TEPRI Webinar: Pathways for DERs to Reduce Energy Burdens

Q&A Summary | May 26, 2020

Question 1:
Can you tell us a little about that extremely bright yellow census tract in the single-family homes map? Why is that tract so full of potential?

Answer 1: Erick Jones
The calculations are based on available rooftop space and number of low-income households. So, the bright areas have both a high concentration of low-income households with available solar rooftop space. We used the NREL Solar Potential for Low- to Moderate-Income Households to inform our data (https://data.nrel.gov/submissions/121). A more technical explanation of our calculations will be available in our report.

Question 2:
Could you clarify how community solar programs have the potential to make solar more affordable by aggregating costs? What is meant by aggregating costs and why is that beneficial for low-income?

Answer 2: Erick Jones
Solar generally has high upfront costs, and the idea behind community solar is that by sharing those upfront costs, the cost per household is reduced hopefully significantly. This should give LI households the ability to invest in green energy. Sunnyside is one such program (https://www.solarunitedneighbors.org/sunnyside/) and we are working with another in San Antonio. Also, I have written a journal paper (still in review) that investigates this exact question, and found that investing in community solar lowers the cost of energy overall and encourages investment in solar for everyone in a community. However, if this is effective in the real world is currently unknown.

Question 3:
How can this be accomplished in deregulated areas where the municipality does not own the utility?

Answer 3: Erick Jones
Harris County is in a deregulated market, and our work specifically applies to them. They must improve energy efficiency by PUCT edict and a certain percentage of those improvements must be to hard-to-reach customers. See snippet below. (https://www.puc.texas.gov/agency/rulesnlaws/subrules/electric/25.181/25.181.pdf). Therefore, CenterPoint must target LI households with its energy efficiency programs. However, they have found that this benefits them (as well as these households) by reducing their energy bills, their peak demand loads, and of course are more able to pay reducing collection costs and bad debt.

Question 4:
What is the state of the grid infrastructure in Harris County? Is the infrastructure there to increase the economic potential of DERs? Can a project like this work in the Rio Grande Valley?

Answer 4: Erick Jones
While we did not study the grid infrastructure condition of Houston, our study found that energy efficiency (a type of DER) was where most of the economic potential was. Furthermore, due to the PUCT rule that mandates that a certain percentage of energy efficiency programs must reach hard-to-reach customers (see Answer 3), utilities must increase the energy efficiency of low-income households. Therefore, the portions of the Valley under PUCT regulation would be a good candidate for this approach.

Question 5:
Can the panelists repeat who is doing good work on different methods for credit checks?

Answer 5: Julia Emerson
PosiGen

Question 6:
For follow up: Solar potential slide shows source as NREL. Dallas Comprehensive Environmental & Climate Action Plan (as well I think as Houston's CAP) use Google Project Sunroof. Google's data seems to be publicly available but I'm not sure where to find NREL's. Sunroof appears to only look at rooftop potential, and I'm not sure how it treats potential for new construction. 1) Where is the NREL data available? 2) Any comments on comparing these two sources?

Answer 6: Erick Jones
NREL released a study called Rooftop Solar Technical Potential for Low-to-Moderate Income Households in the United States. It is an extension of an earlier dataset that used LIDAR data for buildings in 128 metro regions for an accurate representation of potential.

Google Sunroof is a great source and is much easier to work with. Its estimates are based on satellite imagery (Google Earth) and weather data. However, it is not as precise as its data can be old and its machine learning algorithms can misinterpret shapes, and, by extension, potential.

However, it is still a great tool to use to get a relatively accurate general idea of solar potential. In fact, we used Google Sunroof to calculate the solar potential of Galveston in a recent project where we were looking for sites to place community solar. However, when we actually cited the potential installations, we used a more accurate program (Helioscope).

Question 7:
Curious what recommendations you have for a regulated state with higher than average electric rates; our regulators don't like one class subsidizing another class so we're wondering how to propose LI programs that can be cost effective for all customers (e.g. help lower utility bad debt/uncollectible expenses). Thanks much!

Answer 7: Erick Jones
CenterPoint (Houston's Electric provider in the deregulated market) must target LI households with its energy efficiency programs by a Public Utility Commission of Texas's rule. They have found that this benefits them as well. By improving energy efficiency in households, their peak demand is reduced and thus they need less of the very expensive peak electricity. Furthermore, it also reduces their energy costs and, by extension, their energy burden which allows households to afford their bills. This reduces collection costs and bad debt when those costs eventually have to be written off. A class agnostic program, in theory, will realize that the biggest bang for your weatherization and energy efficiency buck is in low-income houses where small changes (e.g. switching to LED lights) goes a long way. For more examples on how energy efficiency and other DERs benefit a variety of stakeholders, look at this paper from the Rocky Mountain Institute (https://rmi.org/insight/economics-of-zero-energy-homes/).

Question 8:
How could information about this type of program be disseminated to the lower income communities?

Answer 8: Erick Jones
A lot of research shows that authentic connections with trusted organizations already established in communities is often the most effective engagement strategy. These community-based organizations can be churches, community centers, and other local trusted groups. It is helpful to establish relationships early so they may be included in both effective program development that meets the needs of the community as well as serve as a channel for information dissemination.