

Energy Storage Solutions (ESS) An Equity Perspective

June 4, 2024



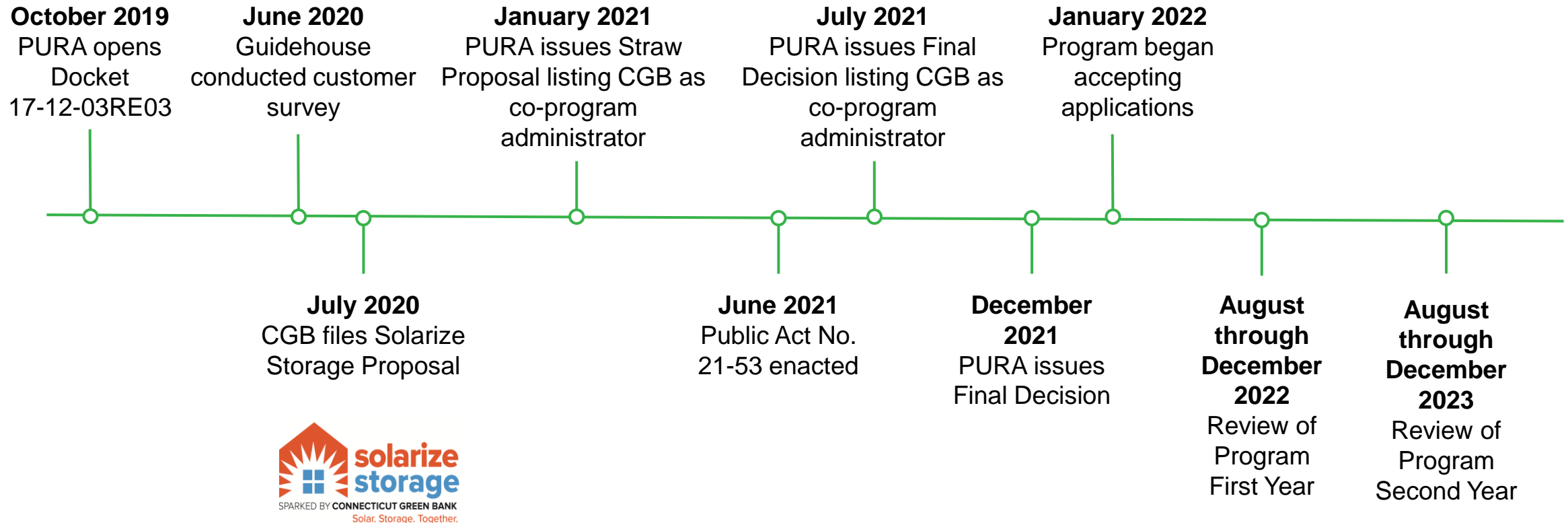
ESS Program



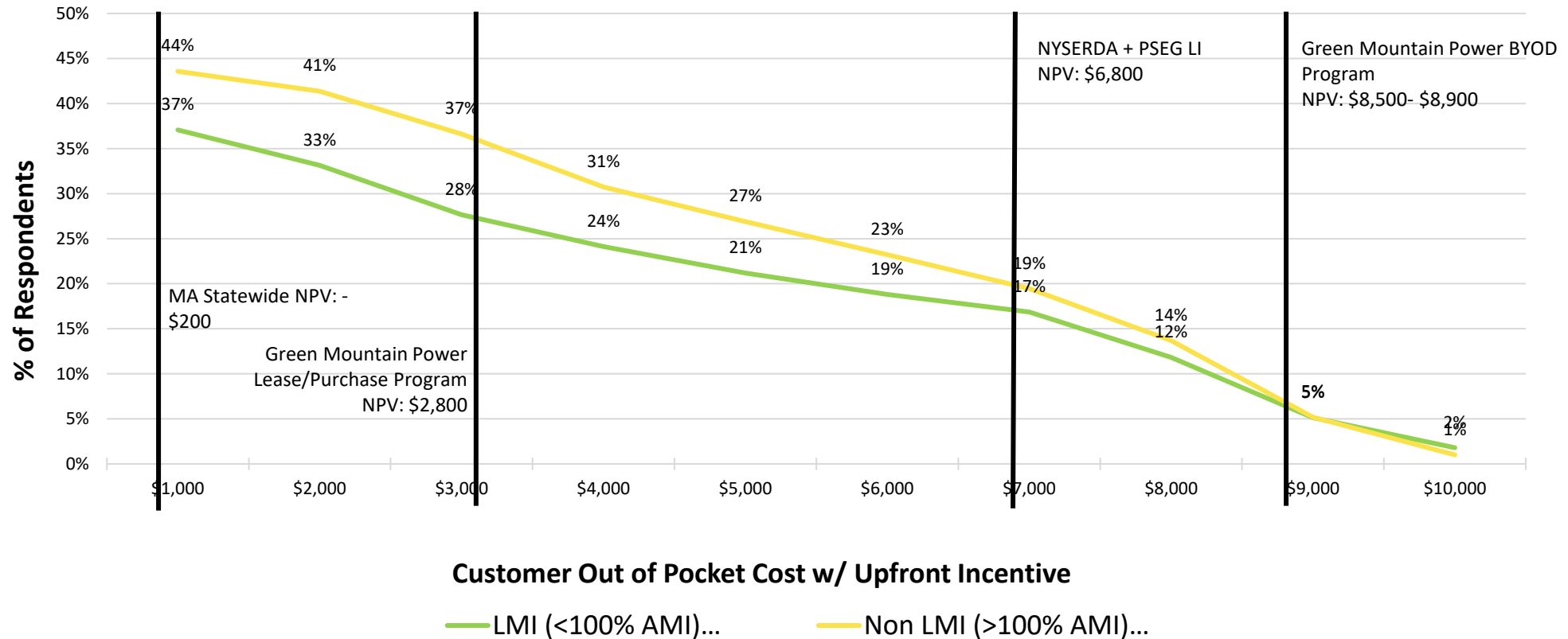
Overview



Timeline

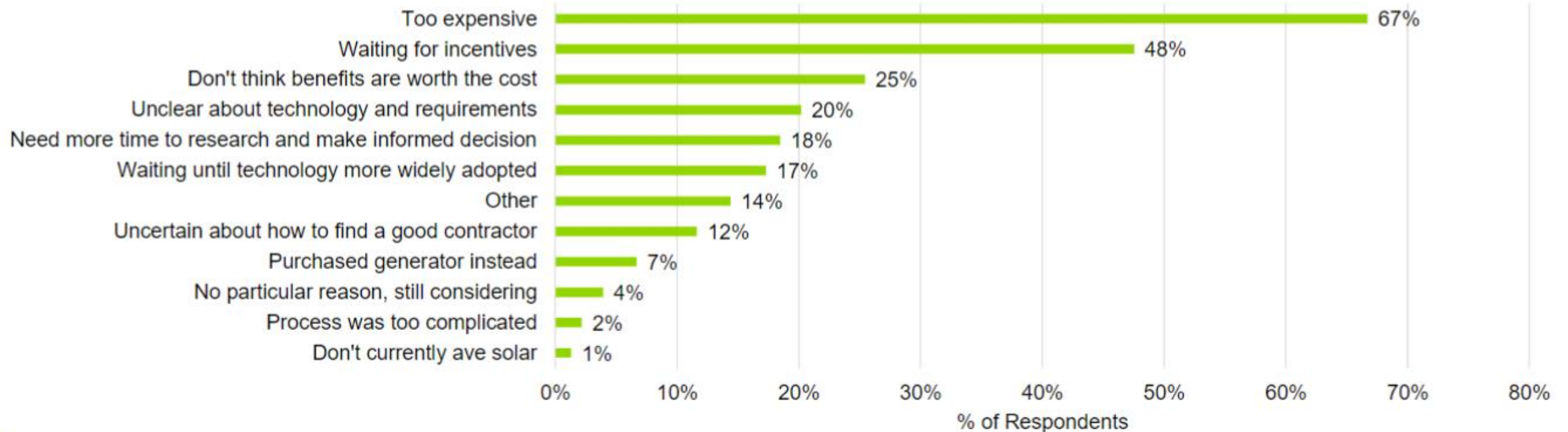


Solarize Storage Research



Determining incentive levels using market research and data-driven analyses

Solarize Storage Research



In order to achieve PURA's targets at the residential level, the availability of appropriate upfront incentive was going to be crucial

Legislative and Regulatory Mandate

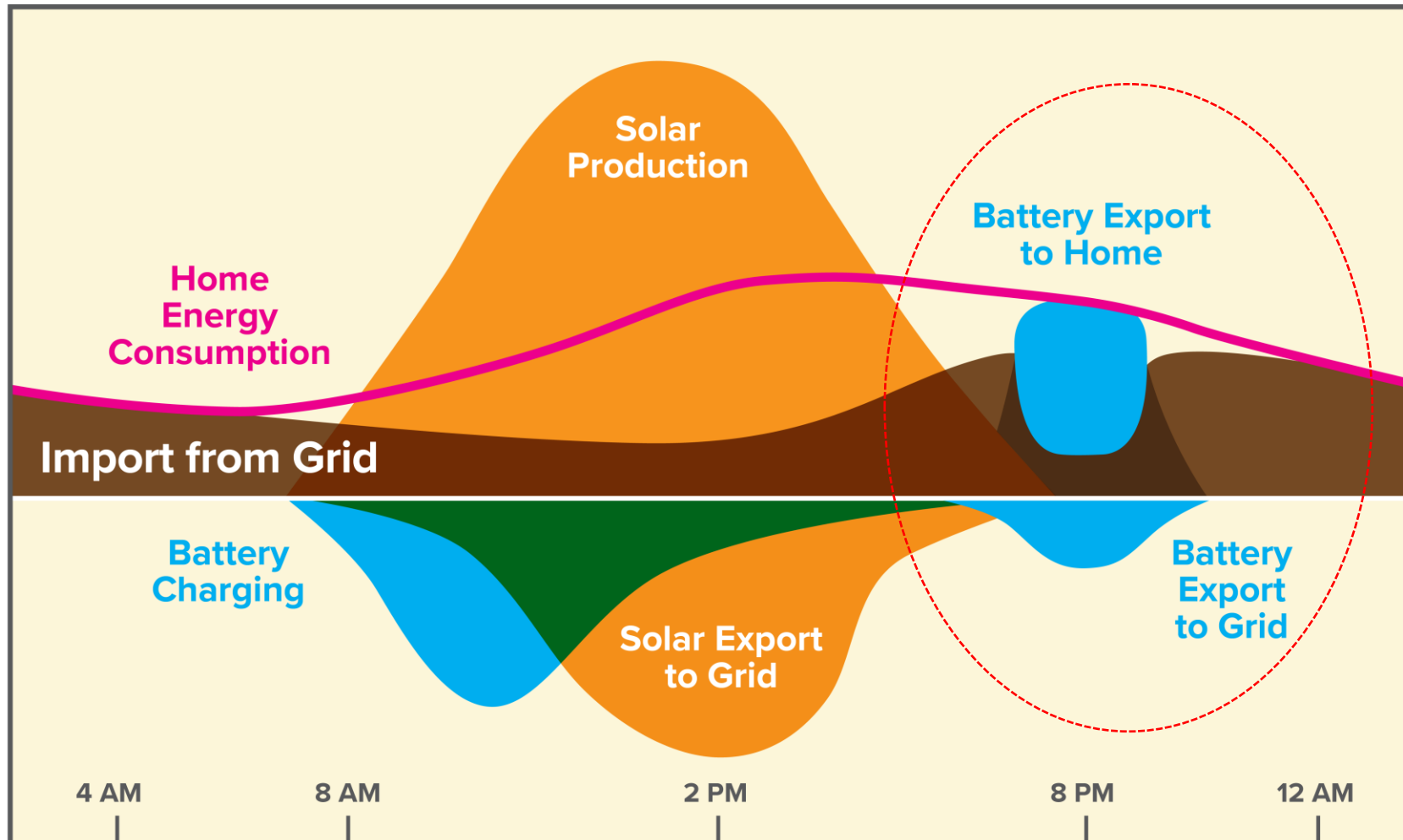


- Statewide goal of 1000 MW, including front-of-the-meter
- 9-year declining incentives – Goal of 580 MW behind-the-meter storage for residential and non-residential end-use customers

CUSTOMER CLASS	2022-2024	2025-2027	2028-2030	TOTAL
Residential	50 MW	100 MW	140 MW	290 MW
Commercial and Industrial	50 MW	100 MW	140 MW	290 MW
Total	100 MW	200 MW	280 MW	580 MW

- Cost-Effective – ensure there is net benefit to electric customers
- Vulnerable Communities – deploy no less than 40 percent of residential installations in vulnerable communities
- Resilience – maximize the deployment of battery storage to improve the overall resilience to (1) low-and-moderate income (LMI) customers, customers in environmental justice or economically distressed communities, customers coded medical hardship, and public housing authorities, and (2) customers on grid-edge
- Economic Development – foster the sustained orderly development of a local battery storage industry
- Benefits – Provide multiple types of benefits to the electric grid and support the deployment of DERs
- Environmental benefits – reduce emissions associated with fossil-fuel peaking generation

Program Design in a Nutshell



Program Design Parameters



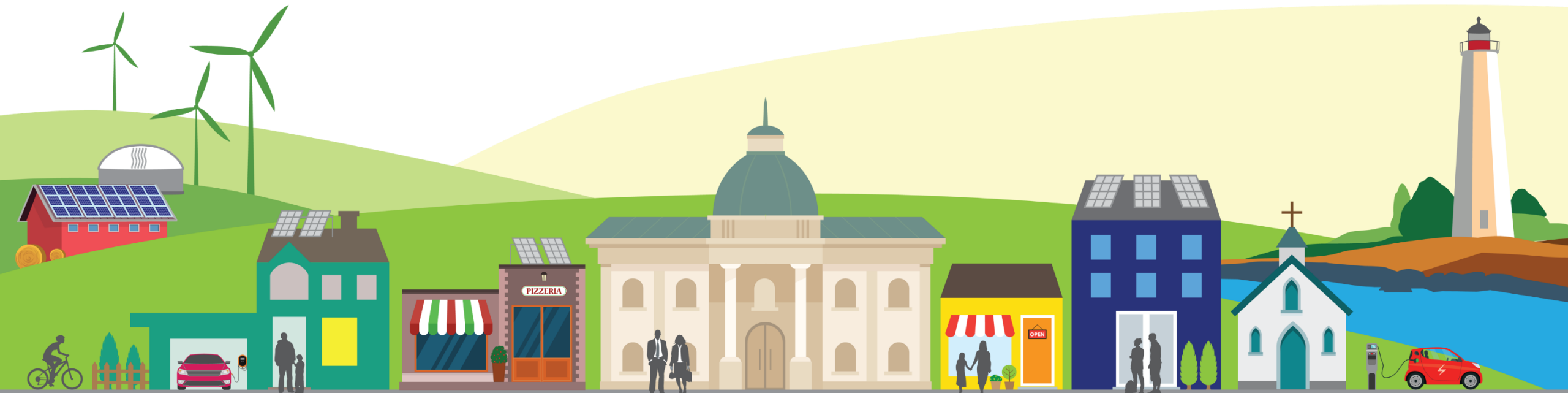
Customer Classes:

- Residential customer classes: Standard, Underserved, and Low-Income Households
- Commercial/Industrial customer classes: Small, Medium, Large (based on demand)

Systems installed through this program can receive two incentives:

Program Element	Design Item	Summer	Winter
Upfront Incentive (Passive Dispatch)	Events per Season	All non-holiday weekdays (~60)	N/A
	Months	June, July & August	N/A
	Event Duration	5 Hours	N/A
	Anticipated Dispatch Window	3 PM to 8 PM	N/A
Performance-Based Incentive (Active Dispatch)	Events per Season	30 to 60	1 to 5
	Months	June through September	November through March
	Event Duration	1 - 3 hours	1 - 3 hours
	Anticipated Dispatch Window	Noon to 9 PM (All Days)	Noon to 9 PM (All Days)

Incentive Levels



Residential Incentive Levels



Upfront Incentive Levels (Installed 2022-2024) – Capped at \$16,000

Capacity Block (MW)	Standard	Underserved	Low-Income	Grid Edge
<i>Target Participation</i>	60%	30%	10%	
10	\$250.0/kWh	\$450/kWh	\$600/kWh	
15	\$212.5/kWh	\$450/kWh	\$600/kWh	50% Adder
25	\$162.5/kWh	\$450/kWh	\$600/kWh	

An 18.5 kWh battery is eligible to receive between \$4,625 and \$16,000

Performance Incentive Levels (Installed 2022-2024)

Summer, Years 1-5	Winter, Years 1-5	Summer, Years 6-10	Winter, Years 6-10
\$200/kW	\$25/kW	\$115/kW	\$15/kW

**Residential Upfront Incentive Capped at \$16,000 per project*

Programmatic Changes



ISSUE	Year 2			Year 3		
	Baseline (\$/kWh)	Underserved Community (\$/kWh)	Low-Income (\$/kWh)	Baseline (\$/kWh)	Underserved Community (\$/kWh)	Low-Income (\$/kWh)
Residential Upfront Incentives	\$200	\$300	\$400	\$250	\$450	\$600
Residential Incentive Cap	\$7,500			\$16,000		
Multi-Family Affordable Housing	Underserved Community			Low-Income		

**Residential Upfront Incentive Capped at \$16,000 per project*

Commercial Incentive Levels



Upfront Incentive Levels (Installed 2022-2024) – Capped at 50% of installed cost				
Capacity Block (MW)	Small	Medium	Large	Priority Customers*
<i>Participation Level</i>	60%	30%	10%	
50	\$200/kWh	\$175/kWh	\$100/kWh	
100	\$200/kWh	\$175/kWh	\$100/kWh	25% Adder
140	n/a	n/a	n/a	

Performance Incentive Levels (Installed 2022-2024)			
Summer, Years 1-5	Winter, Years 1-5	Summer, Years 6-10	Winter, Years 6-10
\$200/kW	\$25/kW	\$115/kW	\$15/kW

Portion of battery eligible for upfront incentive is the greater of 150% customer’s annual peak demand or 2MW

*Priority customer: customers on grid edge, critical facilities, small businesses, and customers replacing onsite fossil fuel generators

*C&I Upfront Incentive Capped at 50% of project cost

ESS Tranche Status as of 05/30/2024



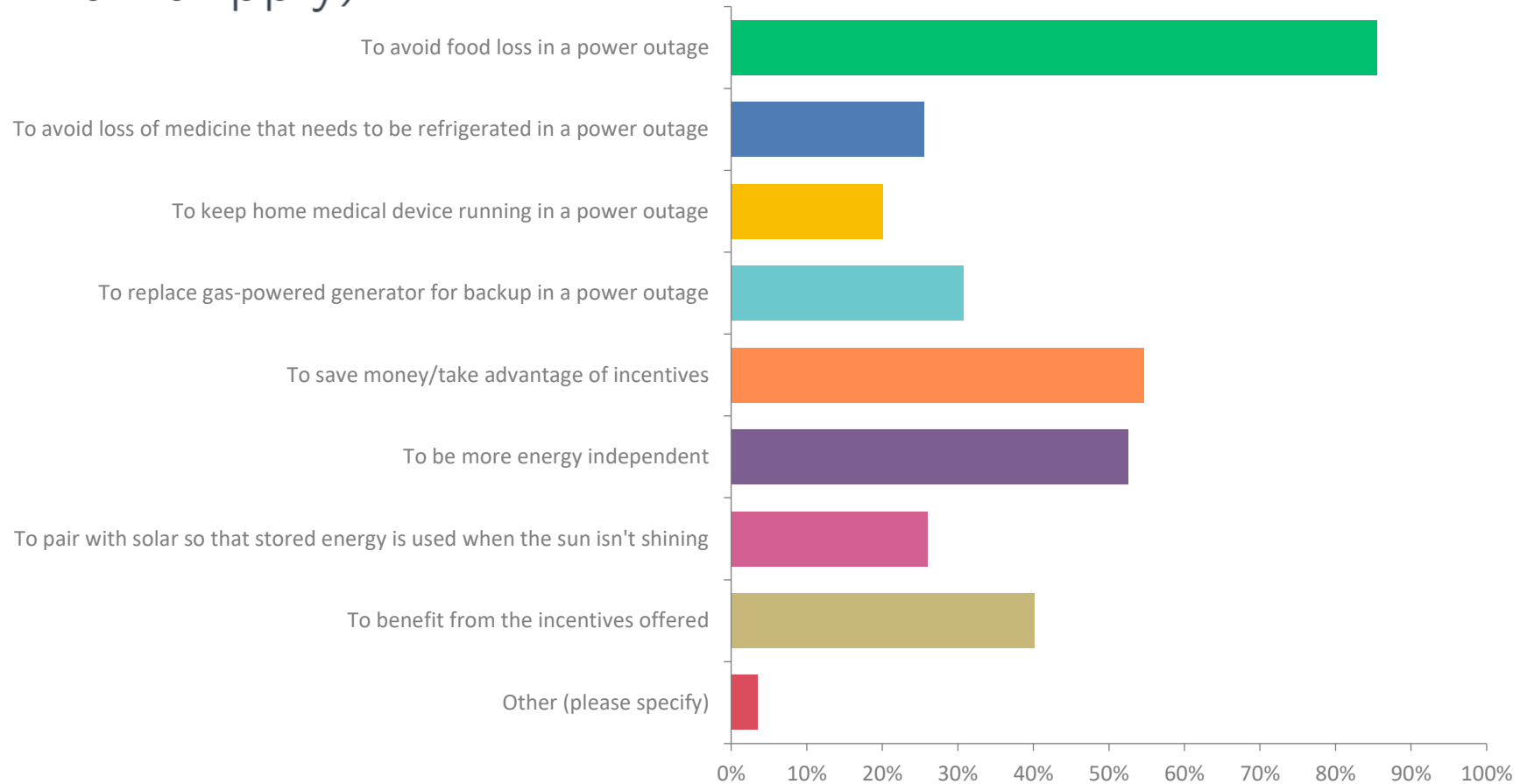
	Tranche 1 (2022-2024)	Tranche 2 (2025-2027)	Tranche 3 (2028-2030)
Residential	50.0 MW	100.0 MW	140.0 MW
	3.6 MW		
	1.6 MW		
Non-Residential	50.0 MW	100.0 MW	140.0 MW
	41.2 MW	99.99 MW	
	1.2 MW		



Barriers to Adoption



Which of the following benefits of battery storage would help you the most?
(Select all that apply)

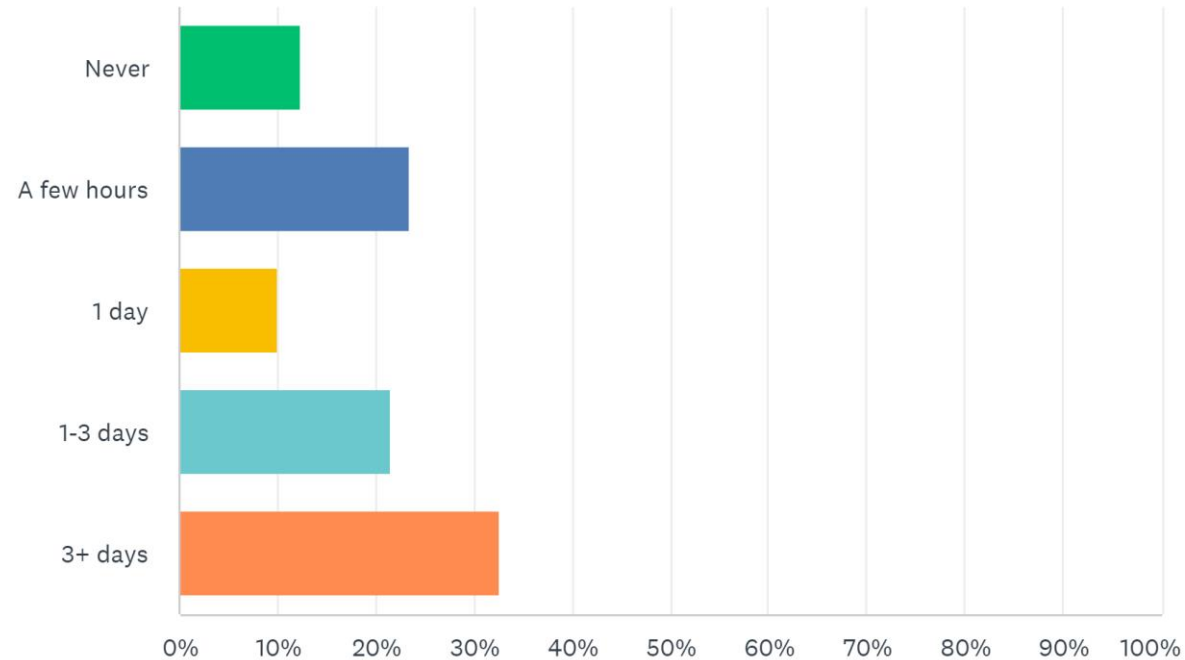


Experience with power outages



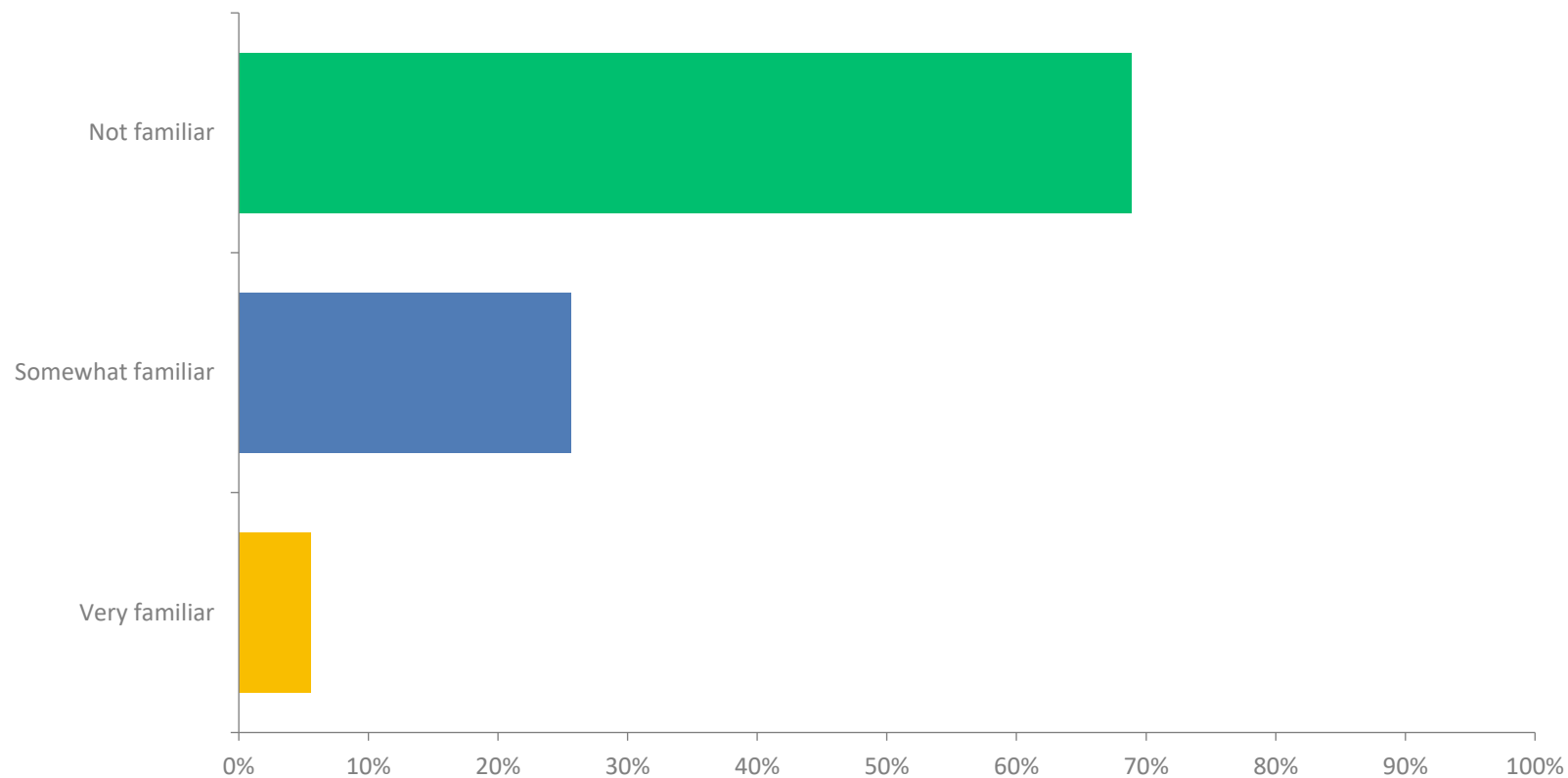
What is the longest you have gone without power in your home?

Answered: 289 Skipped: 0



How familiar are you with battery storage for your home?

Answered: 289 Skipped: 0

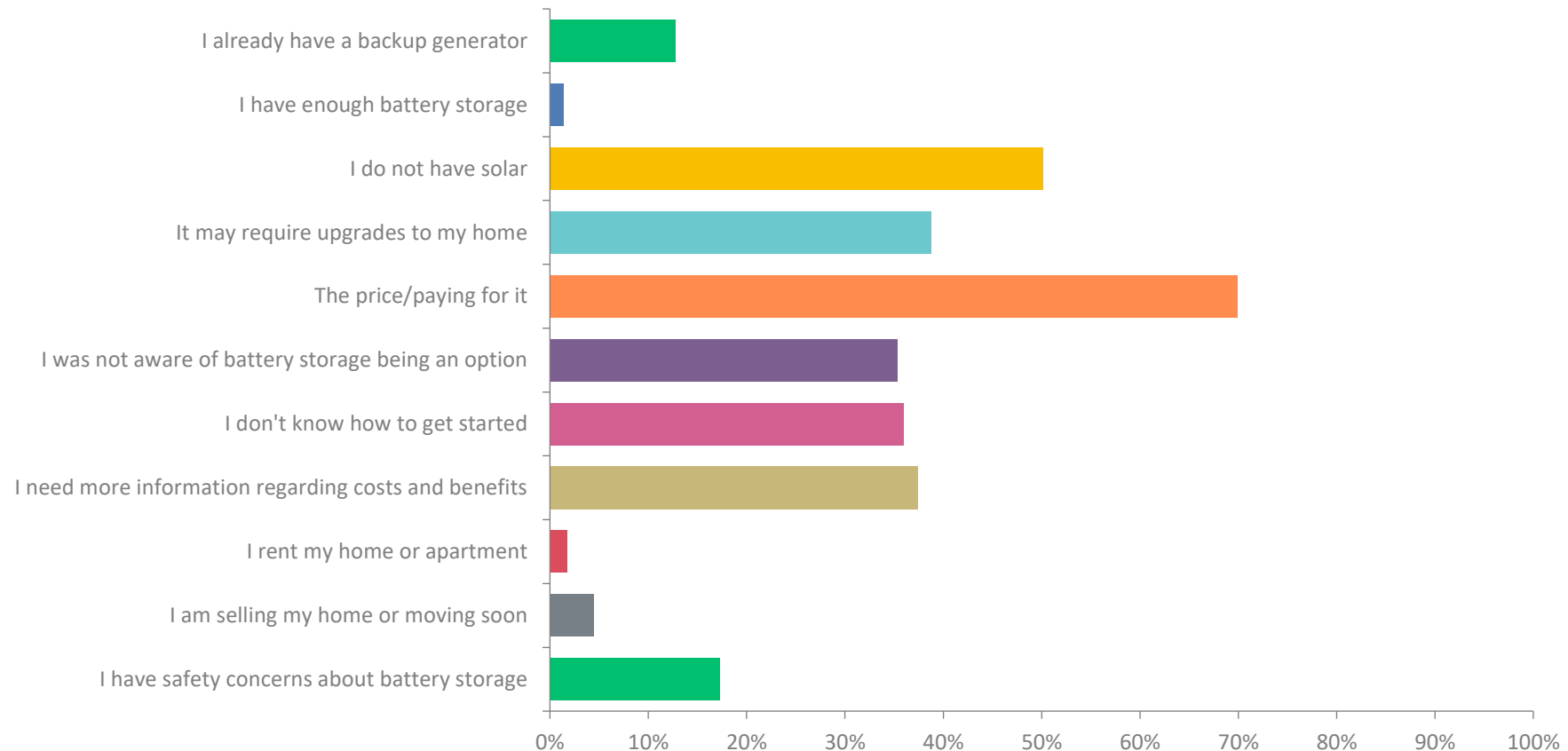


Reasons to not adopt



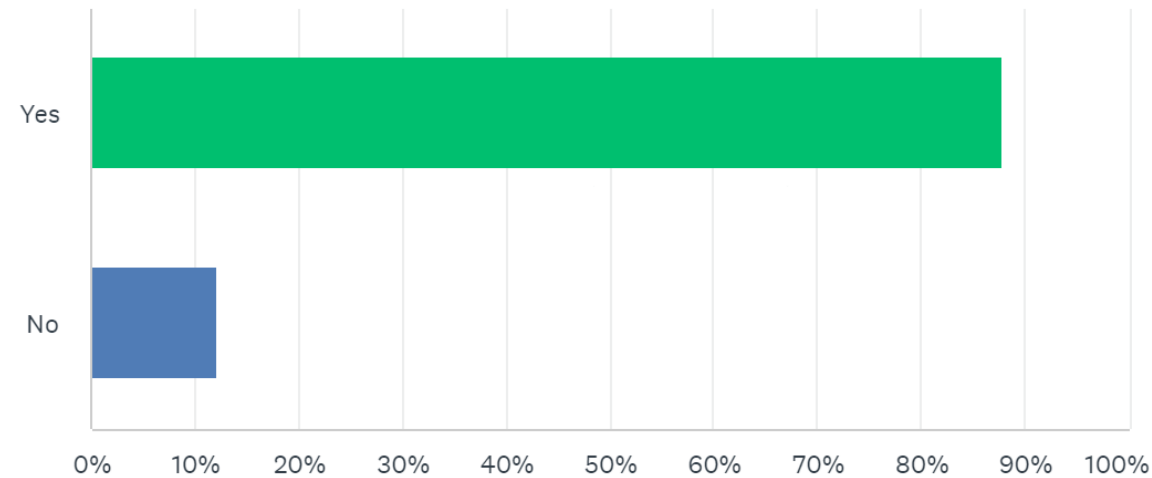
Select all of the reasons that make you hesitate to install battery storage:

Answered: 289 Skipped: 0



If none of the barriers above existed, would you then consider battery storage

Answered: 289 Skipped: 0

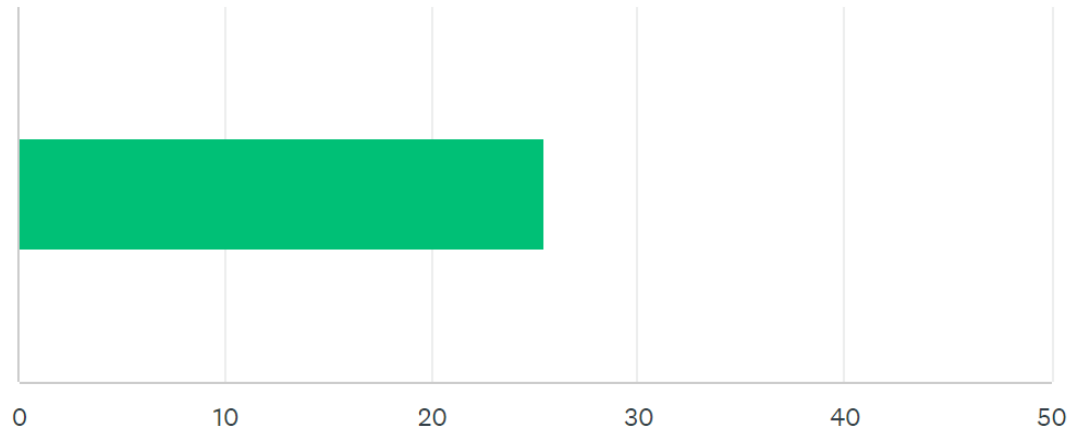


Willing to Pay for Resilience



A battery storage device can provide enough power for basic home use for a couple of days when the power is out. If leasing a battery storage device was an option, how much would you be able and willing to pay per month?

Answered: 289 Skipped: 0



Key Takeaways



BARRIERS: The survey reveals there are barriers to adoption for the target population related to cost and familiarity with the technology

RENTERS: Renters removed from the target population due to a multitude of barriers for renters

COST: Target population does not consider purchasing non-essential items unless it is certain how it is benefitting them directly

“I don’t know anything about it.”

“If the cost is too high. I’m already living paycheck to paycheck.”

“Can’t afford it.”

“I would be interested in learning about this topic.”

Thank You!



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