



Alaska Energy Authority

Neil McMahan, Program Manager
Alaska Affordable Energy Strategy Update
9/23/2015

RSAs and RFPs

Study	Entity	Status
Community Energy Model & Decision Support Tools	GINA	Active
Sustainable Utilities Study updates, Utility structure Analysis, and subsidy program analysis	ISER	Active
Demographic and Economic Scenario Development	ISER	Active
Energy cost impact on community outmigration/ Training & Employee Tenure	ISER	Being Developed
Statewide LNG Feasibility	Northern Economics	Active
Energy Efficiency Gap Analysis	VEIC	Active
Documentation of Alaska-specific technology development needs	ACEP	Active
Identification of Barriers to Private Investment in Rural Alaska	ACEP	Active
Investigation of Improvements to Bulk Fuel Transportation system	USACE	Waiting on AG signature

Future/Potential Studies

Study	Entity	Status
Regional biomass pellet depot investigation	Possible RFP	Waiting on internal feedback
Ensuring Adequate O&M	AEA/RFP	Still developing SOW
Impact of Climate Change	?	Still developing SOW

Expected Near-term Deliverables

Study	Entity	Status
Community energy consumption model: Residential, Non-residential, & water/wastewater (electricity and heating fuel)	GINA	Due mid-October
Economics & technical/safety requirements of LNG	Northern Economics/ Baker Engineers	Due Sept. 30
Draft of private investment case studies & literature review	ACEP	Due Sept. 30

Policy Question: Implications of “Affordable”

- An Analysis of Need-based and Need-blind definitions for the Alaska Affordable Energy Strategy

AkAES: Definition of “Affordable”

Two primary options for using “Affordable” to allocate resources:

1. Need-based: “Affordable” includes the ability to pay
 - a. Some combination of energy unit prices and/or costs and median household income of the community
 - i. Example: LIHEAP
2. Need-blind: “Affordable” is a price or cost target
 - a. A goal for energy unit prices and/or costs
 - i. Example: PCE

Budgetary Implications of “Affordable”

- Total cost reduction requirements will be different based on how “affordable” is defined
- Regional distribution of required cost reductions per definition influenced by:
 - Total population
 - Local cost of energy—heating is the primary driver
 - Climate
 - Building stock
 - Other socioeconomic considerations

Need-based

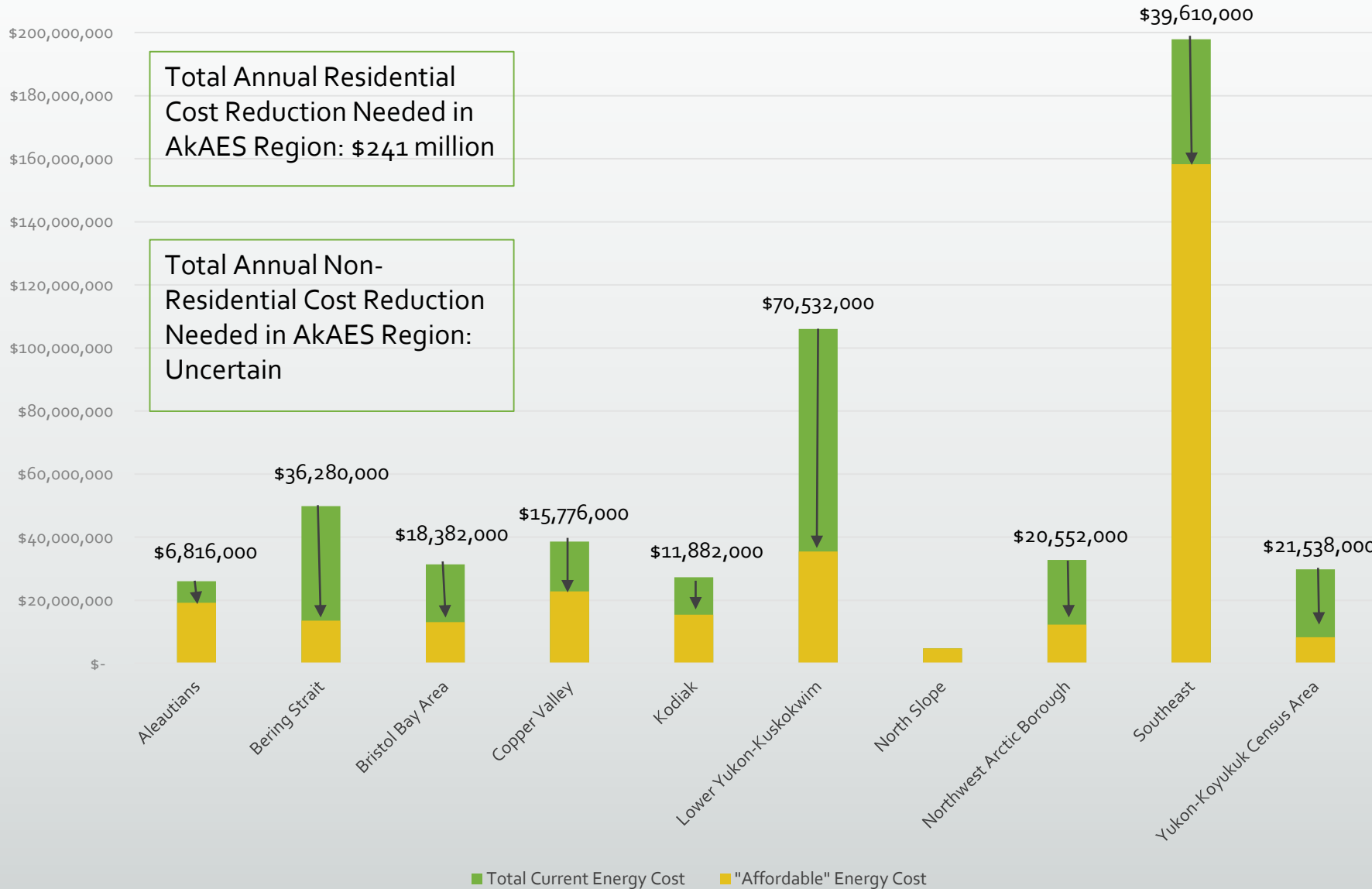
- Affordability includes the ability to pay
 - The unit price of energy, total consumption, and income all play a role
- State Government precedent
 - Alaska Heating Assistance Program
 - Provides subsidies for heating fuel to low-income households

Question: Household or community need?

Potential Need-based Definitions

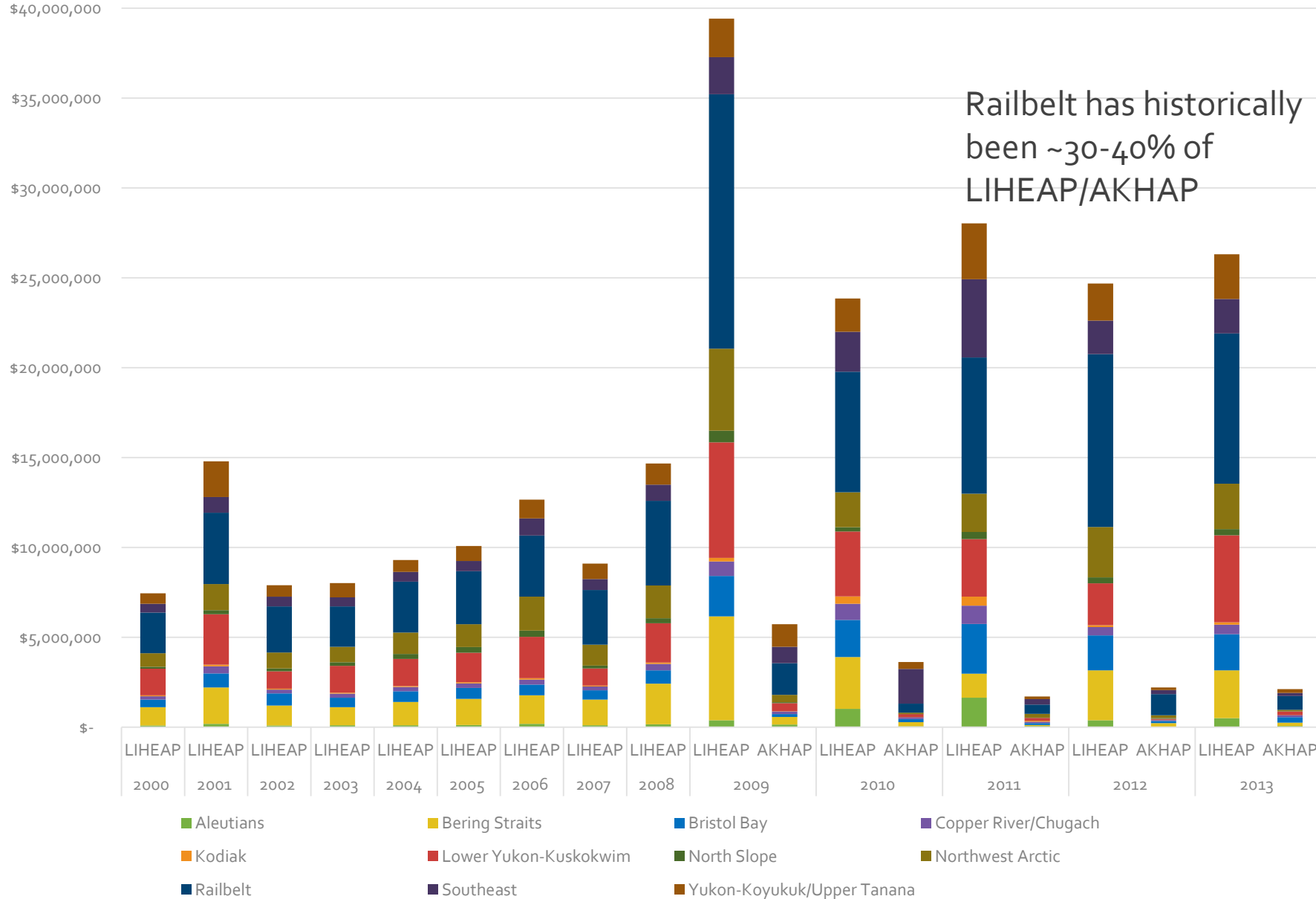
- Energy Poverty—UK government definition
 - 10% of household income allocated to energy costs
- EPA: greater than 2% of MHI for water & wastewater is considered high impact on a community
- Energy: Assumed here to be heating and electricity
 - Sen. Murkowski's Plenty at Stake: Indicators of American Energy Insecurity
 - IEIs do not include transportation costs

Need-Based "Affordable" Energy



- Heat and electricity
 - Annual Household Energy Cost Reduction needed to Have 8% Energy Cost Burden
- Data from 2014 AHFC Housing Assessment
- Assumes 500 kWh/month
- Only includes residential sector
- Uses MHI from ACS 2013
- Does not include PCE

Funding for LIHEAP & AKHAP 2000-2013



Railbelt has historically been ~30-40% of LIHEAP/AKHAP

Alaska Heating Assistance Program

- Provides heating fuel based on income
- LIHEAP and AKHAP provide ~10-20% of needed residential energy cost reduction on previous slide
- Local subsidies are unknown
- 2000-2013: 16% of funding has gone to Railbelt communities

Need-blind

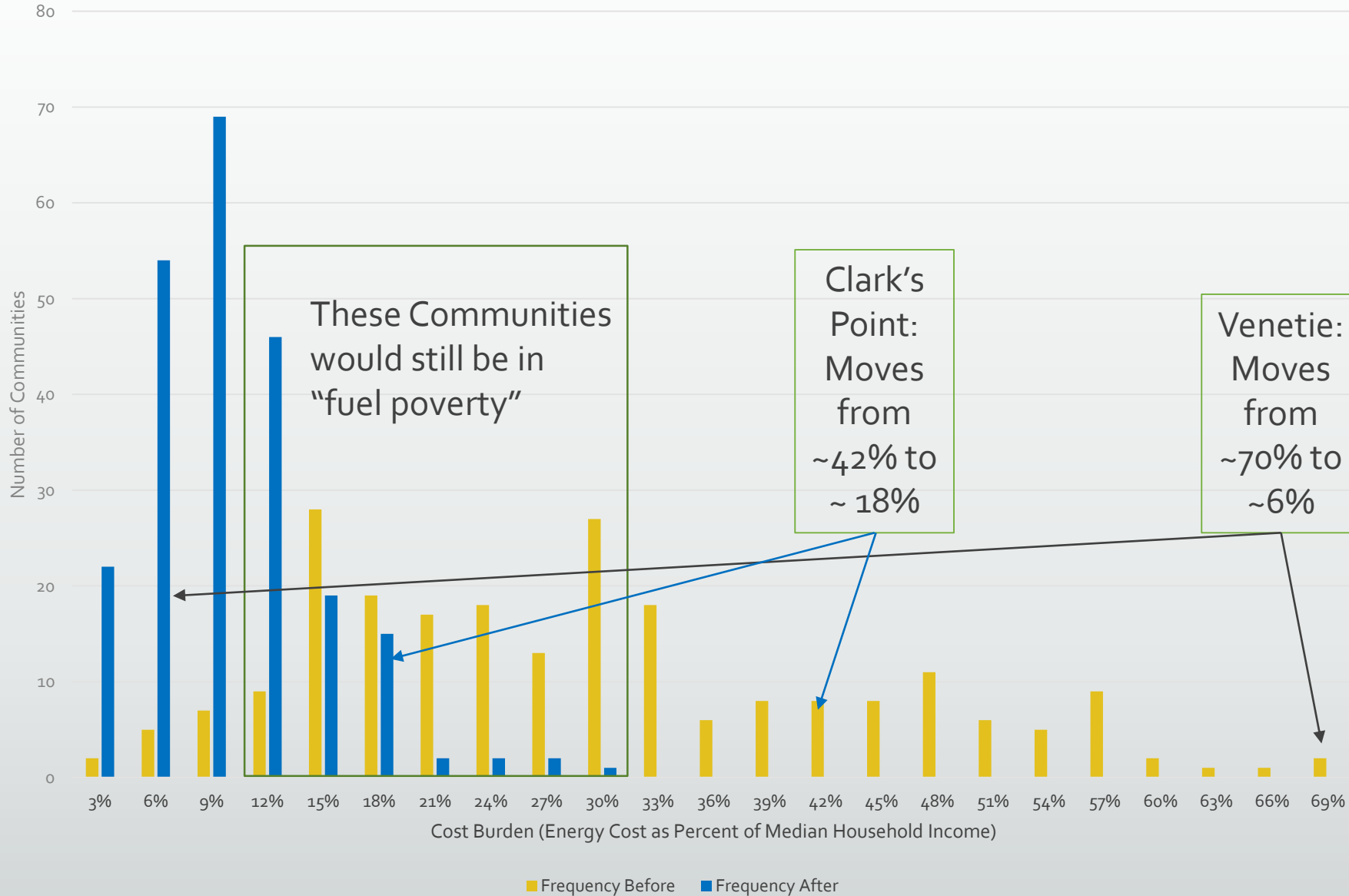
- Affordability is determined as a price point (postage stamp rate)
 - Set to an equivalent price for natural gas
 - Such as Cook Inlet or from the proposed pipeline
 - Set to an equivalent total cost of energy
 - Total household energy costs for heat and electricity
- State government precedent:
 - Power Cost Equalization program
 - Provides a subsidy to utilities based on a formula including a weighted average cost of Anchorage, Fairbanks, and Juneau

Need-Blind "Affordable" Energy



- Heat and electricity
 - Annual Household Energy Cost Reduction Required to equal \$0.21/kWh and \$15/mcf Natural Gas
- Based on regional estimates from AHFC 2014 Housing Assessment
- Assumes 500 kwh/month
- Only includes residential sector

Resulting Energy Cost Burden When HH Energy Prices have been reduced to equivalent of \$0.21/kWh and \$15/mcf



- Heat and electricity
- Data from AHFC 2014 Housing Assessment
- Only includes residential sector
- Uses MHI from 2013 ACS

Need-blind will still leave some communities in "fuel poverty"

Conclusion

- Insufficient money will be available for all consumers
 - Cost reduction needed:
 - Residential: ~\$240-300M/year
 - Non-residential: Greater than residential
 - Total: >\$500M/year
 - Projects with $B/C > 1$ are not common
 - Current state & federal programs
 - Subsidies:
 - PCE: ~\$35M/year (includes some non-residential electricity)
 - LIHEAP/AKHAP: \$20-40M/year

AkAES Advisory Group

- Who?
- Purpose
- Scope
- Interaction with AO 272

AKEnergyAuthority.org

