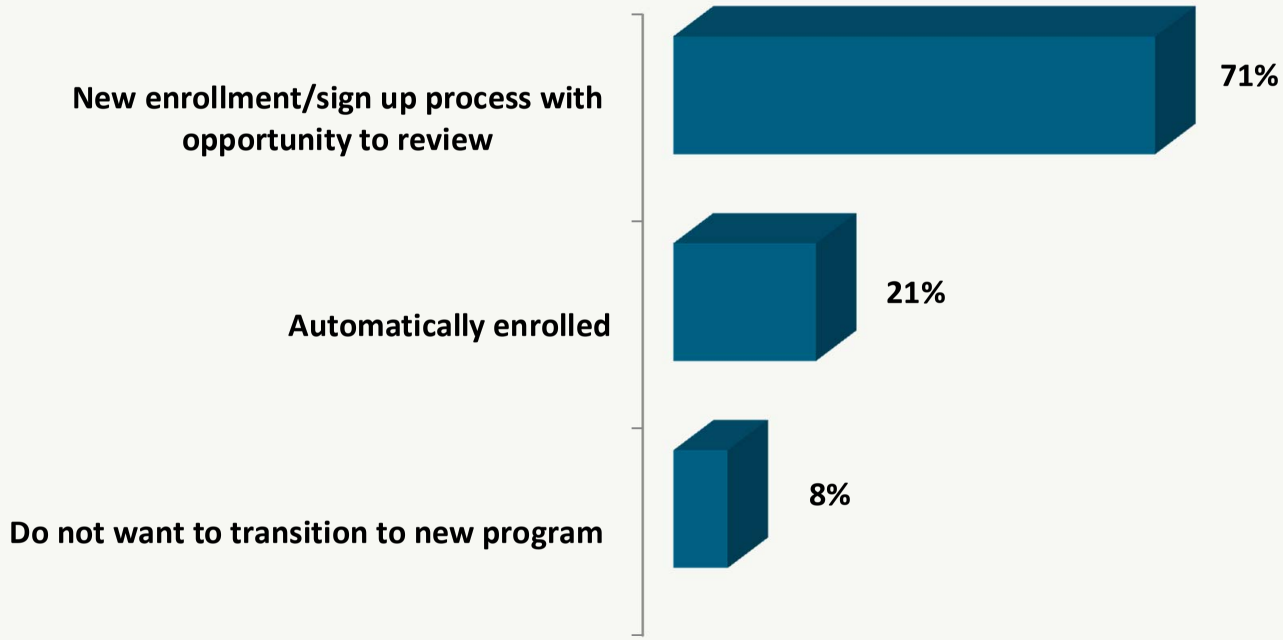
Prior Respondents' Preference for Location of Solar Gardens

N=22

Q. Unlike the rural windfarm that supports the Windsource program, community solar gardens are intended to be centrally located near/around the communities that they serve. How important is it to you that your energy is being sourced from local resources?

Xcel Energy®

Most Respondents Prefer a New Enrollment Process

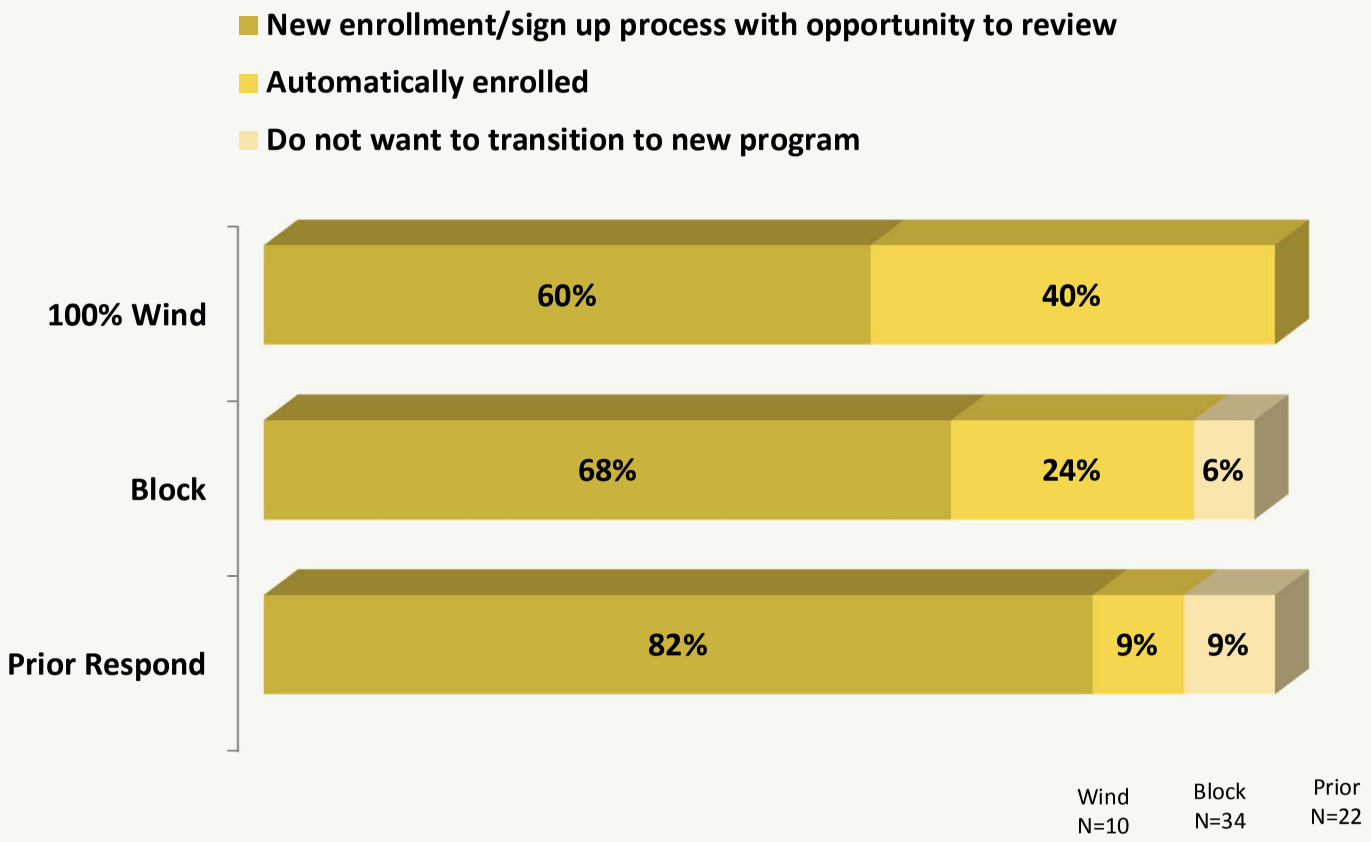


N=66

Q. If the community solar garden program was available to you in the near future, how would you like to be transitioned to the new program?

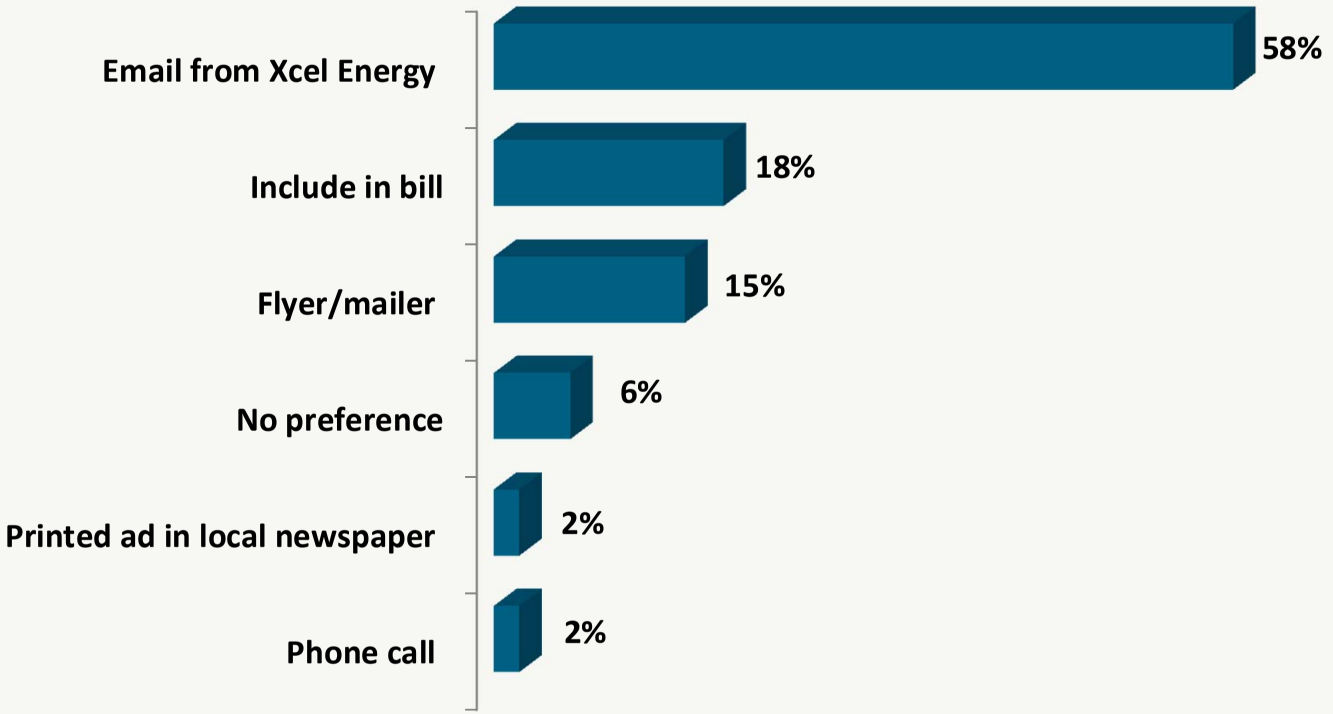
Xcel Energy®

Most Respondents Prefer a New Enrollment Process



Q. If the community solar garden program was available to you in the near future, how would you like to be transitioned to the new program?

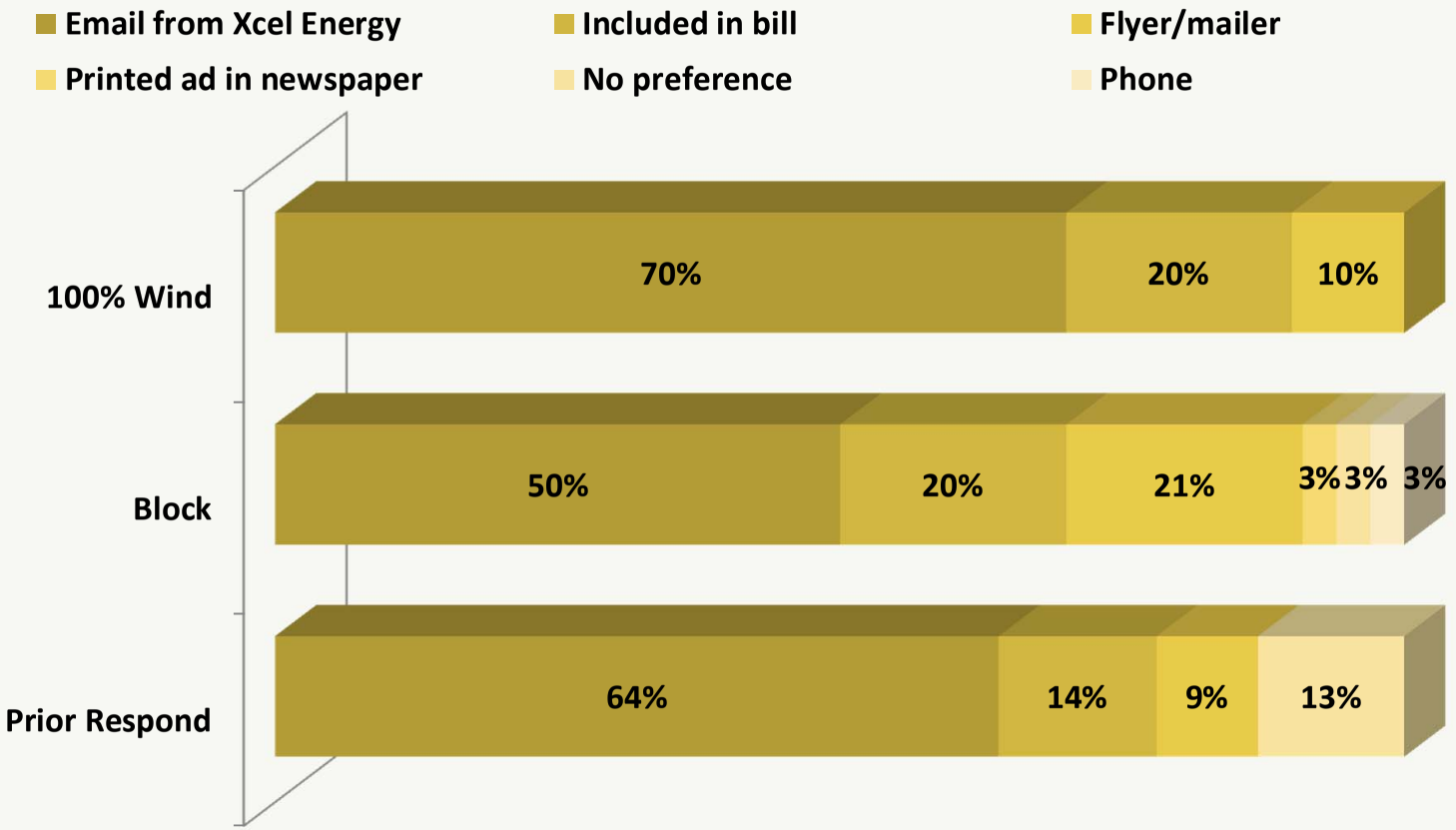
Most Respondents Prefer Email Communication



N=66

Q. How do you prefer to hear from Xcel Energy about new renewable programs, such as community solar gardens?

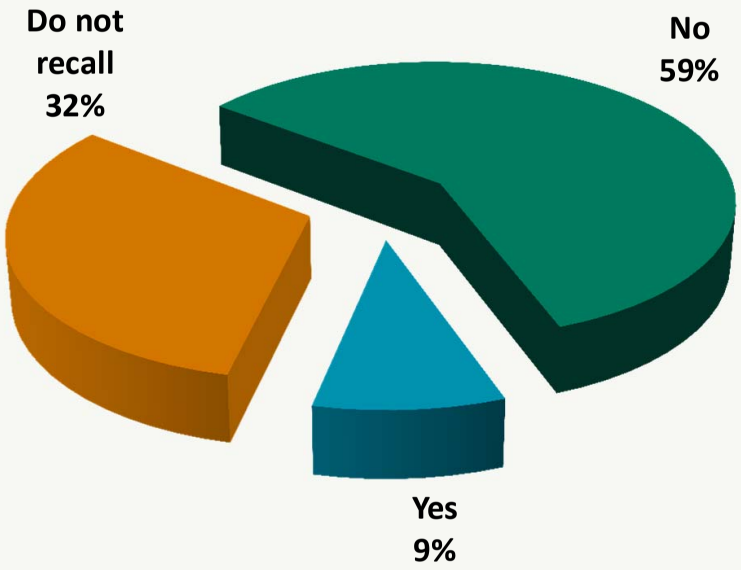
Most Respondents Prefer Email Communication

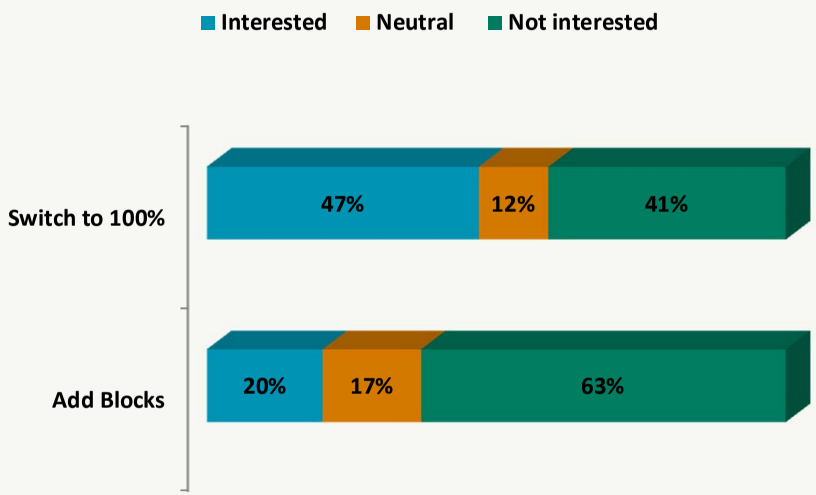


Q. How do you prefer to hear from Xcel Energy about new renewable programs, such as community solar gardens?

The Windsource Block Subscription

Among Block Customers, Only Three Added Blocks – Interest in Switching to 100% but Not Adding Blocks



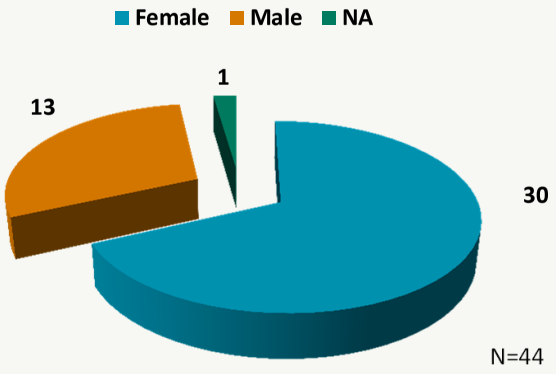


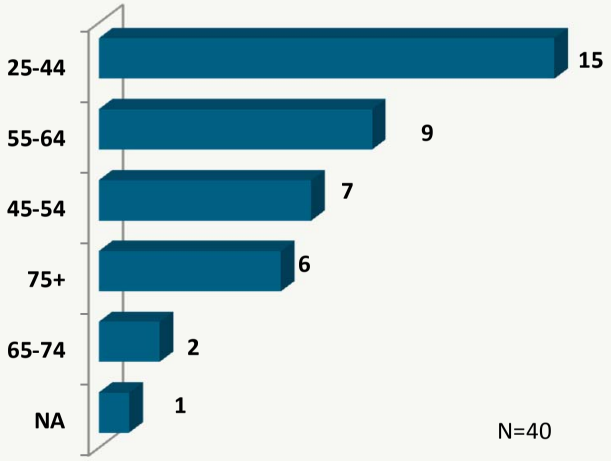
N=34

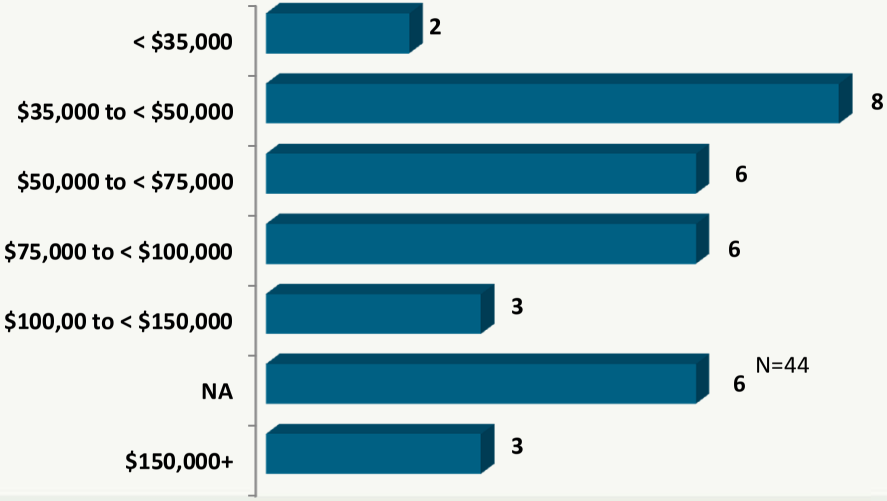
Q. Since you first enrolled in the Windsource program, have you adjusted the blocks in your subscription?

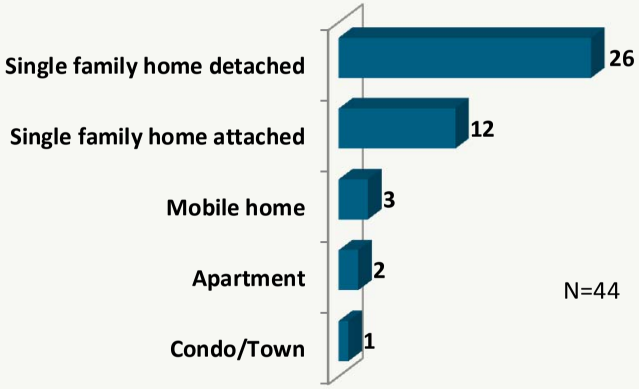
Demographics

Demographics | All



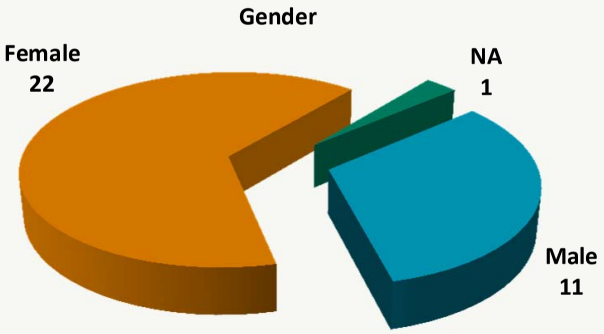


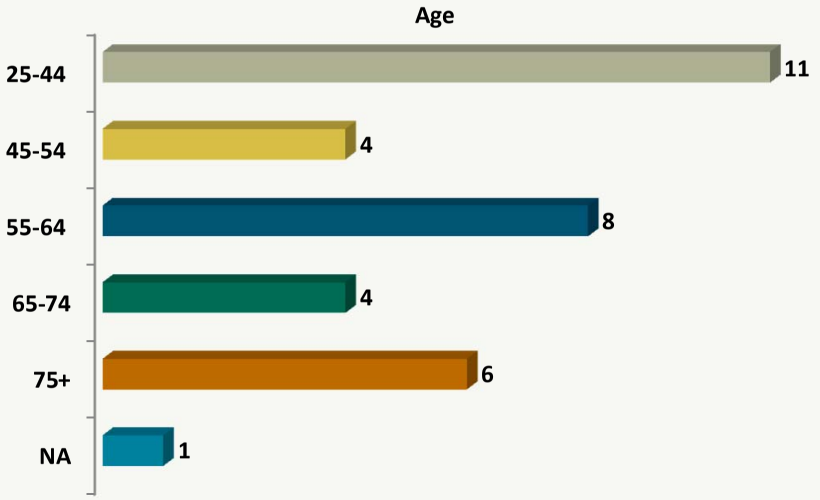


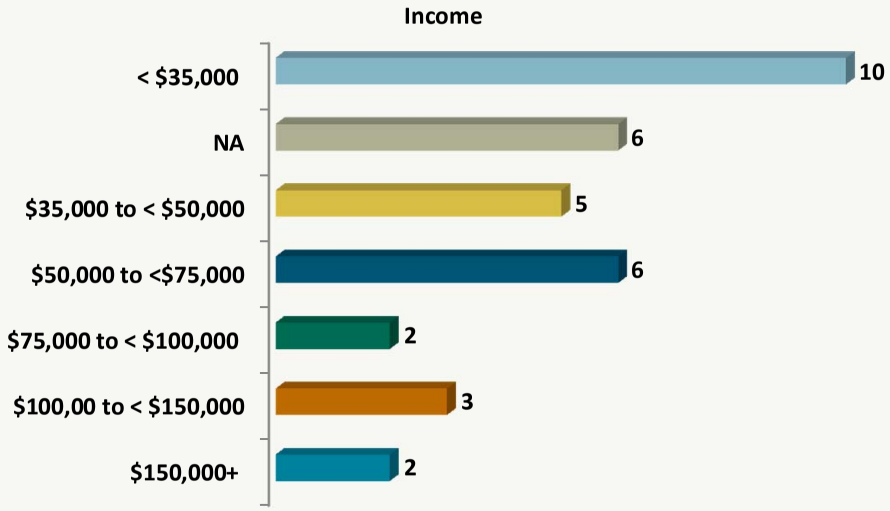


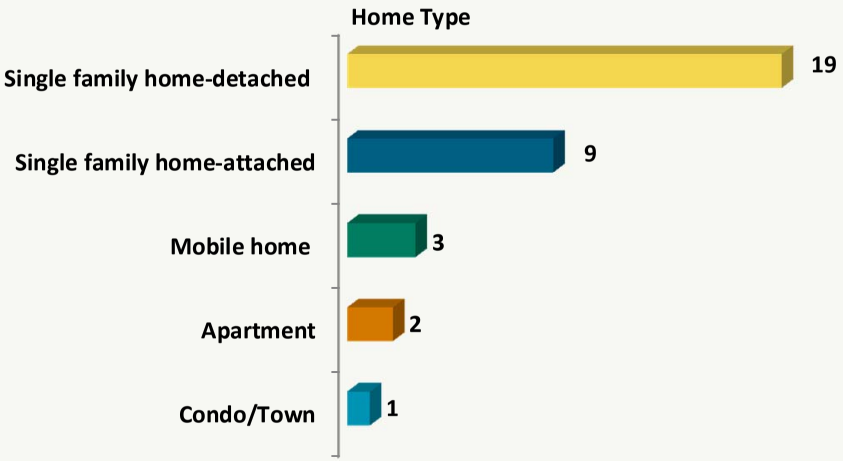
Xcel Energy®

Demographics | Block





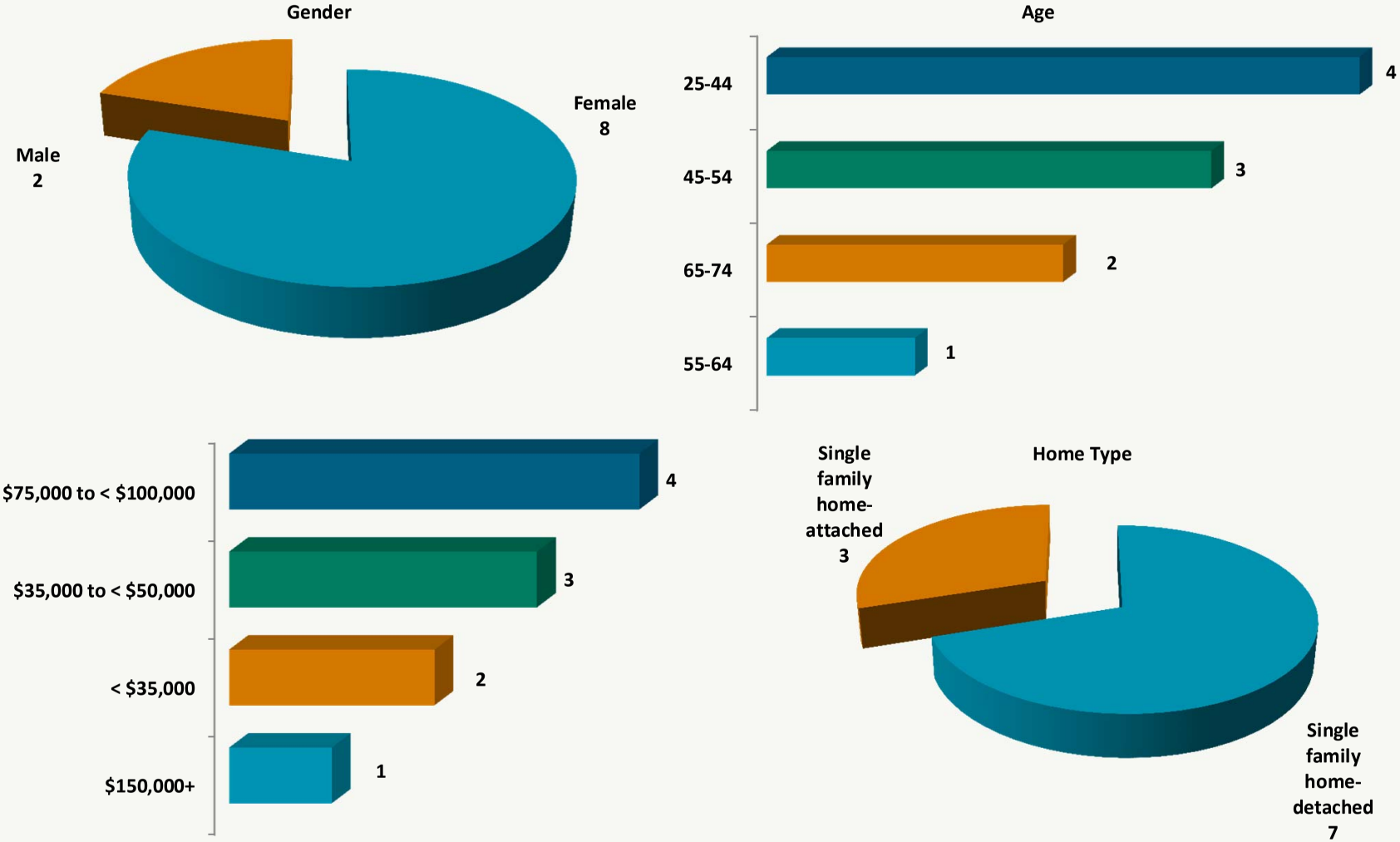




N=34

Xcel Energy®

Demographics | 100% Wind



N=10

Xcel Energy®