# Equity in Energy Efficiency Policy:
# A Multi-State Study on Residential Program Investment Trends

## Low-Income Work Group
## Michigan Energy Waste Reduction Collaborative
## November 1st, 2018


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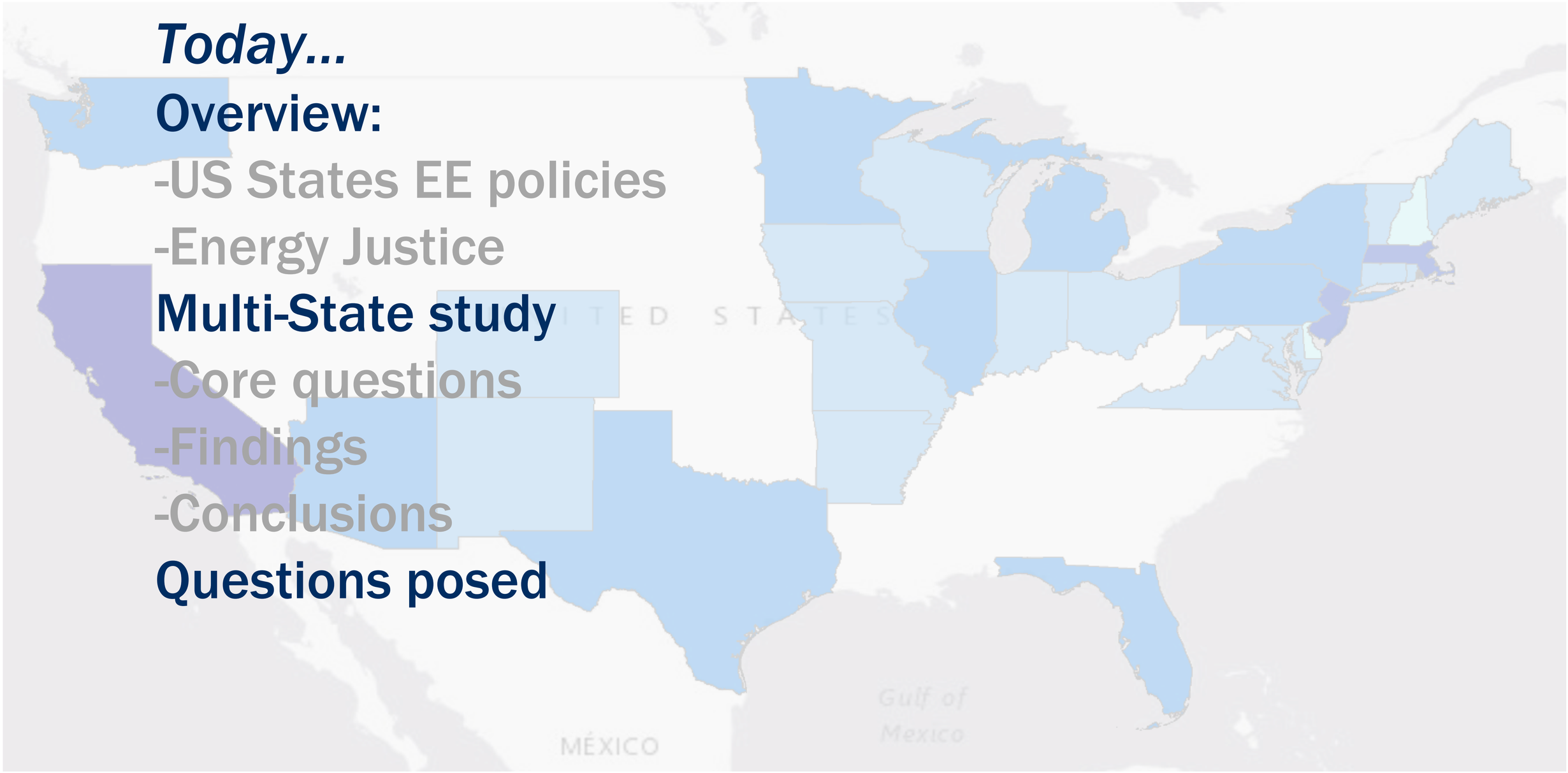



*Today…*

**Overview:**

-US States EE policies

-Energy Justice

**Multi-State study**

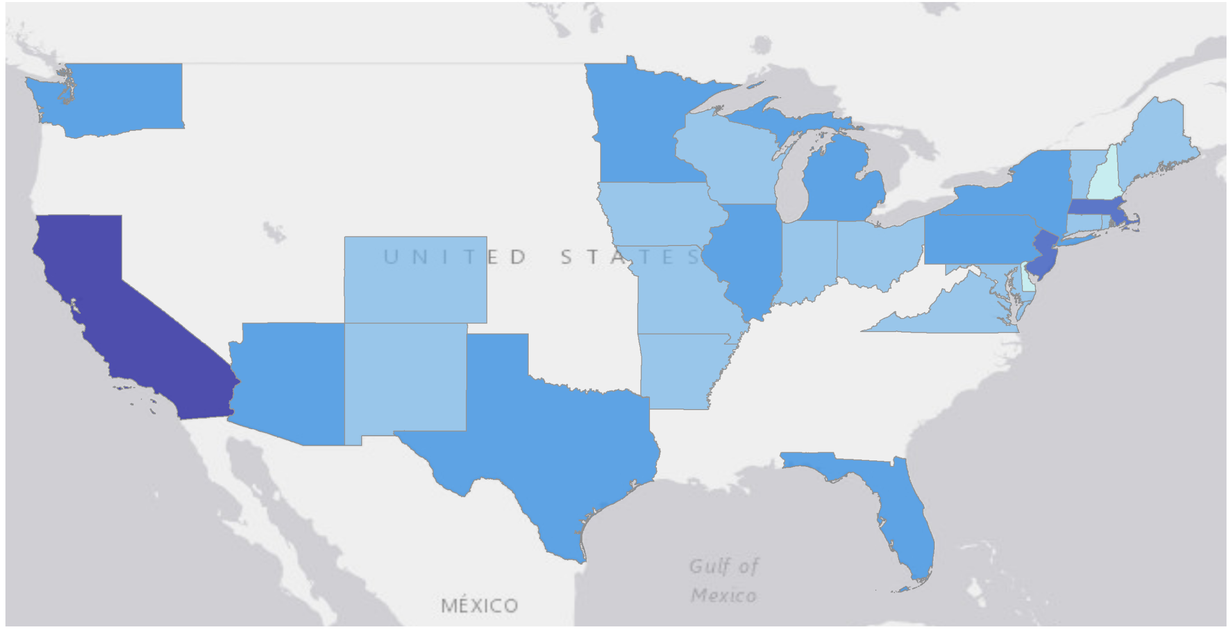
-Core questions

-Findings

-Conclusions

**Questions posed**

# Energy Efficiency Resource & Energy Justice




Data Source: DSIRE

***US states with EE standards (2016)***

*Color ramp indicates: E3b investment level*

## Energy Efficiency Standards

- 29 US States
- $2.5 billion/yr. invested (*2016 electric residential*)
- Policy goals
- Implementation structure
- Administered: Utilities
- Oversight: PUC
- Portfolios & Programs
- Residential markets:
  - Single/Multi-family
  - Renters/Owners
  - ***Low-income, Non-LI***

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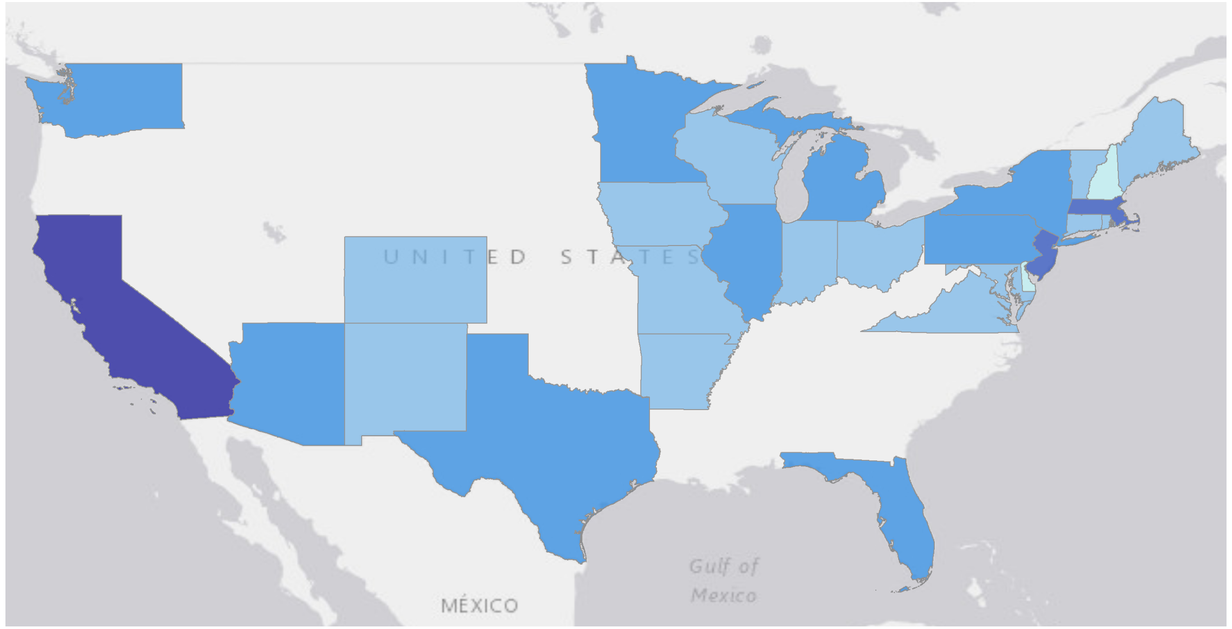
# Energy Efficiency Resource & Energy Justice

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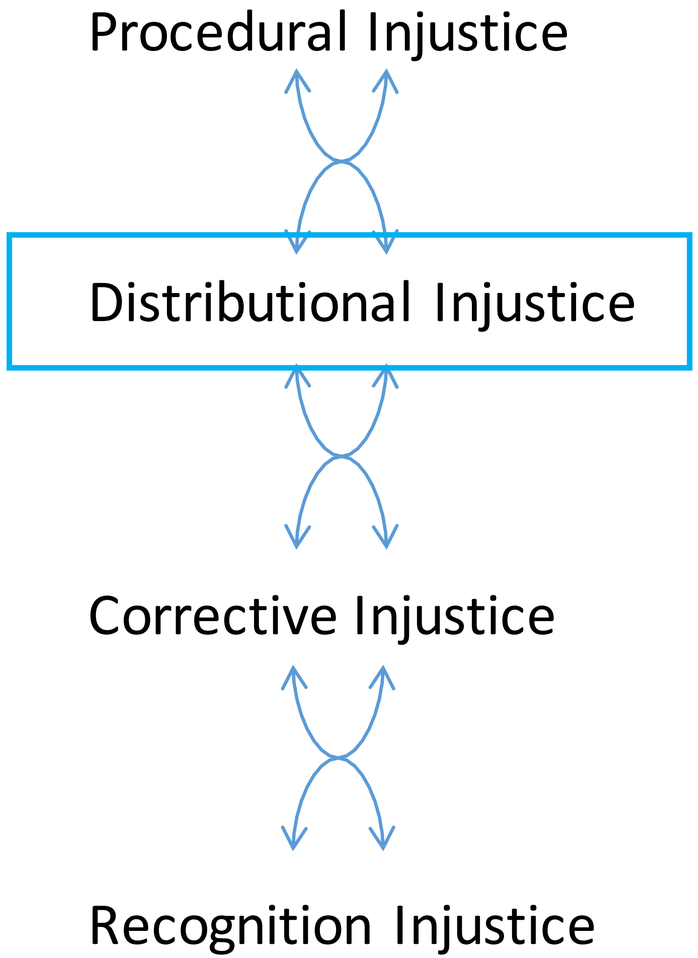
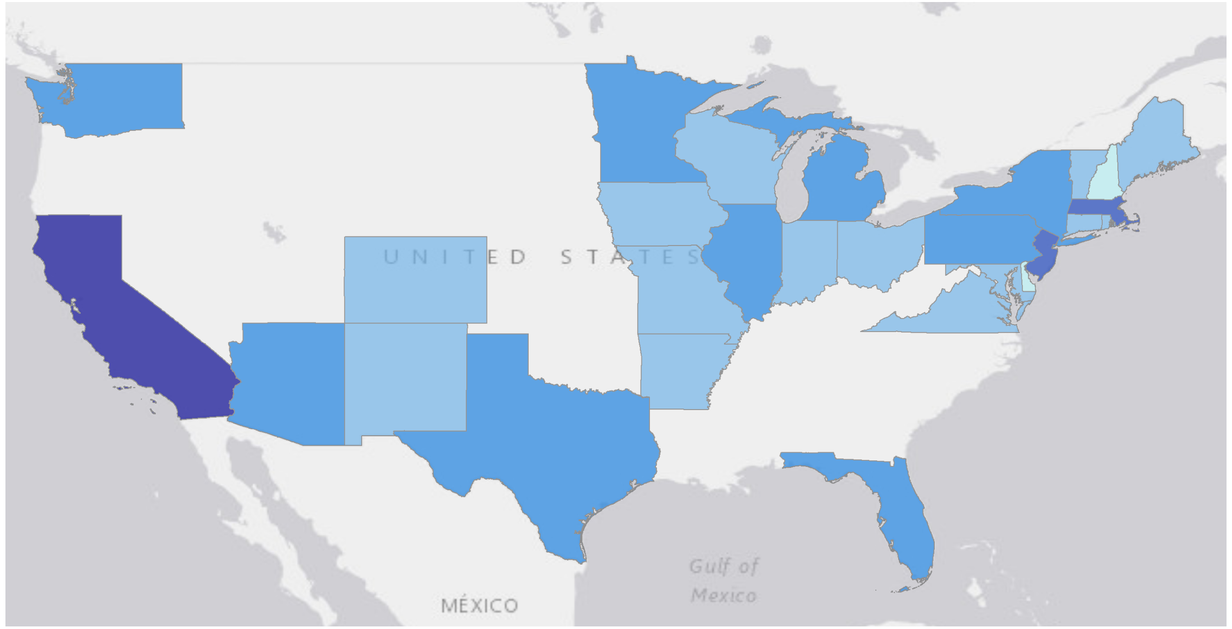



<u>Energy Transitions away from inequity:</u>

1 in 3 households struggle to afford energy

1 in 5 households trade-off w/other monthly costs

# Core research questions….

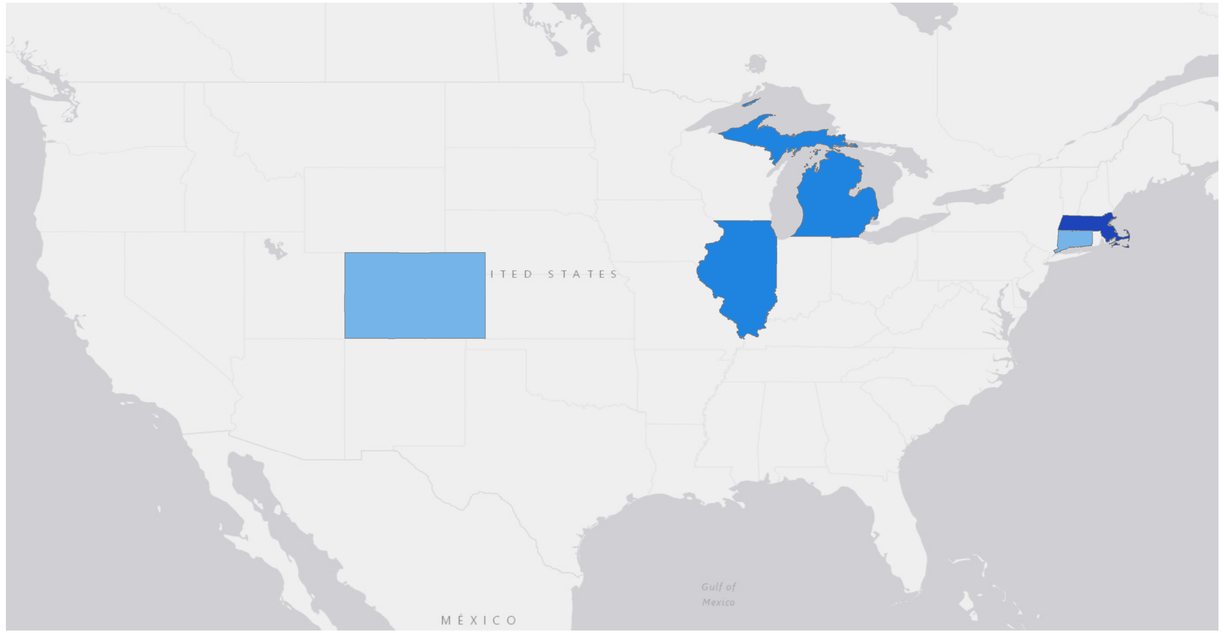



1. Is the energy efficiency resource *investment* being distributed equitably?

2. How to compare states, or utilities, performance in terms of equity?

3. Are some state policies more effective than others at reaching equitable investment levels?

# Our approach…




1. **Multi-state comparison capturing *varying* policy approaches to low-income EE policy**

- **5 states** (CO,CT,IL,MA,MI)
- 37.5 million residents
- **10 electric IOUs**
- $2.8 billion *invested* (2012-17')
- **Data: annual EE filings and reports**
- **Interviews: PUCs and stakeholders**

**2. Established novel metric: "E3b"**

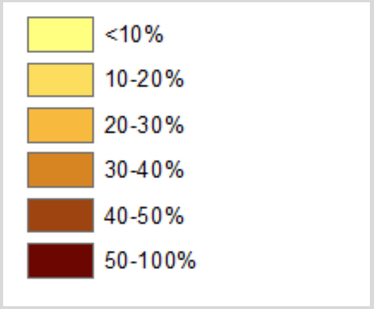
***Energy Efficiency Equity baseline***

# Finding 1: Variations in state LI requirements, LI qualifiers

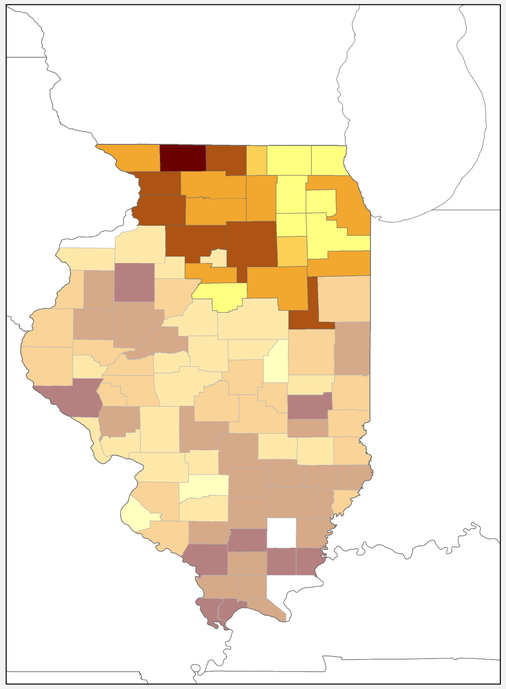
| State | Illinois | Massachusetts | Michigan |
|---|---|---|---|
| State Policy | Future Energy Jobs Act (2016) | Green Communities Act (2008) | Energy Waste Reduction Act (2016) |
| Approach | *Utility size* | *Percent of total Spend* | *No Required Level* |
| Requirement | $25M (>3M customers)<br>$8.4M (0.5-3M customers) | 10% Portfolio | *No required amount* |
| LI Qualifier | 300% FPL (post-2016)<br>80% AMI (pre-2016) | 60% SMI | 200% FPL |

# Finding 2: Variation in utility territory *income qualified* populations

**State**
**Income Qualified**
**(% Population)**




## Illinois



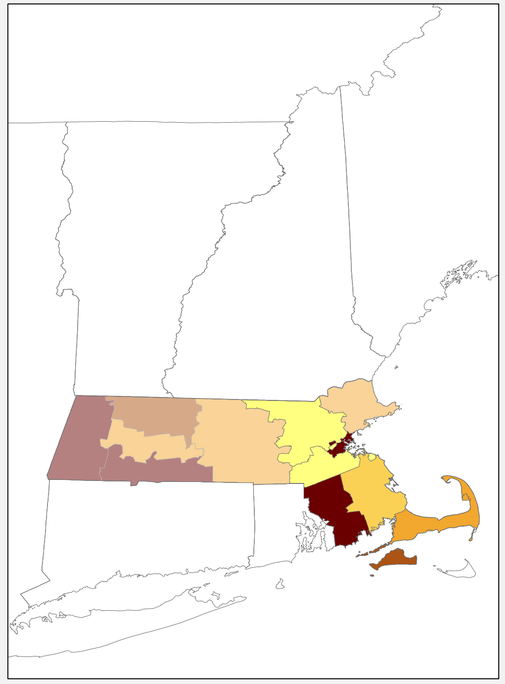
**% Population Income Qualified**

**Ameren – 38%**
**ComEd – 39%**

**LI Qualifier**

80% AMI (pre-2016)

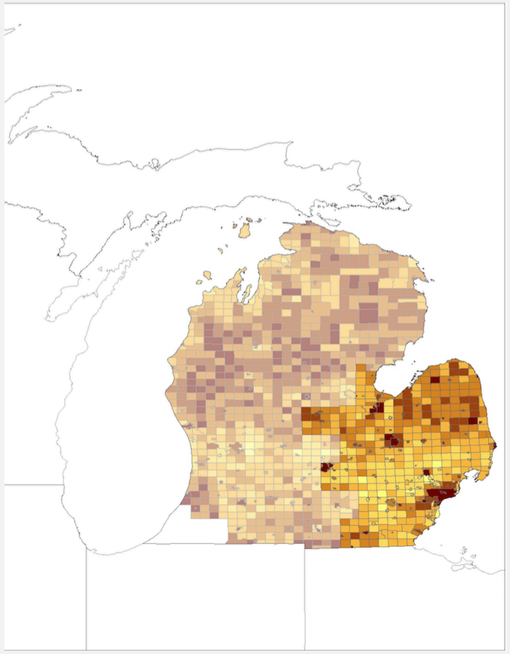
## Massachusetts



**National Grid – 31%**
**Eversource – 32%**

60% SMI

## Michigan



**DTE – 34%**
**Consumers – 34%**

200% FPL

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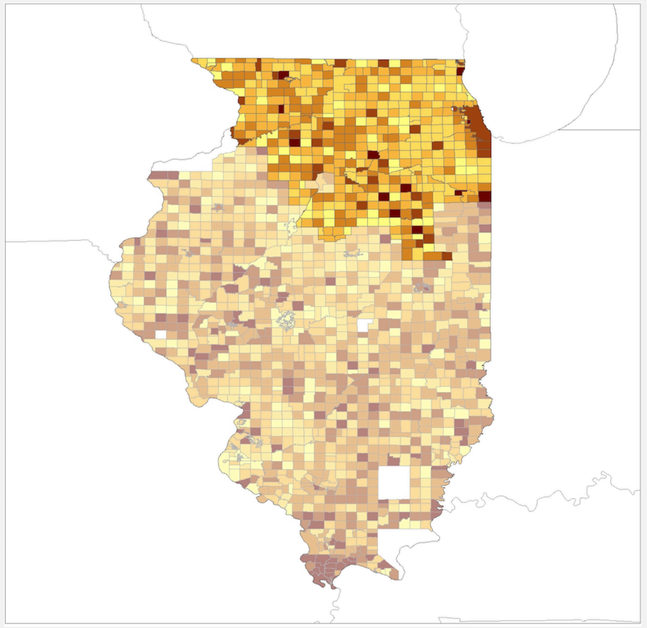
# Finding 2: Variation in utility territory populations: 200% FPL

**Income mapped 200% FPL**

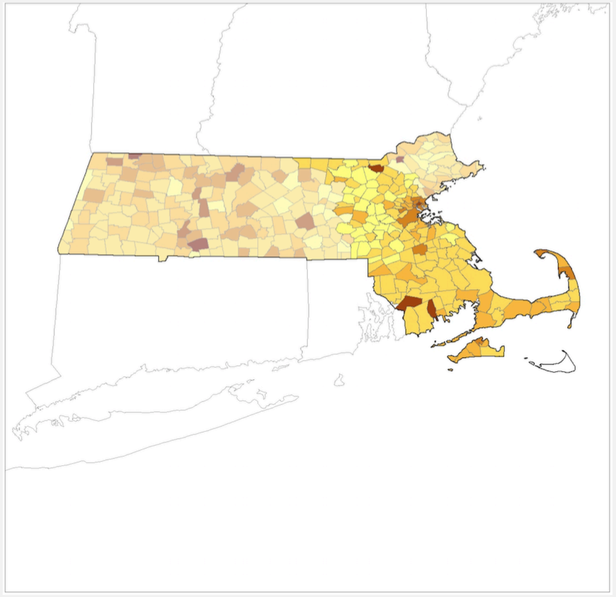
**Subcounty**
**Households <200% FPL**

- <10%
- 10-20%
- 20-30%
- 30-40%
- 40-50%
- 50-100%

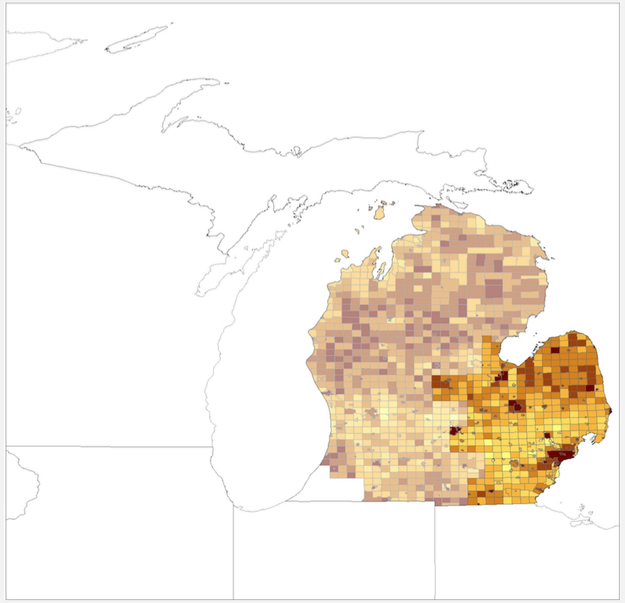
*Illinois - 31%*



*Massachusetts - 24%*



*Michigan - 34%*



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# Setting an effective comparative baseline:

# **Energy Efficiency Equity baseline, "E3b"**

$$E3b = \sum_{RES} + \sum_{LI} \times P_U$$

**Energy Efficiency Equity baseline** ($ equitable low-income investment)

Total Investment Sum of residential and LI-residential EE programs ($)

% population income-qualified per utility territory

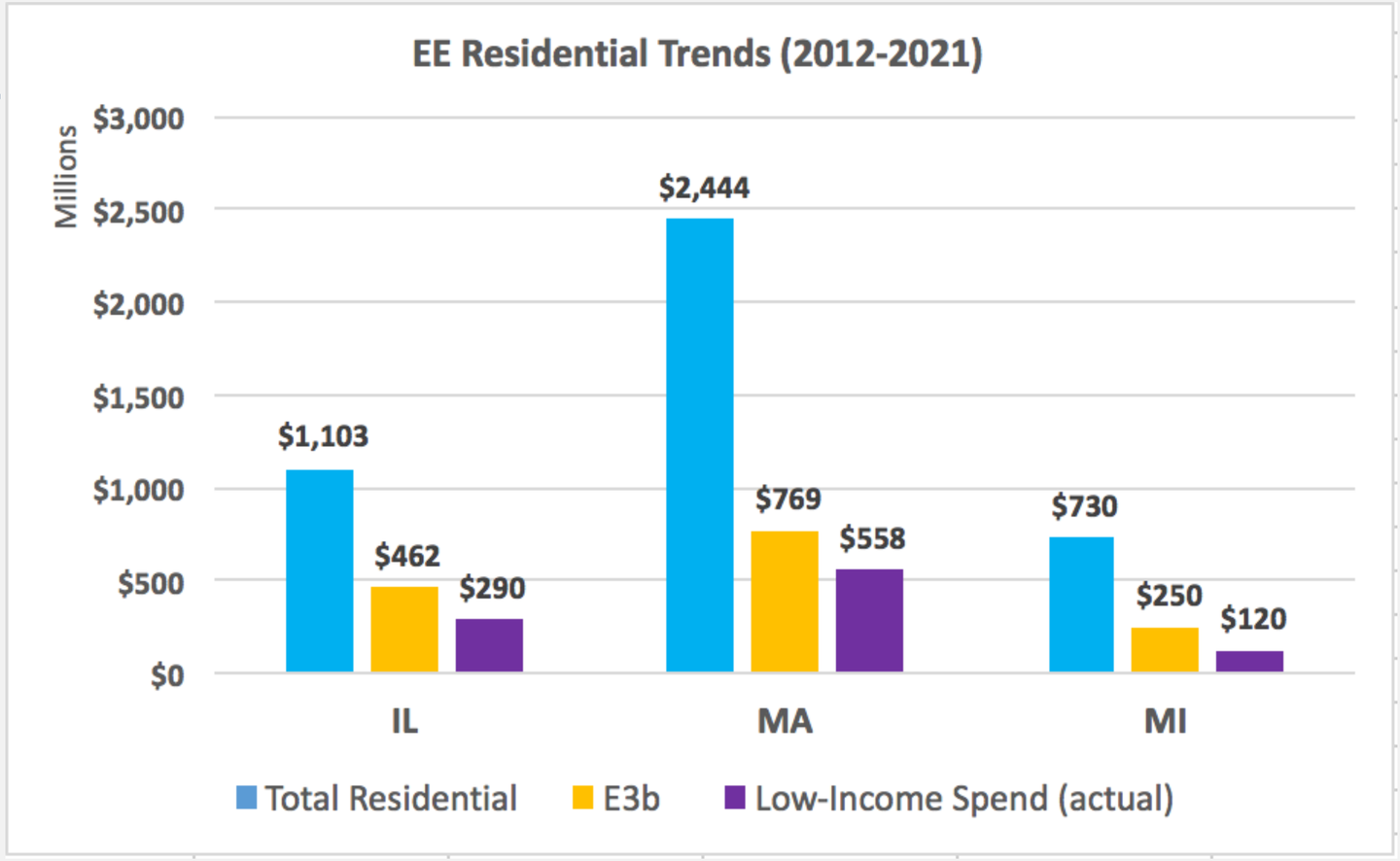
- **Tailored: Utility territory populations**
- **Flexible: Variation in income-qualifiers**

# EE Investment trends

Distribution of EE Residential Funds…

**(2012-2021)**

**Total Residential**: $4.2B



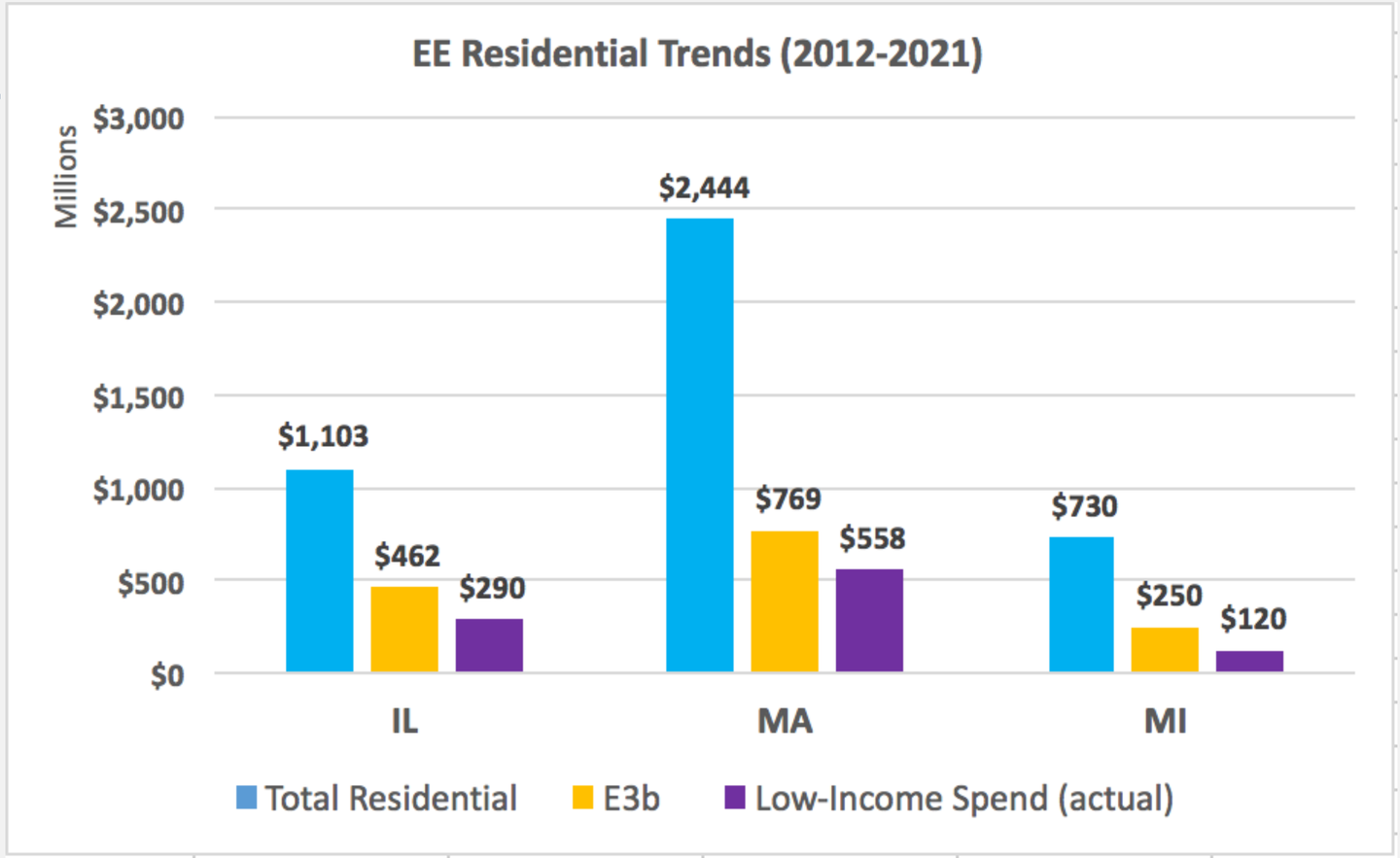
# EE Investment trends

Distribution of EE Residential Funds…

**(2012-2021)**

**Total Residential**: $4.2B

**E3b spend on Low-Income**: $1.5 B



# EE Investment trends

Distribution of EE Residential Funds…

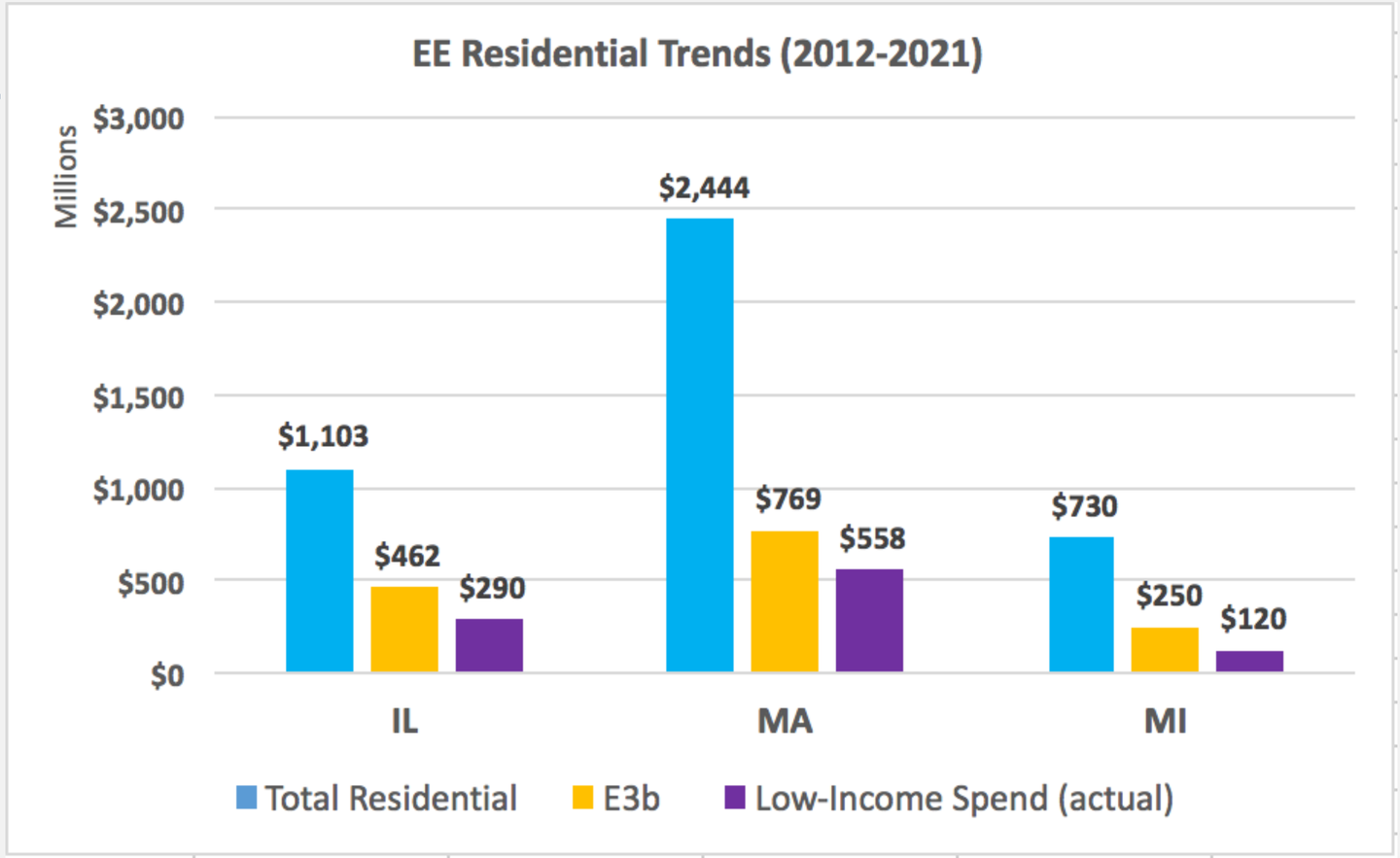
**(2012-2021)**

**Total Residential**: $4.2B

**E3b spend on Low-Income**: $1.5 B

**Actual spend on Low-income: $**1.0 B

**($0.5 B gap)**



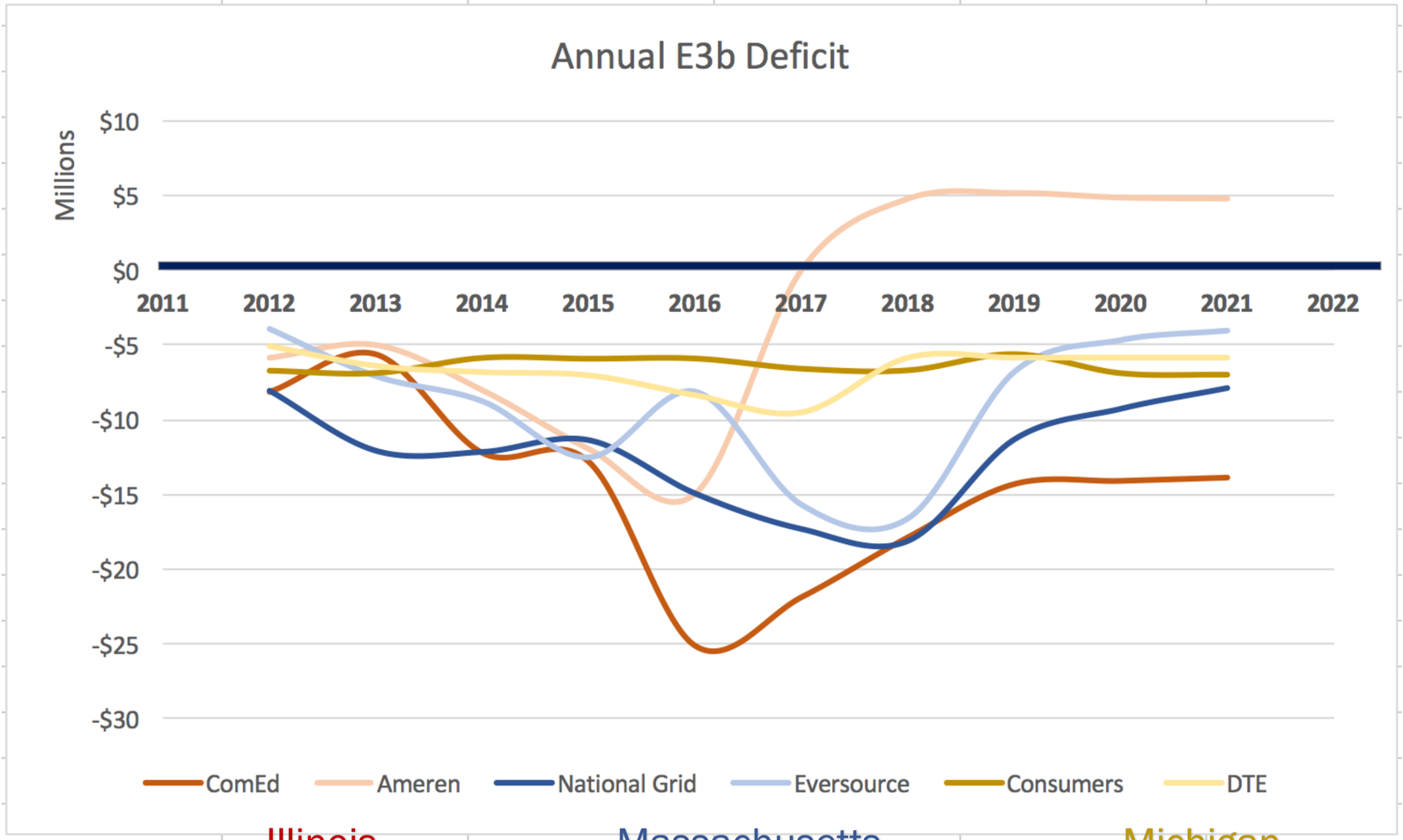
# How do utilities equity performance compare?

# Finding 3: Annual utility trends in reaching E3b

*In dollars*

Michigan utilities:

- *$5-10 million annual shortfall*
- *Consistent into 2021*



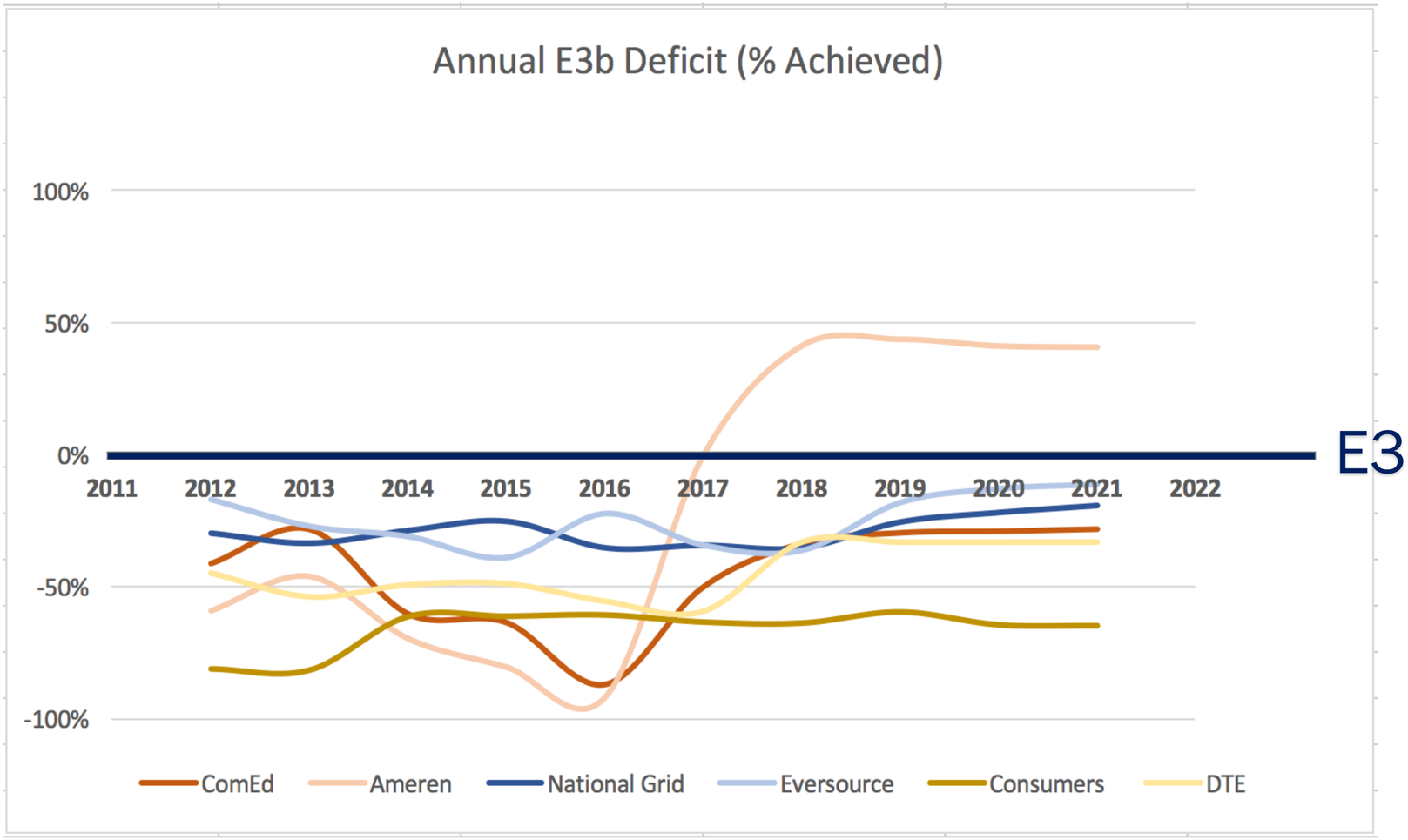
# Finding 3: Annual utility trends in reaching E3b

## Apples: % E3b Achieved

*(%) Normalized by program size annually*

## How do Michigan utilities compare?

- *Past: Similar to IL*
- *Future: Low performance (IL 2016 FEJA)*
- *Variability between MI utilities*



# Finding 4: Cumulative utility trends in reaching E3b

**Cumulative (10 yr.) equity, EE investments**

**Interpreting the figure:**

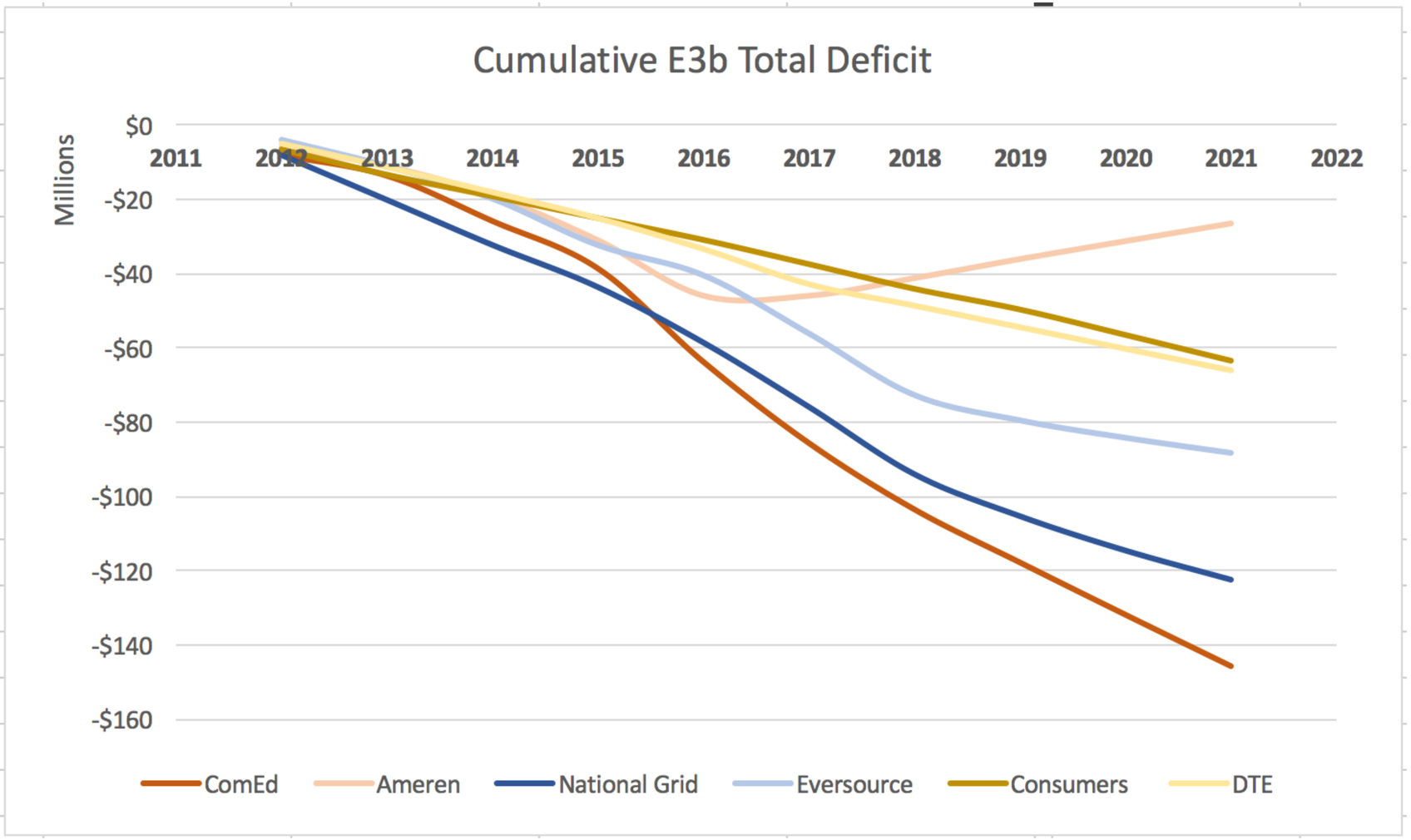
**Decline**: continue operating E3b deficit

**Flat slope**: Meeting E3b

**Incline**: Exceeding E3b, closing "lifetime" gap

Michigan utilities:

- *>$60 million by 2021 (per utility)*

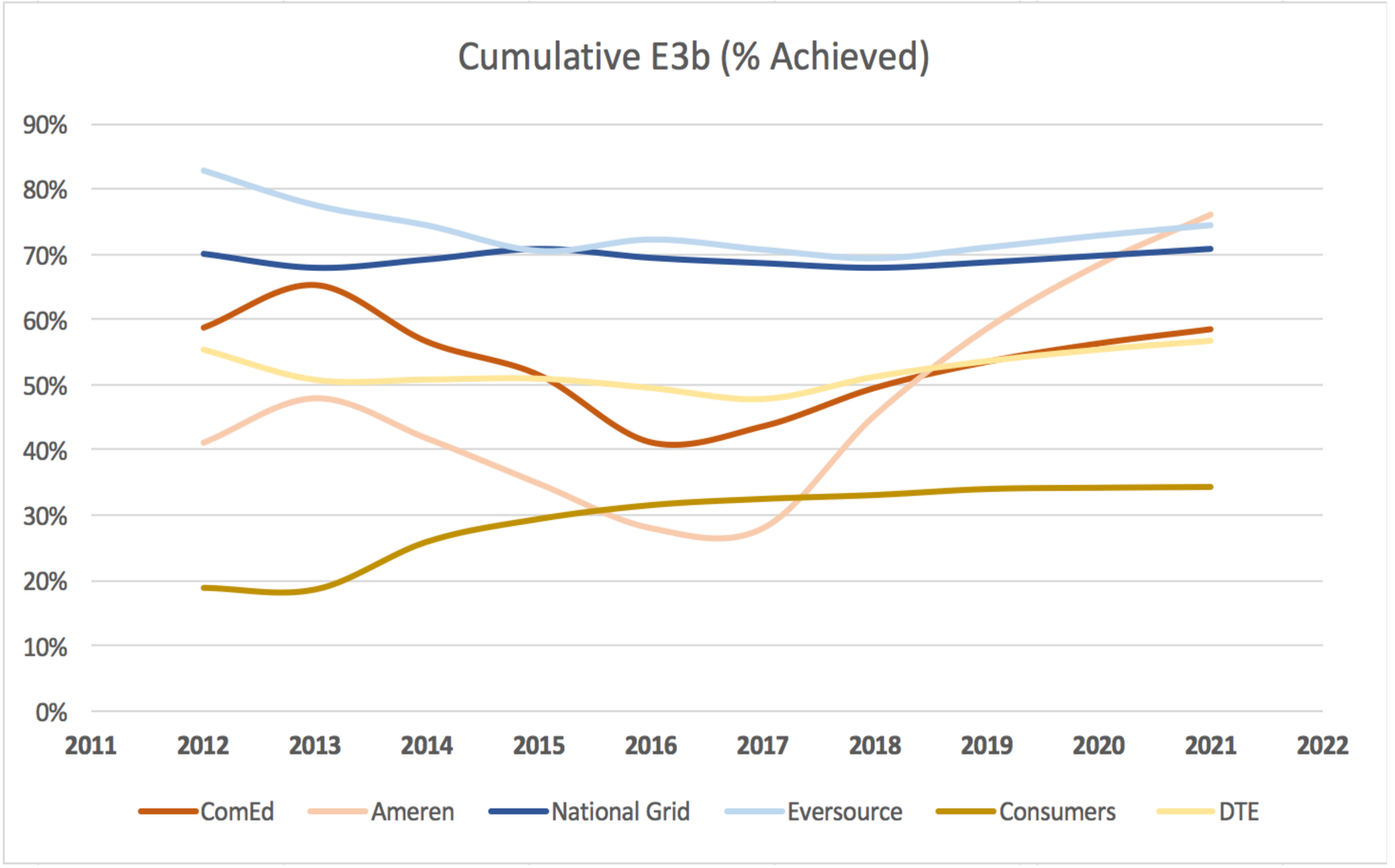


# Finding 4: Cumulative utility trends in reaching E3b

Apples: % E3b Achieved
*(%) Normalized by program size annually*

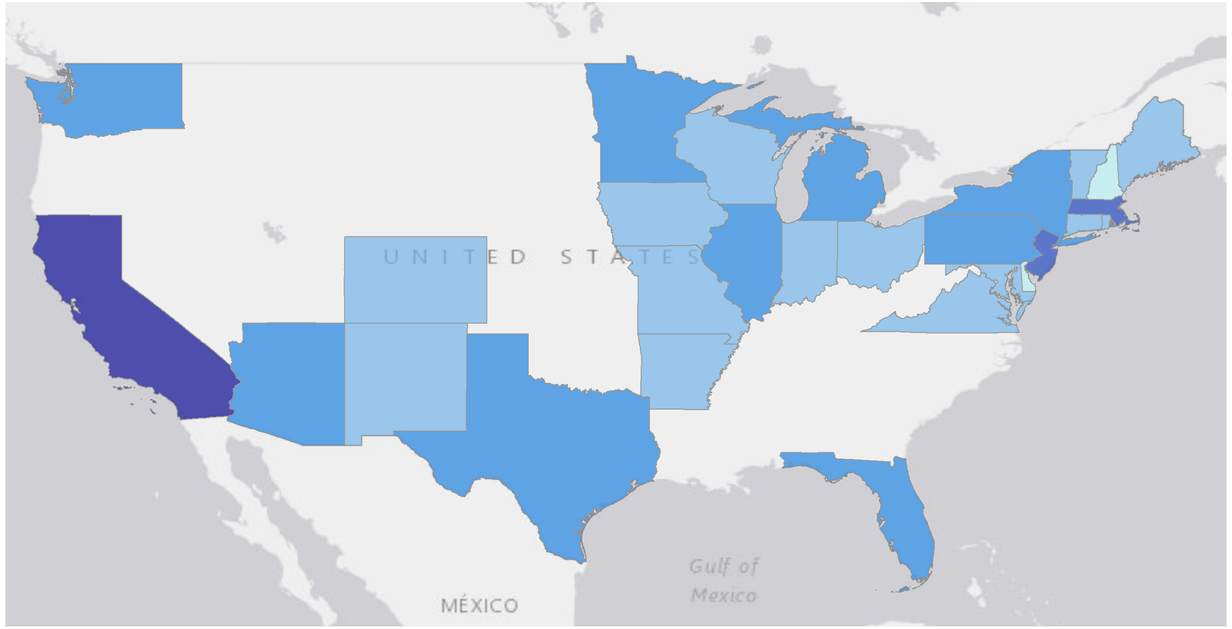
Lifetime achievements
- *Low/high points*
- *Today/Future*

How do Michigan utilities compare?
- *Past: Similar to IL*
- *Future: Decreasing gap, but still low performance*
- *Variability between MI utilities*




Illinois Massachusetts Michigan

# Conclusions:




1. Most states/utilities performing below E3b, wide variation

2. Equity performance factors: Utilities decision-making & state policy, energy type, population characteristics

3. E3b - strong comparison

- Flexible – utility target markets
- Tailored - territory population

**Implications in general:**

- Disparities are accumulating between low and non-low-income residential EE investments

**Opportunities through this study:**

- E3b metric: benchmark and compare *equity* performance between utilities/states
- Utilities: Recognize leadership in energy equity
- Stakeholders: identify/quantify concerns regarding "*fairness*"

**Questions for Michigan LIWG:**

- Should Michigan establish a requirement for low-income program spend?
- What approach to use?
- Percent of total portfolio spend, flat value, % annual revenue, E3b, %E3b?
- Income qualifier as 200% FPL, 60% AMI, 80% AMI?
- What barriers and opportunities, exist from each stakeholder position to establishing a state level low-income program spending requirement?

# Thank you!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