SMART ENERGY CONSUMER COLLABORATIVE

2022 CONSUMER SYMPOSIUM

Advancing a Smarter, More Equitable Energy Future

Co-located with DistribuTECH

DALLAS, TEXAS / MAY 24-25, 2022

#SECC2022

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Before Build Back Better

Grid Resilience through Superior Customer Engagement

Angela Amos

May 24, 2022

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WHAT IS UPLIGHT?

Uplight powers the transformation between energy providers and their customers toward a clean-energy future.

All for **the greater good** of our communities.

The climate portion of Build Back Better contains four pillars.

Rebates and Tax Credits

Domestic Clean Energy

Environmental Justice

Investment in Conservation

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Uplight's **Plus** yields similar results and also benefits various stakeholders.

Consumers

- Enables participation in DSM and green energy programs
- Fixed bill with no surprise true-ups
- Predictable and convenient
- Device optimization engages customers in real-time resilience efforts
- A tool to manage household budgets

Utilities

- Increased customer engagement at low cost
- Increased enrollment in DSM programs
- Additional tool to help LMI customers
- Aids reliability goals
- Opportunity for new value creation
- Reduces call center volume

Regulators

- Maximize benefit/cost (i.e. a "synthetic TOU" rate)
- Channel to expand program benefits
- Achieves emissions reductions
- Enhances efficiency
- Aids reliability goals
- Supported by some consumer advocates

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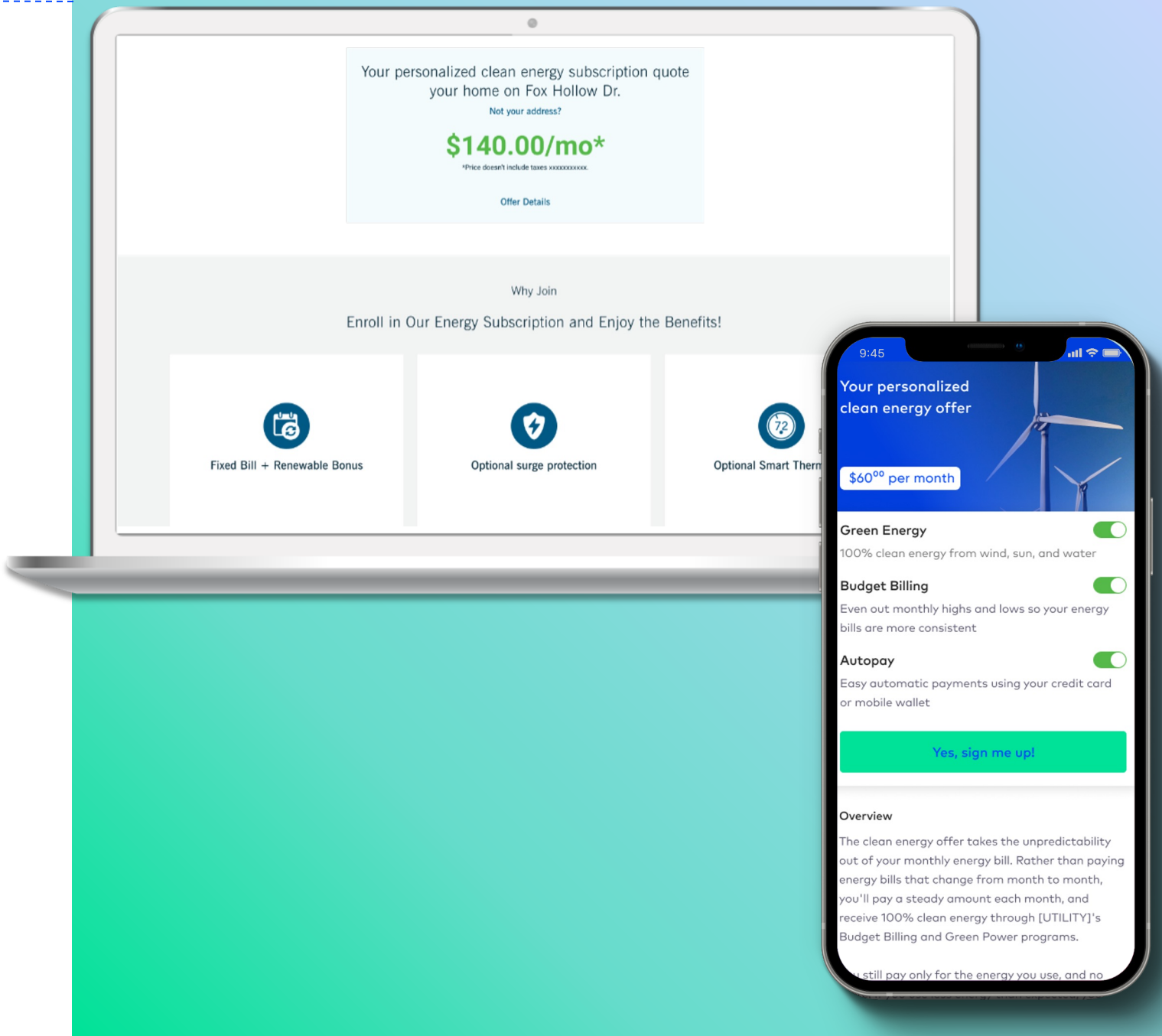
UPLIGHT PLUS

Plus is a subscription energy bundle embedded in a simple, easy to use interface.

- Enables utilities to separate energy usage and customer payments by bundling fixed bills with energy optimization
- Leverages automatic cost signals to devices, rather than relying on price signals to customers to change their behaviors
- Provides the grid benefits of load shift while freeing customers to enjoy convenient and predictable bills



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Pilot results show fixed bill bundles boost program enrollment and energy savings.

aes Indiana	Large Utility A	Large Utility B
Green Energy Fixed Bill Bundle	**Green Energy Fixed Bill + DR**	**Fixed Bill + Energy Optimization**
Status: Launched March 2021	**Status:** Launched June 2021	**Status:** Launched March 2021
Goal: Test customer appetite for a green energy subscription and impacts on program enrollment via a subscription bundle	**Goal:** Test how adding device control to a fixed bill program with no true-up can reduce risk and potentially increase margin on the Fixed bill program (includes renewable energy offset at no addl' charge)	**Goal:** Test Fixed monthly rate + smart thermostat optimization to determine if daily thermostat optimization can offset any potential increases in energy consumption
Results: 2x enrollment in green energy program through the subscription bundle	**Results:** Subscription customers + DR reduced peak energy use by 15-39%	**Results:** Fixed rate + thermostat optimization resulted in 6% less energy use on average

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NRLP’s Green Power Program

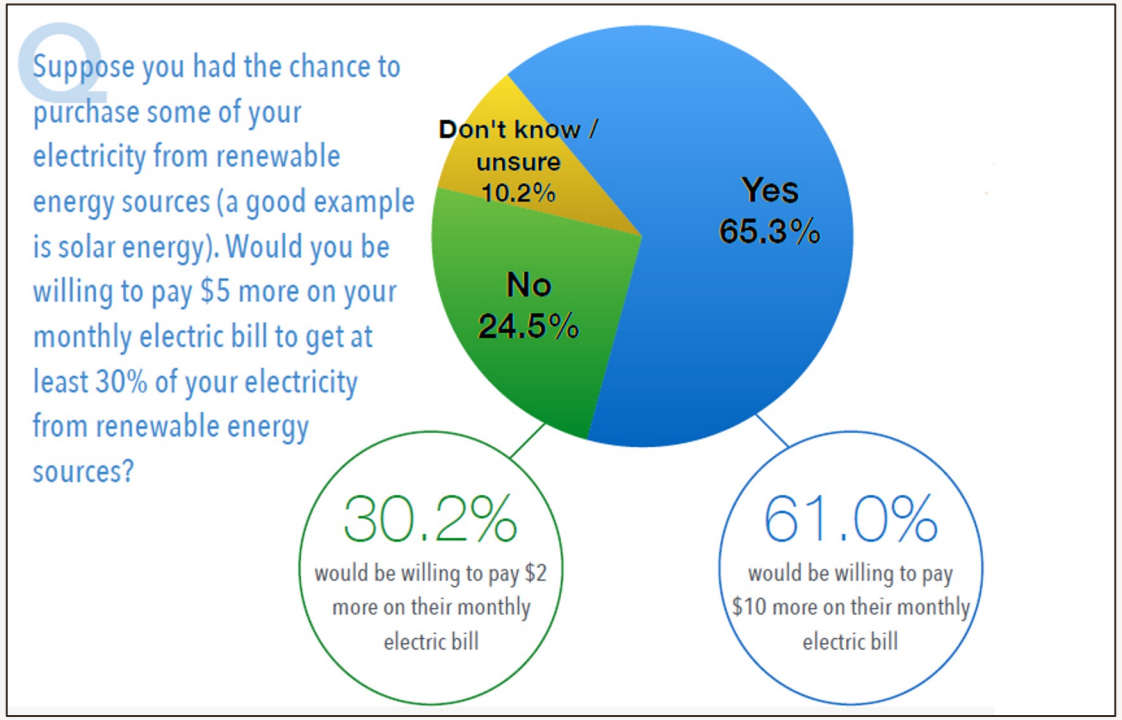
NRLP 2020 Customer Survey

- 65% of customers have been with NRLP less than 5 years.
- Over 61% of NRLP customers are renters.
- A majority of NRLP's residential (88%) and commercial (65%) customers have indicated that clean energy is important to them.
- Nearly 76 percent of NRLP's residential customers reported they would pay a premium for renewable energy.

Source: 2020 Customer Satisfaction Study

Customers are willing to pay a premium

- 65 percent of NRLP residential customers would be willing to pay an additional $5 on their monthly bill to obtain 30 percent of their electricity from renewable sources.



Source: 2020 Customer Satisfaction Study

Overview

- The Green Power Program allows NRLP to purchase clean, hydroelectric power on behalf of its customers.
- The program is available to both residential and commercial customers.

Overview

- NRLP’s Green Power Program is made possible through our wholesale power agreement with Carolina Power Partners, effective January 2022.
- Renewable energy purchased through the program will replace carbon-based sources of energy, lowering the carbon footprint of NRLP, our customers, and the region.

How does the program work?

- NRLP customers can choose to purchase blocks of hydroelectric power to offset their monthly carbon-based electric use.
- Each block costs $5 and represents 250 kilowatt-hours (kWh) of clean energy.

$5 = 250 kWh

- On average, a residential customer uses 750 kWh of electricity per month which translates to many customers being able to offset 100% of their usage with renewable power for just $15 extra per month.

Current Progress

- Nearly 8% of NRLP's total load is now renewable due to the program.
- This has been made possible through commitments from Appalachian State University, the Town of Boone, and Watauga County to purchase clean energy.
- 135 accounts have purchased over 4,700 blocks of renewable energy which is enough to offset 1,582 average NRLP homes with 100% renewable energy.

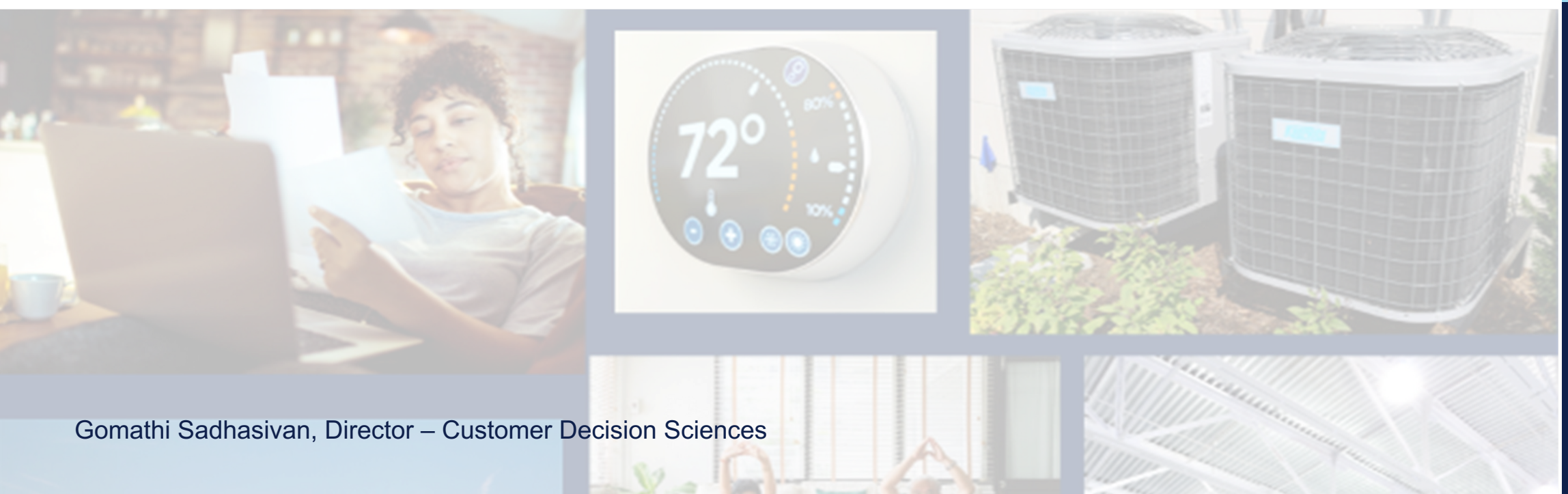
WHEN TRUST MATTERS

Before Build Back Better

Active Projects for a Resilient Grid

Smart Energy Consumer Collaborative Consumer Symposium

24 May 2022

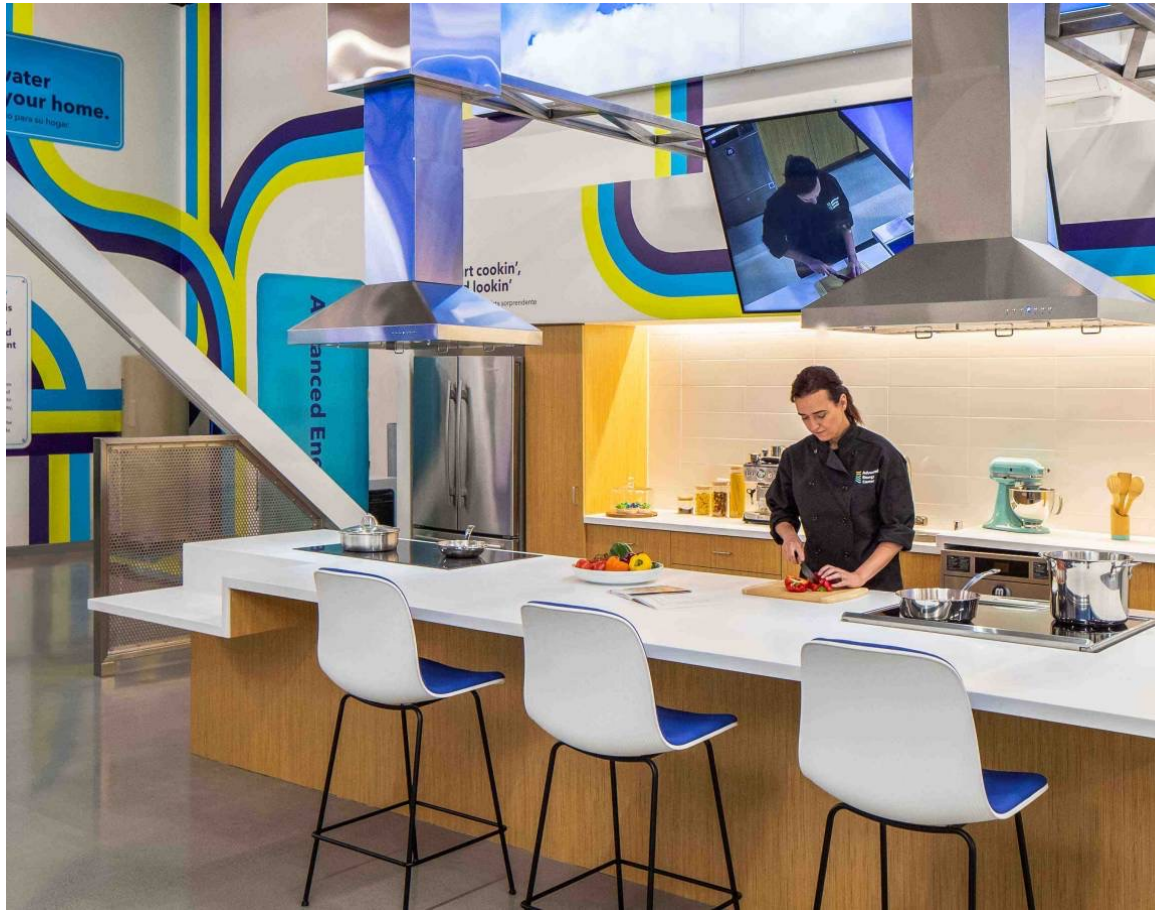


Gomathi Sadhasivan, Director – Customer Decision Sciences

Sonoma Clean Power - Lead Locally

- Electrification program funded by a California Energy Commission EPIC grant
- Project goal: reduce energy usage by at least 10% in residential buildings and 20% in non-residential buildings across 300,000 sq. ft. of existing buildings
- Project implementation phases:
  - Research
  - Demonstration
  - Deployment
- Technologies:
  - Res: HPs for heating/cooling, HPWHs, induction cooktops, ventilation, radiant panels, PCM
  - Non-res: Induction cooktops, heat recovery dishwashers, daylighting, PCM

Advanced Energy Center amplifies ME&O efforts and enables customers to explore emerging technologies



Applying a wider lens for program KPIs

Energy and cost savings

Greenhouse gas and criteria emissions reductions

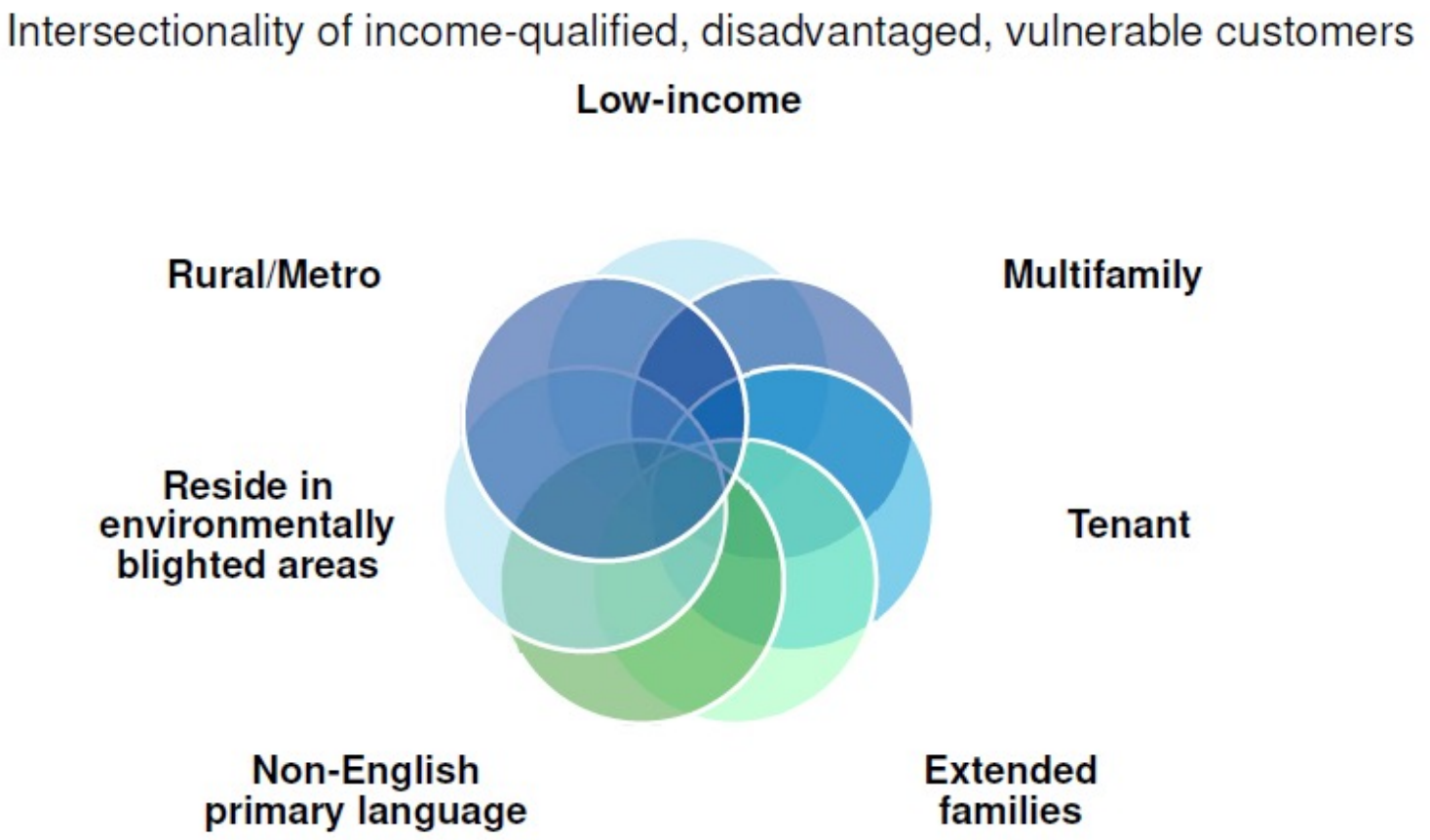
Non-energy benefits such as reliability, public safety, lower operational cost, environmental improvement, indoor environmental quality, and societal benefits

Data on potential job creation, market potential, economic development, and increased state revenue as a result of the project

Marin Clean Energy – LIFT Pilot Program

- MCE launched the LIFT Pilot Program for its low-income customers/tenants at multifamily properties
- Program provides eligible customers energy efficiency and electrification measures to decarbonize space and water heating loads
- Program aims to overcome multiple significant customer barriers
  - fear of property owner retaliation
  - lack of control over any significant upgrades made to their units
  - concerns about sharing personal information
  - immigration enforcement actions
  - financial constraints

MCE LIFT pilot aims to reach intersectional DACs



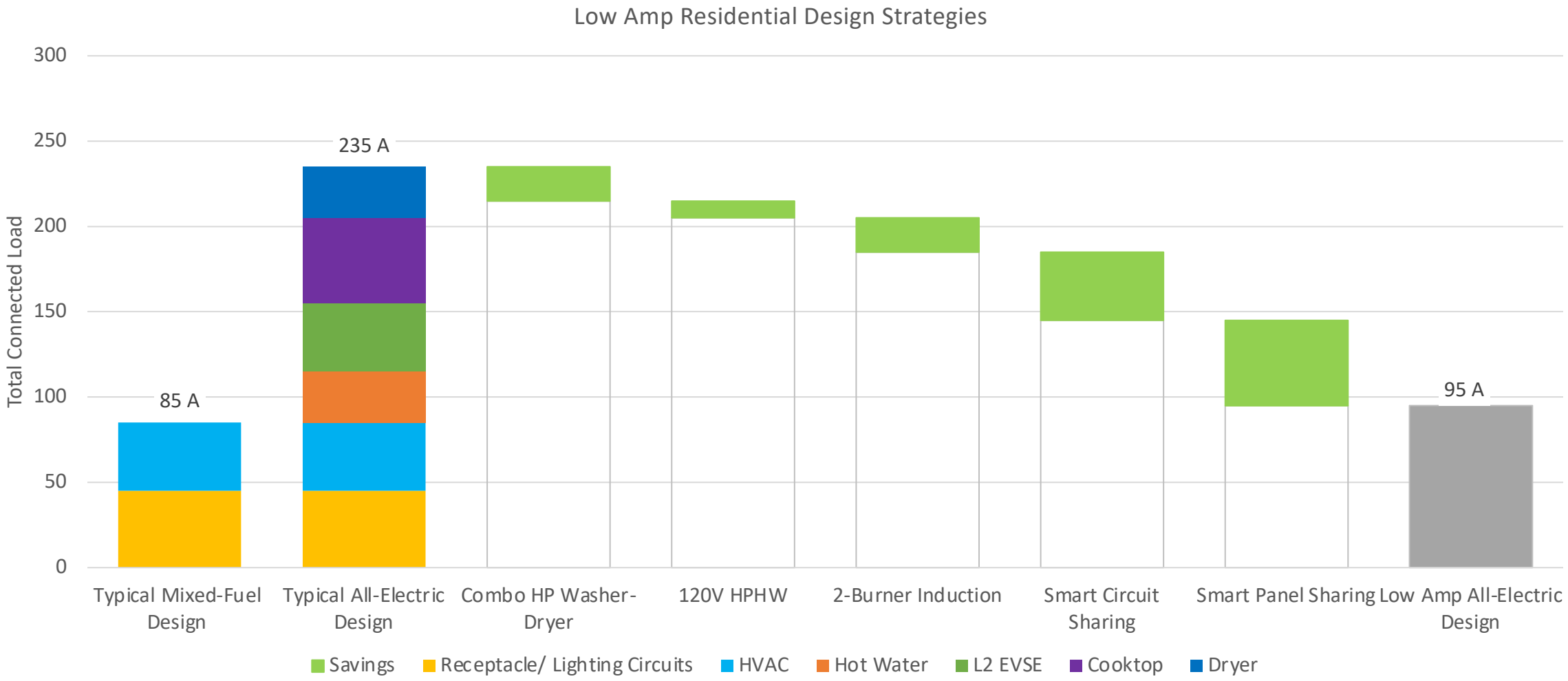
SMUD Direct Burial Cable Study

$750 – $2,000 to 200A (customer cost)

$4,000 - $8,000 (or more) to upgrade (customer cost)

Additional SMUD cost – wire + infrastructure upgrades

Low Amp Technology Summary
“Ampkins” diet to avoid costly upgrades



Low-Amp Heat Pump Water Heater (15A, 240V)

Professional *Prestige*
Hybrid
50, 65 and 80-Gallon Capacities
208-240 Volt / 1 PH
Electric

New to the market in 2020, low amp heat pump hot water heaters provide similar efficiency and form factor to 30A units, while avoiding costly electric upgrades.

Pros	Avoids infrastructure upgrade
Cons	Half the recovery in GPH in first hour as compared to 30A unit (16 gallons)
Market Readiness	Available from 1 manufacturer
Which Customer Types is This Applicable for?	Residential customers with 2 bedrooms or less, as well as commercial with low hot water demand, such as retail or office.
How Many Amps Does it Save?	15A
Co-Benefits	None
Customer Experience	Equal, unless a household of 4 or more
Incremental Cost	Incremental cost equivalent on equipment, savings on electric capacity.
Training Opportunities / Issues	Not well-tested. Released in 2020.
Hyperlink	https://s3.amazonaws.com/WebPartners/ProductDocuments/B68404C8-F5F0-4033-A295-761DCACBBE05.pdf

PSE&G NJ Commercial Programs

- Leverage new PSEG NJ Commercial Programs to drive job growth in New Jersey.
- Ensure that local New Jersey residents have access to clean energy jobs.
- Address lack of diversity in clean energy sector.
- Provide hands-on training opportunities to new entrants to the industry with an emphasis on underrepresented groups.

On-the-Job Training Program framework:

Candidates referred by PSEG Community Partners and screened by DNV's hiring partners, JPI.

Initial cohort of 4 trainees (3 in the C&I program, 1 in the Residential program).

Training duration of 6 months, with 2-3 months in-house with DNV, and the remainder with a key trade ally. Labor paid for by the PSEG EE Jobs Program.

Technical trainings, software trainings, and interpersonal skills trainings offered in addition to hands-on experience.

In sum, these projects underscore that transition to a more resilient and greener grid is enabled by…

- Focusing on areas of greater risk (climate, grid capacity constraints)
- Reducing costs
- Delivering customer savings and non-energy benefits
- Prioritizing customers in need
- Delivering services using a diverse workforce to build resilient communities

Thank you! Questions?

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