



Committee on Energy Resources & the Environment

Making the Math Work: Affordability and the Evolving Grid – Part 2

This session will begin at 3:15PM

WELCOME

Hon. Cecile Fraser

Commissioner

Massachusetts Department of Public Utilities



PANELISTS

Hon. Megan Gilman

Commissioner

Colorado Public Utilities Commission

Jessica Cain

Vice President

Eversource

Logan Atkinson Burke

Executive Director

Alliance for Affordable Energy

Shuchen Cong

PhD Student

Carnegie Mellon University





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Making the Math Work: Affordability and the Evolving Grid – Part 2



Identifying, capturing, and mitigating energy poverty through human-centered policy making

JULY 19, 2022

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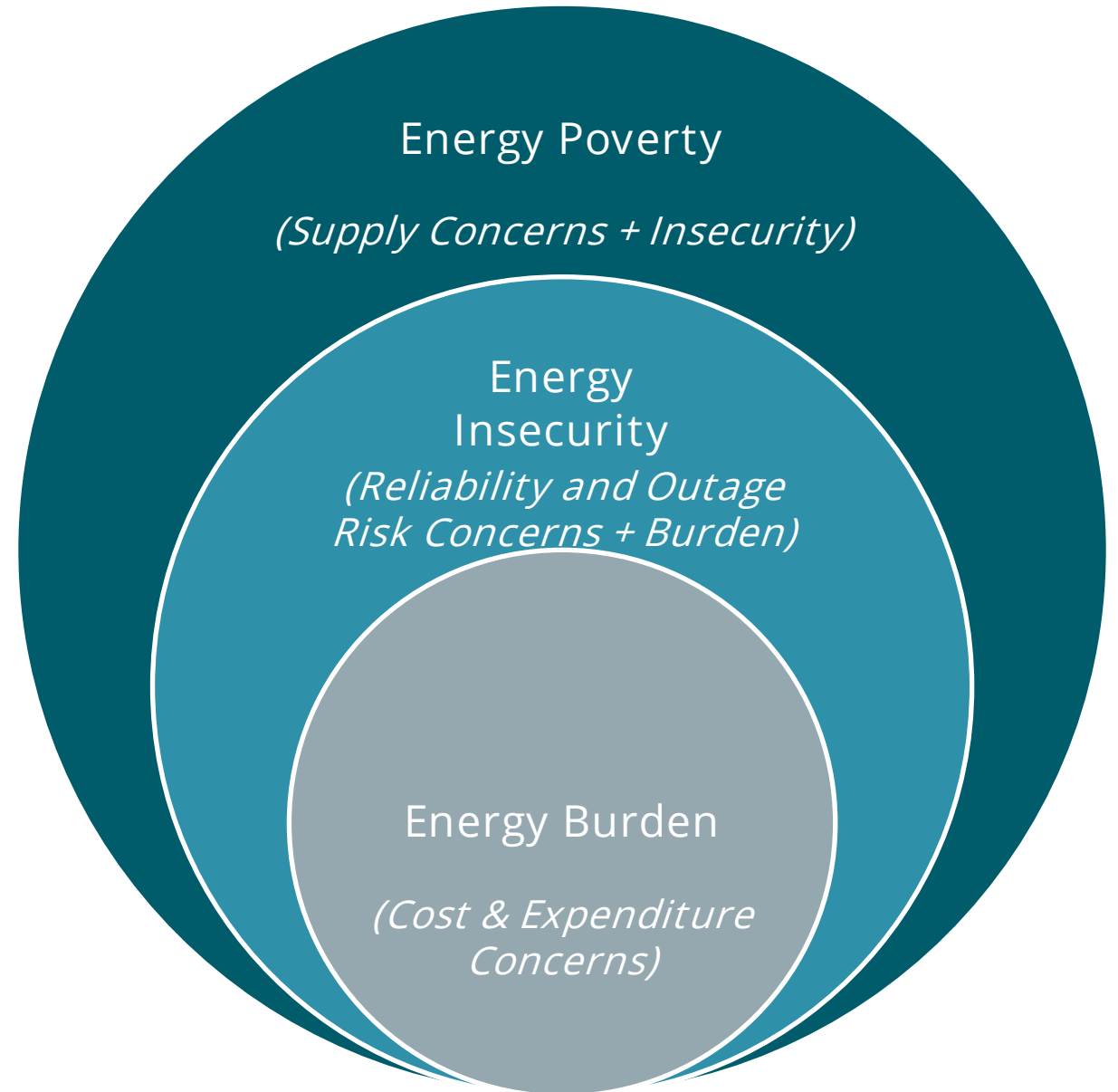


Energy burden dominates energy poverty analysis

Maricopa County, Arizona
Between 2006 and 2016, **228 heat-related deaths occurred indoors** despite the presence of an AC.

- 30 households - electricity disconnected
- 78 households turned off their working AC
- 120 households had a broken AC

(Iverson et al., 2020)



A hidden inequity

Able to satisfy all
your demand but
high cost.

People able to satisfy partial
needs, but may be at risk

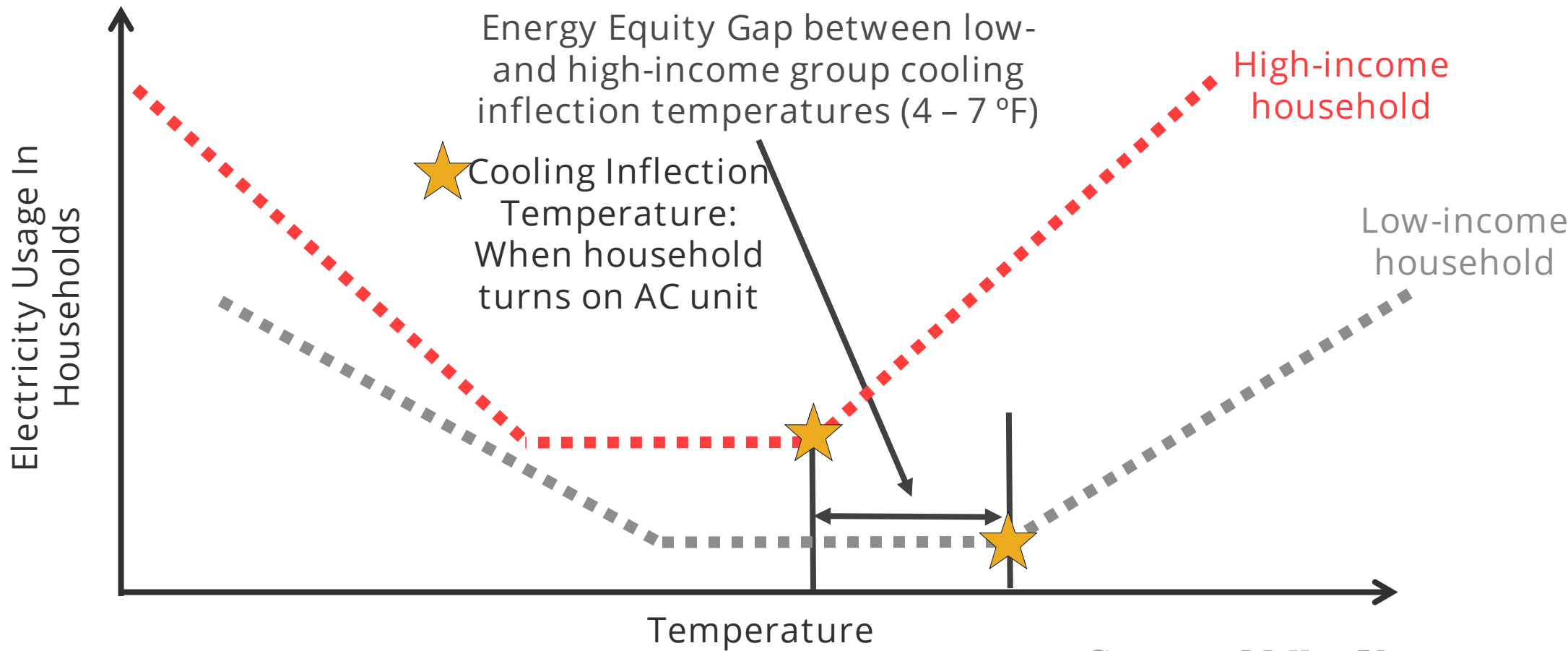
Unable to satisfy
any of your
demand (outage,
disconnected)



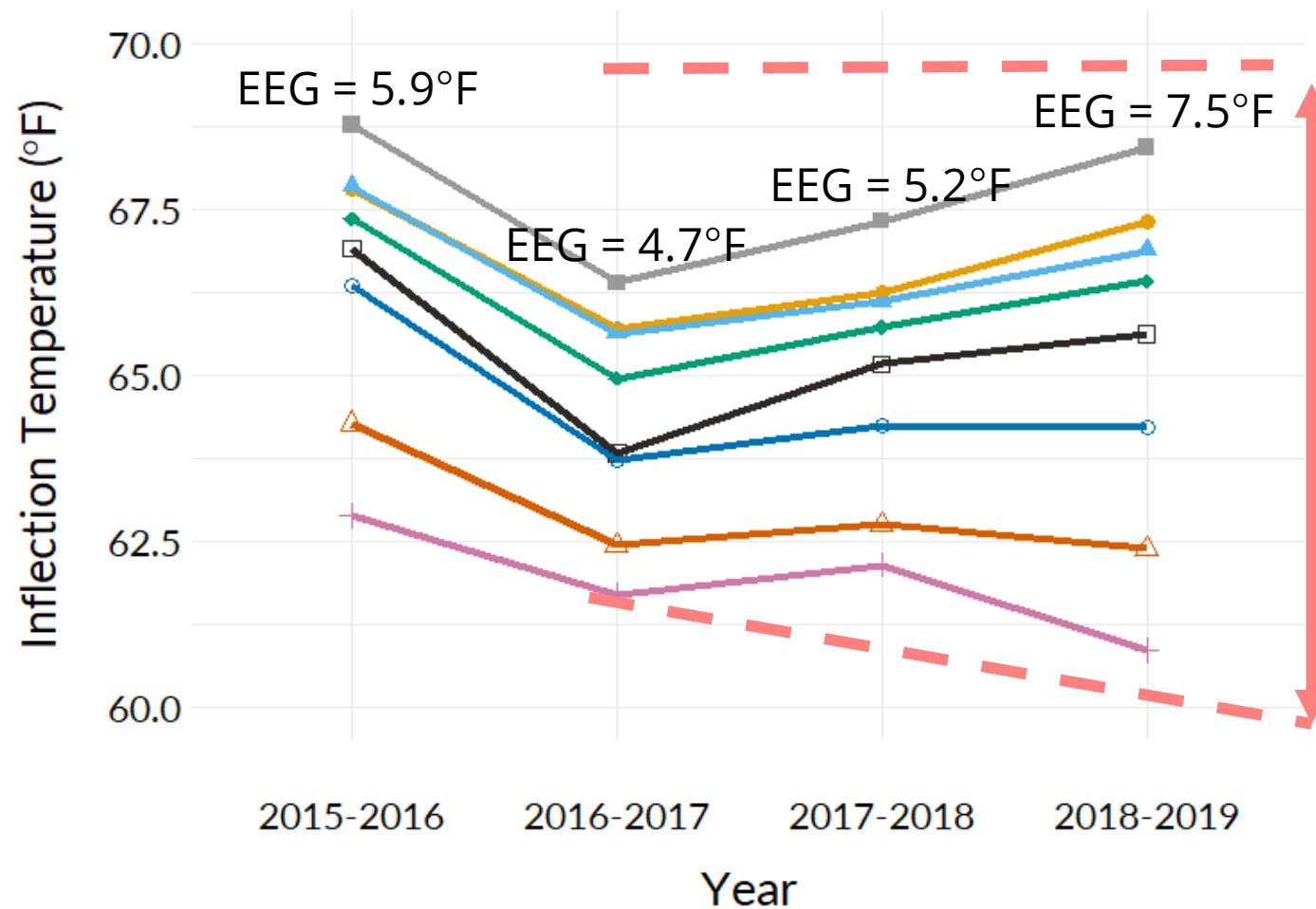
Traditional Energy Poverty
(energy burden (EB)) based
on income, misses human
behavior and people's
tendency to reduce their
energy consumption to save
money



The energy equity gap (lessons from our study in AZ)



The energy equity gap (EEG, 2015-2019)



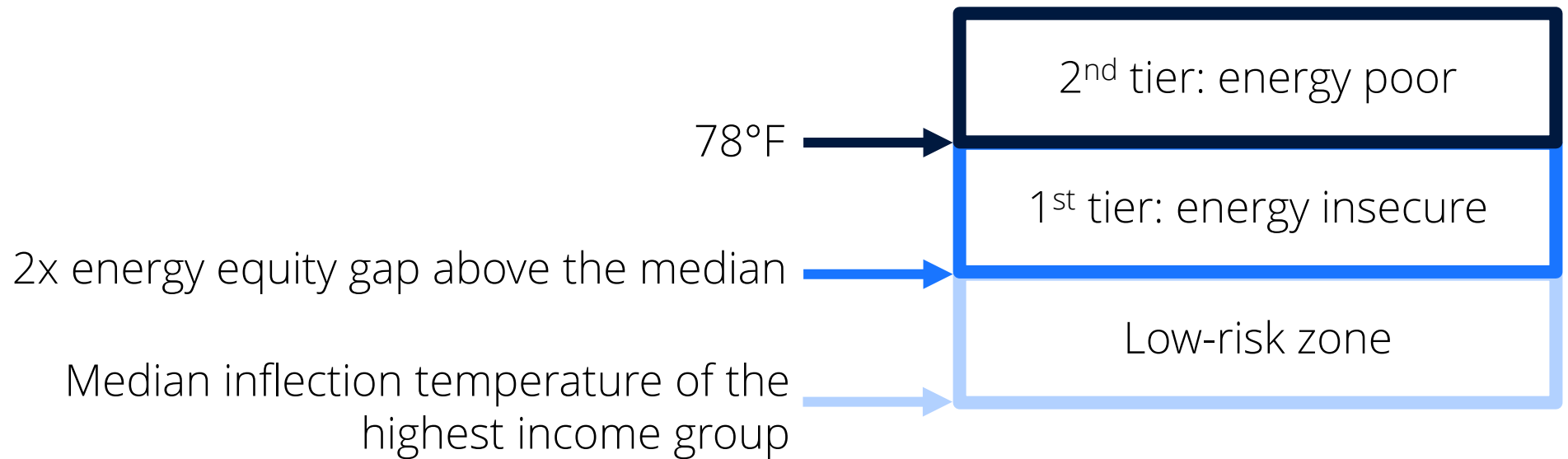
Gap widening over time.

Correlated with increasing electricity costs, which could reduce with decarbonization (retirement of high-cost fossil fuel plants)

(Cong et al. 2022)

How can the energy equity gap inform policy?

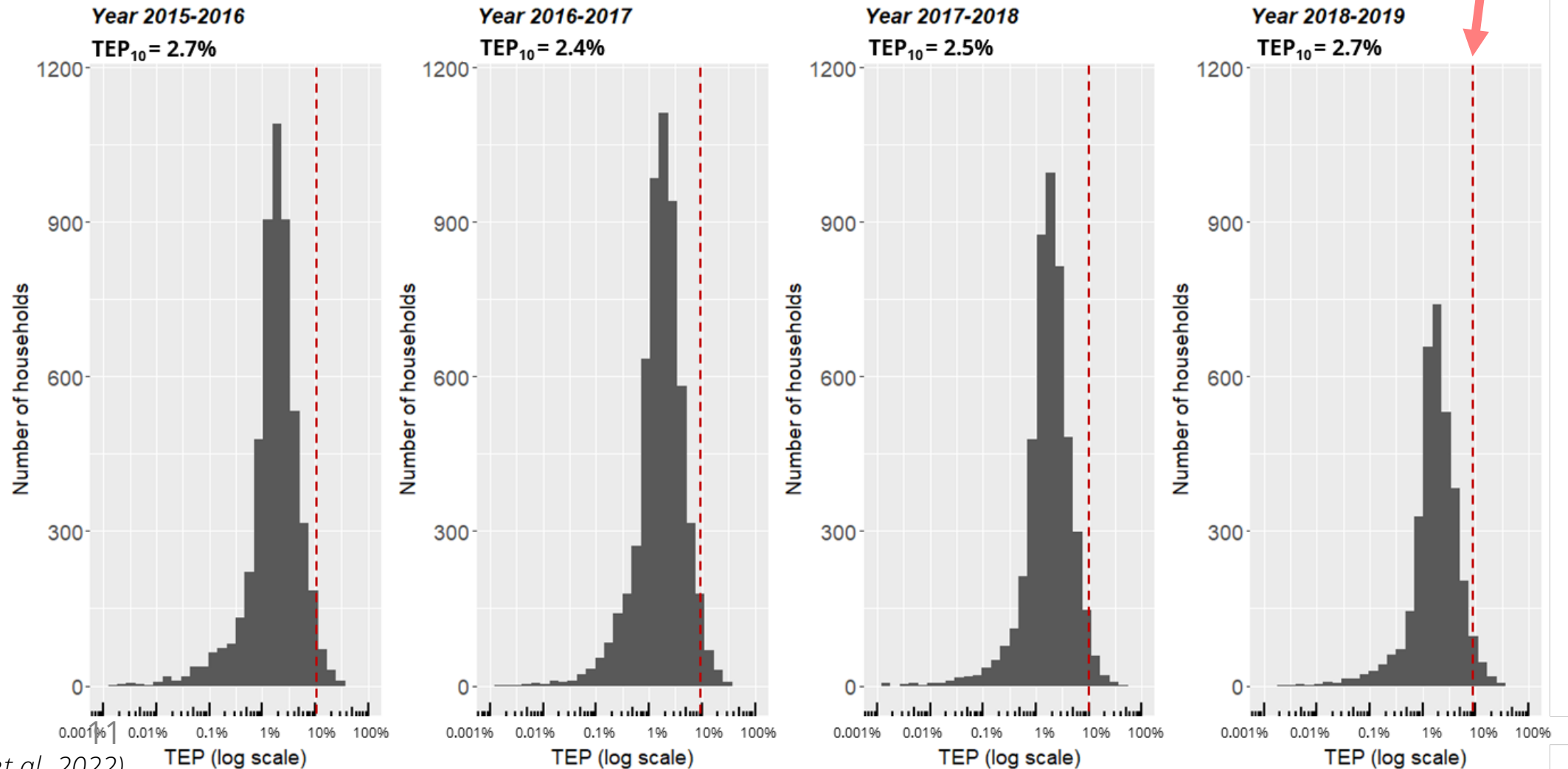
Proposed: A tiered aid system based on the household inflection temperature



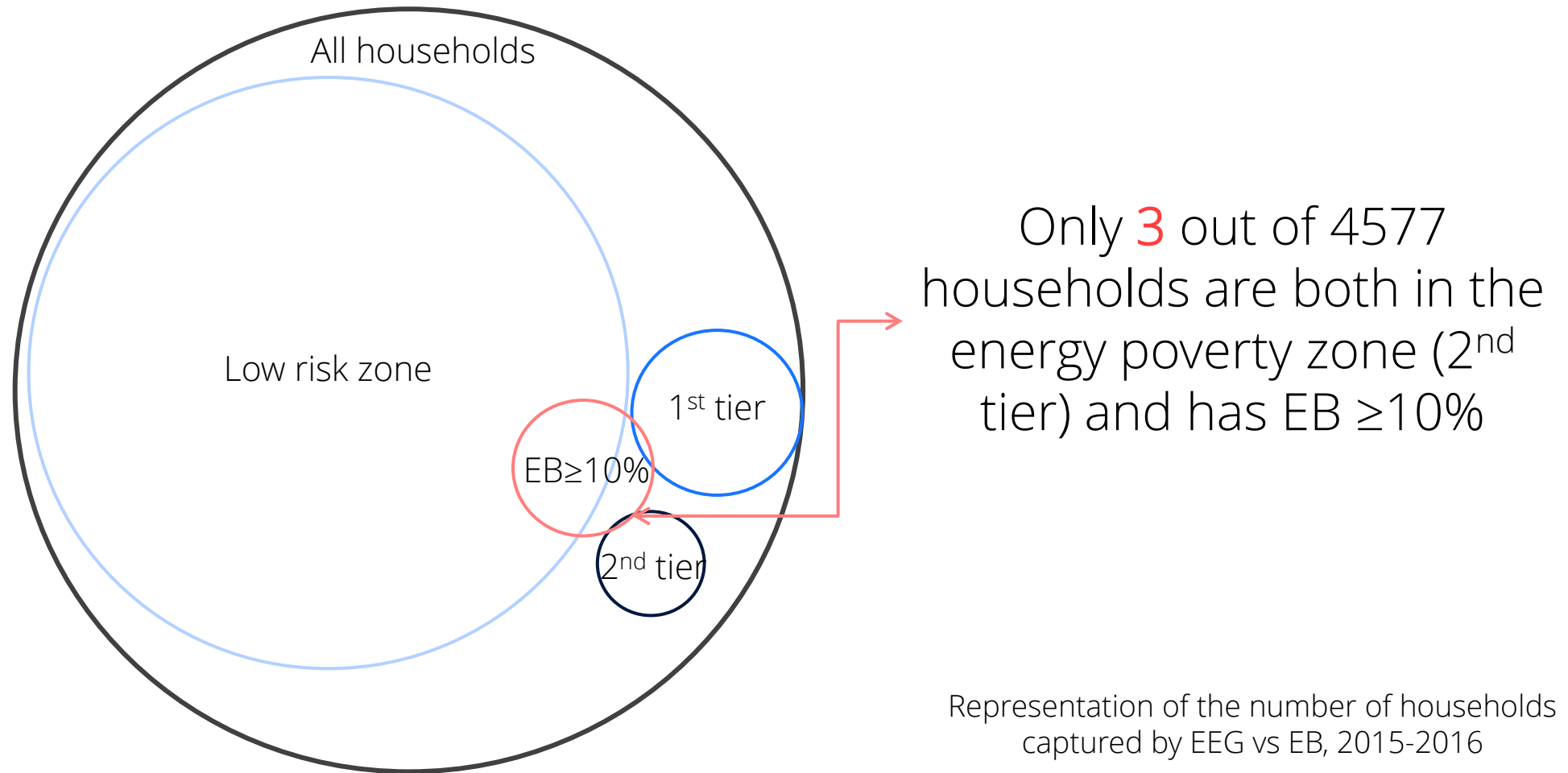
(Cong et al. 2022)

How does the energy burden (EB) measure compare?

EB = 10%
threshold



Energy equity gap (EEG) vs. Energy burden (EB): Who has been left out?



Representation of the number of households captured by EEG vs EB, 2015-2016

Conclusion

The energy equity gap captures human behavior and people's tendency to reduce their energy consumption to save money, who were previously missed under traditional income-based measures.



Household 1 – Income = \$30,000



Household 2 – Income = \$100,000



*Committee on Energy Resources & the
Environment*

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Thanks for attending.
We look forward to seeing you at 9:30 AM
tomorrow for the general session.