

# Roundtable Discussion

Part 1 – Utility Only

# Survey Questions

- What are utilities' greatest customer program **opportunities** next year?
- What are utilities' greatest customer program **challenges** in **next year**?
- What will be utilities' greatest customer program **opportunities** 10 years from now?
- What will be utilities' greatest customer program **challenges** 10 years from now?
- What additional topics would you like to discuss?

# What are utilities' greatest customer program OPPORTUNITIES next year?

- Aggregating demand response
- Broadband
- Commercial efficiency
- Customer Engagement
- Energy Resource Integration
- LED Lighting
- Multifamily programs
- Shifting to Midstream programs
- Offering renewables and energy efficiency programs at affordable prices
- Off-grid energy production
- Working with local non-profits
- Demand Side Management

# LED Lighting

- Residential lighting isn't the opportunity anymore, those savings are accounted for....what's next
- Payback on LED street/parking lot lighting is there
- Component sales, but LED's are getting too cheap to be feasible for savings, paying customers to take them
- Potential study at Colorado Springs Utilities – amazed at how many T-12s are out there

# Aggregating Demand Response

- Aggregation is where you control; what are utilities doing to aggregate?
  - Xcel is pursuing full-scale DRMS platform across 8 states, some interact with MISO and some stand alone, but one operator will be able to drill down to individual feeders and even devices to control DR
  - Some Thermostat devices starting to be aggregated, water heaters and pool pumps coming

# Shifting to Midstream Programs

- Some utilities have experience 50% increase in participation shifting to midstream
- Regional approach? Could be powerful to drive EE at distributor level across the state

# What are utilities' greatest customer program CHALLENGES in next year?

- 2-way meter technology
- More renewable energy on grid
- Energy Efficient Home Retrofits
- Customer Engagement
- Hard to reach customers
- Explaining DR benefits
- Extreme weather impact
- Empowering customer resource decision-making
- Raising awareness
- Year-round rebate funding
- New technology education
- Demand Side Management

# 2-way meter technology

- In order to establish rate-setting programs you have to have it
- Competing resources within an organization are an issue, but coordinating departments so everyone can have that data is key – how do you break down silo walls? How do you get organizational buy-in?
- ADD – Automated Digital Dialogue – communication protocol will be a strategy for making that work
- People that want to know what they are doing (customers and customer service) can observe for EE analysis and also for DR (control the office before we control the customer) – helps keep an eye on peak demand
- 100% advanced meters – about a year and a half on most customers at 15 minute intervals, customers are able to see up to the previous day's usage (different interval options)
- Started as a circuit deferment program rather than DR, but the potential study helped tie in the data and see where the loads actually are



# Explaining DR benefits

- Easy to give away money to a customer to do nothing, but a big challenge to get real buy-in and help a lay person understand
- Nest traffic rush-hour technology does a good job, but real need a one-pager
- Explaining peak has a price penalty helps, but there needs to be a better way
- Starting on a non-coincidental peak but will go to coincidental peak – teaching very early before price penalties kick in – and that has to be integrated with 2-way meters
- Difference between customer level rate and wholesale rate (from a G&T perspective) the peak rate allows the wholesaler to tie those together and explain, but haven't found a good answer
- Getting good results on thermostat and water heating switches
- AC and water heaters don't operate as much as we thought they did
- Real data provides a sense of how much DR we are really getting (not what we thought it was)

# Residential vs Commercial & Industrial Demand Response

- AC DR on residential
- Varying levels of notification time frames on C&I

# What are utilities' greatest customer program OPPORTUNITIES 10 years from now?

- Apple car, Tesla smart home, Google self-drive
- Distributed energy resources
- Near Net Zero Building upgrades
- Customer energy choice education and management
- City/county energy reduction requirements
- Energy Efficiency Audits and Retrofit
- Energy efficiency home/building controls
- Commissioning and optimization for persistent controls strategies
- Selling services not electrons
- Updating to efficient infrastructure

# Building Codes

- Adopted 2015 IECC codes – new homes being pushed to net zero
  - Requires substantial amount of renewable energy being produced by the homes
  - Trying to accelerate adoption of renewables, but coordinating government and utility strategies to meet emission goals is a challenge
  - Utility rebates on incremental cost and the standard (code) efficiency is the baseline—if the baseline is the highest possible standard (net zero) there is nothing left to improve over baseline, so looking at overall reduction of energy use in retrofit as a rebate baseline

# Utilities as a service provider

- Customers want savings but they also want comfort and you need to quantify that (easier for municipal than investor-owned utilities)
  - Customers want it easy, and fast, and not take a lot of time
    - Healthy homes, comfortable homes
  - City of Ft. Collins is eliminating time, complexity, and cost barrier
- Non-energy benefits (NEBs) are important, but quantification is the struggle
- Co-ops have always been known as distributors now are distribution, generation, transmission, and service co-ops – economics play in
  - Solar garden = simple and instant revenue to customers (instant is key)
- There is an opportunity for bundling energy with cable, security, etc. and let those providers do the heavy lift to get the savings

# What are utilities' greatest customer program CHALLENGES 10 years from now?

- Changing business model from commodity to a customer-service focused model
- Controlling energy use and emissions
- Cost of energy
- Grid defection
- Stranded assets
- Technology integration
- Offering customer-centric services
- Private sector clean energy production
- Shifting baselines due to adoption of modern IECC energy codes
- Utility culture and attitudes toward change

# Distributed Generation impact on business model

- To stay relevant, the models will have to change and need to happen quickly
- Customers change whether you are ready or not; solar, cell, nanotechnology – generation and use is very different than in the past

# Culture

- New people moving into the industry, and the millennials have different ideas
- Even in the rural areas a younger generation is moving in, and the members are looking for customer service ... it's important to them to understand
- New meters and other enhancements allow the members to view and manage their own data, and hence their usage
- Smart Hub
- Messaging that the data is empowering the customer, not spying on the customer



# Roundtable Discussion

Part 2 - Everyone

# Partnerships

- Need to partner for DR – aggregators and various providers
- Green and healthy homes – quantify savings in terms of days off school and days off work; Achieve energy savings and can apply to all types of residential

# Multifamily programs

- Out-of-state builders that don't care about student housing efficiency – they don't pay the bills, so the multifamily programs can help get their attention
- Bulldozing all-electric multifamily from the 1970s because they are so poorly built; better to partner with the towns to encourage Energy Smart partnering and renovate rather than destruct
- Lead time to capture energy savings is longer for multifamily; may take several years for the builder to receive the incentive and for the utility to see the savings (you have 3-year sales cycle from concept to sales)
- Easier to bring the builders in a second time, but the contractors build to get the bid and you need to have the requirements in place to get them to build it right the first time
- Getting to the distributors, manufacturers, the spec community – it helps to work with the midstream lighting providers; competition and race on price is pushing manufacturers into the retrofit market

# C&I

- Segmentation and targeting
  - Process efficiency
  - Water and waste water
  - National hot button – strategic energy management (SEM) – who has it, who’s thinking about it, what is it? Different definitions around the country, but..
    - Strategic energy manager at the production site co-funded by utilities so that position is always looking for opportunities
    - Some utilities are not even looking at measures, so much as overall behavior – reward on a production normalized basis as long as the energy use goes down
- Trusted advisor relationships
- Loss of generating assets
- Getting capacity from demand side, paying for technology (e.g., ice storage)

# Grow industry

- Indoor growers – really may be surprised if you don't have 2-way meters
- Conflicting regulations
- Hard to reach customer
- Have money to pay for upgrades – don't need assistance, but need education
- Merges with the distribution system operator issue – the system has to step up
- Three states have legalized, up to six in the next election, starts to impact regionally

# Military bases

- Net zero executive order – they need (and want) help complying with the EO
- Asking for incentives
- Georgia Power has done quite a bit and has good info

# Health care

- Shutting down operating room lights not practical
- Shutting own diagnostic machines not popular
- Investing in new buildings/facilities so the retrofit market is dwindling as new construction happens
- Trying to find the contractors already working in health care facilities
- 30% lighting rebate bonus for health care segment
- Working with 3<sup>rd</sup> party to help identify segments
- Partnering with lighting manufacturers to get in front of the c-suite decision makers for long term plans – looking at longer rebate cycles (18-month)

# Customer Journey Mapping

- 2-day adventure defining a customer persona – 1 for residential and 1 for business
- Learning the customer experience and emotions to participate, example:
  - Customer with day-care in her home, subfreezing weather, furnace breaks, possible gas leak – now what is her experience to participate?
- Pull in advertising, brand, corporate communications, web designer, rebate operations, call center teams, and legal to work through this process
- Implement the learning steps – easier now to have informal conversations to make in-progress changes (of course IT and data management is always a formal process)
- Each employee needs to own the customer relationship – you can't pass the buck



# 2-way metering

- Supporting programs in the south and southwest
- Technologies coming on that actually allow the end consumer to disaggregate the node and the utility to inform customer when they are approaching a certain kW usage and what measures they need to take (what they need to shut off)

# EVs

- Making stations available allows people to travel, show on the club share apps, raises awareness
- CNG doesn't help the situation, use renewables.
- DC fast charge is a problem, requires new transformers, etc.
- solar roadways
- Rolling out new charging stations, studying use and making sure rates stay balanced; replicable, scalable model
- Microsoft grant supporting duplication
- mission, objective, goal: looking at peak impact, resource planning and integrating as well as EE
- Customers want help from utility but also choice on the type of vehicle, how bills are paid, rates:
  - Work on communications,
  - dealer networks
  - Electrical contractors for codes and compliance on charger installs (new and retrofit)

# Customer programs

- From a customer standpoint – look at taking the headache away when dealing with customers
- Consider fixed-cost electricity – learn from telecommunications
- Definitely a different model – utilities are always in arrears
- Utilities could study the past usage
- But utilities also need to meet fixed costs
- Pre-pay meters and budget billing provide solutions

# Rising baselines

- Code increases tap out measures
- Limits how much can be done with commissioning
- Efficiency programs challenged – there is a limit to how much insulation or continuing to replace light bulbs
- Reaching a threshold where installing renewables is more effective than retrofitting or improving efficiency

# Net metering

- Localized storage, more solar, other items speak to the end of net metering
- Changing business model – being the DSO speaks to integrating technologies and learning how it fits together

# Additional Topics

- Managing new parties interested in energy efficiency programs for evolving reasons
- Alternative incentive structures for energy efficiency based on changing motivations (i.e., efforts to curb emissions)
- Barriers to implementation
- Energy Storage integration into the mix - and how.
- Ground Source Heat Pump programs
- Forward looking plan development
- Rate increases
- Defining customer service
- Working with the real estate market to value energy efficiency
- Valuing indirect products such as energy assessment to introduce rebate programs
- Educating consumers on how DSM prescriptive/custom rebate programs can aid adoption of energy efficient technologies.
- Software and technology
- Increasing customer participation
- Managing changing power supply & demand challenges resulting from customer power production
- Why fighting the CPP is a waste of time and money