

The Household-Level Costs of Net Zero 2050 in the United States

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Assumptions

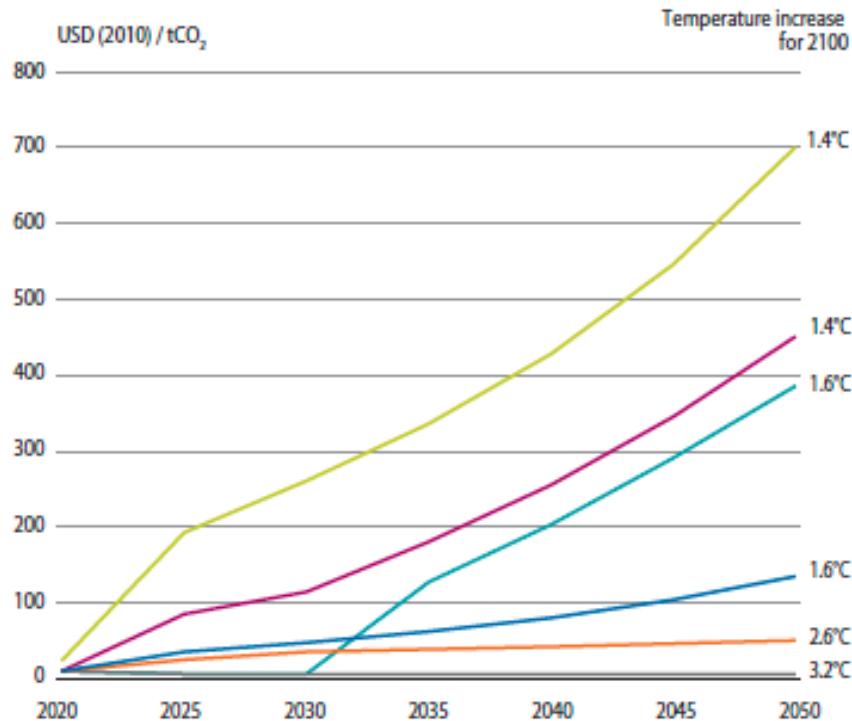
1. Net Zero 2050 is a cost-effectiveness problem.
2. A carbon tax is the least-cost path to a C-E solution.
3. All costs are borne by households.
4. No carbon tax would be 'revenue neutral'.
5. U.S. households will not pay for GHG reductions in other nations.

Red states, blue states: CO2 emissions/household (mt)



NGFS scenarios: Temperatures & carbon prices

Carbon price development



NGFS Scenario

- Divergent Net Zero 2050 (not $\leq 1.5^\circ\text{C}$)
- Net Zero 2050 (not $\leq 1.5^\circ\text{C}$)
- Below 2°C
- Delayed transition
- Nationally Determined Contributions
- Current policies

SCC/carbon tax designs examined

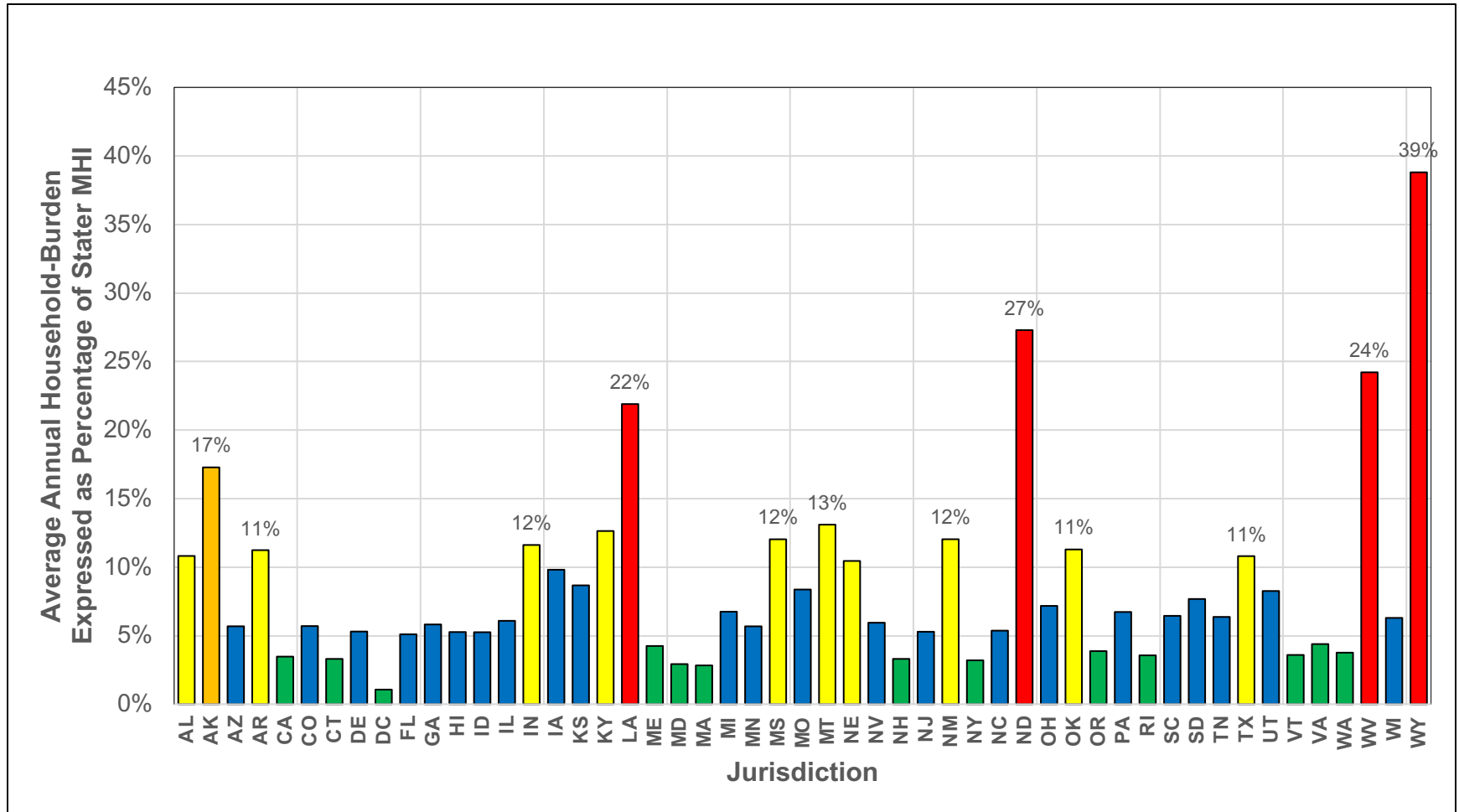
- A. Carbon tax based on in-State emissions, divided across in-State households
- B. Carbon tax based on U.S. emissions, divided across U.S. households



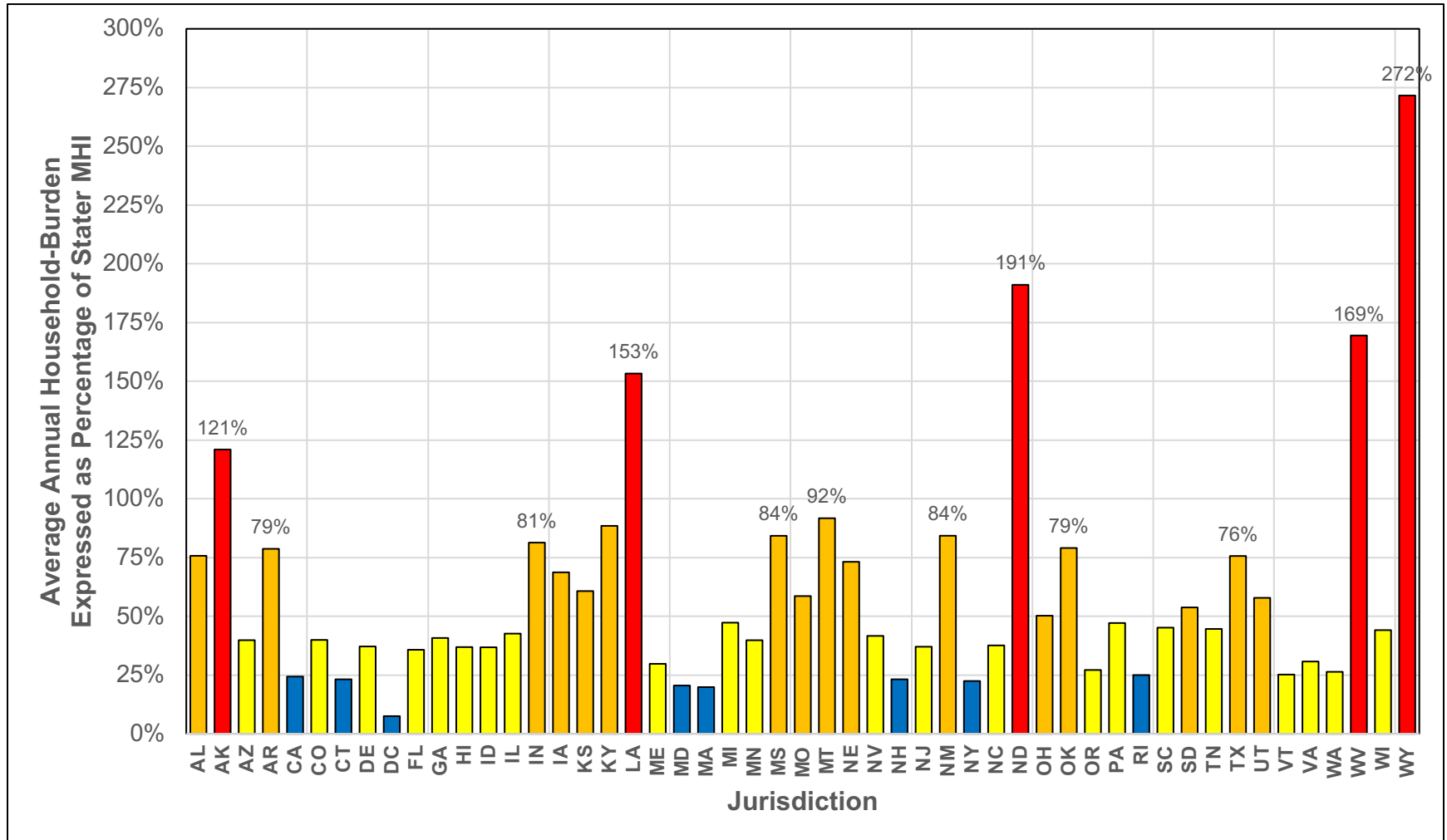
DESIGN A



Percent of MHI/Year Extracted by Net Zero 2050; Design A, \$100/mt



Percent of MHI/Year Extracted by Net Zero 2050; Design A, \$700/mt

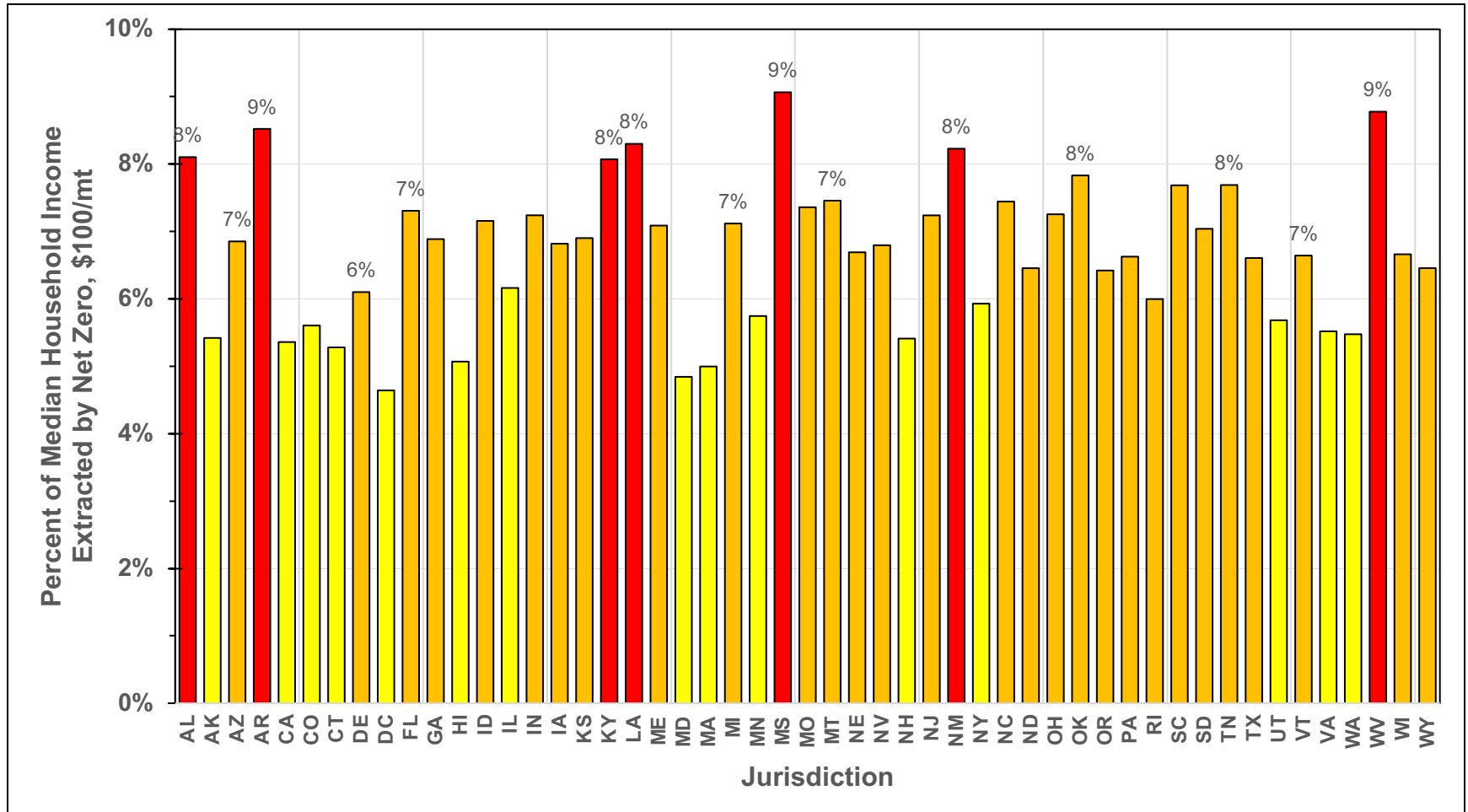




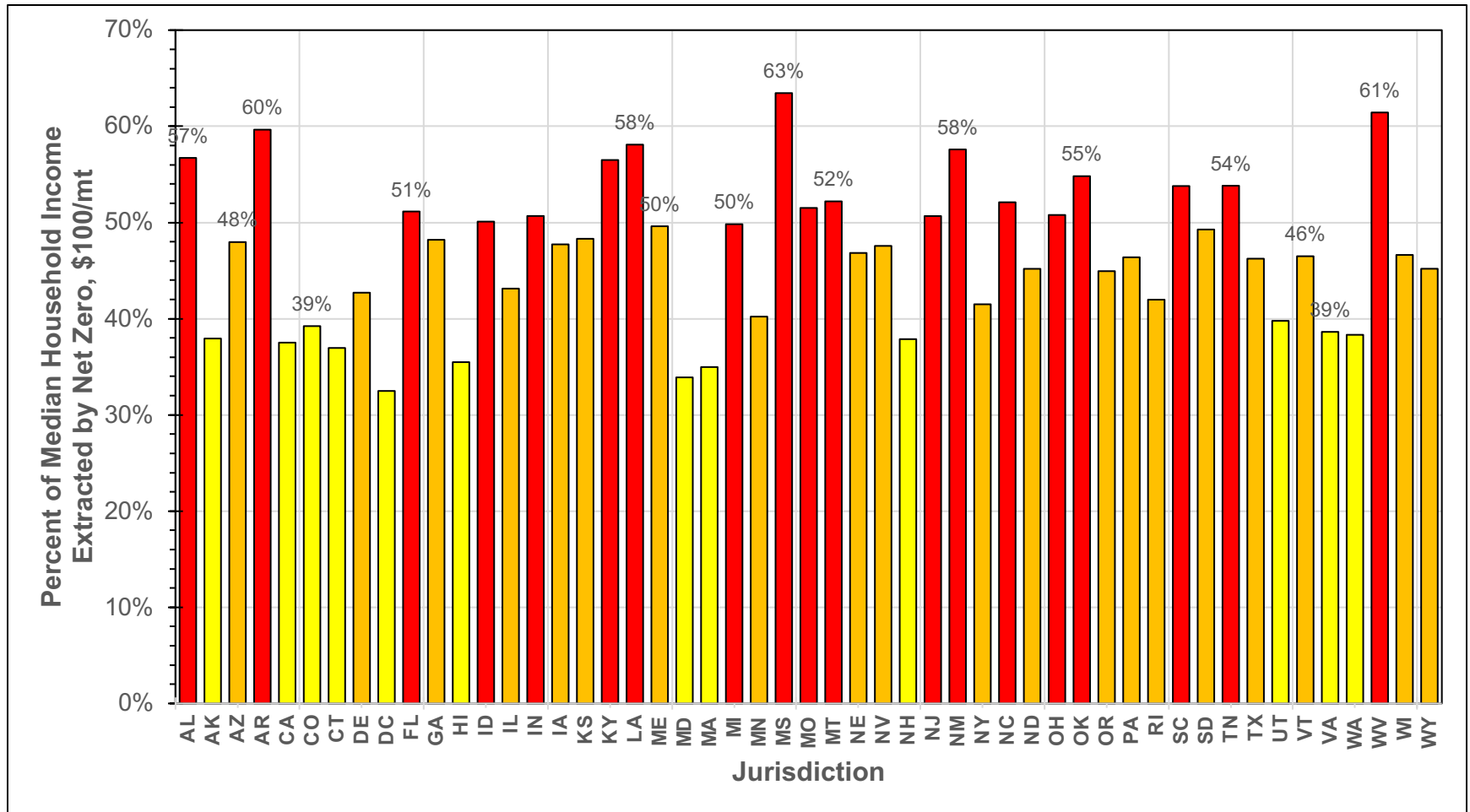
DESIGN B



Percent of MHI/Year Extracted by Net Zero 2050; Design B, \$100/mt

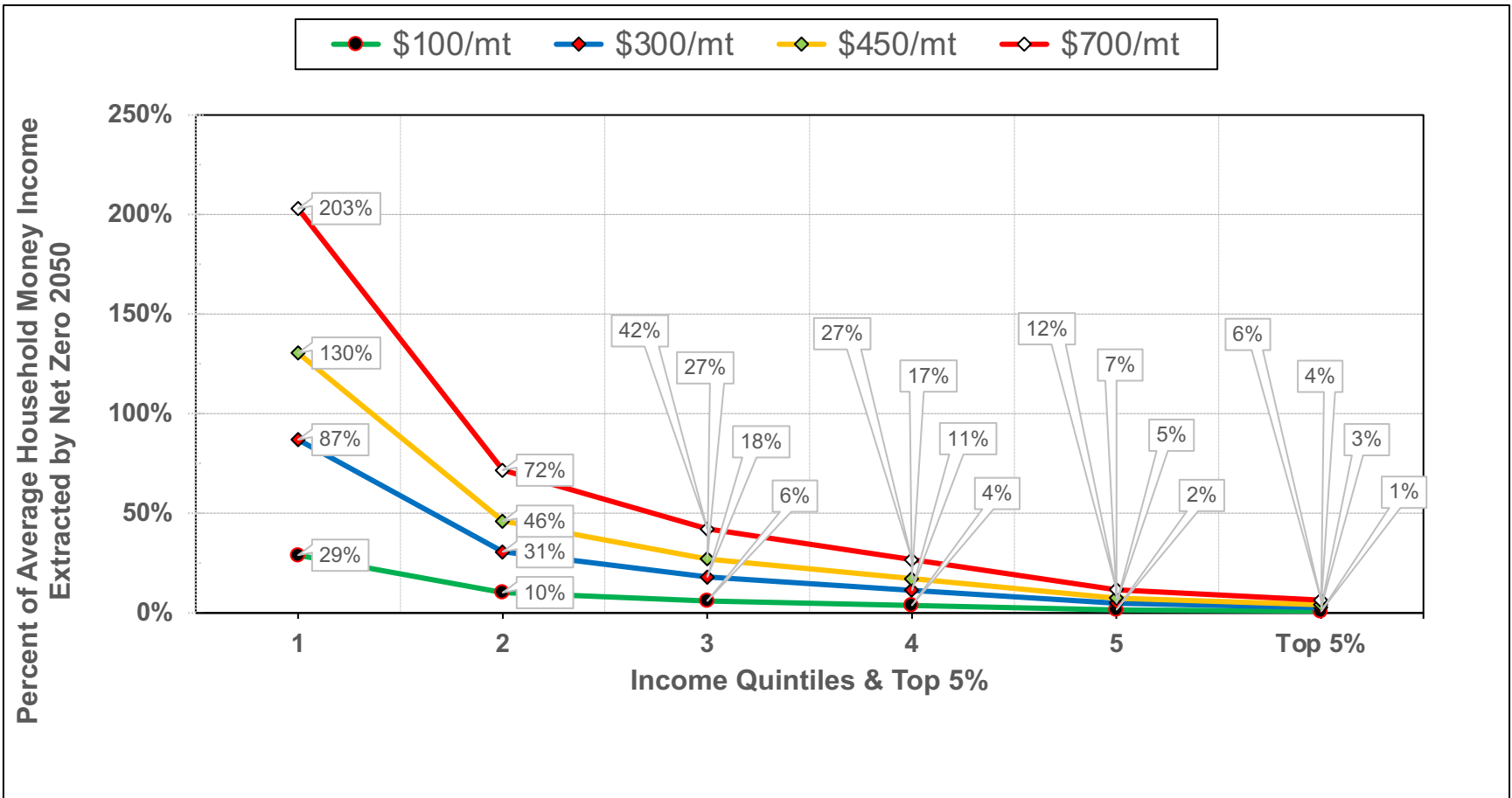


Percent of MHI/Year Extracted by Net Zero 2050; Design B, \$700/mt

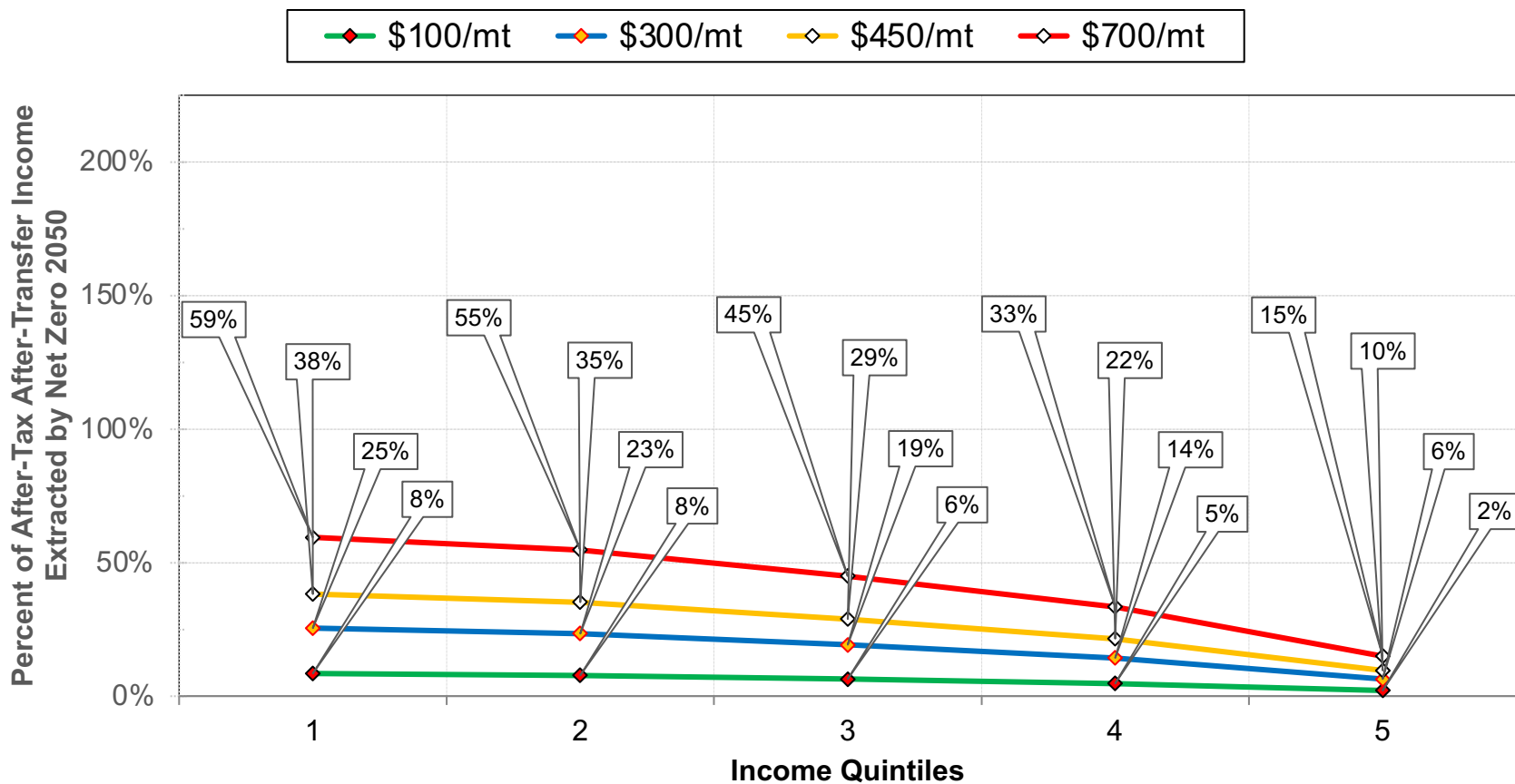


DISTRIBUTIONAL IMPACTS

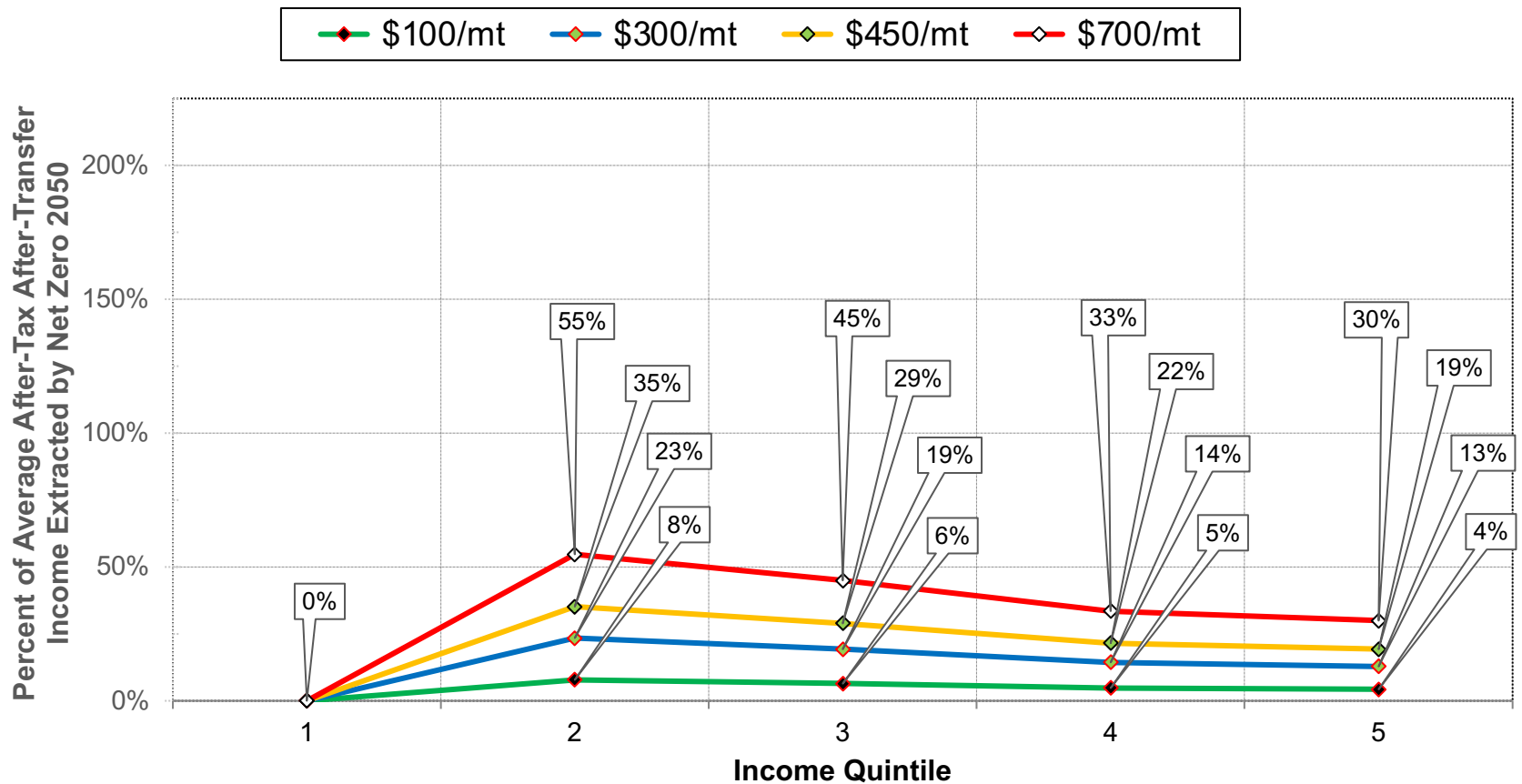
Household-Level Cost of Net Zero 2050 for 4 Alternative SCCs/Carbon Prices by Quintile & Top 5%, in Percent of Average Money Income



Household-Level Cost of Net Zero 2050 for 4 Alternative SCCs/Carbon Prices by Quintile (% Average After-Tax After-Transfer Income)



Household-Level Cost of Net Zero 2050 for 4 Alternative SCCs/Carbon Prices by Quintile if Q5 Pays for Q1 (% Average After-Tax After-Transfer Income)



European Relevance

- ① Household-level cost of Net Zero 2050 has not been clearly communicated to the public.
- ① Simple carbon tax designs illuminate the magnitude of this cost.
- ① Divergent impacts apparent in U.S. are likely to be also present in Europe.
- ① Distributional impacts will be similarly severe, and similarly hard to remedy.

More details!

- ① Download a copy of the working paper.
 - Go to www.rbbelzer.com.
 - Click on Working Papers in the left margin.