

# **Vermont Weighs In: Public Opinion on Renewable Electricity**

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**Prepared for the Vermont Department of Public Service  
Oct 3, 2023**

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# Project Overview

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- MPG conducted a survey of 700 Vermont residents 18+, including an oversample of 100 Vermonters who self-identified as non-white.
- At the end of the initial survey, residents were asked to participate in focus groups.
- Focus groups were held in-person (6) and virtually (5).
- Focus group participants received a policy brief document prior to their group. MPG presented slides based on that brief at each event.
- Finally, focus group participants completed a follow-up survey, which was analyzed against those residents' responses to the initial survey.

Initial survey  
N=700



Focus Groups  
with policy  
brief and slides



Follow-up  
survey  
N=92

# Key Findings

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- Vermont residents rated affordability and reliability as the most important factors to consider when the state is procuring electricity.
- Reducing carbon emissions rose alongside these two as residents' single most important concern, propelled by self-identified Democrats and residents with advanced degrees.
- Residents tended to underestimate how much of Vermont's current electricity mix is renewable and low carbon. Focus group participants were pleasantly surprised to learn how well the state is doing on these metrics and retained that information in the follow-up survey.
- Majorities "strongly supported" the state getting electricity from solar and hydropower. Nuclear and biomass were less favored initially, although support for all energy sources rose in the follow-up survey after the focus groups. The focus groups and follow-up survey revealed concerns about the life-cycle impacts of renewables, and a preference for smaller-scale projects on existing developments.
- Residents were split on whether they would pay more for 100% renewable or low carbon electricity. Just over half (52%) say they would, but nearly as many would not (31%) or were unsure (17%).

# Initial Survey

# Survey Background

- Survey of 700 Vermont residents, including an oversample of 100 residents who self-identified as a race or ethnicity other than white.
- Responses were collected from June 7-15, 2023, via three modes: live telephone interviews to landlines (210 responses) and cell phones (210 responses), and via text-to-web online surveying (280 responses).
- The survey was offered in English, French, and Spanish, and 677 respondents took the survey in English, 12 in French, and 11 in Spanish.
- Responses from white and non-white residents were weighted by race and ethnicity, age and gender, geography, and educational attainment. White and non-white respondents were then combined proportionally and weighted by the parameters above, plus party identification.
- The margin of error for the entire sample, including the design effect, is +/- 4.3 percentage points at the 95% confidence level.

# Initial survey demographics

- Final weighted demographic closely match initial targets.
- Demographic targets were derived from the latest available 5-year American Community Survey conducted by the U.S. Census Bureau.
- Political ID targets were derived from the latest available estimates from Gallup and the Pew Research Center.

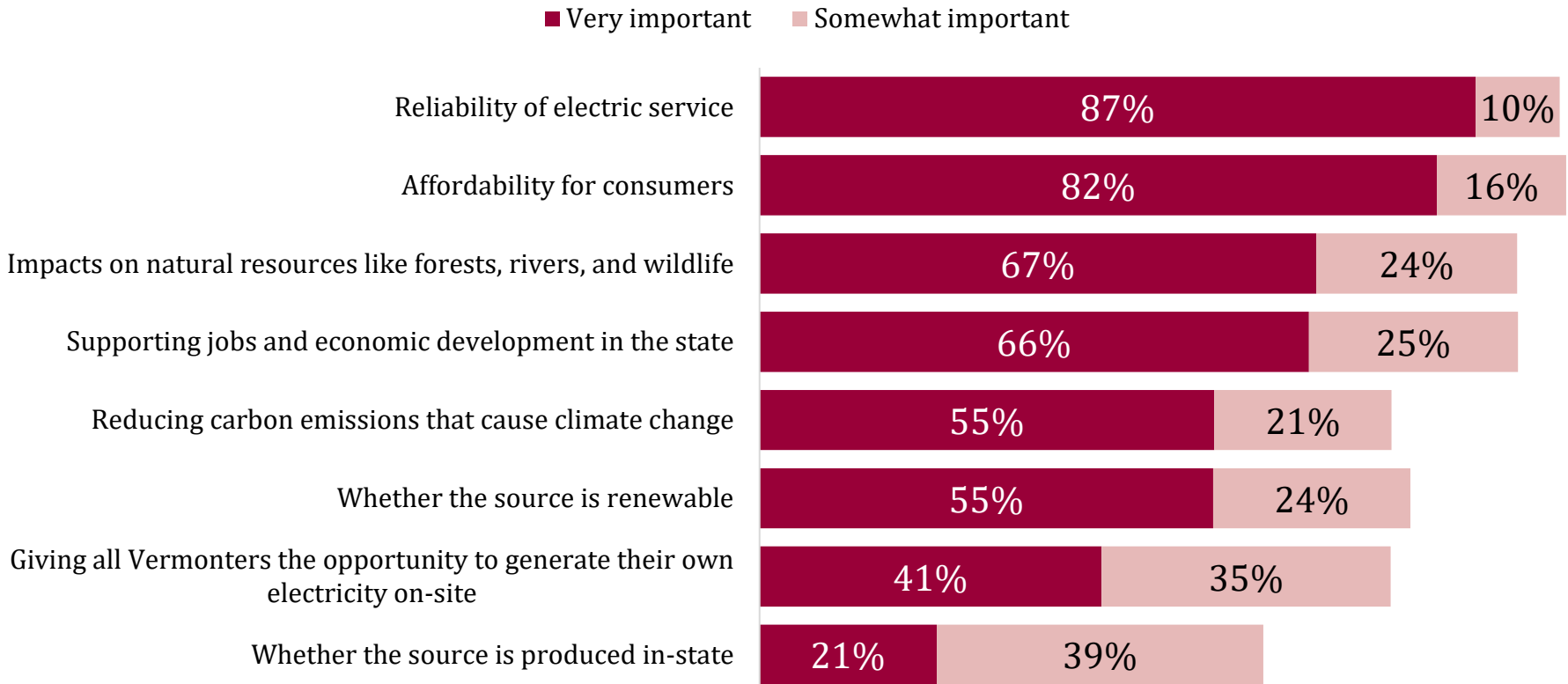
		Vermont residents 18+	Final Weighted Results
<b>Race and Ethnicity</b>	White alone	93%	92%
	Black alone	1%	1%
	Hispanic	2%	2%
	AAPI alone	2%	2%
	Other / more than one race	3%	3%
	Don't know / refused		1%
<b>Gender</b>	Men	49%	48%
	Women	51%	51%
	Non-binary / other		1%
<b>Age</b>	18-29	20%	20%
	30-44	22%	21%
	45-59	24%	24%
	60+	34%	34%
	Don't know / refused		1%
<b>Education</b>	HS or less	36%	35%
	Some college	28%	28%
	BA	23%	22%
	Advanced	14%	14%
	Don't know / refused		1%
<b>Region</b>	Chittenden	25%	26%
	Central (Addison, Orange, Washington)	20%	20%
	North (Caledonia, Essex, Franklin, Grand Isle, Lamoille, Orleans)	19%	22%
	South (Bennington, Rutland, Windham, Windsor)	32%	31%
	Don't know / refused		1%
<b>Party ID with leaners</b>	Democrat	55%	52%
	Republican	30%	27%
	Independent / Other	16%	15%
	Don't know / refused		5%

# Most important factors

- Two factors stood out as rated “very important” by more than 80% of residents: reliability (87%) and affordability (82%).

## Reliability and affordability most important considerations for Vermonters

% who say \_\_\_\_\_ is \_\_\_\_\_ when considering how Vermont gets its electricity

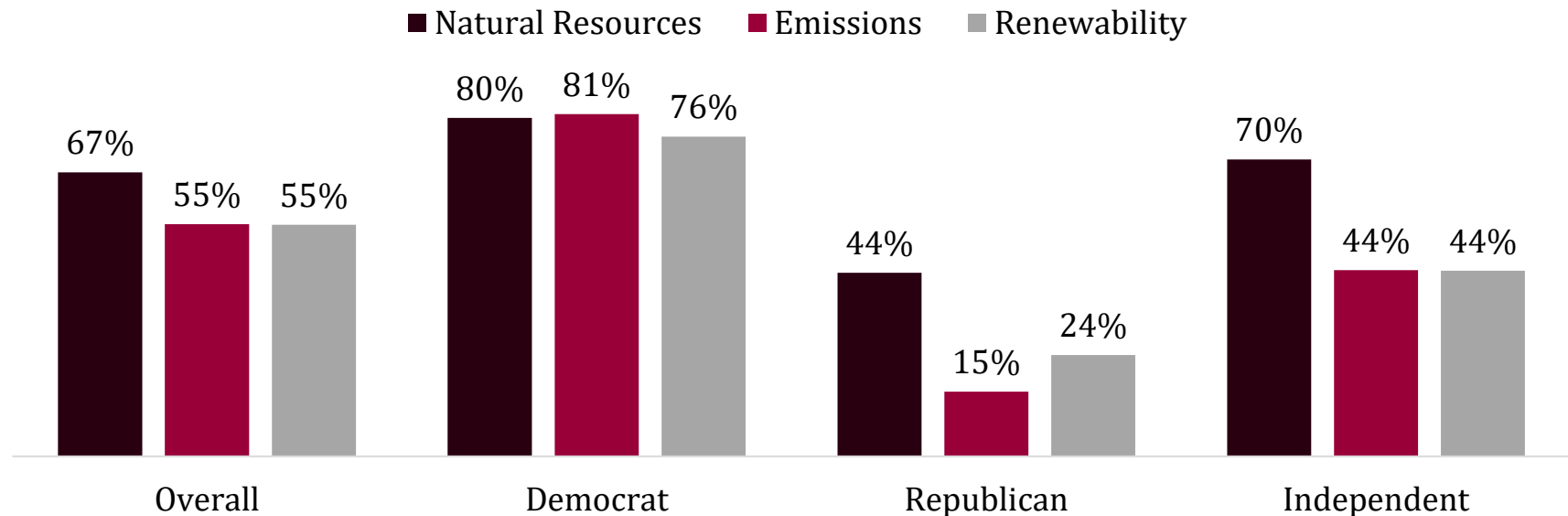


# Partisan gap on environment

- Impacts on natural resources like forest, rivers and wildlife was the top-rated environmental concern (67% “very important” overall).
- There is a sharp partisan divide on all the environmental factors tested, but especially on reducing carbon emissions.

## Two-thirds rated impacts on natural resources a “very important” factor; concern about emissions is polarized politically

*% rating each factor “very important”, overall and by political party identification (including leaners)*



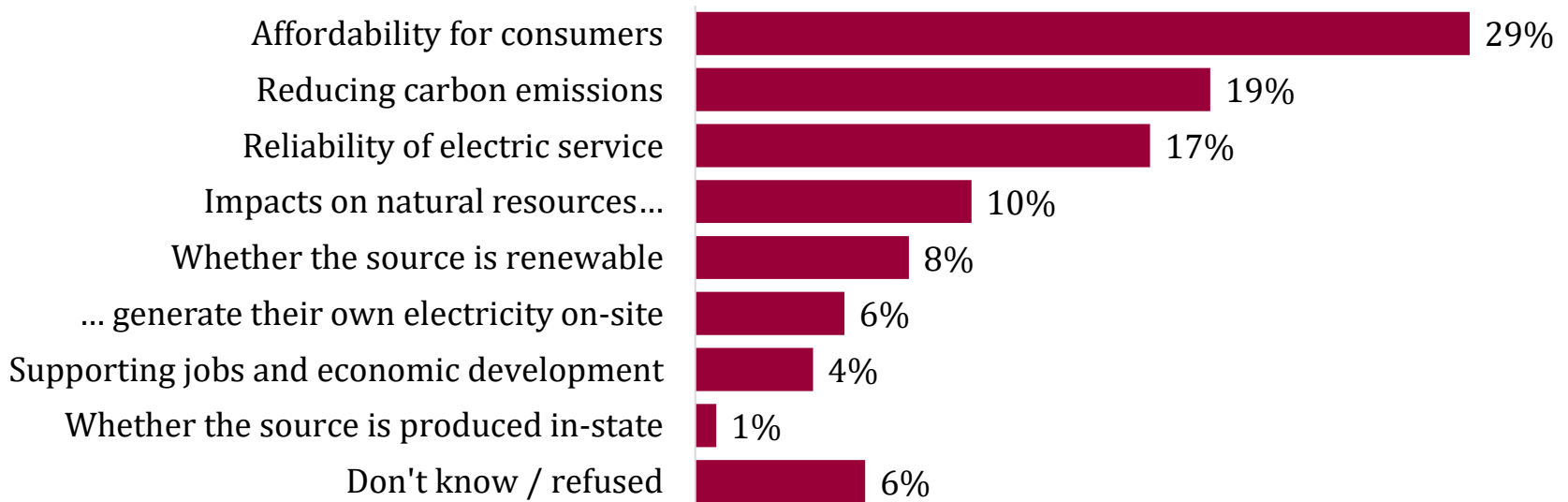


# Single most important factor

- When asked to name their single most important factor, carbon emissions rises to the top three alongside affordability and reliability.
- Concern about emissions was driven largely by 33% of Democrats and Democratic-leaning independents naming it their top concern.

## Carbon emissions rises to a top-three concern when residents are asked to choose their single most important factor.

*% who named each their single most important factor*

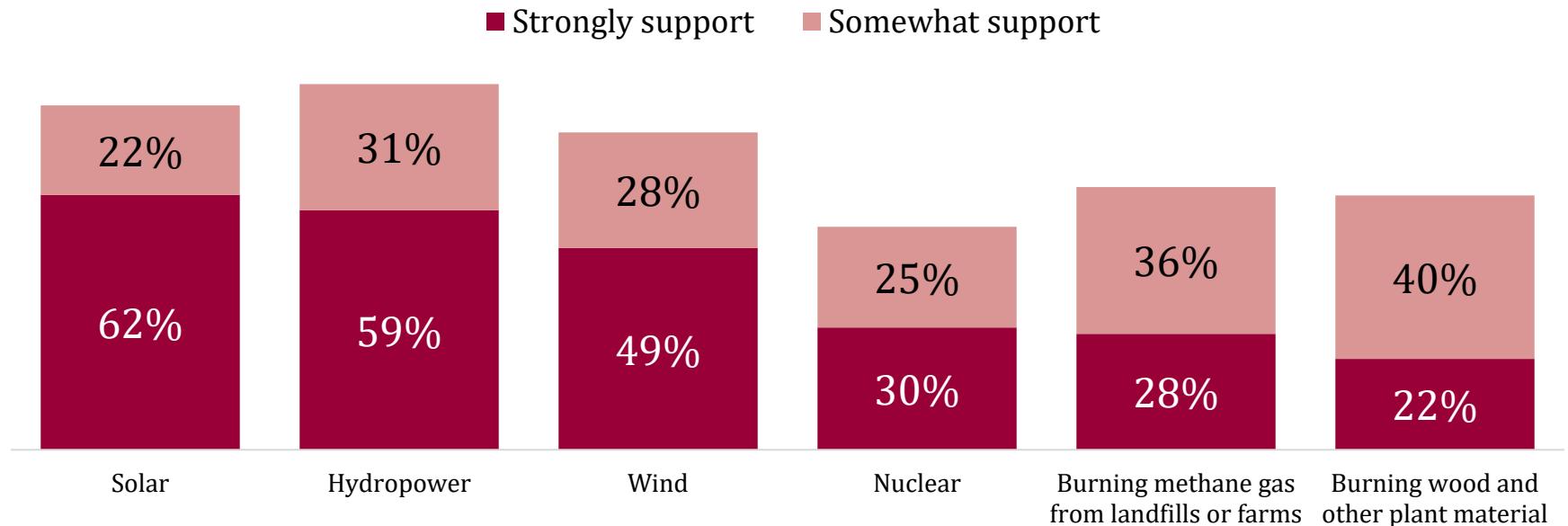


# Electricity sources

- Two electricity sources were strongly supported by majorities: solar (62%) and hydropower (59%). About half strongly supported wind (49%).
- Nuclear and two types of biomass were less favored, but were still at least somewhat supported by majorities.

## Solar, hydropower are the most favored electricity sources

*% who strongly or somewhat support Vermont getting electricity from each source*



# Sources by most important factor

- Residents who were most concerned about emissions heavily favored solar, wind, and hydropower.
- Those concerned most with reliability and affordability supported a broader mix of electricity sources.

## Strong support for various sources differed by residents' single most important factor

*% who strongly support each electricity source overall, and by their single most important energy priority*

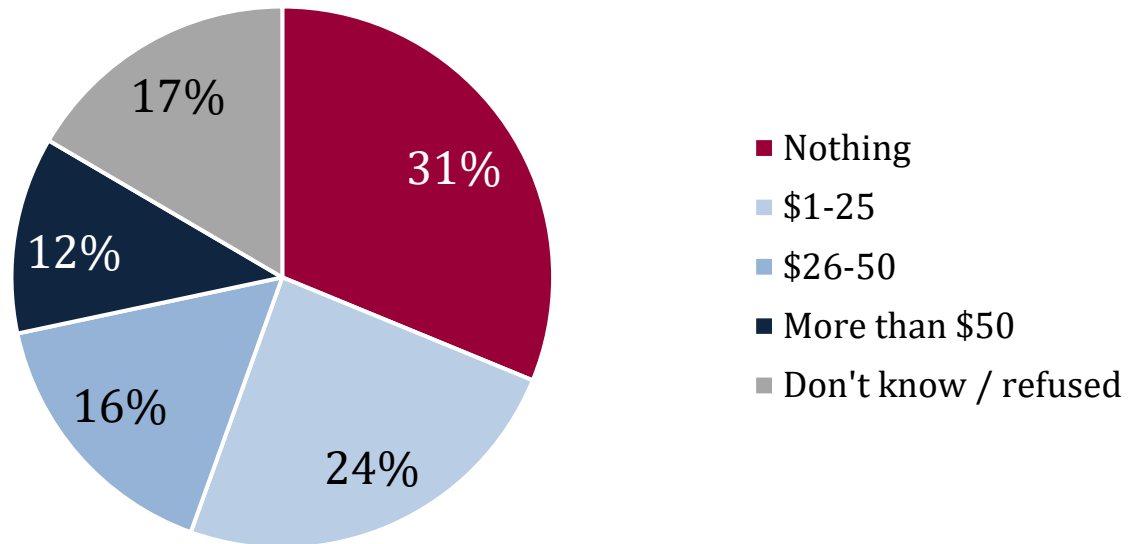
	Overall	Reliability	Emissions	Affordability
Solar	62%	43%	94%	43%
Hydropower	59%	69%	55%	55%
Wind	49%	37%	83%	32%
Nuclear	30%	43%	13%	41%
Burning methane gas from landfills or farms	28%	36%	19%	39%
Burning wood and other plant material	22%	26%	10%	32%

# Willingness to pay for renewables

- Just over half (52%) were willing to pay any amount more per month to get to 100% renewable / low-carbon electricity, but 31% were not willing to pay anything more.
- Among those willing to pay some amount more, the median amount was \$30 more per month.

**About half of Vermonters were willing to pay more for 100% renewable / low carbon electricity, but 31% are not.**

*% are willing to pay each amount more per month*

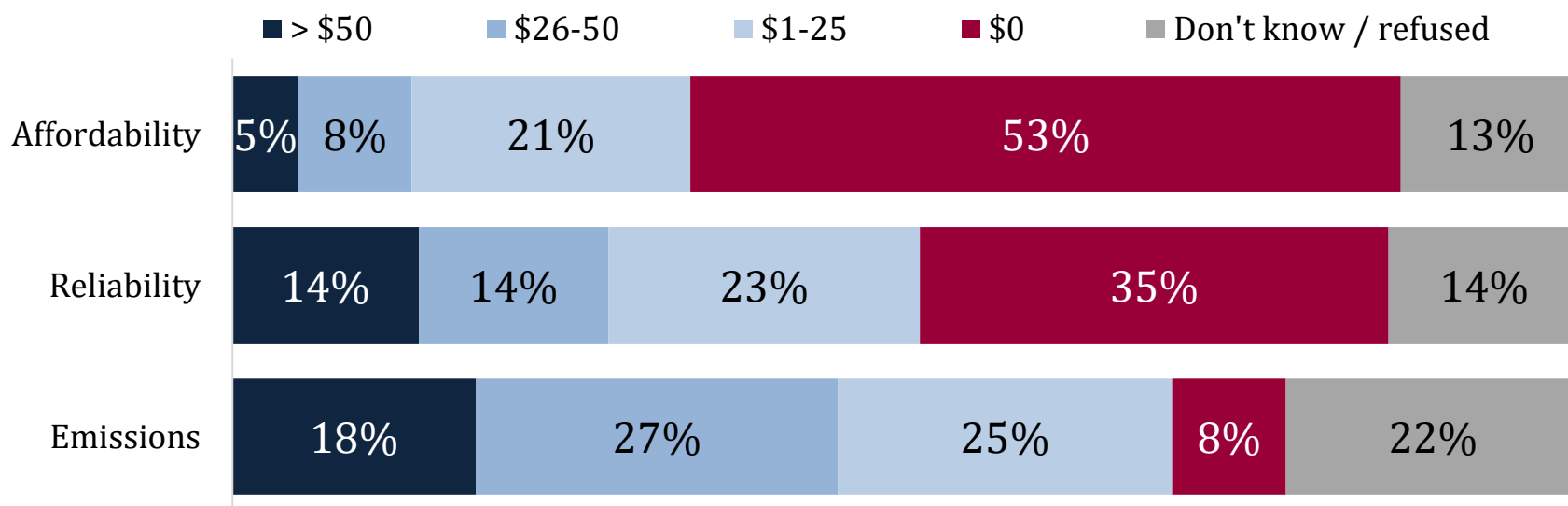


# Willingness to pay by top factor

- Willingness to pay varied by residents' top factor: 53% of those who prioritized affordability were not willing to pay any amount more.
- Meanwhile, 70% of those who prioritized reducing emissions were willing to pay more for fully renewable / low carbon electricity.

## Those most concerned about emissions were more willing to pay more for renewable/low-carbon electricity.

*% willing to pay each amount more per month, by single most important factor.*



*Q: Switching to renewable or low carbon electricity might cost more. How much more would you be willing to pay for electricity if it meant that all of Vermont's power came from renewable or low-carbon sources? Please answer, in US dollars, the amount you would be willing to pay in addition to what you pay now per month for electricity.*

*Q: And of the items you just rated, which do you think should be the **single most important** factor in how Vermont gets its electricity?*

# Clean energy adoption

- Overall, 54% of residents reported they neither owned nor did any of the clean energy interventions tested.
- Higher income residents were more likely to have heat pumps, hybrid cars.
- Homeowners were more likely to have solar panels than renters.

## Homeowners, higher-income residents more likely to have clean energy

*% overall and by income and homeownership status who report owning /doing each*

	Overall	< \$50k	\$50-99k	\$100k+	Own home	Rent
A heat pump hot water heater	20%	16%	20%	24%	22%	11%
A heat pump for home heating or cooling	19%	15%	15%	28%	22%	11%
A fully electric vehicle	4%	2%	4%	6%	5%	3%
A hybrid gas and electric vehicle	12%	10%	11%	16%	13%	10%
Have solar panels on your property	17%	15%	20%	17%	19%	8%
Participate in community solar or group net metering	4%	2%	7%	4%	5%	3%
None of these	54%	60%	57%	44%	49%	73%

# Focus Groups

# Focus Group Overview

- Group participants were recruited from the initial survey.
- MPG held 6 in-person groups and 5 virtual.
- The Lyndonville group was postponed due to the flooding, and some participants were offered virtual groups due to flood impacts.
- Participants received a policy brief on renewable electricity ahead of their group. The brief was recapped in a deck of slides at each group.

Location	Date	follow-up surveys collected
Rutland	June 27	3
Brattleboro	June 28	9
South Royalton	June 29	6
Winooski	July 12	11
Burlington	July 13	9
Virtual 1	July 17	12
Virtual 2	July 17	9
Virtual 3	July 18	10
Virtual 4	July 19	10
Virtual 5	July 19	7
Lyndonville	July 20	6



# Affordability & Renewability

- Some participants were torn between switching to renewables or lower emissions out of a moral obligation to others and the planet overall versus what they could afford financially.

“Renewable and affordability is what I'm between. Renewable because I definitely care about the longevity of ... everything that we have currently I'd like to see continue in the world and improve for future generations... Affordability because I'm a young, new homeowner. I don't have a lot of funds. I would love to have a more affordable way to heat and cool my home, especially as the temperatures are rising.”

“I was going to say affordability is my top. Obviously, the better angels of my nature want equity, renewability, and low emissions to be a priority. But I bought an old New England house for pennies on the dollar. I can't afford startup costs for new loans, and I don't have the budget for monthly payments in addition to my mortgage.”

# Affordability & Equity

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- Many participants saw affordability and equity as linked, and affordability as a lens for talking about conservation and climate-friendly policies
- Energy efficiency was seen as an important part of the conversation and something that could benefit lower-income residents and renters.

“A part of it being equitable is poor people are often under the radar no matter what. And then therefore, they will go to what they can afford and find, and some of that may actually be environmentally not sound. So they're tied together for me.”

“I'm on my town's energy committee, and that's always what we talk about. It's not how we save energy. It's how we save money. ... Climate change is real, in my opinion. Will you make people listen? Not necessarily. Will you make people listen to money? Yes. So affordability is important to me.”

“Something aside that hasn't been mentioned too frequently here is efficiency. Myself and most of my friends, we are all renters and we don't have a lot of power to weatherize our homes. It's not up to us. It's up to our landlords. And they don't eat the costs of the wasted energy that we use because it's all escaping from the windows.”

# Emissions & Renewables

- Emissions generally won out over renewables when it came to participants' top environmental priority
- Few participants cited renewability in and of itself as a factor. Rather, renewability was seen as a means to lower emissions.

“The world is burning, and we’re drowning,”

“I feel like if I had to pick one from that list it’s the emissions... What is the ultimate goal? [...] climate change is hammering the planet now. We’re trying to decrease the effects. [...] Emissions are changing our whole planet. I would say that the renewable leads to that.”

“I more and more find that the term renewable has an expandable and contractable definition, and I think it’s not useful. I would much prefer that we had an emissions reduction standard than that we have a renewable energy standard. That would get us more on track and it would eliminate that first category. The focus would be on emissions, and I think that would be a better way to do it.”

# Reliability / Timing

- Some participants expressed concerns about renewables being able to provide reliability baseload power.
- Some were also concerned about whether the grid had the capacity to take the growing supply of renewable energy being fed into it.

“I care about reliability and stability... We're adding more load to our grid with electric cars and heat pumps... We have to be able to grow to meet demand. And if that means some kind of balance between fossil fuels and solar, and it's going to take a lot of factors. But we also have to upgrade our infrastructure itself.

“So I think my overriding concern about everything is baseload power, because if you turn on the switch and nothing comes, then you can't see anything... .. You don't have wind and solar generation that is stable enough - it's intermittent.”

# Renewable Energy Standard & RECs

- The RES and RECs were complex concepts, and most participants seemed to accept them without much hesitation.
- Most accepted RECs and the REC market, but some were mistrustful, likening them to carbon offsets, “greenwashing” or a “bait and switch.”

“Green Mountain Power has lots of solar RECs and it sells those RECs outside the state to other states that need those RECs. ... And with the profit that Green Mountain Power, for example, makes from selling those RECs at a high rate, it performs a marvelous act of arbitrage, where it goes to Canada and it buys very low quality, relatively high emissions RECs from hydropower generated by Hydro-Quebec.”

“I think that the shell game is going to exist. ... Yeah, Hydro-Quebec produces hydropower that displaces all sorts of habitat and things like that. But compared to coal-fired power plants in the Midwest or the Southwest, I think everyone would agree that that is perhaps more advantageous. ... Industry has to be able to move forward within the realities of what they can and can't do and what our society can and can't support.”

# Solar & Net Metering

- Solar was popular, but most participants didn't want to clear natural habitats to create large solar arrays or fields.
- There were some concerns about the life cycle emissions impacts of solar panels and the other environmental costs of mining the minerals for them.
- Solar consumers were usually happy with their panels and the money they saved but worried that they might be raising electricity rates for their neighbors.
- There was considerable interest in community solar, especially as a way for renters to tap into the benefits of renewable energy.

“When I implemented the solar system in our in our home, I didn't understand that people who could not afford to do what I was doing were going to take the brunt of my lower rates, and that then is still a big concern.”

“I would also love to know why not all of our parking lots ... why are they not covered with solar panels?... I just came out of California. I'm seeing more and more of that out there. It's a billion degrees. Let's add some shade and also solar panels. I would love to see more of that kind of project.”

# Hydropower and Wind

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- Renewables overall were popular – people were surprised at how much of their energy came from Hydro-Québec and some expressed concerns about diversifying the grid should something happen to that particular source.
- Wind was popular, although some complained about the aesthetics of ridgeline wind and the effects of offshore wind on marine life.

“Systems are only as good as they're being used and maintained, and the more centralized things are, the riskier they may be. Maybe it's cheaper to have more electricity coming from a consolidated place. But if that has issues, then where is power going to come from?”

“But then when you have 30 some odd whales washed up on shore, right near these offshore 300-foot monsters, you know, 12 miles off the shoreline. ... They may not have anything to do with it, but those are some things that might slow a lot of this stuff up.”

# Biomass

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- Biomass was the least known sources, and opinions varied between wood and methane-based biomass.
- Participants reacted well to learning that burning naturally-occurring methane results in a less-potent greenhouse gas.
- Some saw it as a useful power source for heating while others thought labeling it as “renewable” was a mistake.

“I'm okay with burning wood but there are certain other things like nuclear. Personally, I would rather see nuclear go bye-bye. But. I mean I'm just one person.”

“It is not CO2 neutral, it is dumping CO2 in our atmosphere from trees that have sequestered it for decades. So biomass, if we are thinking of wood, is a bogus, bogus source right now.”



# Nuclear

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- Nuclear was another divisive energy source – some participants touted newer nuclear reactor designs as safer, but others worried about the disposal of the fuel.
- There was a disconnect among many concerned chiefly with emissions who were nonetheless opposed to nuclear.

“I'd much rather do like a nuclear thing because baseload again, is my thing. But then biomass ... is baseload, but it's dirtier.”

“It's low in carbon during production, but massive amounts of carbon, both in the production of the facility, the mining, the even the production of the fuel and the final price tag is still unknown since we haven't learned how to dispose of nuclear. Not to mention the waste, which is basically a genetic time bomb.”

# Follow-up Survey

# Demographics: follow-up v initial

- Overall 92 focus groups participants submitted a follow-up survey.
- Follow-up respondents were older, slightly more diverse, more educated, more Democratic, and more likely to have solar panels.
- MPG used anonymized ID codes to link follow-up responses back to their initial responses.
- The slides that follow compare these 92 respondents' answers from the initial and follow-up surveys.

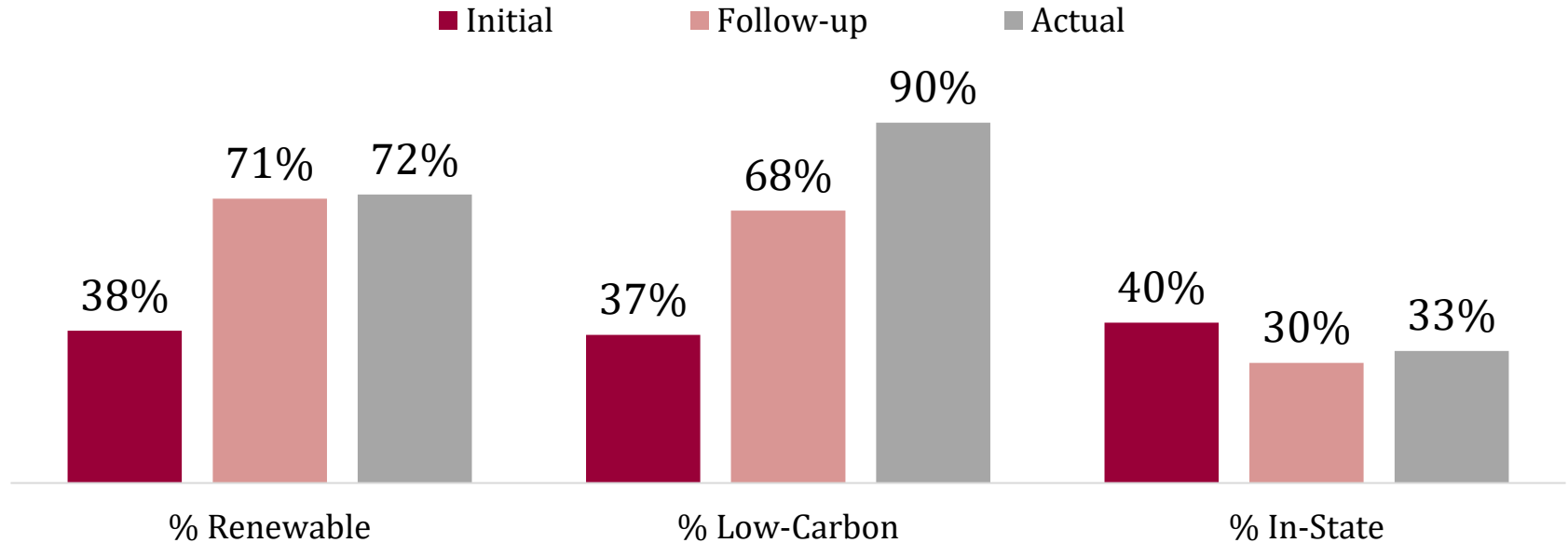
		Initial	Follow-up
GENDER	Woman	51%	49%
	Man	48%	49%
	Non-binary	1%	2%
AGE	18-29	20%	12%
	30-44	21%	24%
	45-59	24%	23%
	60+	34%	41%
RACE	African American, Black, or African	1%	2%
	American Indian / Indigenous	2%	8%
	AAPI	2%	2%
	Hispanic, Latinx or Spanish Origin	2%	9%
	White	92%	86%
PARTY ID W LEANERS	Democrat	52%	68%
	Republican	27%	18%
	Independent / Other	15%	12%
	Don't know / Refused	5%	1%
EDUCATION LEVEL	High School or less	35%	21%
	Some college, no degree	28%	26%
	College graduate (BA/BS)	22%	35%
	Advanced degree	14%	17%
INCOME	< \$50K	28%	28%
	\$50-99K	31%	41%
	\$100K+	28%	24%
	Don't know / Refused	13%	7%
Do you own or do any of the following?	A heat pump hot water heater	20%	17%
	A heat pump for home heating or cooling	19%	17%
	A fully electric vehicle	4%	8%
	A hybrid gas and electric vehicle	12%	13%
	Have solar panels on your property	17%	22%
	Participate in community solar or group net metering	4%	4%
	None of these	54%	48%

# Awareness of renewable progress

- Focus group participants' responses in the initial survey showed a low awareness of how much of Vermont's electricity is renewable, low-carbon, and produced in-state.
- These numbers were included in the policy brief and the slide presentation, and the follow-up survey shows much better awareness after the groups.

## Focus Groups improved awareness of Vermont's renewable, low-carbon progress

*Mean response in initial and follow-up survey, versus actual amount*

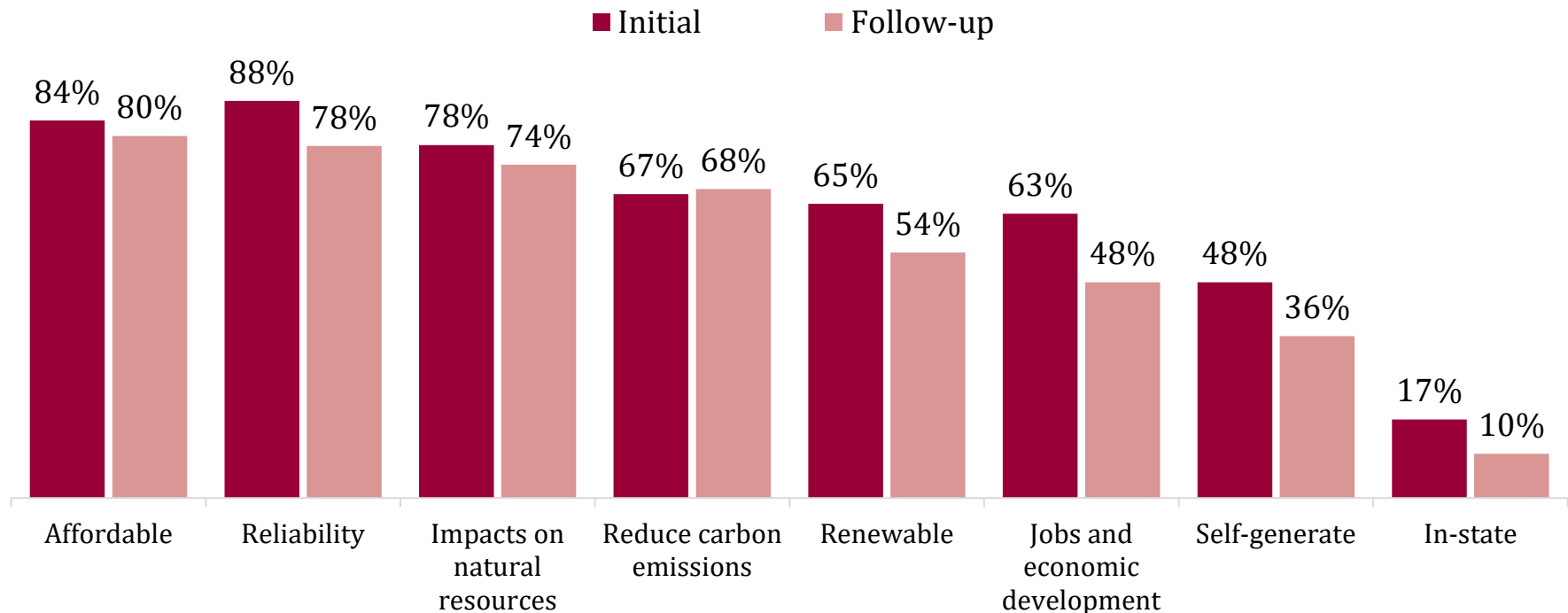


# Most important factors, initial & follow-up

- Except carbon emissions, slightly fewer participants rated each factor “very important”.
- Nonetheless, the rank order of factors remained the same from the initial survey.

## Affordability, Reliability remained top rated factors in follow-up survey

*% of focus groups participants rating each factor “very important” in initial versus follow-up survey*

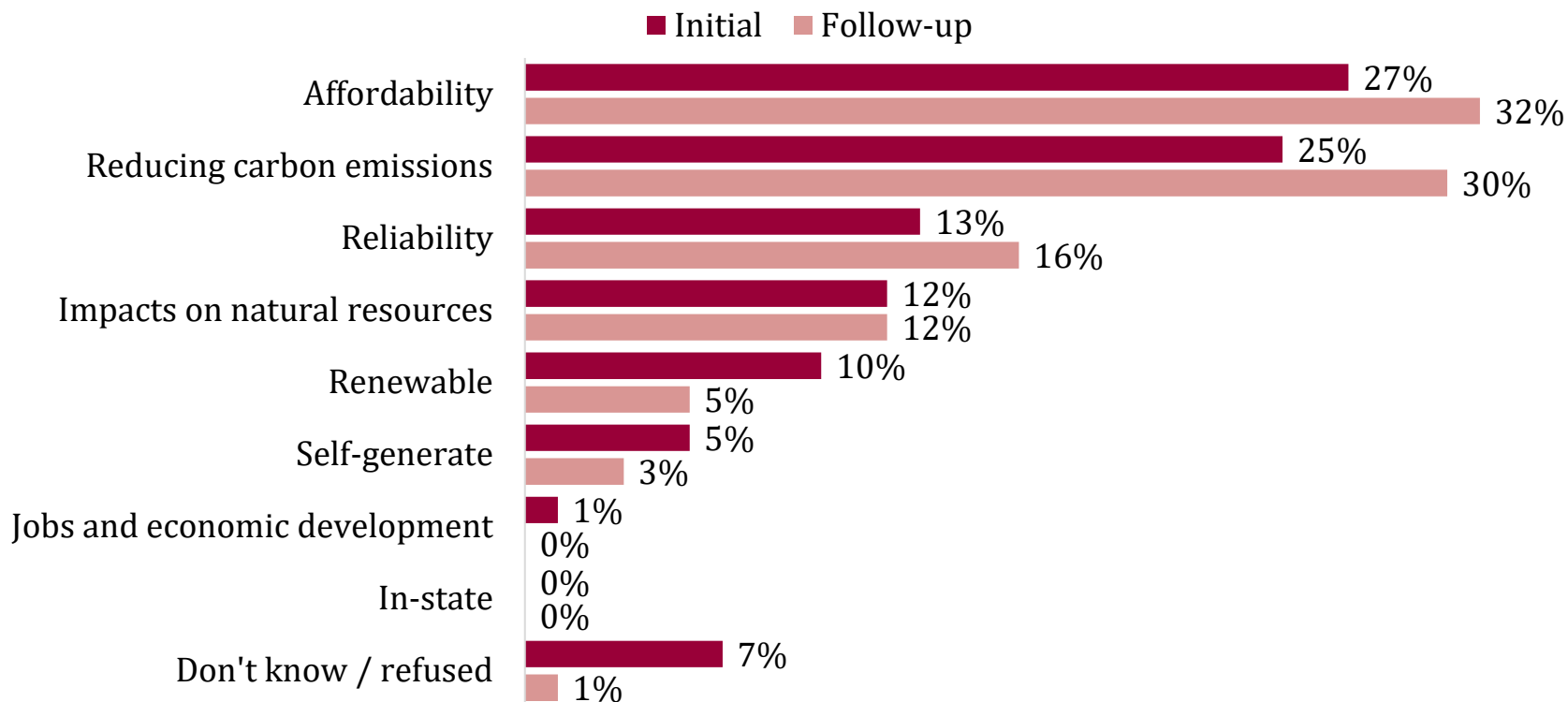


# Single most important factor

- Consistent with the discussion in more focus groups, affordability and carbon emissions consolidated their positions as the top single priorities in the follow-up survey.

## Affordability and emissions gained ground as single most important factor

*% of focus group participants choosing each as their single most important factor, initial v. follow-up*

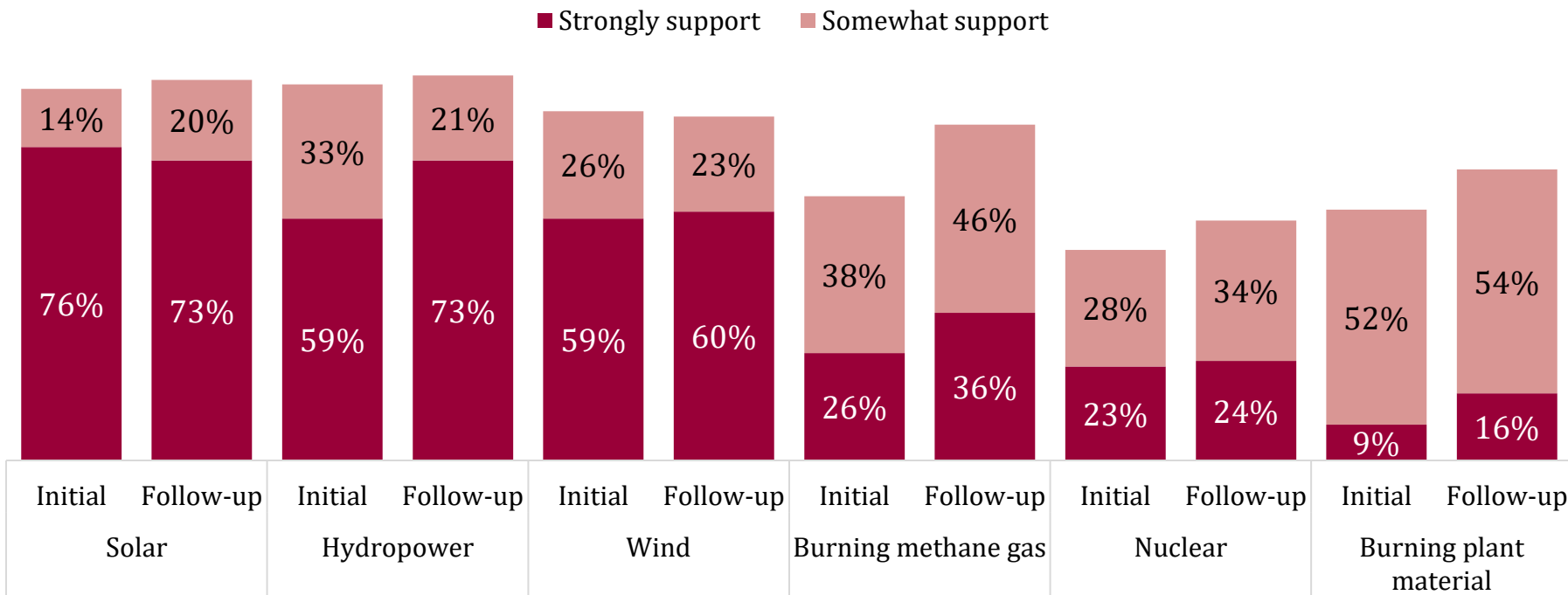


# Favored electricity sources

- The rank order of sources that participants “strongly support” stayed the same, but hydropower and both types of methane saw gains from the focus group discussion.
- Biomass was less well-known in the initial survey, so the discussion may have introduced the concept to participants.

## Hydropower, biomass see increase in “strong support” in follow-up survey

*% of focus groups participants supporting each electricity source*

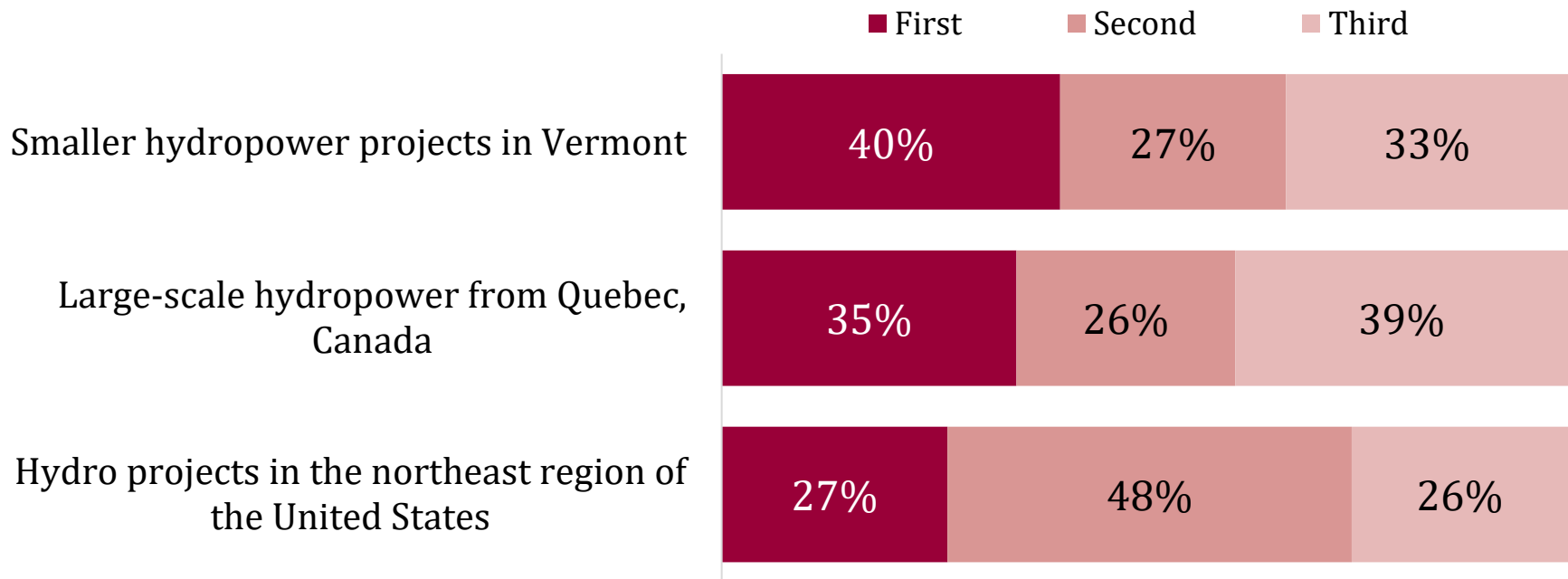


# Scaling hydropower

- Smaller hydropower projects in-state were the most popular first choice, while Hydro-Quebec was the most divisive – 35% ranked it first, but 39% ranked it last.
- Tapping into other hydro in the Northeast was the most popular second choice.

## Participants had a mix of views on the scale of hydropower

*% ranking each option first, second, or third*



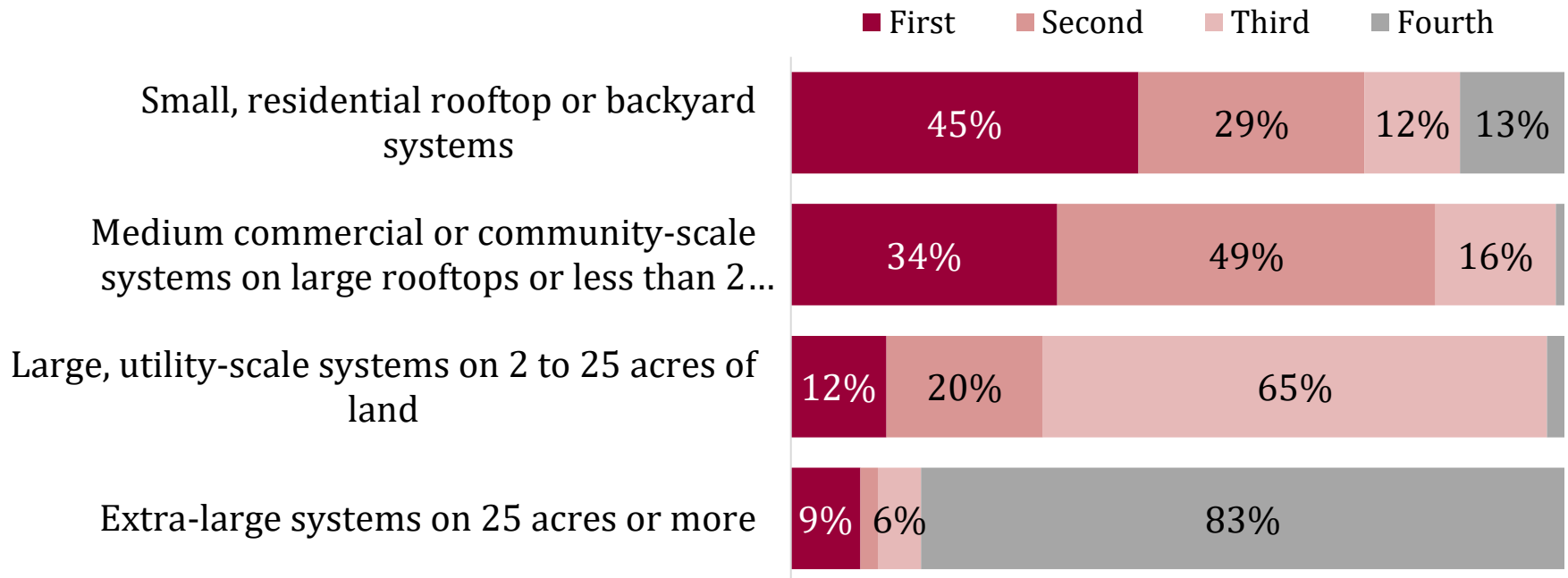


# Preference for smaller solar

- There was a clear preference for small, followed by medium-sized solar.
- This was consistent with a preference in the focus group discussion for siting solar on existing buildings or developed land (ie, parking lots).

## Clear preference for small-to-medium sized solar projects

*% ranking each option first, second, third, or fourth*

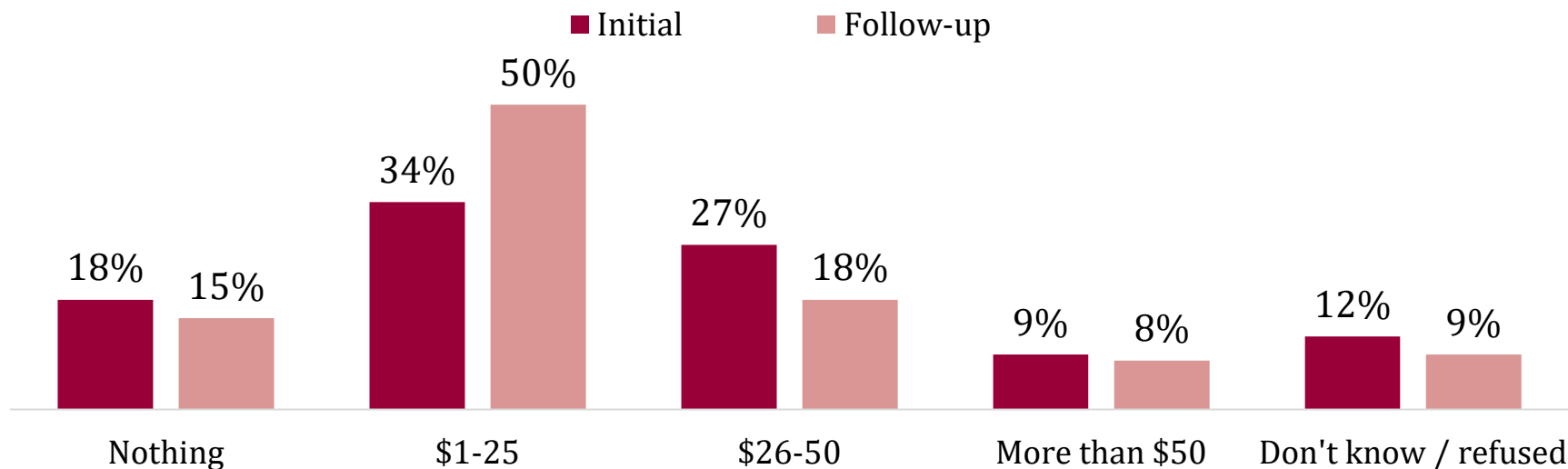


# Willingness to pay

- Focus groups participants came in more willing to pay for renewable/low carbon electricity than all residents in the initial survey.
- But the amount participants were willing to pay declined in the follow-up.
- Learning how well Vermont is doing on renewables already may have led some to lower their estimate of what amount would be needed to reach the goal.

**More participants were willing to pay something after the focus groups, but the amount willing to pay decreased.**

*% willing to pay each amount per month, initial versus follow-up survey*



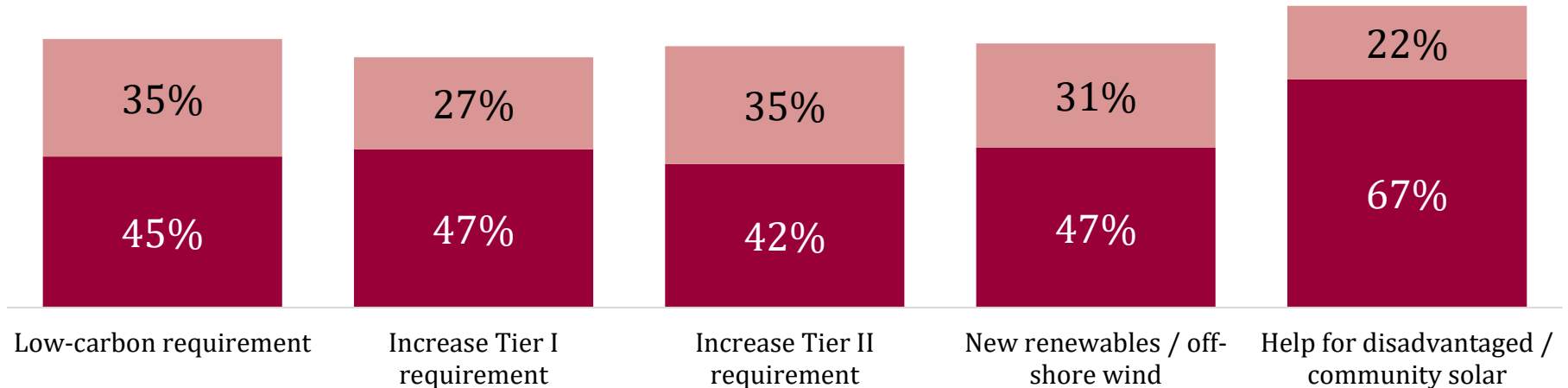
# Policy preferences going forward

- Majorities of focus group participants at least somewhat support Vermont going further on renewable/low-carbon electricity, including a low-carbon electricity requirement, increasing the Tier I and II RES targets, and sourcing new renewables like off-shore wind.
- Two-thirds *strongly* support the state doing more to bring renewables to disadvantaged Vermonters.

## Participants had a mix of views on the scale of hydropower

*% ranking each option first, second, third, or fourth*

■ Strongly support   ■ Somewhat support





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