



**Future Utility Revenue Model Framework & Analysis,  
Presented by Karen Lefkowitz, CEO Sunset Energy  
September 21, 2022**

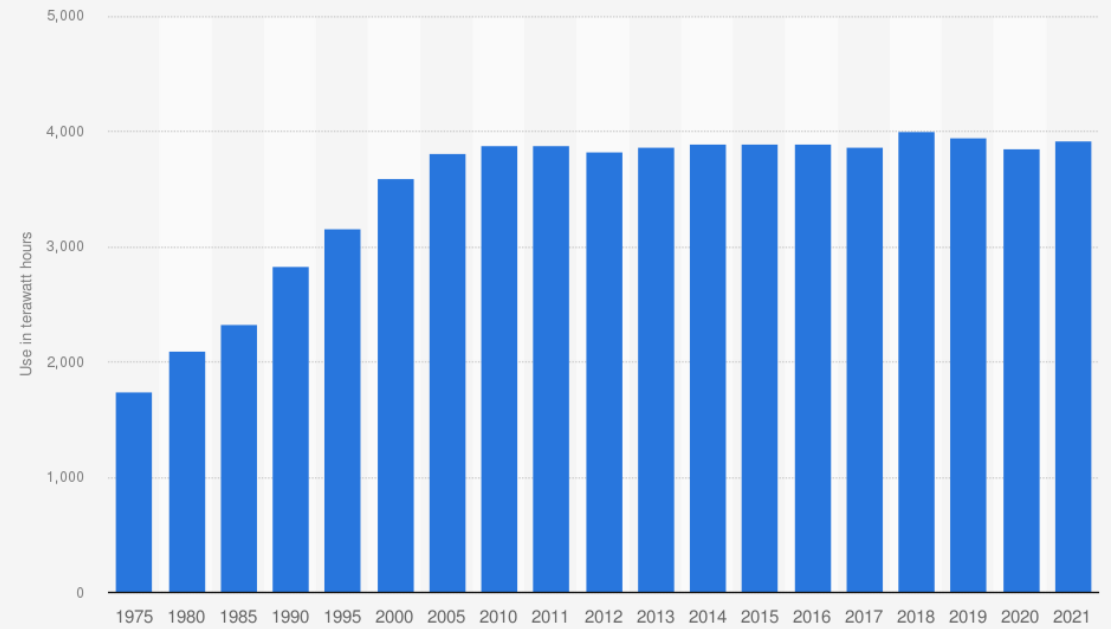
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# Why Beyond the Meter?



# Flat Electricity Usage

Electricity end use in the United States from 1975 to 2021 (in terawatt hours)

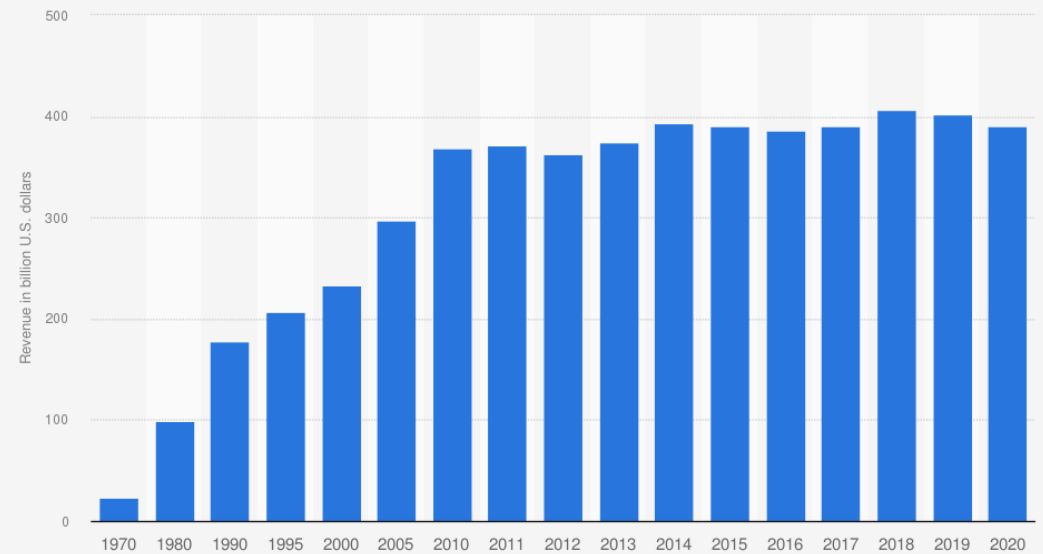


Source  
EIA  
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Additional Information:  
United States; 1975 to 2021

Corresponding utility revenue has been flat

Revenue of the electricity industry in the United States from 1970 to 2020 (in billion U.S. dollars)

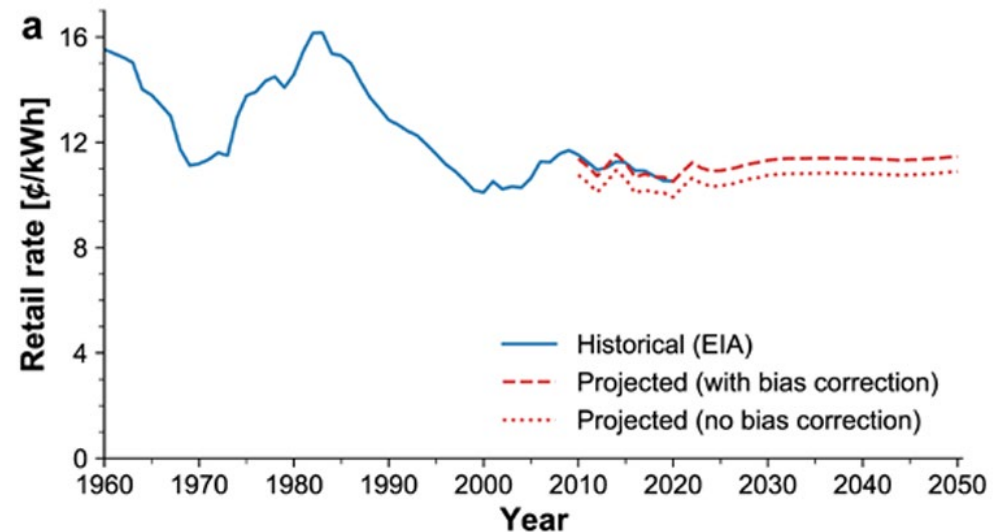


Source  
EIA  
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Additional Information:  
United States; 1970 to 2020; revenue from retail electricity sales to end consumers

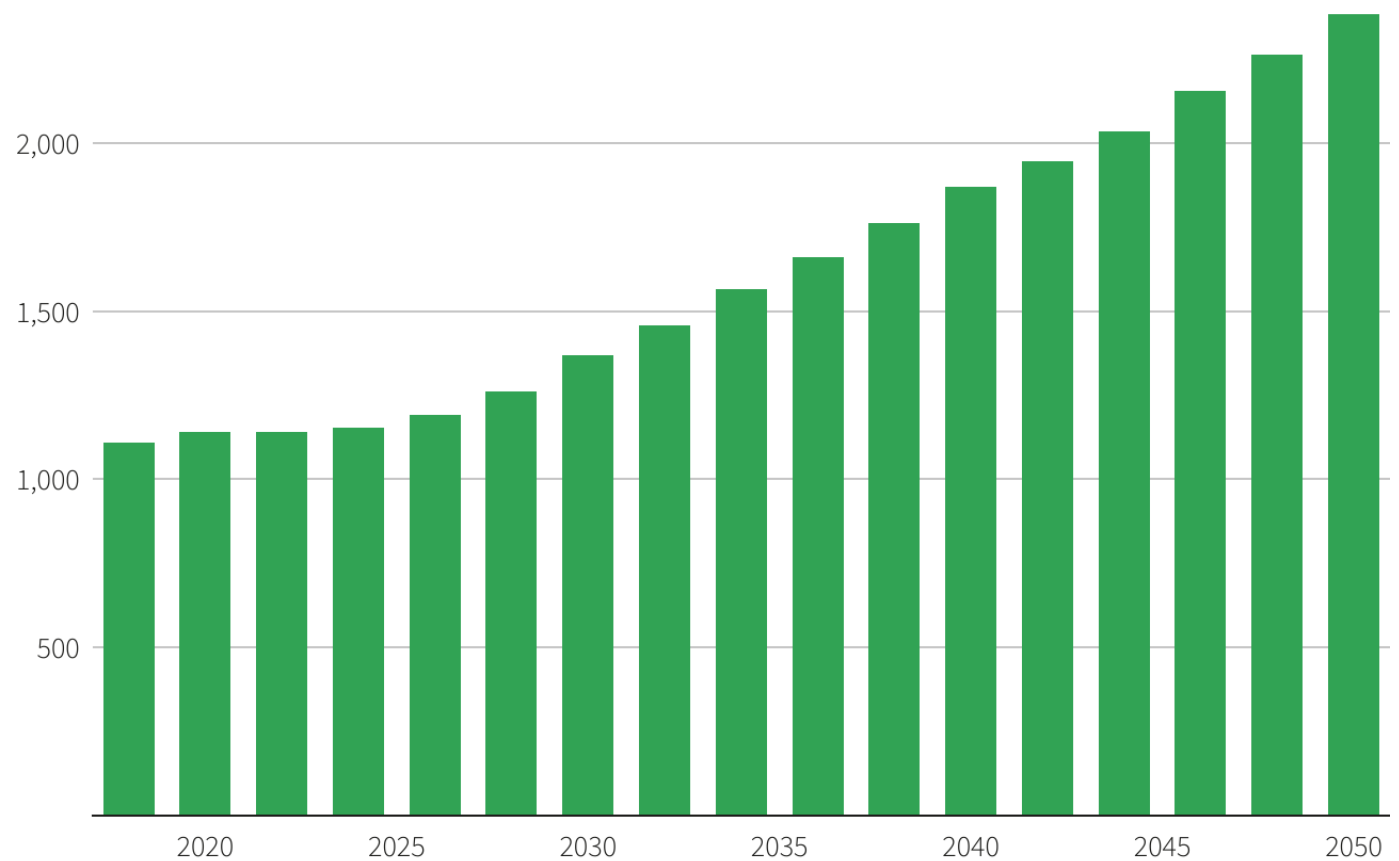
# Retail rate increase projections

- Regulators resist rate increases
- Customers don't like them
- Risk that rates won't meet the increasing needs for infrastructure improvement and expansion
- Rates increasing on generation side



# EVs will require new expansion

Gigawatt electric capacity needs to double to power 186 million light-duty EVs in 2050



Note: Capacity in GW is rounded; 2018 is the base case, all other years estimated; data assumes the share of electricity also increases

# Improve Customer Satisfaction



- Customers have demonstrated that they are willing to spend money on
  - Energy management tools
  - Energy efficiency products
  - Distributed Energy
  - Electric Vehicles
- But often customers don't know where to start in evaluating options and/or their purchases don't meet expectations

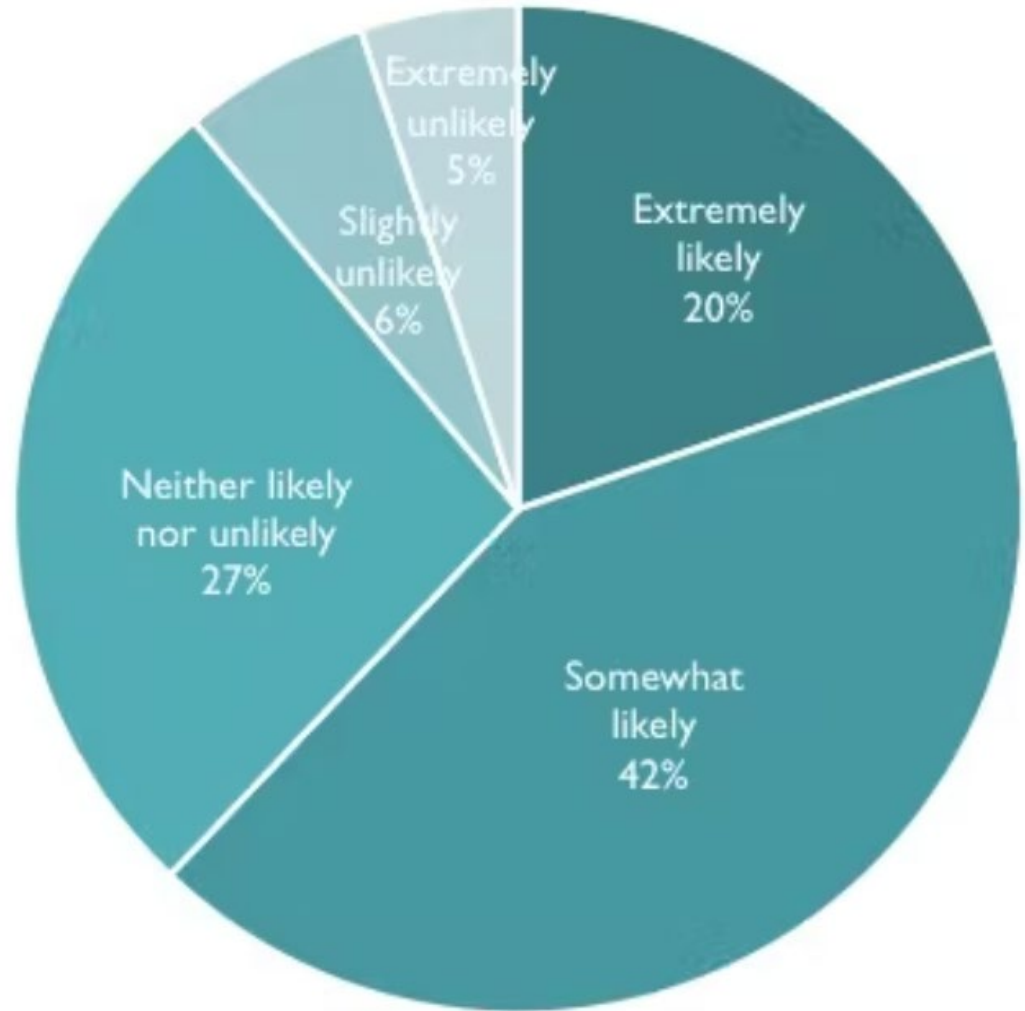
# Complex products require more information from trusted sources



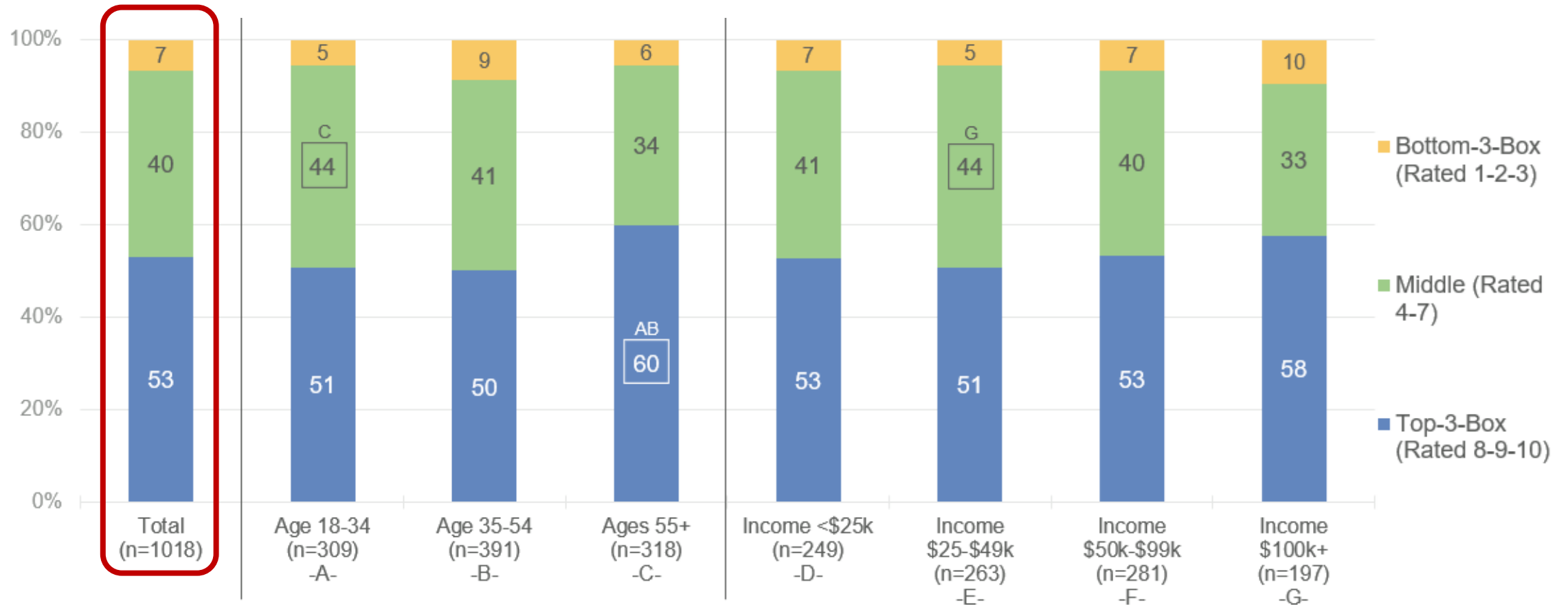


Surveys continue to demonstrate that customers trust their local utility company

Willingness to purchase smart home products from utilities

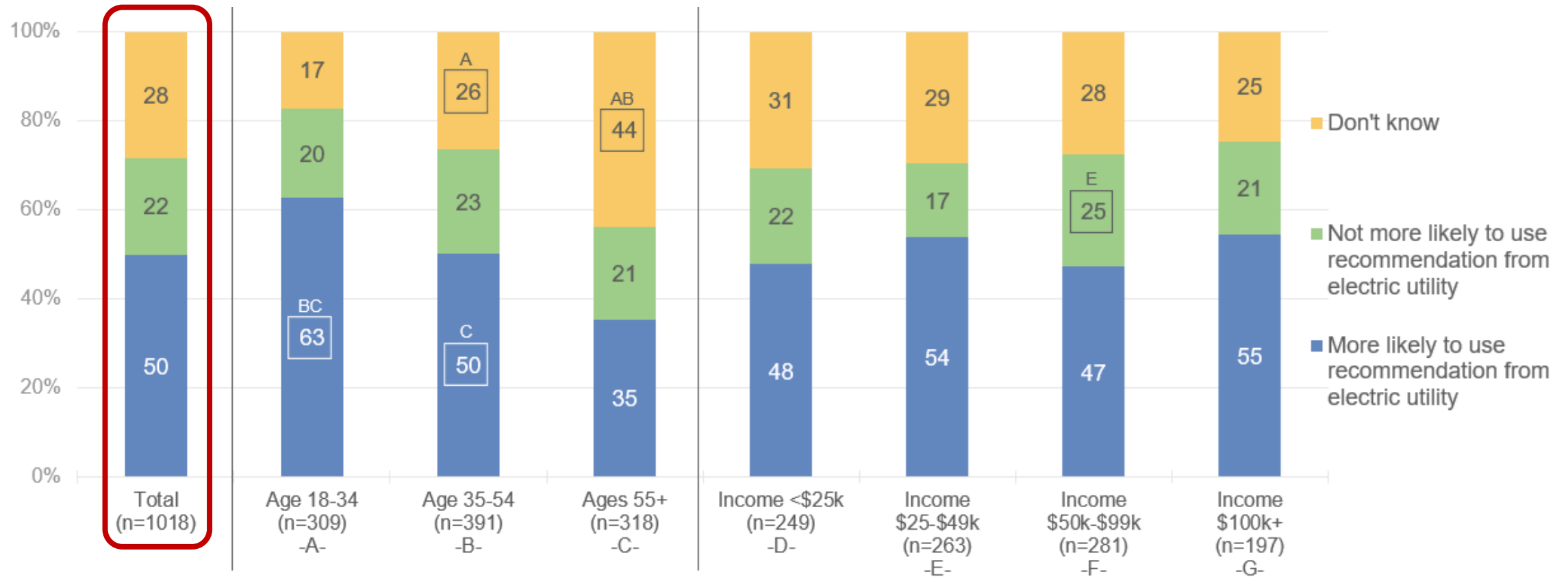


# Majority of Customers View Electric Utility as a Trusted Energy Advisor



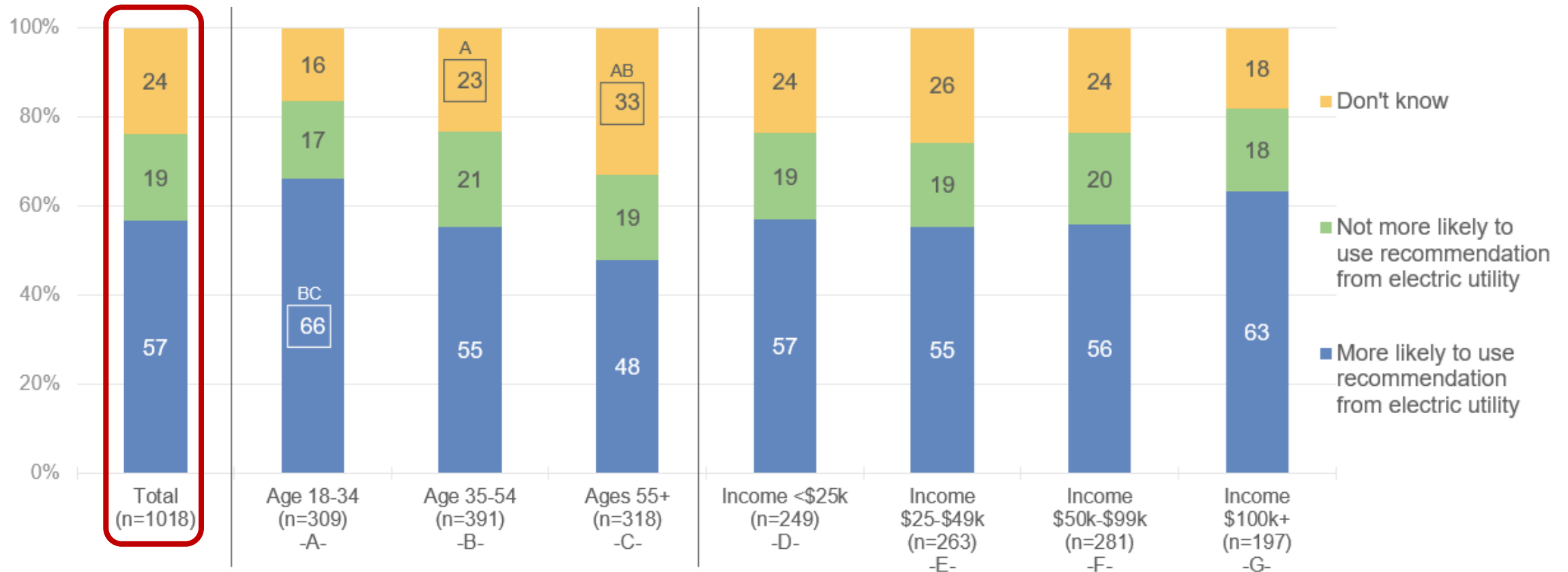
Base: Total Respondents. Q.B3. How would you rate your electric utility as a trusted energy advisor?

# Utilities Have Influence Over Customer Choices Relating to Home Services



(Use of Utility Service Recommended Home Service/Repair) Base: Total Respondents. Q.B4b. If you needed home services or repairs, would you be more likely to use a service that was recommended by your electric utility?

# Utility Leverage Increases for Customer Choices Relating to Solar/Clean Energy Recommendations



(Use of Utility Service Recommended Solar/Clean Energy Installer) Base Total Respondents. Q.B4c. If you were interested in solar energy or other clean energy options, would you be more likely to use a solar energy installer recommended by your electric utility?

Consumers would rather purchase from their local utility than from leading retailers

Q: From the [product category] lists below please select at least two retailers you would consider when purchasing products from each of the following categories:

Rank		Smart Thermostats	UPS	Heating & Cooling Products	Connected Lighting	Security Solutions	Smart Appliances
1	Retailer % of Total Respondents	Utilities 64%	Utilities 62%	Utilities 59.1%	Utilities 52%	Utilities 46%	Home Depot 51%
2	Retailer % of Total Respondents	Home Depot 48%	Home Depot 43%	Home Depot 49%	Home Depot 52%	Home Depot 35%	Lowe's 44%
3	Retailer % of Total Respondents	Lowe's 39%	Lowe's 35%	Lowe's 39%	Lowe's 43%	Amazon 33%	Utilities 42%
4	Retailer % of Total Respondents	Amazon 38%	Amazon 30%	Amazon 21%	Amazon 32%	Lowe's 32%	Best Buy 42%
5	Retailer % of Total Respondents	Best Buy 33%	Amazon 30%	Best Buy 19%	Best Buy 29%	Best Buy 32%	Amazon 27%

Utilities should leverage the customer trust they have earned



**People Buy  
From People  
They Trust**

# Utilities should redefine themselves and build a strategy for growth

- Utilities continue to think of themselves as provider of a commodity
- Shift that mindset – evolve!
  - Amazon & Google’s evolutions to a ‘brand’
    - Book/music seller -> 3<sup>rd</sup> party seller -> clothing -> web services -> smart phones -> home automation
  - Google
    - Search engine -> reinvention of advertising -> email provider -> mapping technology -> smart phones -> fiber -> streaming devices -> home automation -> driverless cars



Beyond the  
Meter  
Opportunities  
Abound





## Traditional Energy Efficiency Products

- Smart thermostats
- LED light bulbs
- Energy Audits
- Weatherstripping

*Note: Due to current inflationary trends, we expect that this area will see a significant increase in consumer interest.*

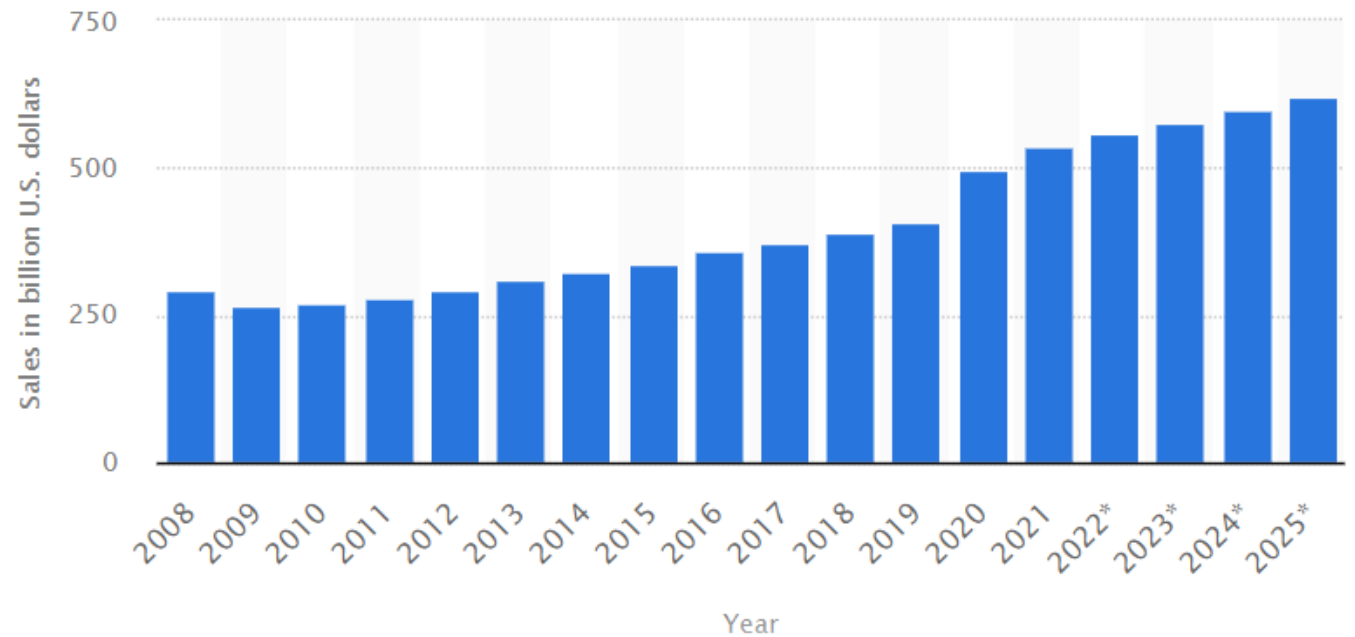
# Home/Referral Services

- Home/Referral services
  - Insurance
  - Handyman
  - Repair services
  - Architectural services
  - Cable TV/Telephone/Internet bundles

*These are also commonly offered as Concierge/Move-In services*

# Home Improvement Market Increases

Home improvement market size in the United States from 2008 to 2025 (in billion U.S. dollars)

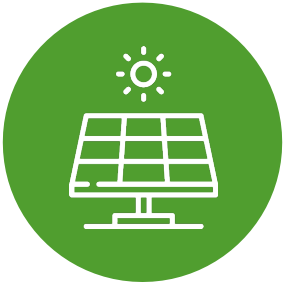


# Projected Market Growth



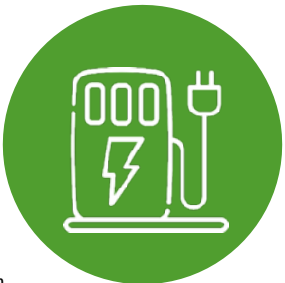
Worldwide Market  
**Smart Home**

\$43.4B → **\$158.9 B**  
2017 → 2024 CAGR of 15%



Worldwide Market  
**Solar**

\$52.5B → **\$222.3 B**  
2018 → 2026 CAGR of 20.5%



Worldwide Market  
**EV Charging**

\$3.8B → **\$25.5 B**  
2020 → 2027 CAGR of 26.8%

# Additional Opportunities

- Smart Home devices
  - Partner with third parties for utility integration
    - Smart thermostats
    - Smart EV charging
    - Energy consumption information
  - Appliance performance
  - Assist in interoperability for consumers
    - Leading manufacturers are moving to a standard, but advanced features are often device dependent

# Additional Opportunities

- Lighting
  - LED conversion
  - Integrated controls
- Electric Vehicle services
  - Charger installation/inspections
  - Evaluation of available rates
  - Optimizing the EV Vehicle-to-Grid capabilities

# Move In Services

- All of the previous items could be bundled into a move-in service, along with:
  - Clean energy options
    - Solar installation
    - Battery installation
  - Clean energy education/advice
  - EV charging
  - Smart Home hubs (particularly useful when a customer is moving into a house with pre-existing technology)

# Residential Energy Management Systems



Passive REMS present a consumer's real-time energy usage on an in-home display device



Active REMS dynamically adjust intelligent home devices

smart thermostats  
water heaters, etc.



Manages customer preferences and occupancy via a schedule, on-demand, or occupancy sensing automation.



REMS can be connected directly to a utility's smart meter and/or to the utility or to a third party through the internet.



# Residential Energy Management meet Energy Efficiency Programs

- Traditional load management programs use a smart thermostat or water heater control device to affect the program
- Future REMs can manage the automated response of the entire household of 'smart' devices and optimize according to the homeowner profile
  - Reduce load on the a/c, but not my wine cellar
  - Reduce the pool pump, but not the sump pump
- Opportunity for a tiered service offering
  - Installation
  - Operation
  - Maintenance

# Distributed Energy (Solar Energy & Batteries)

- Utilities have tremendous expertise and can help consumers:
  - Evaluate their property for suitability
  - Discuss the potential savings
  - Explain the nuances:
    - Net metering
    - Solar renewable energy credits (srecs)
    - Battery back up systems
- Utilities are far more likely to be able to guarantee corporate continuity for the lifespan of the product
- Provide customers with oversight via their state regulatory agency

# Community Needs

- Developers are looking at building new communities that are off-grid – in some cases, this is cheaper than paying for new connectivity
  - Solar
  - Local storage
  - Local batteries
- This presents a Utility an opportunity to partner with developers in siting and managing these developments to best optimize avoiding new infrastructure needs and ensuring better operational experiences for customers
- Utilities should be able to present a business case to the PSC that demonstrates the cost goes to those directly receiving the benefit, rather than socializing the cost of the new infrastructure across all customers.

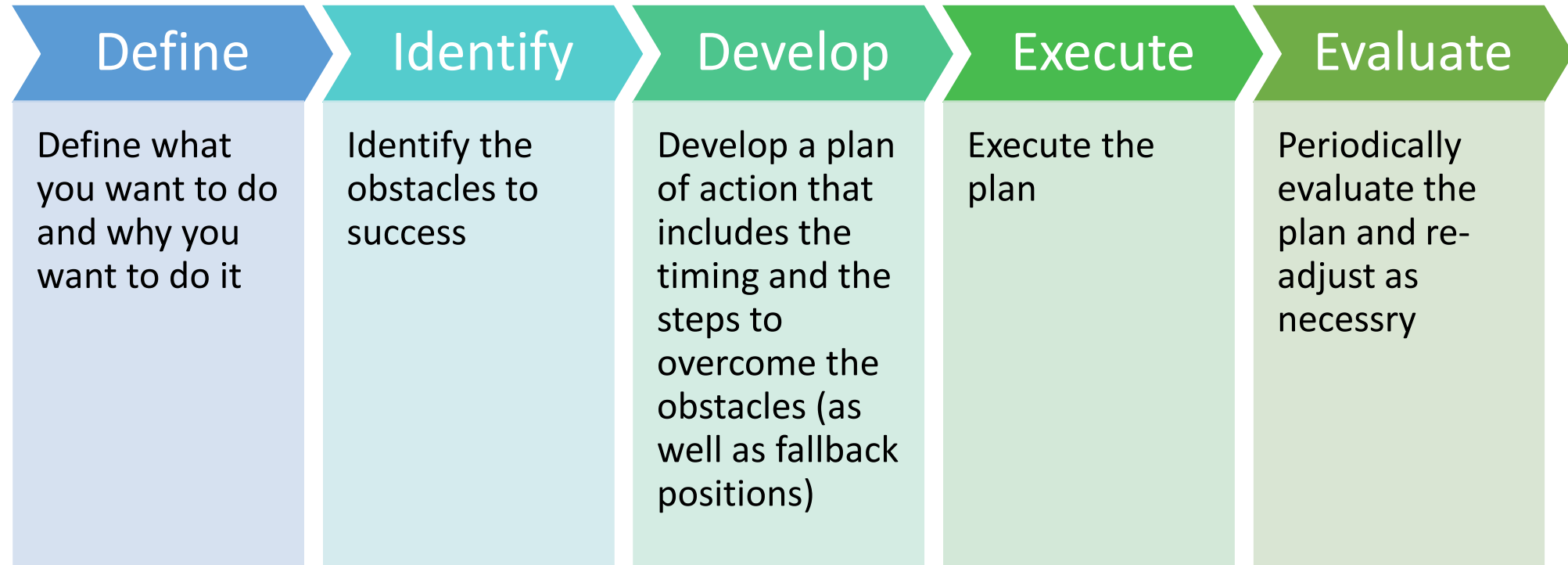
# Community Needs: Climate Change Pressures

- Community concerns about the growing climate crisis prompt:
  - Interest in going green
  - Insecurity about outages
- Creates opportunities for:
  - community/individual solar energy
  - Community/individual battery backup
- Same opportunities exist for commercial accounts
- Cost allocation directly to benefiting customers, rather than socialized across all customers in a class



# Strategic Considerations

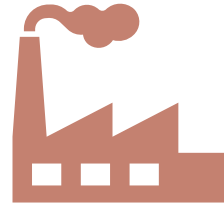
# Steps to Develop a Strategic Plan



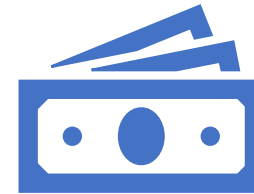
# Concerns Unique to Regulated Utilities



PSC/Legislative  
concurrence - the  
proposal must include  
a win for the customer



Sensitivity to  
concept of  
'stranded asset'



Cost allocation

# Shifting Attitudes – Recognize What Needs To Change

## Traditional Utility Attitude

- Noncompetitive
- “Built here” bias
- All customers are equal
- Everyone pays the same rate
- Mass marketing to all customers

## Retailer Attitudes

- Retail environment
- Appreciates vender/supplier partnerships
- Segments customers appropriately
- Premium service = premium price
- Targeted marketing based on customer segmentation



# Pricing Models

- Rate based approach (typically volumetric) – all customers
- Hybrid approach – revenue sharing with vendor collaboration, pricing applied to select customers
- Establishing a separate line of business

# Initial Obstacles

## Internal

- Integrating new functions/devices into old systems/infrastructure
  - Both internal IT systems or grid devices
- Risk aversion by leadership

## Regulatory

- Distrust and/or prohibitions

## Customers

- Customers have high expectations based on experiences with other suppliers

# Identify The Opportunities

## Collect regional market data

- Sales projections for EV, Solar, Battery, generators, Smart Home devices
  - Ex: National projection of EVs in the US is 15% of total car sales by 2030
  - Federal/State policy changes could push that as high as 50% (International Energy Agency)
  - Policy changes are expected as governments respond to growing climate crisis.

## Decide if you want to be on the 'bleeding edge' vs a 'first follower' in providing a service/product

- The decision may be tied to the results of the market research and should reflect your customers interest, not the internal comfort.

## Define the Time Frame

Public discourse, policy changes, climate concerns are all pushing more entries into the entire energy marketplace – utilities have to recognize the need to move quickly

Learn to accept the data/experiences from other utilities; resist the urge to run a lot of long 'pilot programs'.

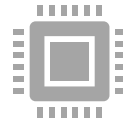
### Define success

- # of items sold
- # of households enrolling
- % of qualified customers participating

# Understand Utility Expertise



Long history of responding to outages can be parlayed into timely response to customer requests



Deep knowledge of integrating new devices into the grid can provide a roadmap for testing and integrating edge of grid devices



Long history of securing adequate supply chains



Utility expertise in running a customer contact center can be a significant help to some partners

# Understand Utility Limitations and Partner Opportunities

- Partners/vendors may/will have:
  - A more mature understanding of retail attitudes
  - More mature product testing protocols
  - Better retail marketing skills

# Operational Risks

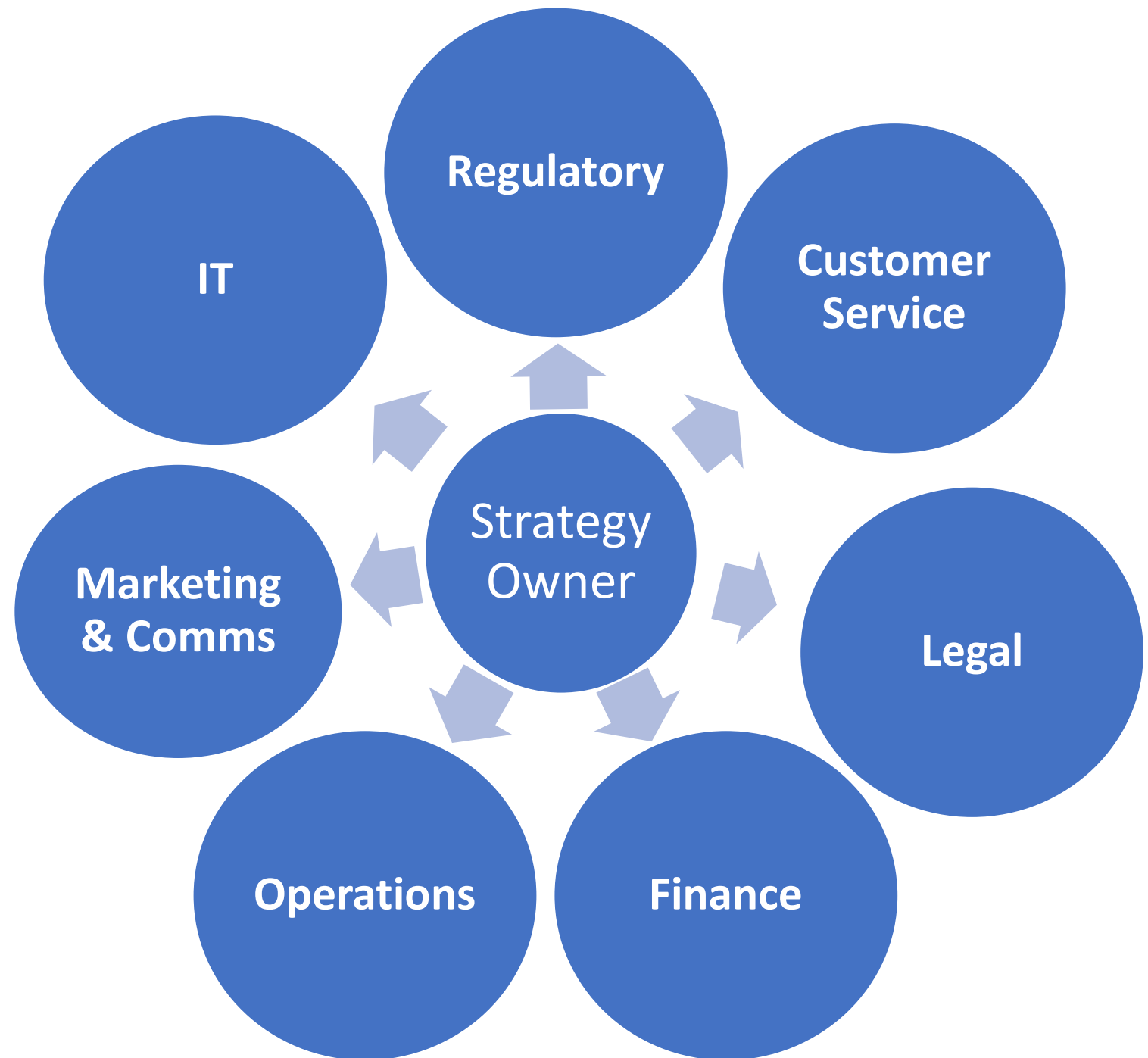
Siloed organizational structures may inhibit achieving cross organizational goals

Older IT systems may inhibit vendor integration

Lack of experience in external partnerships

Personnel may have immature customer relationship awareness

# Organizational Alignment





# Plan for Success

- Programs typically start small but must have the means to quickly scale for success
  - Adequate customer contact avenues
  - Adequate supply chain resources
  - Additional personnel (internal and external)



# Beyond The Meter



# DEFG

Customer Insights & Advisory Firm

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