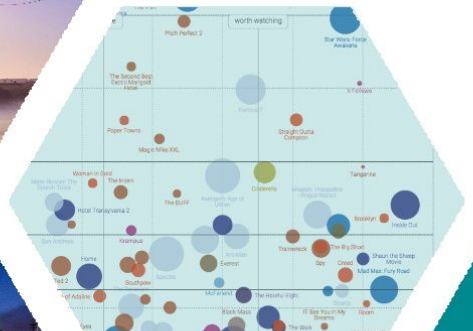







2022 Energy Burden Assessment (WA)

6/15/2022

Findings and Recommendations

empower dataworks

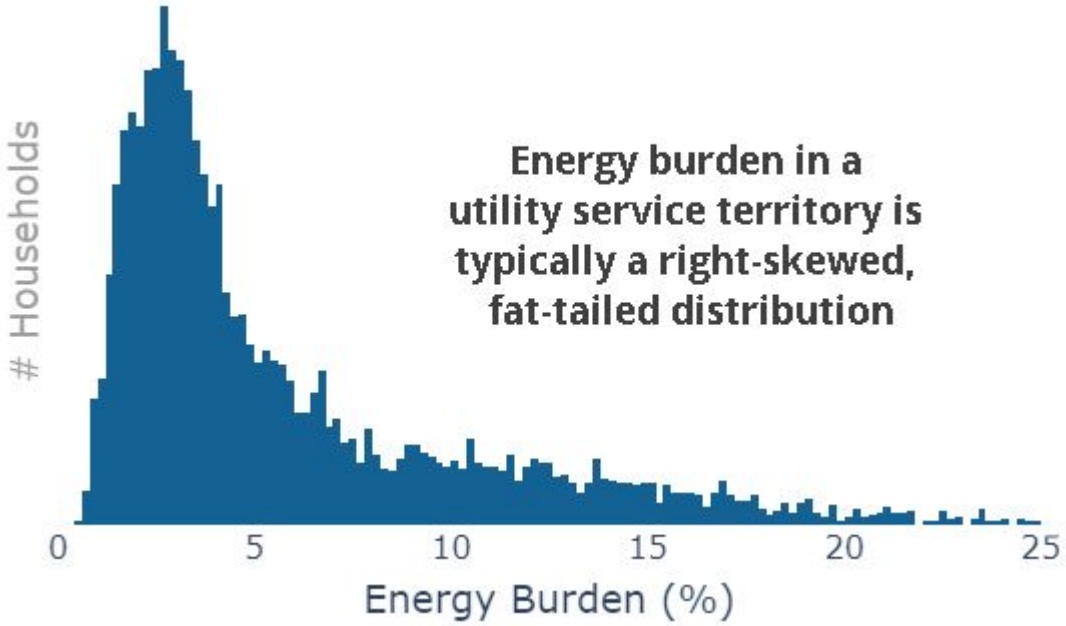
Overview

- ➔ Energy burden assessment for PacifiCorp's residential customers in Washington state
- ➔ Goal is to support PacifiCorp's **CETA Section 120** compliance and planning - Reduce the energy assistance need of customers in Washington
- ➔ Main questions:
  - ◆ What are our equity goals under CETA?
  - ◆ What is the energy burden of our customers?
  - ◆ Are our programs underserving certain customer segments?
  - ◆ Do we need more funding/different program design/better outreach and marketing?

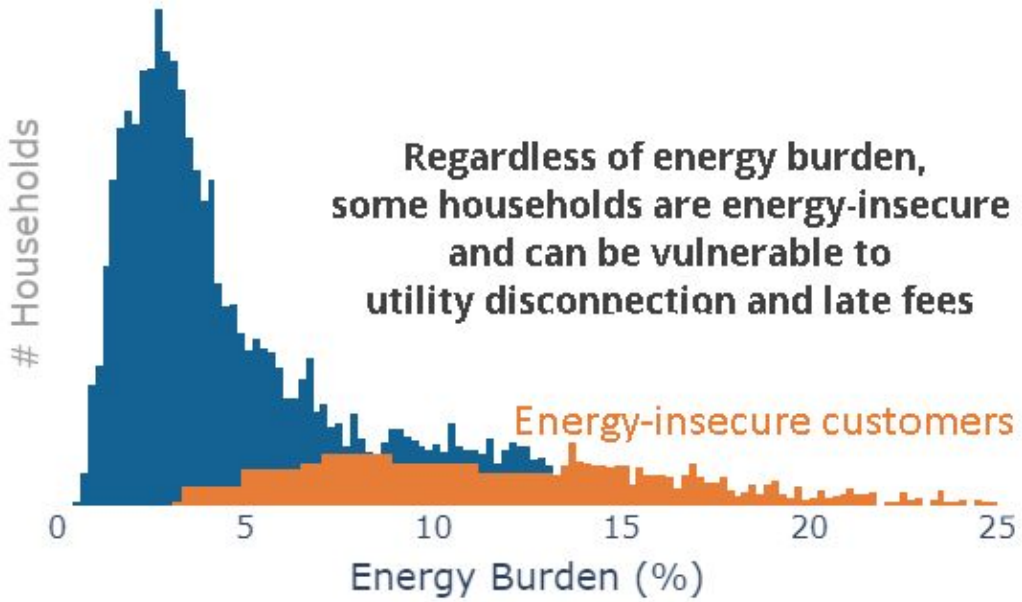
Note: We're using the CETA definition of "energy assistance" programs which includes weatherization, low-income discounts, community solar etc.

The primary metric of success for energy assistance programs is **reduction in energy insecurity**

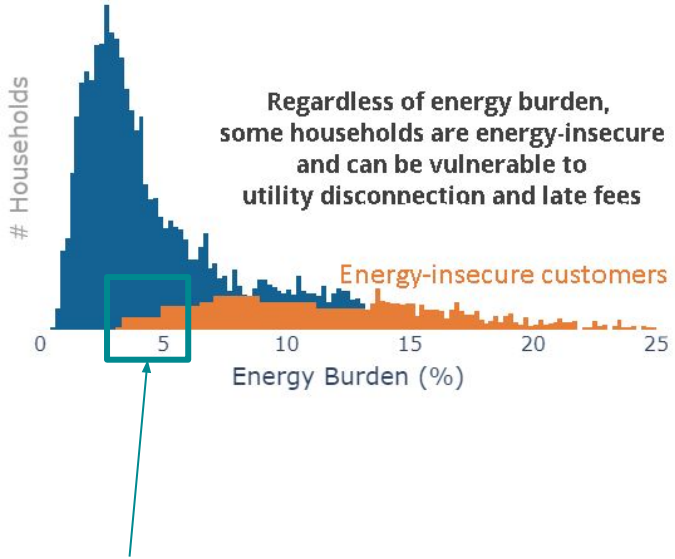
Energy Burden is a Distribution



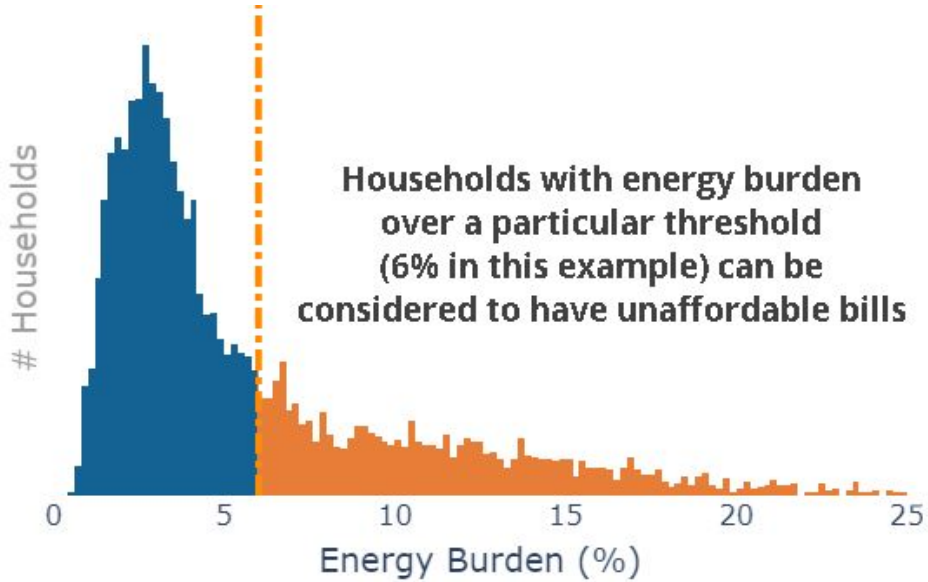
Energy Insecurity is Harder to Measure



Energy Burden is a Proxy for Energy Insecurity



Low burden but energy -insecure



The primary, measurable metric of success is
reduction in energy burden
for high-burden customers

Data Sources

From PacifiCorp:

- ➔ Customer billing data (CIS)
- ➔ Energy assistance data
- ➔ LI Weatherization program data
- ➔ Disconnections

From Third Parties:

- ➔ Customer-level demographic data
- ➔ Building data from county assessors
- ➔ Census data (as needed)
- ➔ Some demographic data from agencies

Insights: **Energy Burden**

Number of Households

~107,000

Low Income Households

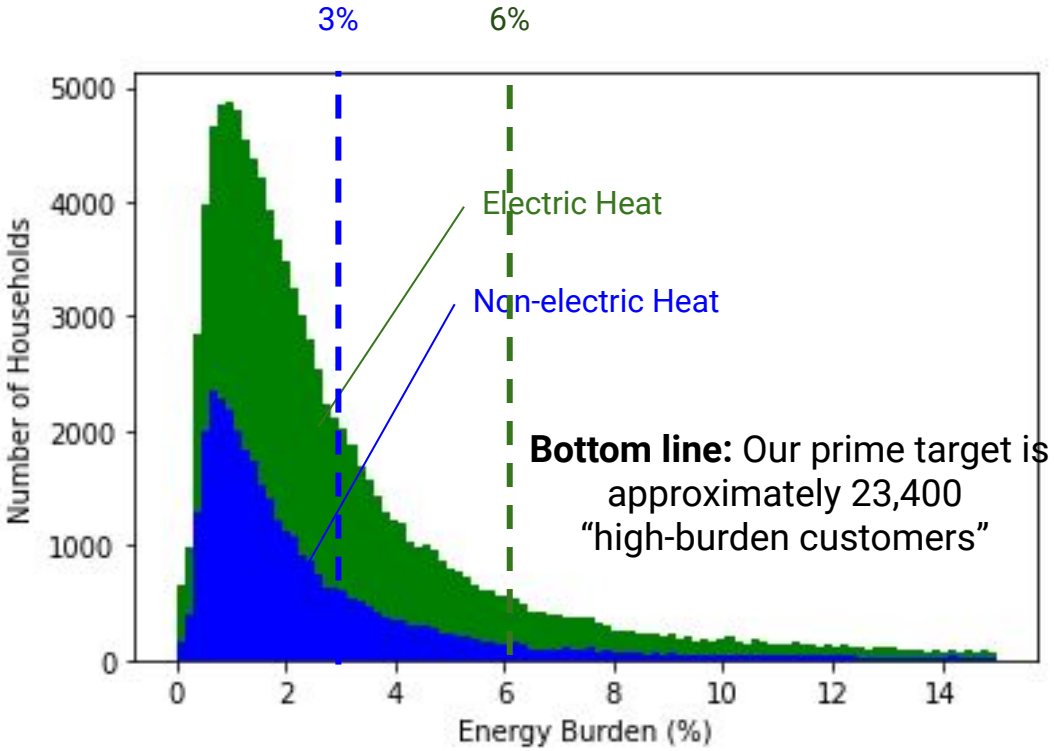
80% AMI ($45k): **~49k**

200% FPL ($35k): **~38k**

Energy Burden (Electricity)
Median: **~2.2%**
Average: **~4%**

High Burden Households

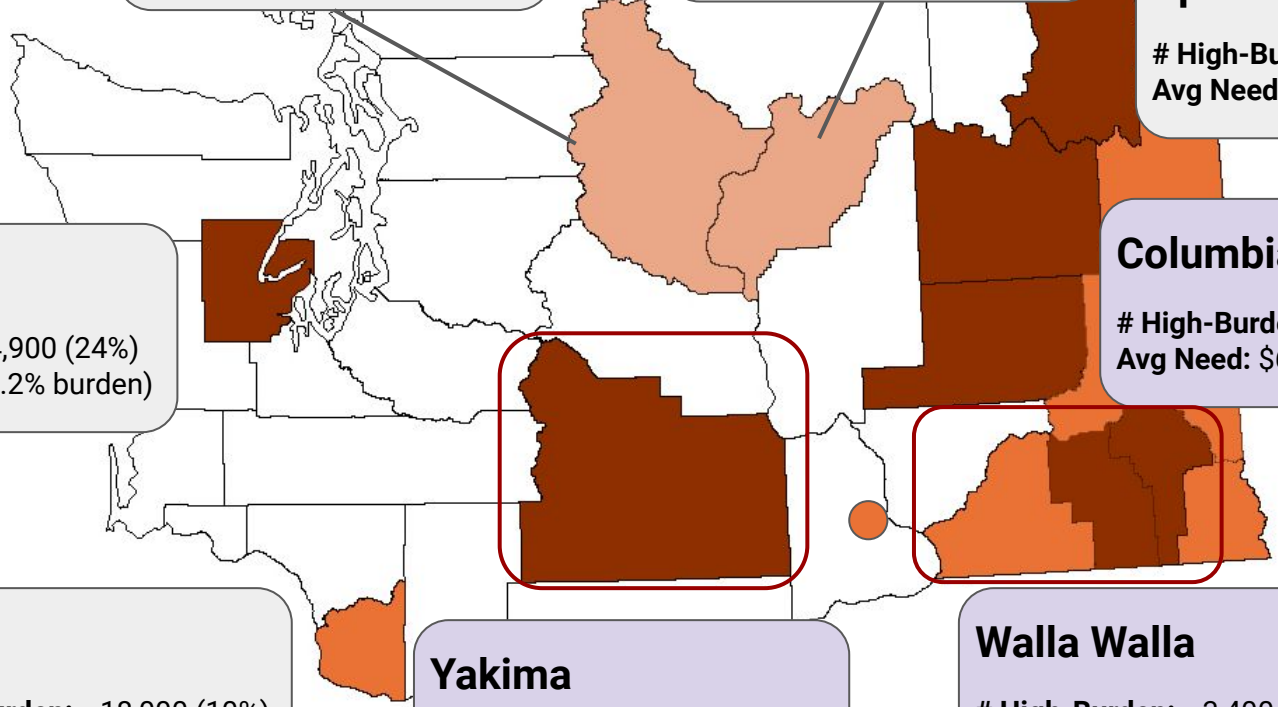
~23,400



Bottom line: Our prime target is approximately 23,400 "high-burden customers"

Note: Energy burden is based on total household energy use. In this assessment, we use separate thresholds for electric heat (6%) and gas heat customers (3%) (similar to NJ and IL), since we don't have gas billing data.

Energy Burden Overview



Chelan

 # High-Burden: ~2,000 (5%)
Avg Need: $320 (1.2% burden)

Douglas

 # High-Burden: ~700 (4%)
Avg Need: $310 (1.1% burden)

Spokane

 # High-Burden: ~31,000 (18%)
Avg Need: $560 (1.6% burden)

Mason

 # High-Burden: ~4,900 (24%)
Avg Need: $790 (3.2% burden)

Columbia

 # High-Burden: ~270 (21%)
Avg Need: $680 (2.3% burden)

Clark

 # High-Burden: ~18,000 (10%)
Avg Need: $570 (1.5% burden)

Yakima

 # High-Burden: ~19,500 (23%)
Avg Need: $660 (2.3% burden)

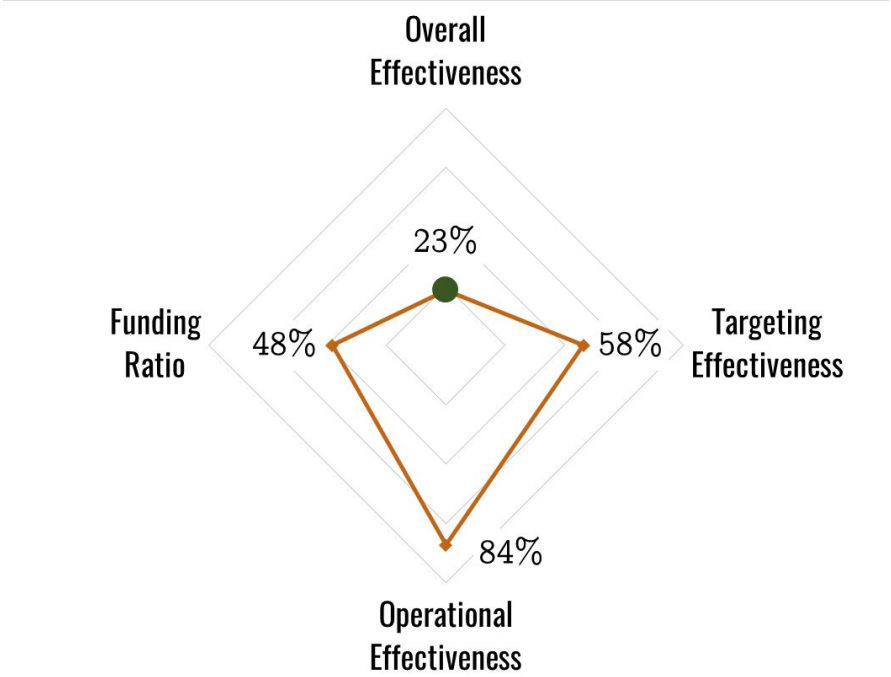
Walla Walla

 # High-Burden: ~3,400 (17%)
Avg Need: $570 (1.7% burden)

PacifiCorp’s
Annual Energy Assistance Need
for Washington state

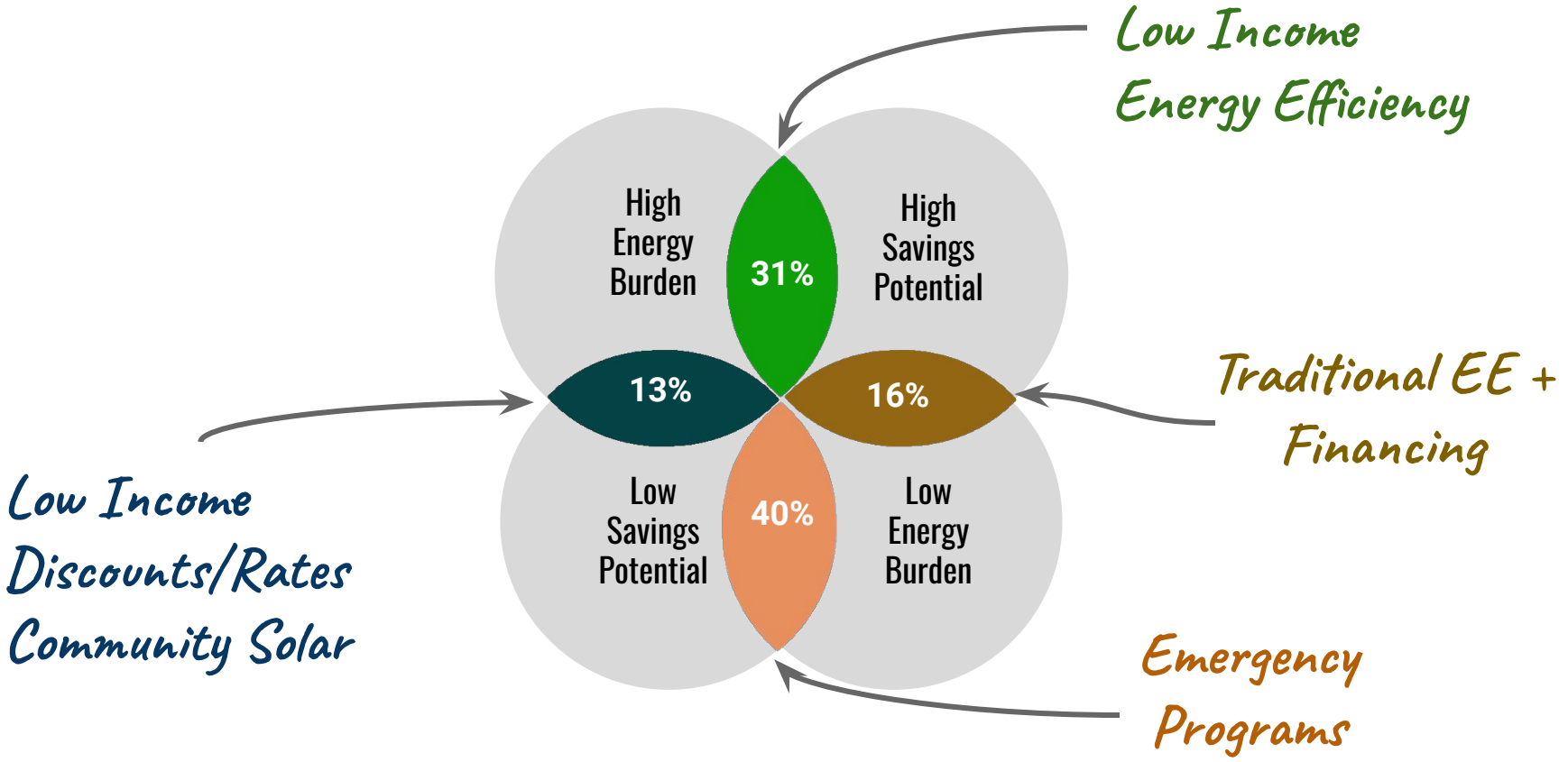
~$15 M/year

Achieving **Energy Burden Reductions**



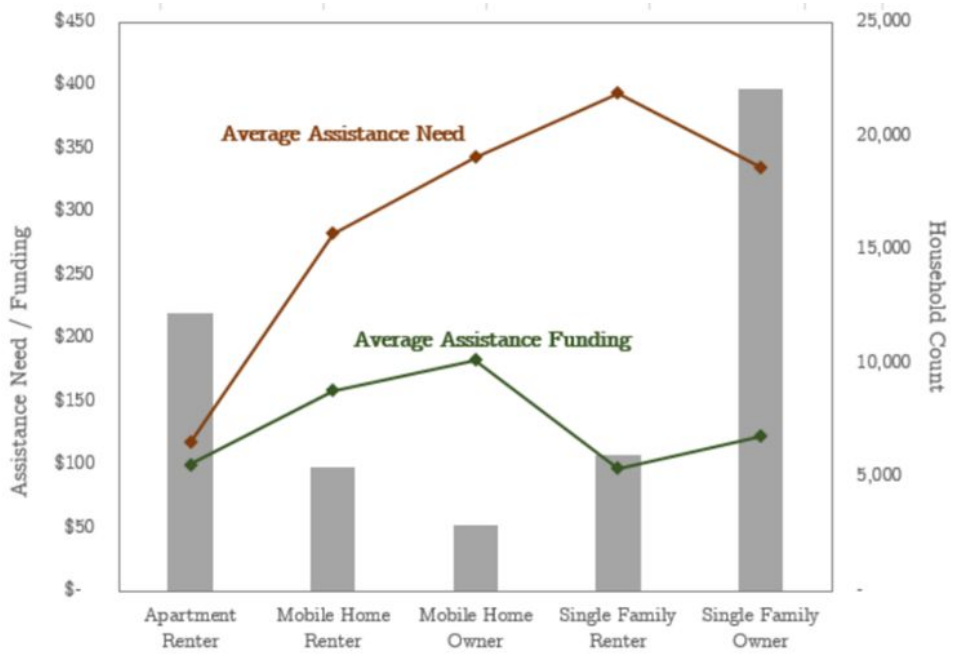
Takeaway: LIBA enrollment cap was removed in 2021 - the lowest hanging fruit over the near term is more strategic outreach and removing barriers to increase participation

Energy Efficiency vs. Direct Assistance



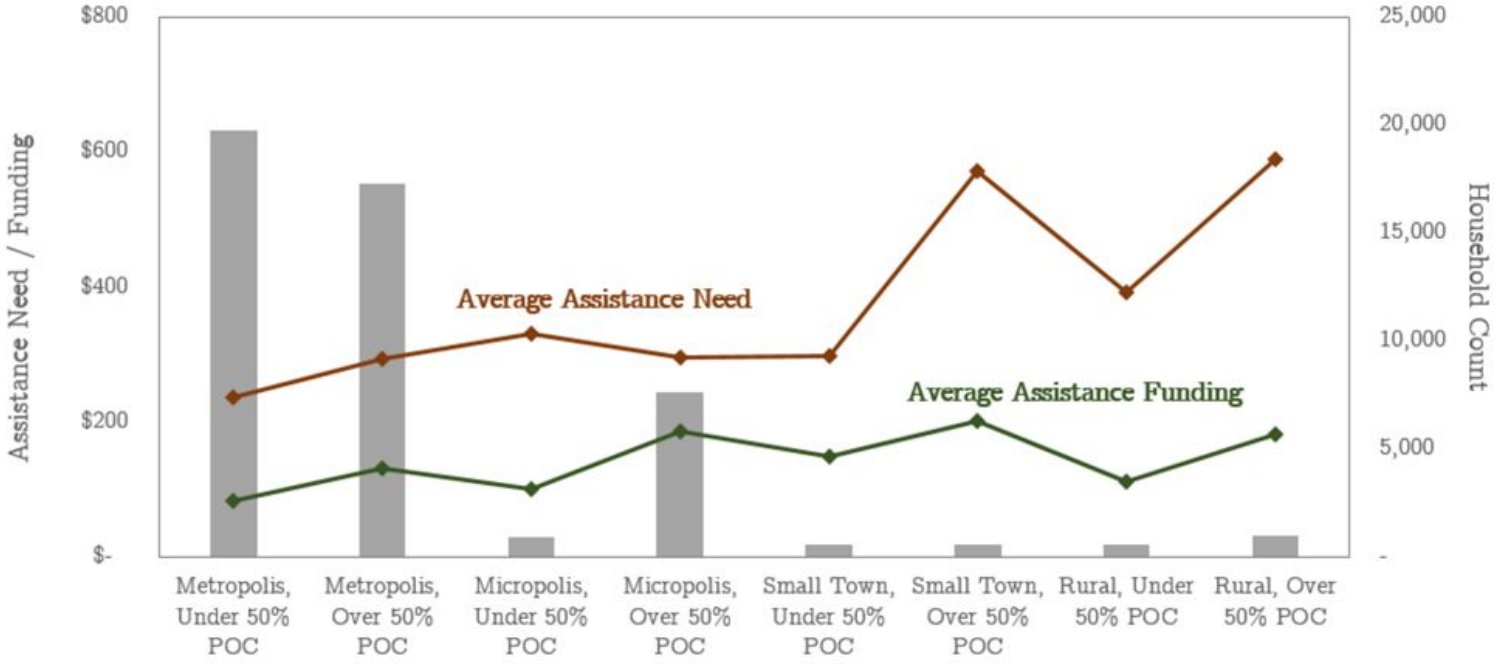
Dashboard Walkthrough

Single Family Renters



Takeaway: Largest gap between need and funding among single family home renters

Ethnicity and Location



Takeaway: No clear trend by ethnicity. Rural areas have a higher gap between need and funding.

High-level Takeaways

- The energy assistance need in Pacificorp's WA service territory is about $15M/year
- In 2019-20, funding was a bit low relative to the need, but budget changes in 2021 are expected to change that
- Program administration/overhead is very efficient relative to other programs in the state
- LIBA program design is very good at targeting benefits to higher burden customers
- Weatherization program participation is low, but in line with other similar programs across the state - primarily due to constrained workforce, low cost-effectiveness and a high rate of deferrals.
- Good coordination between Pacificorp and local agencies on culturally-appropriate marketing and program design

Recommendations and Discussion

Recommendations

Program Monitoring: For the 2021-22 CETA Section 120 reporting period, monitor the impact of removing LIBA enrollment cap on program participation and distributed benefits. If program participation does not increase by more than 50%, there could be an issue with lead generation for the program - create a new LIBA marketing plan in collaboration with agencies and other community organizations.

Energy Burden Data Sharing: Pacificorp has adopted energy burden as an indicator for its CEIP and is required to monitor energy burden reductions for CETA Section 120. Agencies have previously shared some participant income information with Pacificorp. This recommendation is to design and build the technical infrastructure, data sharing agreements and reporting tools for agencies to share demographic data with Pacificorp, in order to target high-burden customers and evaluate program performance.

LIBA Customer Research: This recommendation is for Pacificorp to consider conducting a LIBA evaluation - both participant survey and non-participant opinions. The goals of this customer-focused research would be:

- Understand energy insecurity outside of energy burden
- Increase the achievable energy burden reduction potential through understanding and reducing participation barriers
- Identify effective communications channels with customers who are eligible for LIBA

Targeted marketing: This recommendation is for Pacificorp to identify high-burden customers and neighborhoods using data from this Energy Burden Assessment and use these customer lists for targeted informational campaigns about existing programs. These campaigns should be timed during periods of high bills or arrearages (e.g. January/February).

Recommendations

Improved customer experience on website/social: Currently, program information on website is dense and does not clearly specify the program benefits. Recommend to develop a mobile-friendly program wizard or chatbot that can be embedded on the Pacificorp website and social media to provide a smoother experience for customers who are looking into energy assistance options.

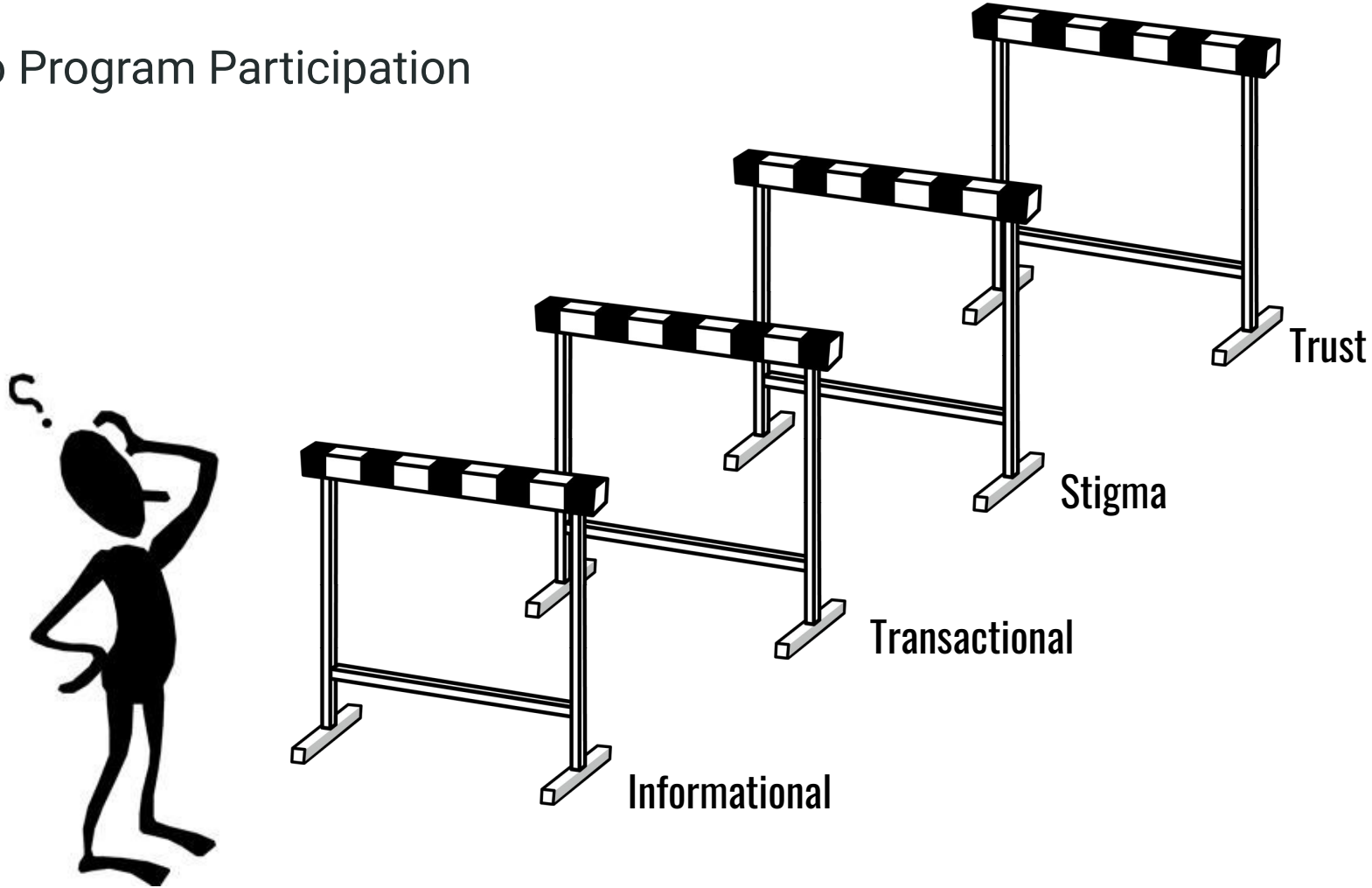
Expand local partnerships: Local presence is an important factor for rural customers and satellite offices of agencies or local community-based organizations can be very effective at reaching these customers. To improve program access, consider partnering with local community organizations for referrals or program intake.

Energy Ambassador Training: A primary barrier to program participation by low-income customers is lack of trust. In many communities around Washington, there are customers who assist others in their communities with program applications and information. The Energy Ambassador program would formalize this process by training and paying a stipend to the “Energy Ambassadors” (usually low-income high-burden customers themselves) based on how many applications they bring in to the programs.

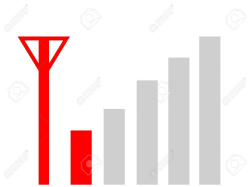
Light touch energy efficiency: Pacificorp low-income customers currently have access to the low-income weatherization program (which has years-long waitlists) or Pacificorp’s standard energy efficiency program (which pays a portion of the measure costs). This recommendation is for Pacificorp to investigate the feasibility of a lighter touch, low-income focused energy efficiency program to provide customers more immediate, sustained bill reductions, while engaging and priming them for participation in other programs. Options include: (i) energy savings kits, (ii) direct install or (iii) behavioral energy efficiency programs.

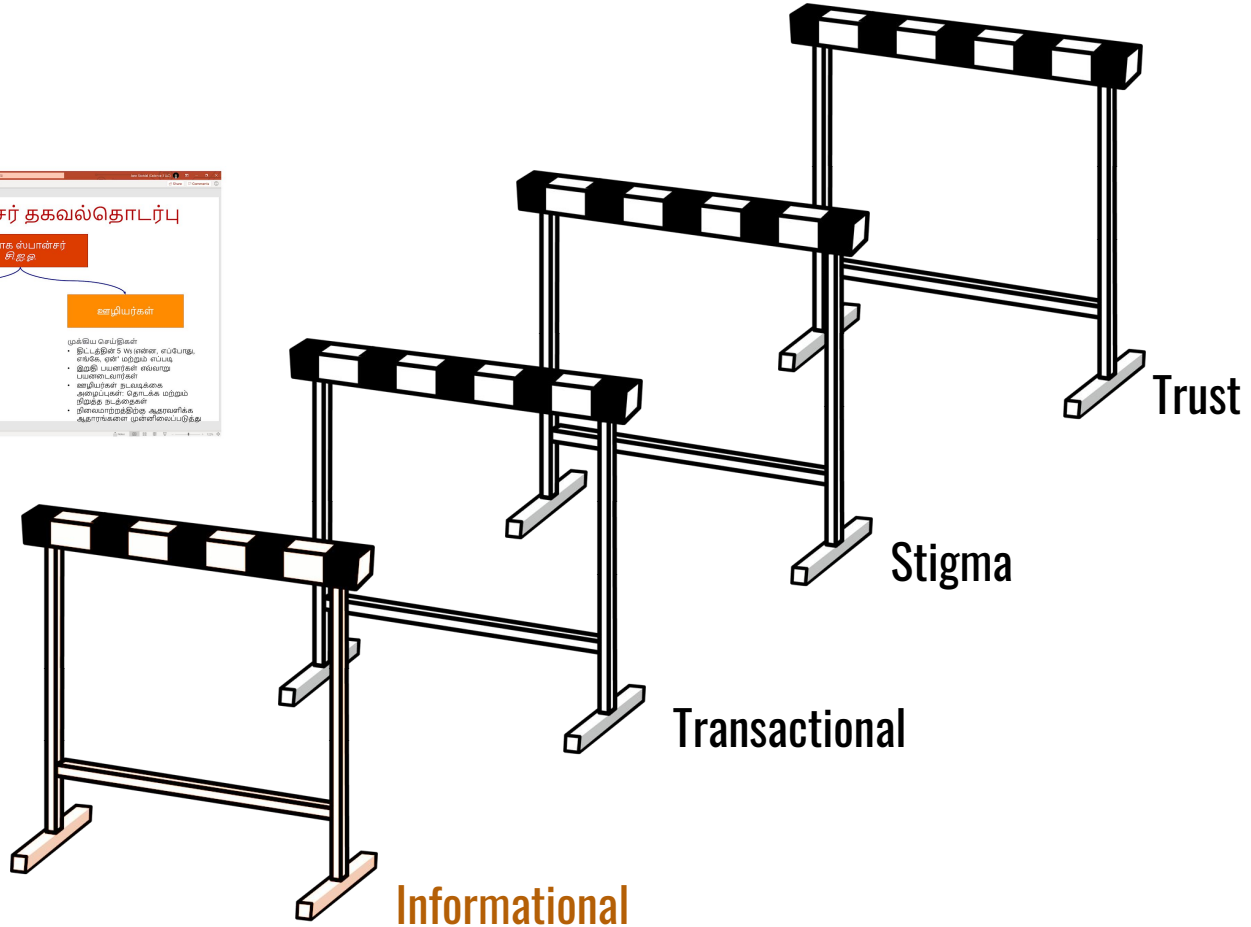
Additional Slides

Barriers to Program Participation

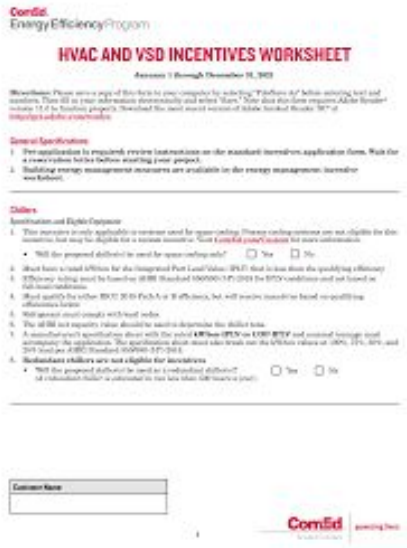


Informational Barriers





Transactional Barriers


ComEd
Energy Efficiency Program

HVAC AND VSD INCENTIVES WORKSHEET

ComEd


Georgia Rock Staffing
1234 Duluth Hwy Duluth, GA 30097

EARNINGS STATEMENT

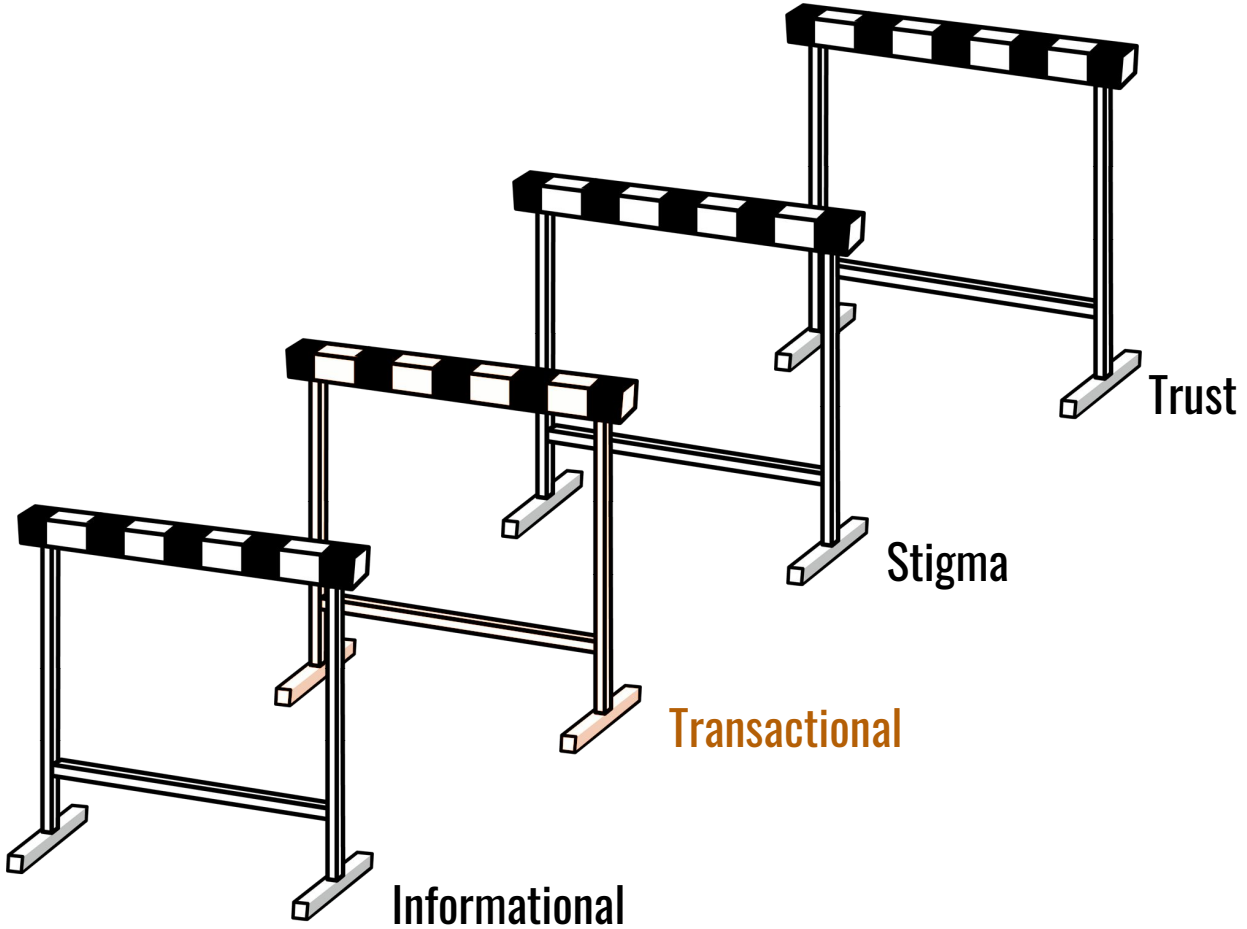
EMPLOYEE NAME			SSN	EMPLOYEE ID	CHECK NO.	PAY PERIOD	PAY DATE
Elvis C Whyte			XXX-XX-2695	96321456	503455	01/01/19-01/14/19	01/15/19

INCOME	RATE	HOURS	CURRENT TOTAL	DEDUCTIONS	CURRENT TOTAL	YEAR-TO-DATE
GROSS WAGES	18.50	77.50	1,433.75	FICA MED TAX	20.78	20.78
				FICA SS TAX	88.89	88.89
				FED TAX	147.05	147.05
				GA ST TAX	73.40	73.40

PAY-STUBS.COM

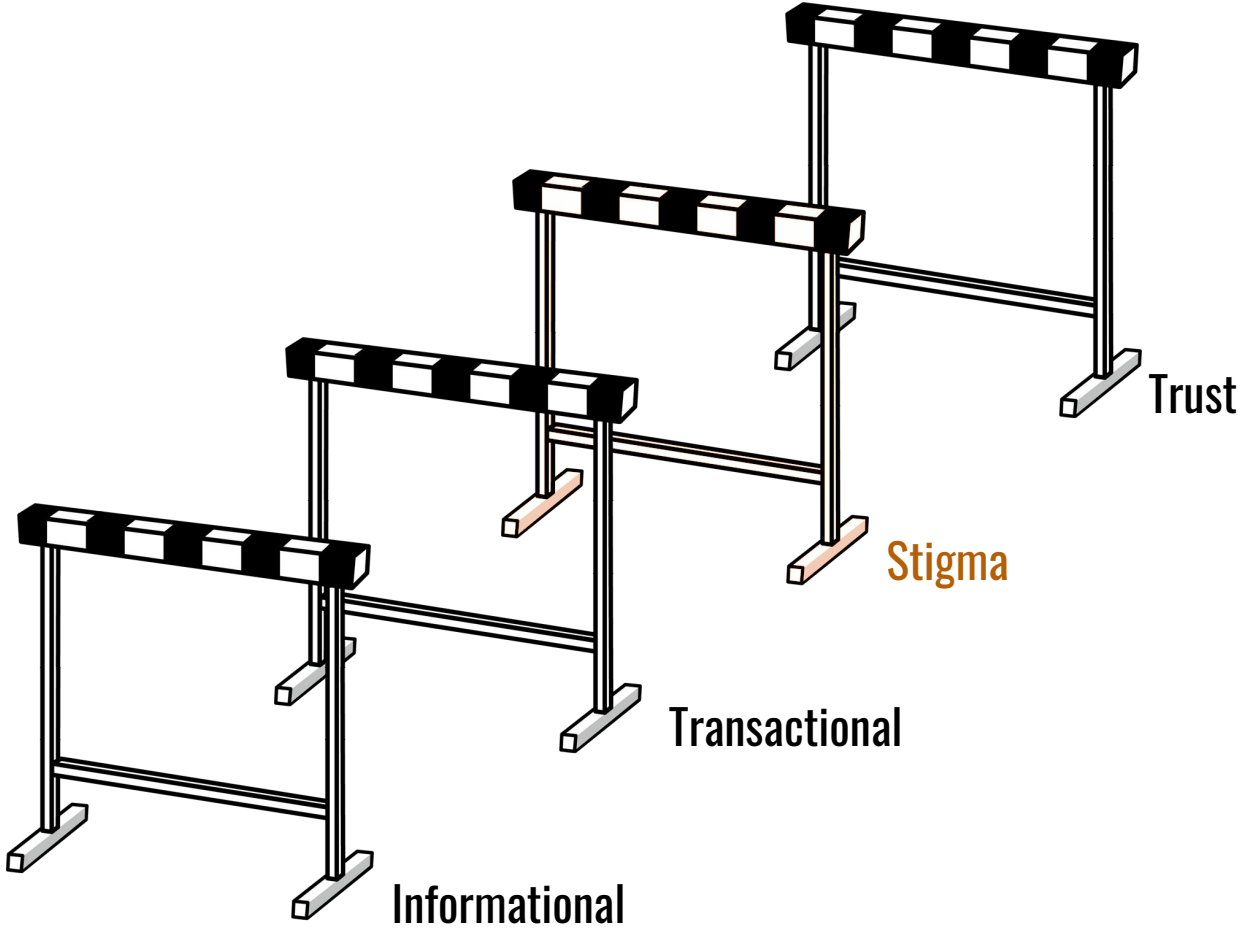
Watermark is removed upon purchase

YTD GROSS	YTD DEDUCTIONS	YTD NET PAY	CURRENT TOTAL	CURRENT DEDUCTIONS	NET PAY
1,433.75	330.12	1,103.63	1,433.75	330.12	1,103.63

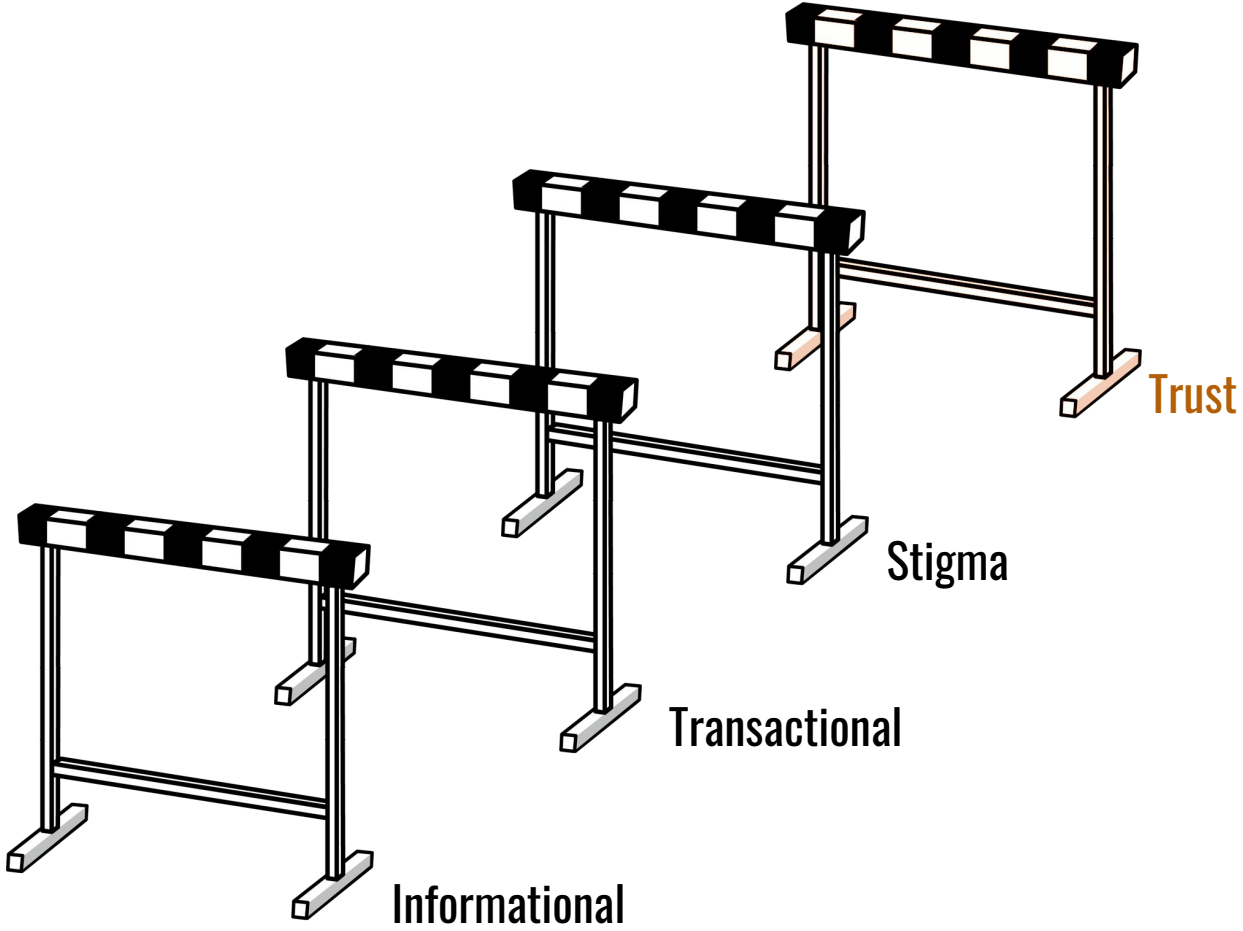


Stigma Barriers

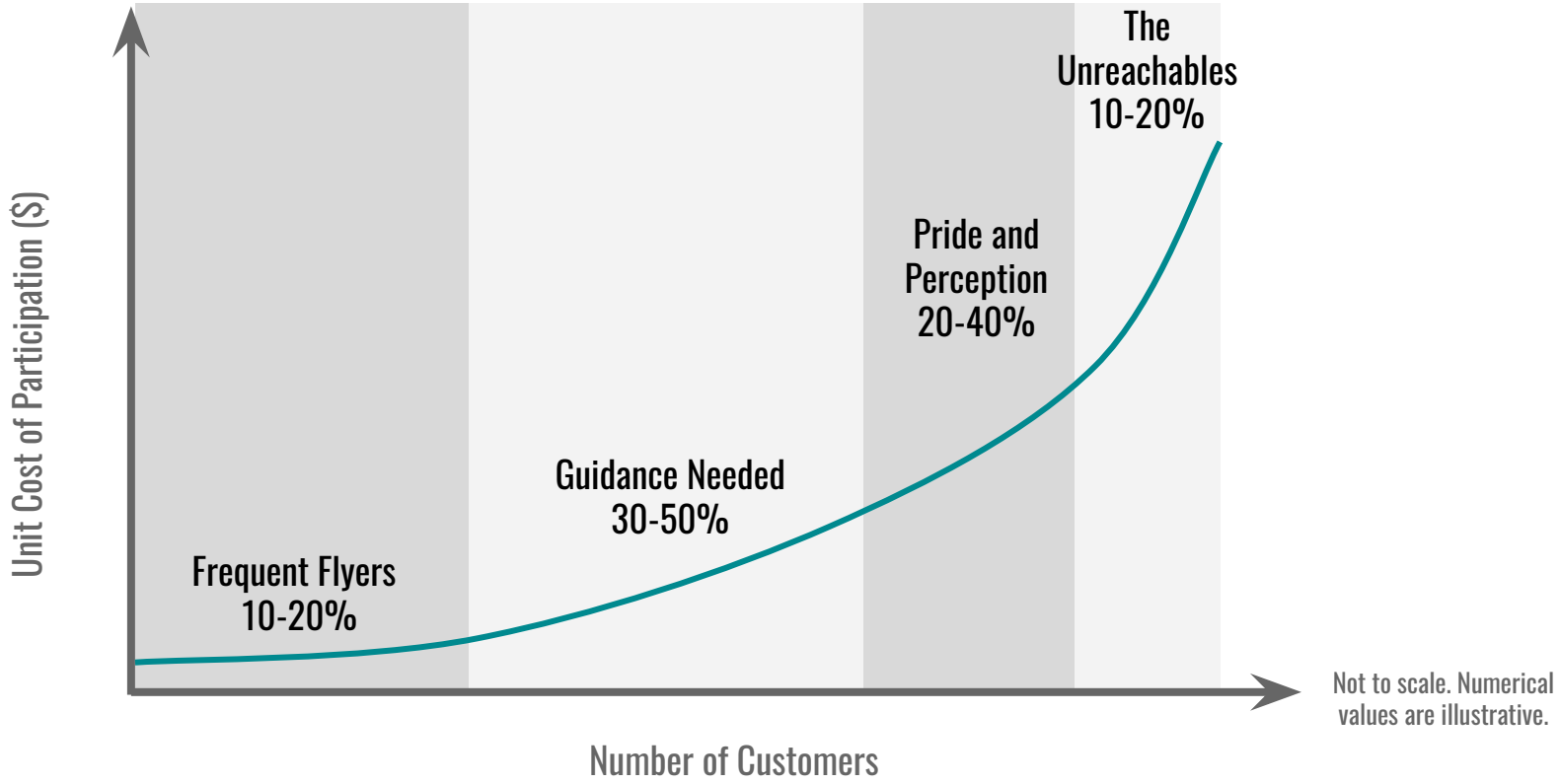
I AM NOT POOR
I AM PRE-RICH
$$$



Trust Barriers



Cost of Participation



Insights: **Energy Burden**

Number of Households

~107,000

Low Income Households

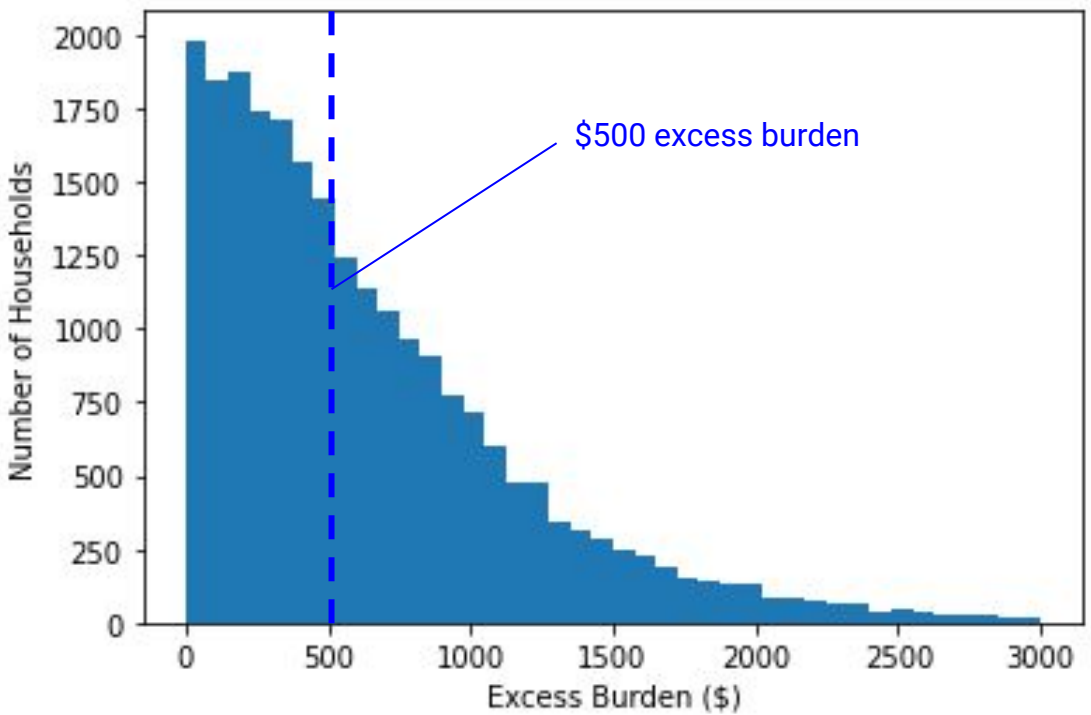
80% AMI ($45k): **~49k**

200% FPL ($35k): **~38k**

Energy Burden (Electricity)
Median: **~2.2%**
Average: **~4%**

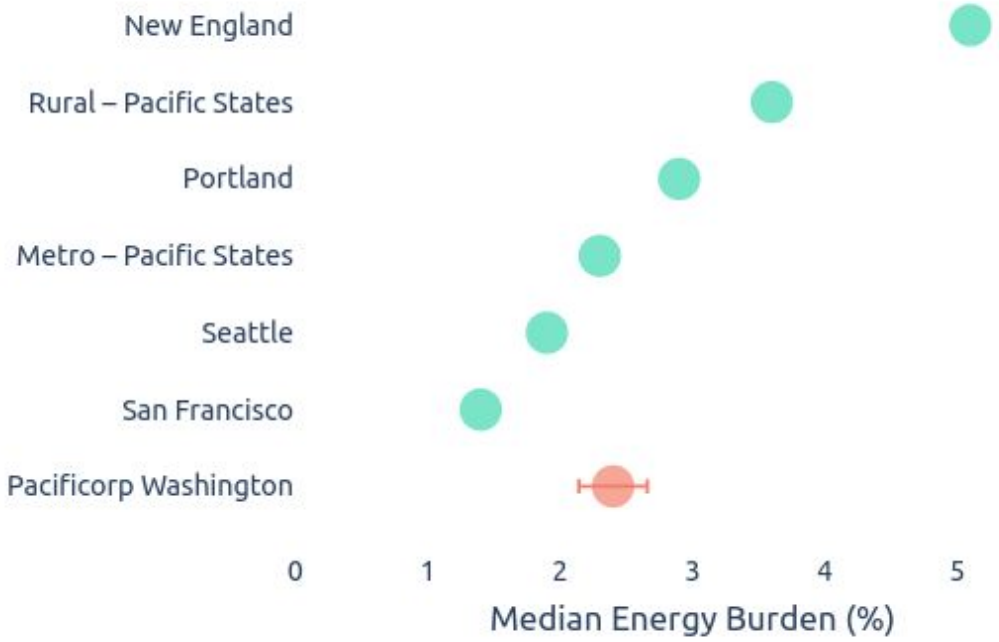
High Burden Households

~23,400

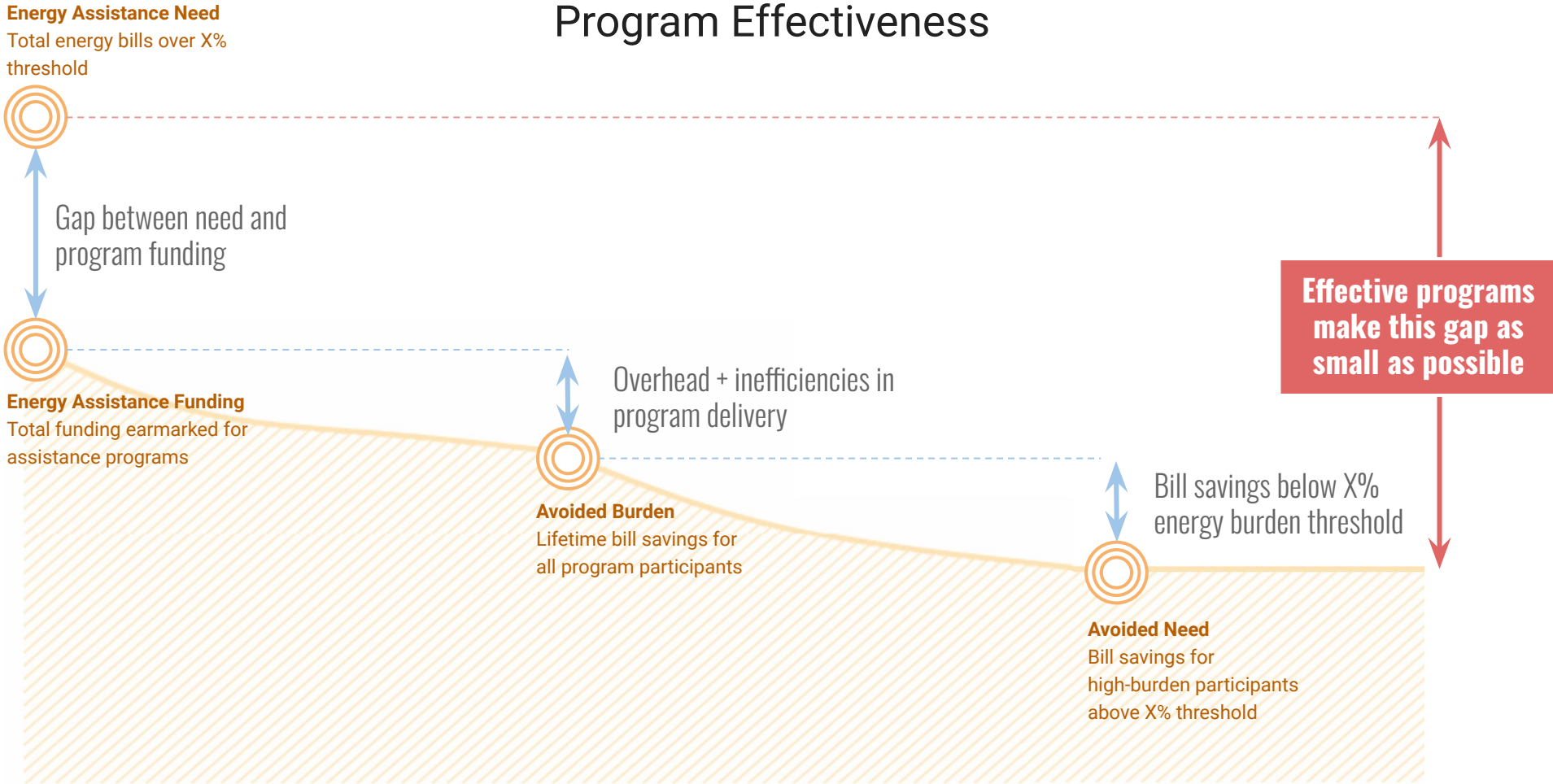


Insights: **Energy Burden**

➔ PacifiCorp residential customers have relatively average bills for WA ($1,200/year), but there is a high level of poverty, especially in Yakima county.



Program Effectiveness



Insights: **High-level Assistance Gap**

- ➔ The total energy assistance need is approximately **$15M.**
- ➔ **42% of this need** is already budgeted in current programs (incl. LIHEAP) - ideal target is 60-80%
- ➔ Approximately 58% of program benefits flow to high-burden customers (average for other utilities is 30-40%)

Current energy assistance need

~$15M

CETA Goals

~$9M by 2030

~13.5M by 2050

Current energy assistance spending

$6.3M (Direct, incl. LIHEAP)

~$350-550k (Admin, excl. LIHEAP)

LIBA Design Review

Annual Household Income Tier	Current Discount Amount	Program Participants	Average Discount % to eliminate high energy burden
0-75% FPL	70%	~2,500	68%
75-100% FPL	35%	~1,900	32%
100% FPL - 80%AMI	15%	~1,800	9%

Takeaway: LIBA discount tiers appear appropriate from an energy burden reduction perspective

Other Discussion Topics

- Income verification for LIHEAP is based on most recent 3 months. This results in a high percentage of ineligible “over-income” clients who have seasonal/agricultural jobs. They may or may not return during the off-season. **How do we balance strict LIHEAP requirements and simplifying LIBA processes for customers, while maintaining staffing and financial feasibility for the agencies?**

- Yakima Indian Reservation has its own weatherization and energy department. **Is it possible to improve the referrals system with the agencies for LIBA? Or add another point of application?**

- Almost all low-income customers have access to cell phones but may not be comfortable with email. YVFWC has had success training customers on an email registration system. **Are there other technologies that can be used to improve the customer experience or streamline the application process?**

- Other ideas?

Energy burden calculations

Energy Burden = (Electricity Bill + Gas Bill) / Annual Household Income

Electricity Burden = Electricity Bill / Annual Household Income

Single Fuel: High burden if electricity burden > 6%

Multi-fuel:
Option 1: High burden if electricity burden > 3% [From a Commerce 2020 workshop]: $15M need, 23k high-burden
Option 2: High burden if (Electricity Bill + Avg Gas Bill) > 6% [Avg CNG bill is $800/yr] - $16.2M need, 22k high burden

For CEIP, vulnerable communities can be:
High energy burden, including multifuel [PSE]
High electricity burden (anyone over 6% electricity burden) [Pacificorp]
High energy burden, but only electric heat customers [Avista]

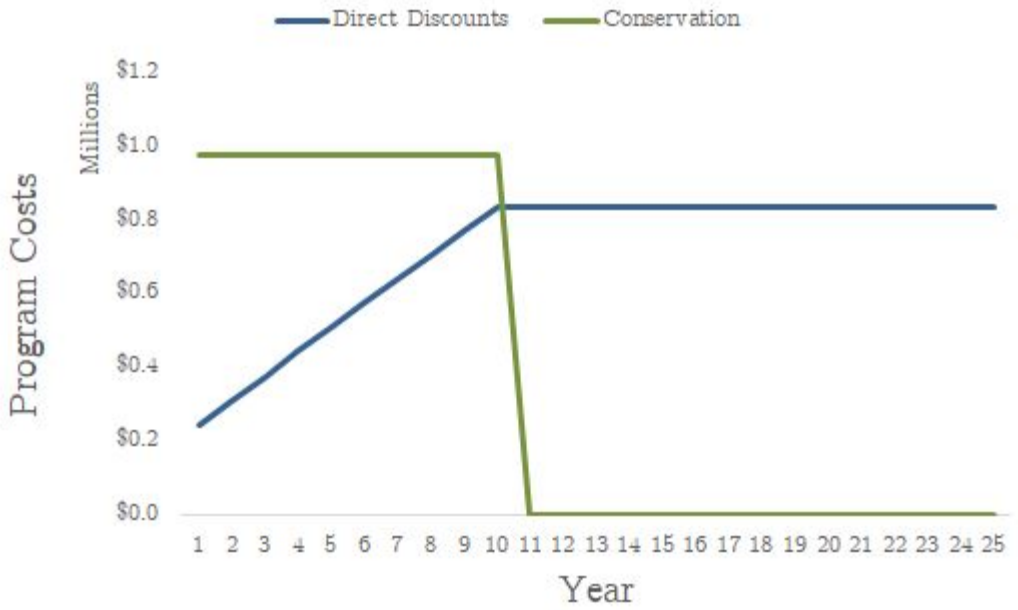
Planning for the **long term**

Forecast of program spend to achieve the same level of energy burden reduction (*this was a theoretical analysis for a Central WA utility*):

NPV of costs over **10 years**:
100% Energy efficiency: **$8.2M**
100% Direct Discounts: **$6M (-27%)**

NPV of Costs over **25 years**:
100% Energy efficiency: **$8.2M**
100% Direct Discounts: **$11.5M (+40%)**

Break-even at **16 years**



A Different Perspective on **Cost-effectiveness**

Total Resource Cost Test = $\dfrac{\text{Avoided Resource Costs}}{\text{Program Costs (Utility + Participants)}}$

Utility Cost Test = $\dfrac{\text{Avoided Resource Costs}}{\text{Program Costs (Utility only)}}$ **= 0.6**

Utility Assistance Cost Test = $\dfrac{\overbrace{\text{Avoided Resource Costs}}^{\textbf{\$0.032/kWh}} + \overbrace{\text{Debt Write-off Reduction NEB}}^{\textbf{\$0.02/kWh}} + \text{Avoided Energy Assistance Costs } \textbf{\$0.1/kWh x 0.3-0.6*}}{\underbrace{\text{Program Costs (Utility only)}}_{\textbf{\$0.052/kWh}}}$ **= ~2-2.5**

*Adjustment factor: Probability that a customer who receives weatherization will not require direct assistance/bill discounts

Reality is more complicated

- Energy assistance and energy efficiency live in different departments within a utility - **how to look at EE and energy assistance as one portfolio?**
- Not all customers are good candidates for energy efficiency - **triage is key**
- Not all customers can be “unburdened” by a single program - **how do we stack programs?**
- Strong reliance on bill discounts makes it harder to sell EE/Wx - **how to navigate this paradox?**
- The constraint for EE is often on the workforce side (1-2 year waitlists)
- Not all customers want energy assistance (even if they are low-income/high-burden)

$15M is Pacific Power’s **technical** energy burden reduction “potential”.

What is the <u>economically achievable</u> energy burden reduction potential?