AESP "Taking a Data Driven Approach to Equitable Program Design"

Case Study and Small Group Activity

Case Study Description

Program Details

- An implementer runs a single- and multi-family residential heating, ventilation, and air conditioning (HVAC) and water heating (WH) program based in "New Dakota," a state in the Pacific Northwest (PNW). The program has been running for four years through a midstream program model. *
- **This means that the program primarily incentivizes **distributors** to stock and sell high efficiency HVAC and WH equipment.*
- The utility sponsor would like to understand the program's historical (baseline) equity impacts and implement initiatives to increase equity impacts.
- The utility has a healthy budget to use over the next 3 years on a baseline equity assessment and implementation of equity-focused program improvements.

Target Customer Segment

The utility sponsor is primarily concerned with equitably serving **Disproportionately Impacted Populations**, defined as census tracts that meet one or more of the following criteria:

- Score in the bottom 30% of a statewide assessment of environmental, social, and health risk
- Have a median household income at or below 80% State Median Income (SMI)
- Contain tribal lands

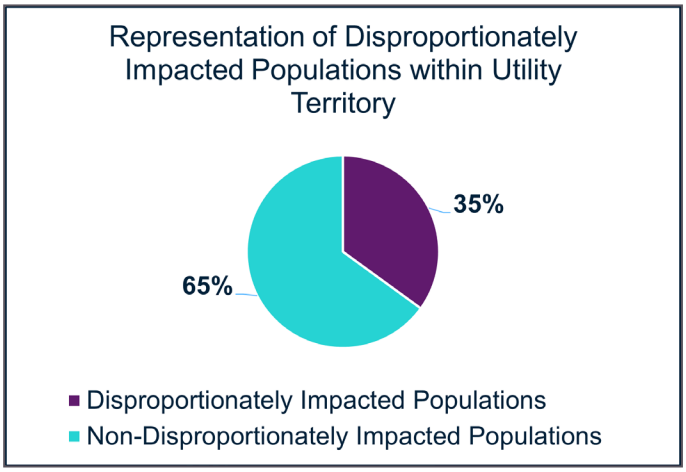
Stakeholder Priorities

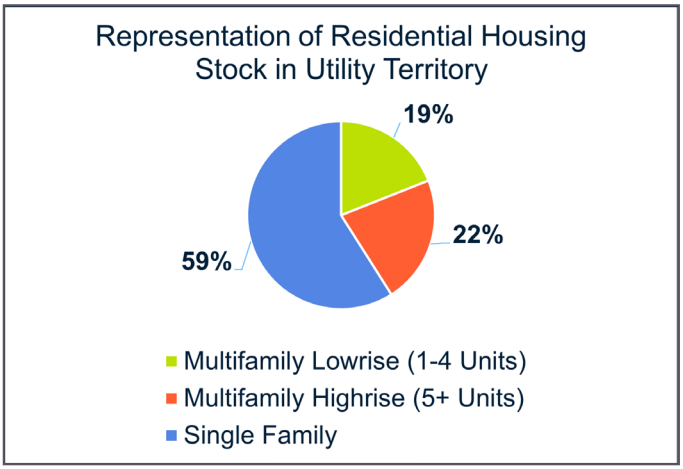
Community Priorities	Utility Priorities & Program Requirements
Affordable & reliable energy service	Improve program equity outcomes
Prioritize health benefits and home comfort for customers	Build and maintain strong community relationships
Ease of system maintenance	Maintain portfolio cost-effectiveness
Program accessibility	Workforce development

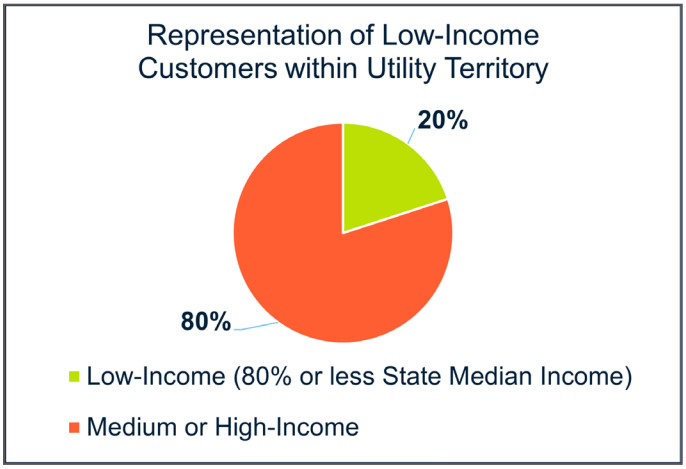
Utility Territory Customer Base

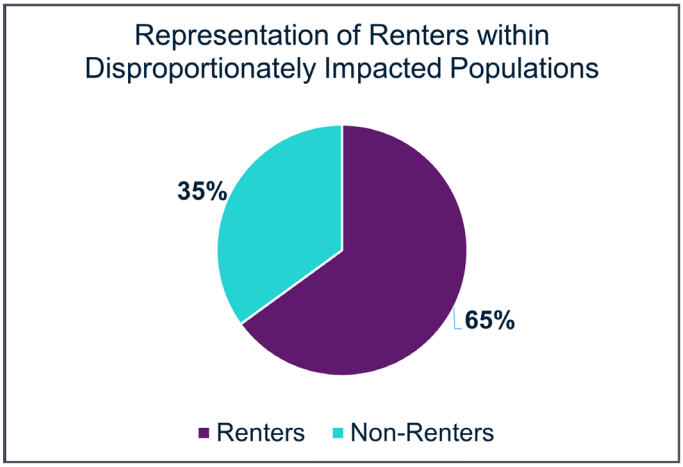
- The utility serves about one million customers.
- The utility's territory is 100% dual-fuel gas and electric.

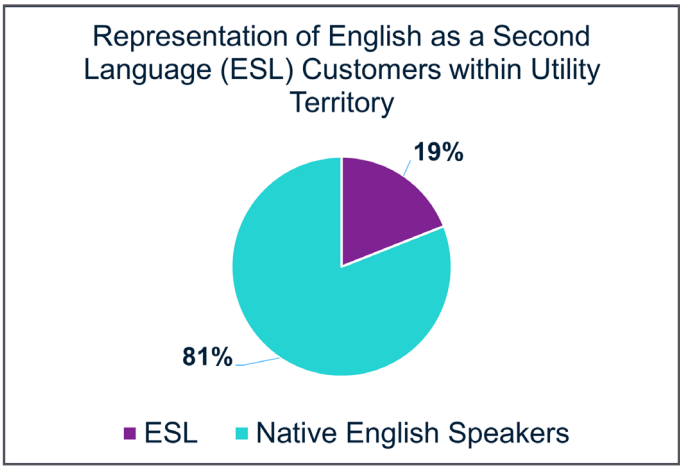
Within the utility's territory:

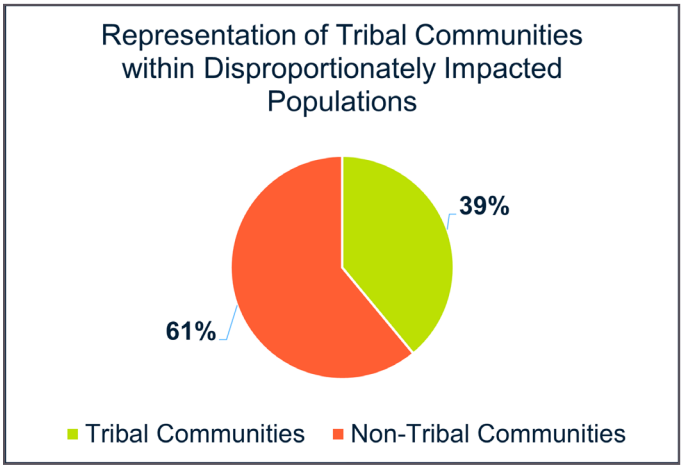












Historical Program Metrics

Key Program Metric	Disproportionately Impacted Populations Coverage	Non – Disproportionately Impacted Populations Coverage
Utility Territory Population	***35%***	***65%***
kWh Savings	**17%**	**83%**
Therm Savings	**25%**	**75%**
Incentives	**20%**	**80%**

Table 1. The program distributes **fewer energy savings** (17% kWh, 25% therms) **and incentive dollars** (20%) to Disproportionately Impacted Populations **compared** to the share of customers that meet the Disproportionately Impacted Populations definition (35%).

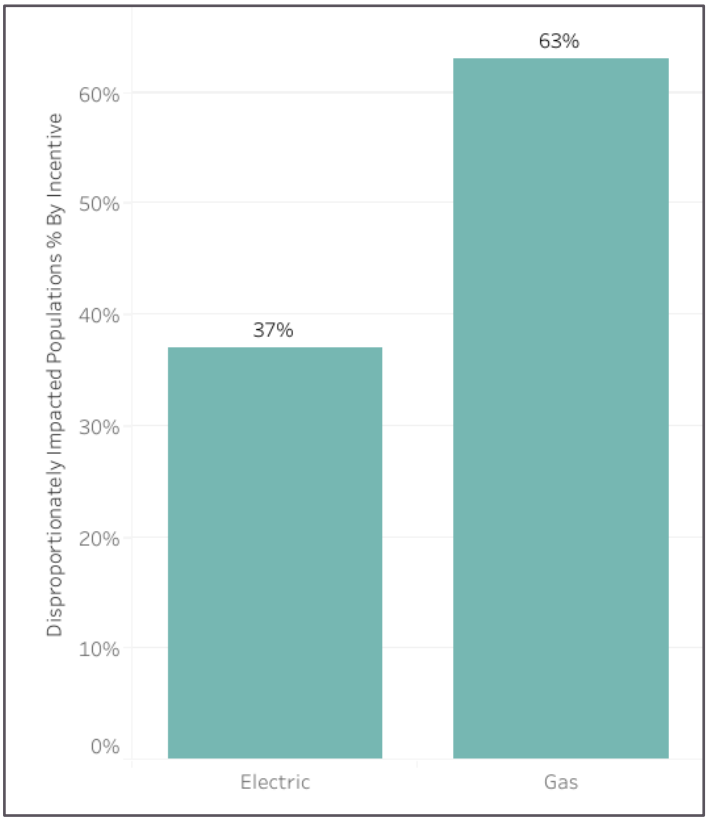


Figure 1. Historically, Disproportionately Impacted Populations have **higher rates of program participation** via eligible **natural gas equipment** than electric equipment.

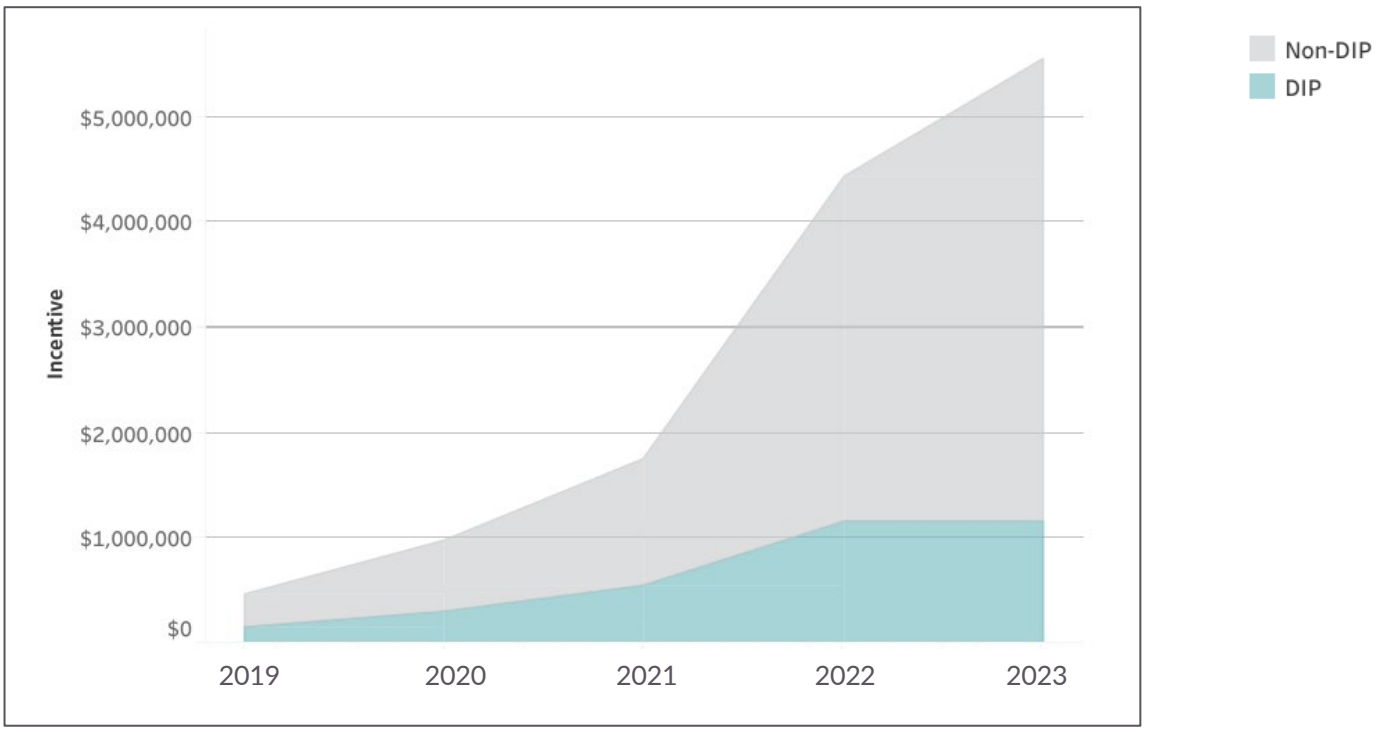
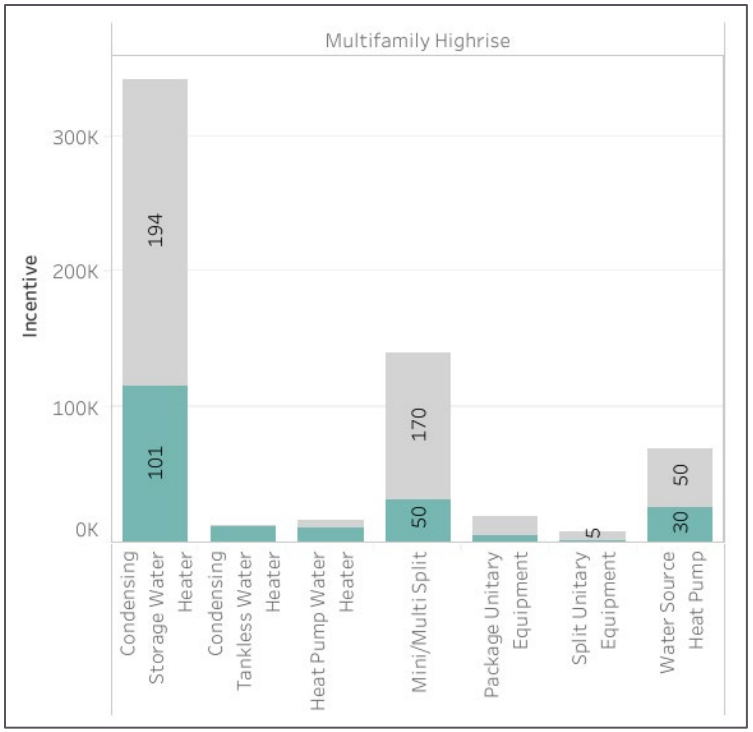
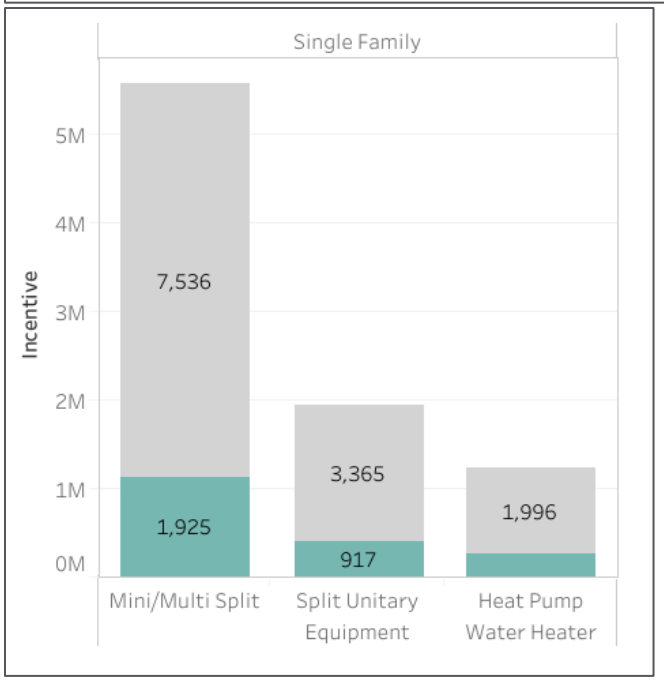


Figure 2. The **share** of participation from Disproportionately Impacted Populations relative to the total program is **decreasing** year over year despite total participation increasing.

Census Tract Metric	% Claims
Below 80% State Median Income	18%
At or above 80% State Median Income	81%
≥90% Renter-Occupied	3%
50-90% Renter-Occupied	11%
<50% Renter-Occupied	85%

Table 2. Participation is highest in census tracts where the median income is **at or above 80% State Median Income** and where the housing stock is **less than 50% renter occupied**.





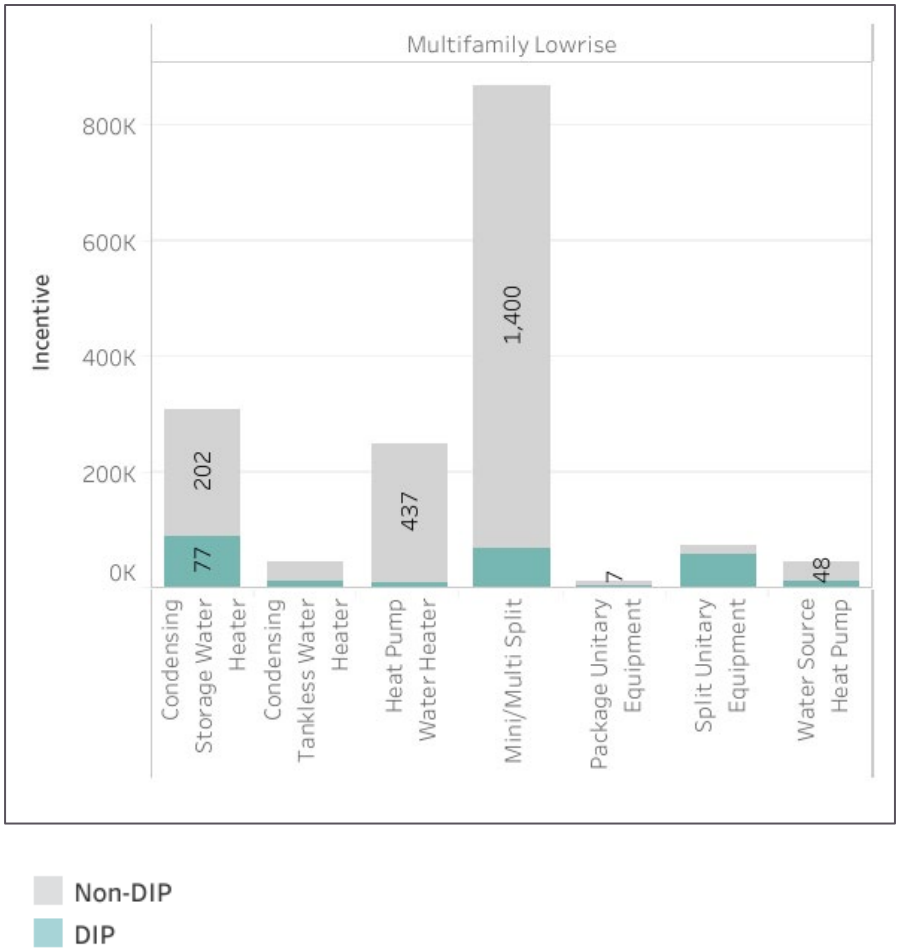


Figure 3. Customers located in census tracts defined as Disproportionately Impacted Populations are more likely to utilize incentives on **gas water heating equipment** and **mini/multi split HVAC equipment**.

Other Program Information

- Residential customers considering high efficiency HVAC and WH equipment cite price as the largest barrier.
- Only a small portion of contractors are trained to offer and install heat pump water heating equipment in the utility's service territory.
- 7% of program-participating contractors are located in Disproportionately Impacted Populations.
- As climate change increases the frequency of extreme weather events, contractors report increased customer hesitancy toward electric HVAC and WH equipment.
- Building space, electrical panel capacity, and unit recovery time are cited as the major determinants of whether a heat pump water heater (HPWH) is a viable option for a single-family home or multifamily building.
- Mini/multi split HVAC units have the highest rate of program participation. Despite higher upfront costs, mini/multi splits are highly efficient and have the highest likelihood of positive utility bill impacts.

Small Group Activity	
Gather Information **10 minutes**	**Review:** Review the case study. As you do, think about: • How are disproportionately impacted populations defined? • What are the key priorities of the communities and utility to consider? • What types of measures does the program support? • What are takeaways from the historical program data? **Opening Discussion:** Once you have finished reviewing the case study, begin discussing with your group.
Assessment **15 minutes**	**Define Gaps:** As a group, define gaps in program design that limit program participation among disproportionately impacted populations (~7 min). Questions to think about: • What barriers does the program need to overcome? • How can the program achieve better alignment between priorities and delivery mechanisms (e.g., midstream model)? **Identify Opportunities:** Brainstorm solutions that can be implemented to increase equitable impacts (~ 8 min). Questions to think about: • How can the program serve the community priorities? • How can the program serve the utility priorities? • What types of strategies would have the greatest impact (outreach, community engagement, marketing, education, incentives, etc.)?
Develop Solutions **10 minutes**	**Share and Prioritize:** Your group is given "budget" to select two solutions to implement. Each solution should focus on a single program component (such as community engagement, marketing & outreach, incentives, or financing) and describe the associated activities you will do. Prepare a brief (~1 minute) proposal for each solution. In developing your pitch, think about: • How do these solutions support community and utility priorities? • How much will these solutions cost to implement? • How long will these solutions take to execute? • What does success look like? How do you measure success? **Select "Pitcher":** Pick a volunteer to pitch one of your solutions (**optional**).
Share Solutions **15 minutes**	**Pitch Ideas:** Pitch one of your group's solutions to the panelists. (**optional**) • Keep your pitch to one minute or less. • Provide a brief summary of your solution and any key components (e.g., *who* you will partner with, *how* you will execute, etc.). • Describe how your solution addresses community and utility priorities and program requirements.