ILLUME

Response to COVID-19: Program Design Innovations

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BACKGROUND

Demand side energy programs and services necessarily engage customers in their homes and at their places of business. In support of public health initiatives to keep our communities well, and to extend additional support to those most likely to be impacted by COVID-19, (including disadvantaged communities and those impacted by social distancing), states, utilities, and energy service providers are being called to rethink their services. As a service to our work community, the ILLUME team developed a quick set of solution ideas to address two challenges faced by energy programs:

- **Challenge #1:** How might energy service providers alter home energy audit program models to make them **(A)** more accessible to hard-to-reach communities, and **(B)** more readily implemented in an environment of social distancing?
- **Challenge #2:** How might energy service providers create new spending initiatives that enable resiliency and provide both energy and social/public health benefits?

In this document, you will find our quick thinking to these two challenges. We hope that it supports you and your team in adapting to this new environment.

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PROGRAM DESIGN CHANGES

Here, we present our ideas for program design changes to consider when adapting to remote and limited contact programs and services.

IDEA #1. ENERGY EFFICIENCY (EE) + HEALTH KITS

Purpose: Energy efficiency will be even less top of mind for people in the coming months, so the goal of this EE+Health Kit program design is to provide customers with something they truly need right now. Pairing that with an educational component on EE (or measures) that people can either implement easily now in the midst of everything else and/or turn back to in 3 – 6 months.

Messaging: Your home is your safe haven. Keep it healthy and bright.

Delivery method: Direct mail, drop off

Potential kit contents – giveaways/direct-install:

- Measures: Furnace filters, LEDs, water filters, low-VOC cleaning products, humidity sensors
- Health: Gift cards, hand sanitizer, meal delivery coupons or vouchers
- Educational: Info flyers and online videos that include EE resources, health information, tips on keeping kids entertained at home, indoor air quality tips, encouragement to use ventilation, to vacuum/clean, manage humidity, optimize plug-load/lighting/appliances/HVAC for energy reduction potential across these end uses
- Allow people to create/order care packages for loved ones (to include in the kit). As a paid (but discounted) product if it contains more "interesting" things like cleaning products or sensors

Potential kit contents – lending

- Indoor air quality (IAQ) or other tests/monitors that people only need for diagnostic purposes; have them then send to a neighbor or ship back

IDEA #2. ALTERNATIVES TO IN-HOME AUDITS

There are a number of alternatives to in-home audits that can be used during periods of social distancing and that can serve as a means of creating a pipeline and prioritizing those with the greatest need so that when programs are able to get back into homes they are able to quickly reach those with the greatest need:

External audits: Auditors can use infrared cameras to do thermal imaging from outside of homes. The company MyHeat does this with customers to help nudge them toward EE, however the ComEd Emerging Tech team is also looking at it to help its income-eligible team better target homes in low-income areas that are in the most need of weatherization. There is a flyer that shows their pilot success and their research question "Can visualizing wasted energy nudge customers towards efficiency?"

Online audits: Create an online audit instead of an in-person home audit. People may not care about saving energy right now but may consider a "home safety and efficiency" audit instead. People are spending more time in their homes and have time to check important systems and make sure they are working.

This could also include having people email (or upload to a dedicated web portal) pictures of how different parts of their home operate and where they "feel" things. This would need to include guidelines/instructions and easy illustrations to show what implementation contractors (ICs) are looking to assess. Ask them to include pictures and/or videos about:

- Areas that are too cold, too hot, drafty
- Health/air quality concerns: mold, mildew, humidity, etc.
- Specific "technical" questions
- Phone follow-ups: Consider an energy auditor review and follow-up (phone, email, mail, etc.) with customers. The auditor could assess residents' needs/goals, pre-weatherization barriers, as well as the energy savings opportunities. Auditors could also meet with customers virtually to go through the home with the customer.
    - Include one-on-one telephone call support in advance to make sure set-up is easy. ICs can personally connect with households that need the greatest support via phone.
    - For low-income funded programs, use a similar approach to identify the means to do business virtually. Most programs currently require in-person visits – this is likely unnecessary. Income verification and information sharing, etc. can be done virtually.
- Super sleuth home health assessment (led by children): Create a program/activity/challenge for kids to go through the house, take pictures, and report on what's going on. Kids may be more motivated and more tech-savvy! And this is a good learning opportunity.

NEW PROGRAM MODELS

Here we share ideas for new program designs that may be beneficial in light of the COVID-19 pandemic.

IDEA #1. ENERGY EFFICIENCY + FOOD SECURITY

Purpose: The COVID-19 school closures are creating food insecurity issues for families that rely on the National School Lunch Program (NSLP). The program could partner with local schools, food pantries, and/or grocers to be a food source for students.

Messaging: Partner with us to help our communities stay fed efficiently during COVID-19 shutdowns.

Delivery method: Set up model energy efficient kitchens (new or retrofit community kitchens) in areas in most need. Partner with organizations to staff the kitchens and prepare the food, provide electric vehicles (EVs) for delivering to students' homes or central locations, and other logistics. This could also rely on local groups that already do food trains for their members (e.g., when a parent is home with a new baby, the local PTO or other organization provides meals for the first month).

Utilities could also include energy efficiency measures like LED bulbs, faucet aerators, tip sheets and a list of resources available to support customers struggling with bill payments with meal deliveries.

IDEA #2. BROADBAND + DSM

Purpose: Support the demand for keeping people/economies connected and to enable connected DSM. This could be accomplished through incentivizing broadband services.

- Although this could have a measurable impact on energy bills via increased energy use in the home in the short-term (TVs, computers, etc.) it also prepares these homes for participation in future smart home programs and provides the opportunity for connectedness during this time of social distancing which may help families concerned about older or isolated family members.
- This time may also provide a unique opportunity to measure the energy reductions at large businesses as they are temporarily closed, comparing that to the overall net effects of telecommuting and home management.

Messaging: Through our partnership with [broadband provider], help your personal/business connections and the economy thrive online.

Note on broadband provider partnerships, there have been efforts where the utility provided a discount on broadband to rural customers, in return for access to the discount the broadband providers delivered energy efficiency kits when they come out to set up the broadband systems. These have had mixed results but are something that could be explored.

IDEA #3. ELECTRONICS

Support online learning by providing deep discounts to school districts for program-qualifying computer and electronic equipment. Partner with retailers to identify the highest efficiency (vs. the cheapest Chromebook) to provide students who do not have access to this type of equipment/services.

IDEA #4. HVAC MAINTENANCE

Create or update an HVAC maintenance tune-up program for this spring/summer that allows customers to "do it yourself, replacing filters, etc. This may entail different messaging, processes, etc. Utilities could promote this online and via websites, through leave behind door hangers or direct mail/bill inserts.

IDEA #5. WEATHERIZATION MODELS

We offer two weatherization models to consider when adapting weatherization programs:

- **Low VOCs:** Review audit/weatherization foam materials and work with contractors to find ways to move to low GWP spray foams (reduce blower agents) and investigate other weatherization practices that may produce VOCs.
- **Pre-weatherization assistance:** Address issues that can often make a home ineligible or delayed for weatherization including "hoarding" by encouraging people to cleaning out closets during COVID-19. Create an online campaign to encourage/recognize/reward people who are cleaning out their closets (and attics) and preparing their home for weatherization while practicing social distancing at home.

IDEA #6. ASSISTANCE/FINANCING

Create 0% finance payment delay or energy payment waivers. Some of the hardest hit will have to decide which bills to pay. Federal stimulus efforts are already exploring this. Energy programs could also provide financial assistance to those in need. Waiver information could be done automatically and sent with a direct install kit. Reciprocity norms may influence customers to install measures.

- This help with finance could be particularly important for folks that have homecare support already in the home, that need to ensure energy services are NOT cut off. These are the same customers who would be at very high risk for COVID-19. These efforts could support some sort of charitable giving/crowdsource funding for families in need. Consider using social hashtags like #SocialDistancingButNotSociallyDistant. An east coast utility has a small business program with an "energy advance" where participating customers can pay their contribution back over 6, 12, or 24 months on-bill (repayment not financing, they are very clear).
- Pay as you save (PAYs) programs also provide an opportunity to help families. These programs which are designed to provide home retrofit work that is payed back overtime on the utility bill, are more commonly run by municipal utilities, would provide the benefit of more efficient homes and lower bills for those customers with the most need. The programs do require being in the home but the groundwork, seeking approval, design, planning and even initial recruiting could be undertaken now, so the program can hit ground running quickly once in-home restrictions are lifted.

IDEA #7. NEW CONSTRUCTION: BUILDING CONNECTIONS

Purpose: Support and/or ensure resilient new construction of buildings (residential, commercial, industrial). For example, resilience to floods and increased other natural disasters/storms.

Appraisal/lending is a big consideration as well (and a potential opportunity). Currently, lower-impact building practices (better wall assembly; building on piers rather than concrete) are not sufficiently valued by appraisers/lenders/bankers so it is actually risky to invest and have your home undervalued as a result. There are "green appraisers" out there, so there is an opportunity to support Green Appraisal training/certification.

Additional thoughts to consider in this area:

- Improved wall assembly and ERVs/HRVs: Building codes are changing to require more continuous exterior insulation (among other things) and as buildings get TIGHTER there is greater need for ERVs/HRVs which traditional builders (and homeowners) don't have experience with, and are skeptical of. There is a need for more education on the importance of ventilation/ERVs/HRVs in new construction.
- Embodied carbon and low-VOC construction materials: Create incentives to curtail building with High GWP (global warming potential) foam. The same new materials with lower embodied carbon also introduce fewer indoor/occupant pollutants (they are not off-gassing as much).
    - Spray foams, insulation materials (rigid foam as well as batting/cellulose), flooring, countertops
    - How can we reduce our use of concrete?

IDEA #8: ANTICIPATED AREA OF GROWTH FOR SMART TECH

Smart products targeting health (fall sensors, indoor cameras, but also things like indoor air quality sensors, particulate matter sensors, and smart filters that alert you to when they need cleaning, etc.) will likely be in high demand. We believe that vendors of these products may soon pivot into the COVID-19 space, leading with these potential health benefits, and then be adopted by more affluent groups. Perhaps PAs can help get in on the ground floor and gain traction within vulnerable communities beyond just cleaning advice and furnace whistles. PAs can actually get some sensors into homes (for health) as well as smart thermostats. There are also opportunities within the context of senior living. Smart devices have been able to help predict cognitive decline in seniors based on motion sensors in their space. Smart home and aging in place (health) programs could help prove this concept.

IDEA #9. COMMUNITY BATTERY STORAGE

Similar to community solar, community battery storage is a collection of battery storage units connected to low-level transformers tp serve houses or small businesses. In this context, the value streams for storage include resiliency (back-up power) to sustain critical load during outages. Though we may have to keep a close eye on supply chain disruptions.

ADDITIONAL CONSIDERATIONS

We offer a few additional considerations for addressing new needs in the market.

CONDUCTING NEED AND RISK ASSESSMENTS

IDEA #1. CUSTOMER LANGUAGE ASSESSMENT

Our industry needs to understand health/safety concerns *in the customers' own language* in order to talk to them about it. We need to understand what people are already doing (or THINK they are doing) to address them, as well as understand what they are willing to do. ILLUME has recently begun some research around this topic, asking people about their health concerns and what they were doing to address them. Knowing what people are already doing to address concerns is important because it gets at knowledge gaps and prevailing myths. For example, we observed that instead of "air quality" customers used the words: clean air, mold, allergens, humid.

IDEA #2. HEALTH ASSESSMENT

Include a few short health assessment questions in all enrollment forms, including health conditions, as well as concerns. If intake staff, auditors, or assessors hear health concerns/considerations through discussion, they need a place to record this too. This will enable the industry to start understanding individuals' goals/needs and build a population and EM&V baseline.

IDEA #3. EVERYTHING WE EVER WANTED TO ASK BUT DIDN'T HAVE THE TIME (SURVEY)

Develop a survey of all the things we want to know from a specific demographic and give people money toward their electric bill to complete it (or a chance to win a years' worth of free energy, or a simple gift card). Marketing around helping those affected by COVID-19 (e.g., those homebound and not able to work). This could incorporate some of the virtual home audit ideas here as well (e.g., have them send in pictures/videos).

MESSAGING STRATEGIES TO CONSIDER

IDEA #1. HELPING THE ELDERLY AND OLDER AMERICANS

Target audience: Position energy efficiency programs as a way to take care of the Baby Boomer generation (e.g., your parents/grandparents/older friends and relatives) and make sure they are safe. This is a departure for promoting things for YOUR home; promote as a way to take care of others.

POSITION:

- Make it easy for family members to refer or sign someone up. In addition to standard intake/enrollment forms, have a path for referrals, with more limited information that program staff can reach out to.
- Allow people to create "healthy while home" care pages of educational info + equipment for home-bound relatives (whether due to COVID-19 or other factors). Ideally allow customizable kits (see kits discussion above).

Messaging: Generally, it's more challenging to convince older people to make changes to their home for any efficiency programs, and even with their health at risk, it may still be challenging. Include messaging around reducing the uncertainty in your electric bills during this uncertain time.

IDEA #2. ENERGY + HEALTH CAMPAIGN

Purpose: The health industry needs to help people do the right thing right now (wash hands, social distancing, etc.), but they are likely unable to get the word out as much as they'd like. Energy efficiency programs may have the opportunity to help the health industry get their message out, while also spurring interest in efficiency.

Overview: Create a contest to get people to share what they are doing while at home and give them something to do and talk about. This could be incorporated into the energy efficiency kit idea mentioned in the PROGRAM DESIGN CHANGES section. Also have customers video themselves walking through their house pointing out how they are doing EE, staying active, being social through the internet (social distancing).

Messaging: Spending a lot of time at home? Now is the time to check and make sure your home is safe and efficient! *Learn how to improve indoor air quality to support staying healthy at home.*

Target messaging around what end uses will be impacted most by families being in their home all day (more energy use from computing from home all day, lights on all day, HVAC use all day), and then think of ways to tailor EE resources to curb that (more thoughts on this in the PROGRAM DESIGN CHANGES section).

IDEA #3. INNOVATION IN COMMUNICATION AND EDUCATION DELIVERY

This is an excellent time to innovate around communications platforms and strategic partnerships. Consider:

- **Video content:** Live/interactive video that helps customers walk through their home and identify ways to save energy/money using a "typical" home in the video. The video could show what a typical audit would do (minus the blower door tests), show people how to install things, how often to change filters, etc. This could be promoted through typical media channels, as well as working with local news stations to do interviews to promote—do the interviews virtually with news hosts to promote social distancing, and also promote how to stay connected at the same time (partner with Zoom or otherwise).
- **Internet/retailer partnerships:** Partner with Spectrum or a mobile service and/or retailer to get people more connected in their area (through broadband or just basic mobile smart phone service) as a way to benefit that population. Offer them free direct installs—if you get them internet, they are more likely to take a survey that asks them to document the types of things they have in their house–with that you can mail them the right furnace filter, or other DIs.
- **Meal/food assistance:** Distributing energy efficiency measures along with the meals that are being distributed to kids at schools, food pantries, meals on wheels, etc. (similar to how utilities have distributed LEDs at food pantries in the past).
- **Lesson Plans for Kids:** Include an education/lesson plan video with materials for caregivers with kids at home. There are opportunities to address how energy use is different with families or children spending more of their day at home. Could also pair the EE kit and instructions/video, etc. with a mini lesson plan for families to share with kids that are home from school.
- **Partnerships with doctors/medical community:** Reach out to the medical community and ask about ways utilities can support via resources or charitable donations to alleviate constraints on the medical system.

MARKETING, EDUCATION, AND OUTREACH INNOVATION

Consider the following education and outreach messaging ideas:

- **Load peaking:** If load is peaking at a location that is hard to manage, create messaging around reducing usage at certain times so that those in need can have energy.
- **Power will stay on:** General messaging that utilities will be keeping the power on and all lines maintained. Sometimes people fear the worst and simple messaging to reassure customers may drive satisfaction. For customers that have respiratory issues and may rely on machines for oxygen, this could be a much-needed reminder/relief.
- **Retirement communities:** *Health/wellbeing* messaging that specifically impacts these communities.

IDEA #1. IAQ EDUCATION

Most people need direction on what contributes to good/poor indoor air quality. It's invisible. Even harder to see than energy because it's not hot or cold. The HVAC industry is starting to use this to sell products, especially air cleaners/purifiers, so we can expect some misinformation out there soon. Utilities and/or energy programs can provide guidance on the most important things for people to do. Even if news/media coverage of IAQ is increasing, it's probably not getting to the most vulnerable people/households. Utilities can help spread the word.

Messaging ideas could include:

- **Cooking fumes:** Always use the fan when cooking on a gas stove or in the oven. How to manage humidity in the summer and winter.
- **Using your ventilation:** How mold and mildew can form, the role of humidity and outdoor/indoor temperature differential. What mold/mildew can mean for your health. Five easy things people can do today to improve indoor air quality, selecting from a list of items, such as:
    - Use kitchen ventilation/fans to maintain good indoor air quality (*provide incentives to have fans installed that vent outside*)
    - Use bathroom fans to control/minimize indoor humidity
    - Safely mitigate and clean mold—give people guidance on what to do when they see mold, what does it mean, how to clean it, when to ask for help
    - Change air filters regularly
    - Look for signs of humidity build-up: For example, in the winter, condensation on the windows in the morning – this means that ___ and you should ___
    - Vacuum carpets and rugs
    - Regularly clean other fabric surfaces (e.g., drapes, bedding, pet beds) that attract allergens People are going to be using a lot of cleaning products that produce VOCs and worsen IAQ – tips on cleaning product safety (high VOC products can cause throat and respiratory irritation)
    - Invest in an air purifier (provide incentives?)
    - Consider a dehumidifier in damp areas
- **Cooling use:** Consider suggesting when to use AC vs. opening the windows, considering outdoor allergens from pollen, traffic, pollution, etc.
- **Renter messaging:** One of the things we heard in our non-participant work on the east coast is how hesitant people are to contact their landlords for fear of being evicted, or for fear of being reported (e.g., if they are undocumented)—suggestions to "contact your landlord" may discourage people who are exactly the communities they are trying to reach. Provide tips that people can do on their own, with the utility.

Delivery methods:

- **Graphic illustrations:** Create graphic illustrations of these; make it a COVID-19 challenge to do all of this cleaning with incentives/rewards? The last thing most people are going to want to do after working at home is clean, especially if they have kids.
- **Short share-able videos** (30 – 60 seconds max) over the next 3 – 4 weeks from public health experts (sponsored by utility) on "staying healthy while indoors" and indoor air quality. What "spring cleaning" you can do and referrals to audit/weatherization programs.

OTHER RESOURCES FOR EDUCATIONAL MESSAGING

ASHRAE Online Conference March 27:
https://www.eventbrite.com/e/corona-virus-and-your-indoor-air-quality-tickets-99081101241
"ASHRAE has developed proactive guidance to help address coronavirus disease 2019 (COVID-19)."

Contractors of America just blogged about Coronavirus and IAQ:
https://www.acca.org/news/guest-blog/coronavirus-other-contaminants-indoor-air