



Presentation to the Greenhouse Gas Mitigation Working Group, Buildings Sub-group

*Bryan Howard
Director of State Policy
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The American Council for an Energy-Efficient Economy is a nonprofit 501(c)(3) founded in 1980. We act as a catalyst to advance energy efficiency policies, programs, technologies, investments, & behaviors.

Our research explores economic impacts, financing options, behavior changes, program design, and utility planning, as well as US national, state, & local policy.

Our work is made possible by foundation funding, contracts, government grants, and conference revenue.

State Scorecard goals

1. Provide an annual benchmark of state energy efficiency policies and progress
2. Offer a comparative tool to direct states toward efficiency policies, best practices, and case studies from high-ranking states and regional neighbors



Photo credit: Idaho Office of Energy and Mineral Resources

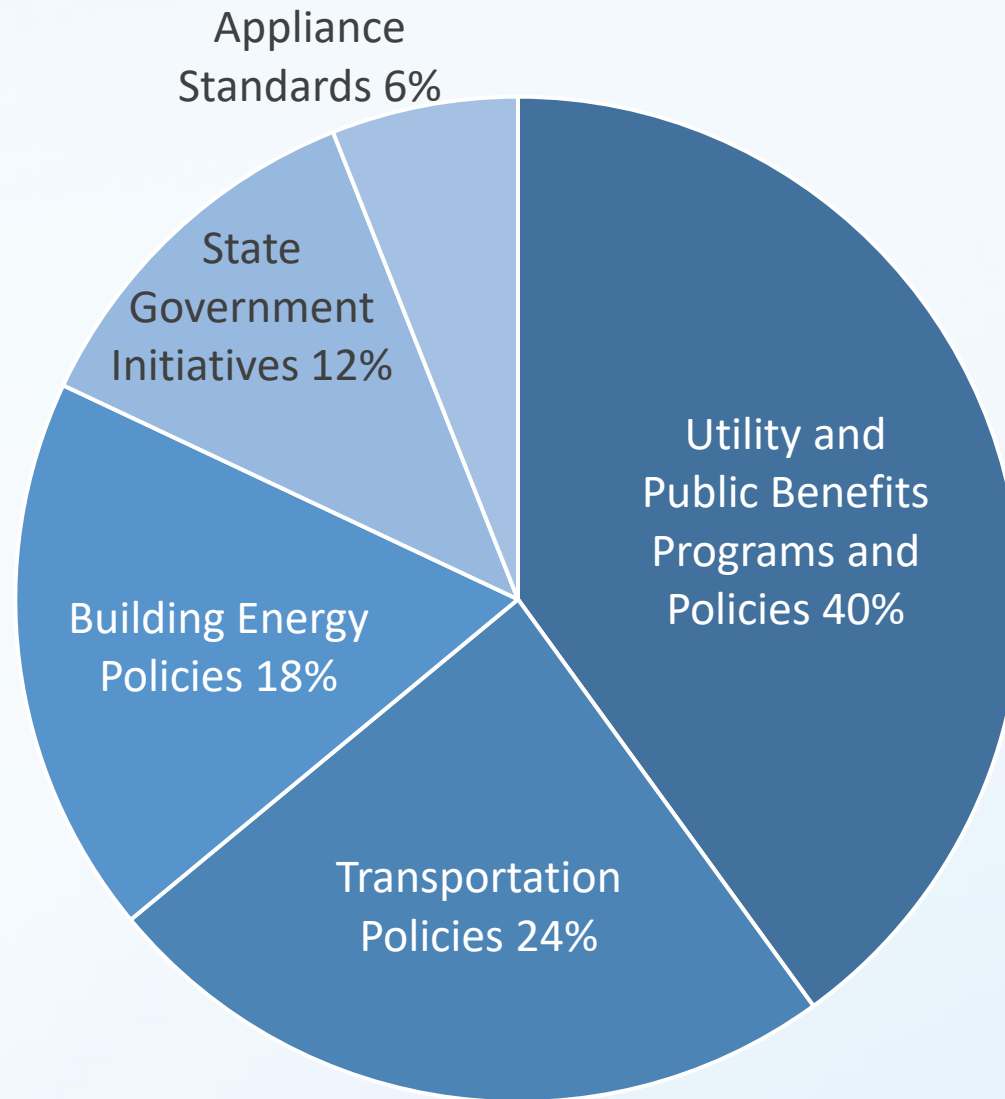


Photo credit: MA Department of Energy Resources

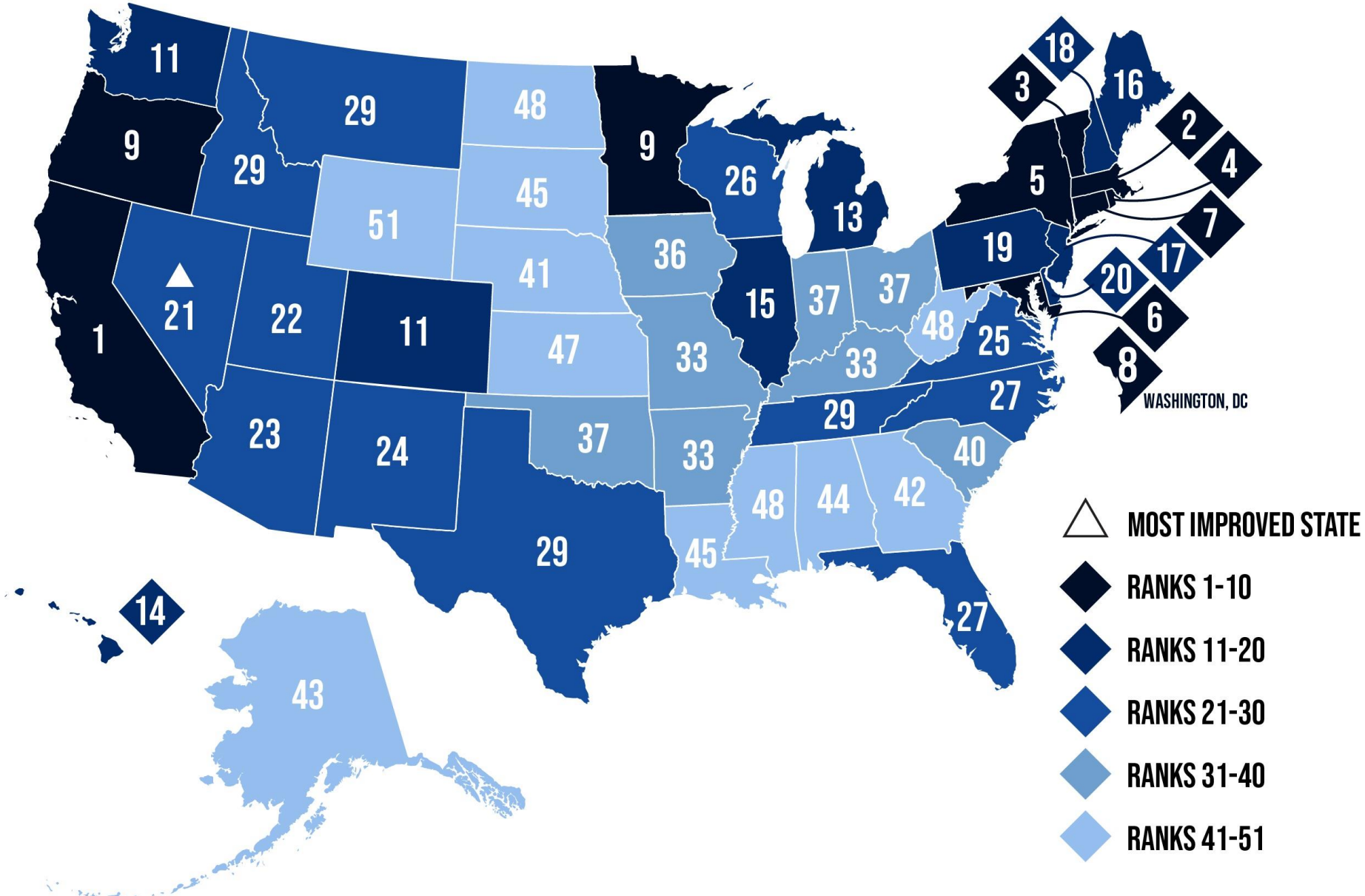


Photo credit: West Virginia Office of Energy

Policy Categories & Point Distribution

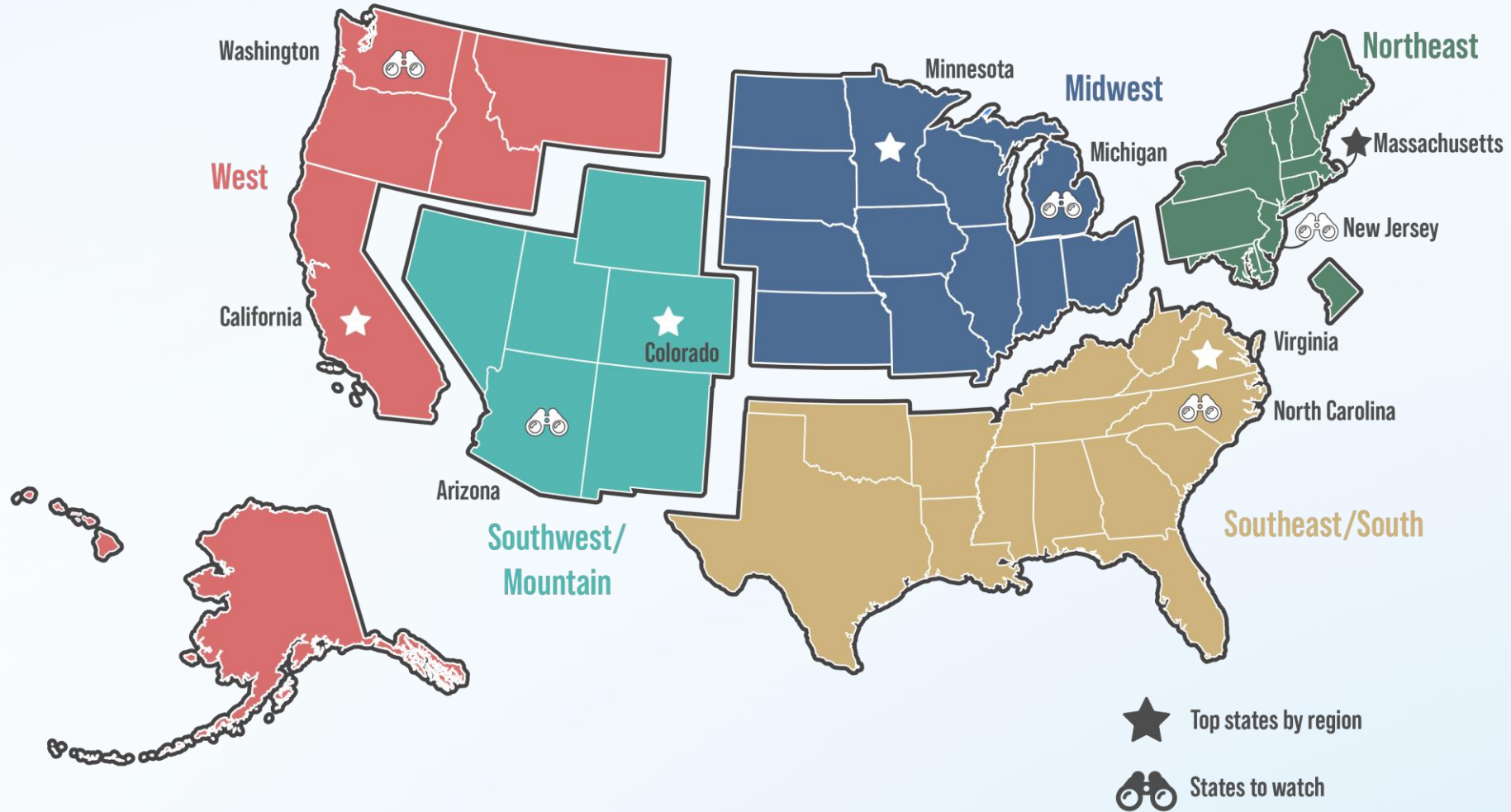


THE 2020 STATE ENERGY EFFICIENCY SCORECARD

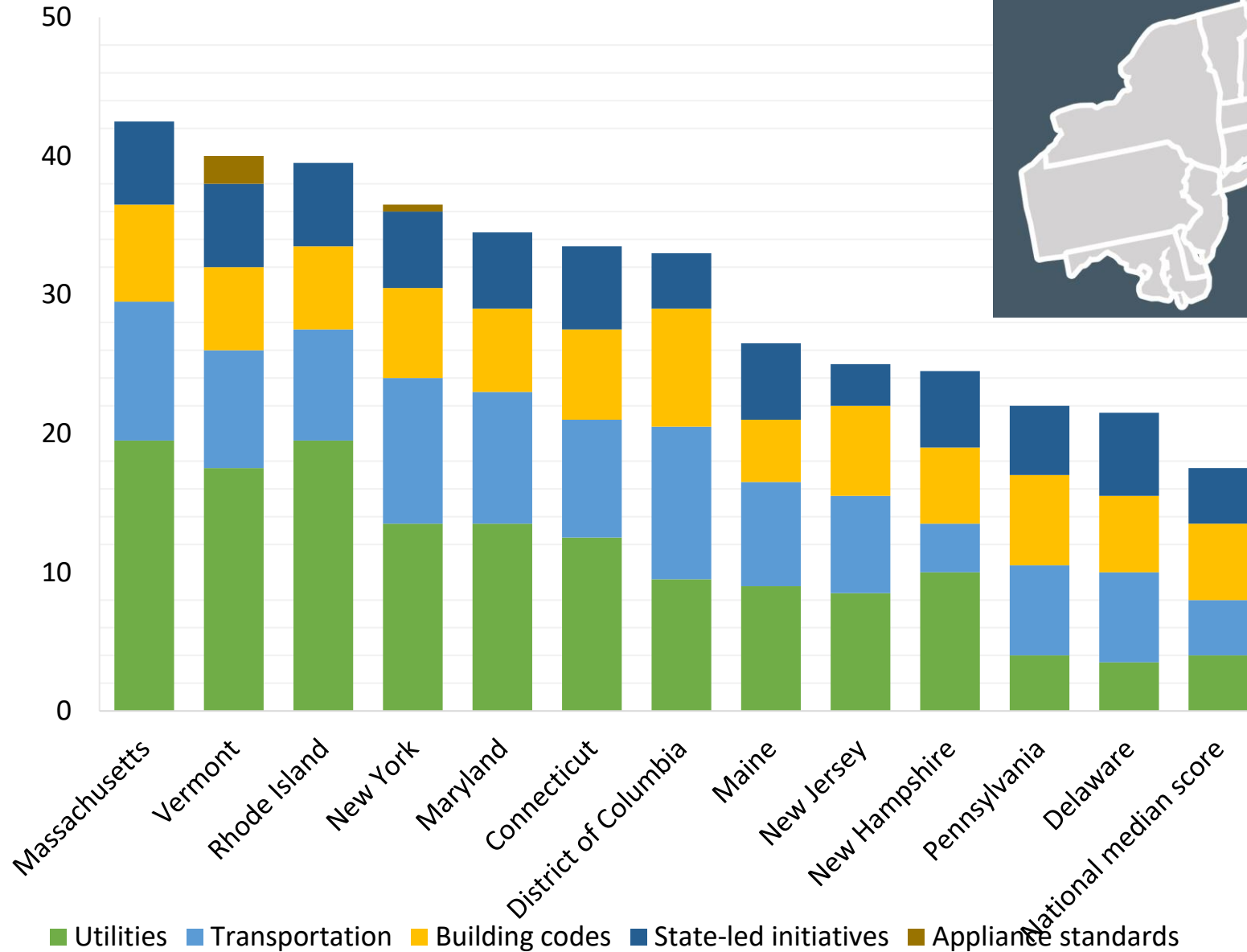


- ▲ MOST IMPROVED STATE
- ◆ RANKS 1-10
- ◆ RANKS 11-20
- ◆ RANKS 21-30
- ◆ RANKS 31-40
- ◆ RANKS 41-51

Regional leaders



Northeast



Buildings policies

- **Regularly update and strengthen building energy codes**
 - **Recent 2018 IECC code adoptions:** Delaware, New Jersey, New Mexico, New York, Vermont, Nevada (res)
- **Building Energy Performance Standards:** Washington State, DC
- **2021 IECC will further opportunity to ensure that new buildings lock-in low energy costs for generations of future residents**

Other opportunities

- Measuring code compliance
- Benchmarking/transparency
- Code collaboratives

State	Compliance study (1 pt.)	Stakeholder group (0.5 pts.)	Utility involvement (0.5 pts.)	Total score (2 pts.)
California	•	•	•	2
Connecticut	•	•	•	2
Massachusetts	•	•	•	2
Oregon	•	•	•	2
Pennsylvania	•	•	•	2
Texas	•	•	•	2
Alabama	•	•	•	2
Colorado	•	•	•	2
District of Columbia	•	•	•	2
Florida	•	•	•	2

Buildings policies

New metric: Zero Energy Buildings

- ZEB: energy-efficient building that produces an amount of onsite energy equal to or exceeding the energy it buys from utilities + energy losses from generation & transmission
- For U.S. to dramatically reduce GHG, will need to build new homes and buildings to minimize energy use and emissions, which means zero-energy, or near-zero-energy construction.
- Top-performers: Vermont, Oregon, Hawaii, California





THE STATE TRANSPORTATION ELECTRIFICATION SCORECARD

Bryan Howard, Shruti Vaidyanathan, Charlotte Cohn, Nick Henner, Ben Jennings

RESEARCH REPORT
FEBRUARY 2021



Planning and goal setting

<i>Electric vehicle and charging infrastructure planning and goal setting</i>	17
EV and EV charging infrastructure plans	4
Light-duty EV adoption goals and ZEV mandates	4
Heavy-duty EV adoption goals and ZEV mandates	4
Utility EV charging infrastructure goals	2
EV-supportive building codes	2
Low-carbon fuel standard	1

Top Performing States



Scoring Statistics

- High: 14
- Low: 0
- Average: 4.2

“EV-supportive” building codes

State adoption has taken two forms:

- EV-capable (electrical capacity and conduit)
- EV-ready (electrical capacity, conduit and wiring for charging stations)

EV Codes are mostly found in commercial and multi-family buildings

State	EV-supportive building codes (2 pts.)
California	2
Oregon	1.5
Washington	1.5
New York	0.5
Colorado	0.5
Vermont	1.5
Massachusetts	0.5
Hawaii	0.5
Illinois	0.5

Appliance savings estimates for Maryland

	Potential annual savings in 2025						Potential annual savings in 2035					
	Electricity (GWh)	Natural gas (BBtu)	Water (million gallons)	NOx (tons)	SO2 (tons)	CO2 (thous. MT)	Electricity (GWh)	Natural gas (BBtu)	Water (million gallons)	NOx (tons)	SO2 (tons)	CO2 (thous. MT)
Air purifiers	31.6	--	--	2.5	6.4	9.7	113.8	--	--	8.7	24.5	29.7
Commercial dishwashers	2.5	58	81	2.8	0.5	4.0	12.3	292	407	14.2	2.6	18.7
Commercial steam cookers	3.3	18	56	1.1	0.7	2.1	15.9	84	270	5.0	3.4	8.6
Faucets	35.2	110	685	7.8	7.1	16.6	140.7	429	2,712	30.2	30.2	59.6
Portable electric spas	11.6	--	--	0.9	2.4	3.6	37.5	--	--	2.9	8.1	9.8
Residential ventilating fans	4.2	--	--	0.3	0.8	1.3	20.9	--	--	1.6	4.5	5.5
Showerheads	32.0	96	420	6.9	6.5	14.9	128.1	386	1,682	27.3	27.5	54.0
Spray sprinkler bodies	--	--	2,701	--	--	--	--	--	10,805	--	--	--
Toilets (water closets)	--	--	192	--	--	--	--	--	953	--	--	--
Urinals	--	--	37	--	--	--	--	--	178	--	--	--
Water coolers	8.3	--	--	0.7	1.7	3.0	33.3	--	--	2.6	7.2	8.6
Total	129	283	4,174	23	26	55	503	1,192	17,007	93	108	194

Assuming a compliance date of 2023 for all the recommended standards. Totals may not sum due to rounding. While we continue to recommend the adoption of state-level standards for computers and computer monitors, we have not estimated savings for these products due to a lack of data on the current market.

Appliance savings estimates for Maryland

	Potential annual utility bill savings (million 2019\$)		Net present value savings (million 2019\$)	Benefit-cost ratio	Payback period (years)
	In 2025	In 2035			
Air purifiers	4.7	18.1	122.2	no cost	0.0
Commercial dishwashers	1.8	10.3	59.7	9.8	1.1
Commercial steam cookers	1.2	6.5	37.5	11.2	0.9
Faucets	14.9	65.9	434.3	no cost	0.0
Portable electric spas	1.7	5.9	35.5	8.8	0.8
Residential ventilating fans	0.6	3.3	22.6	no cost	0.0
Showerheads	11.0	48.9	322.7	no cost	0.0
Spray sprinkler bodies	32.7	150.9	905.8	11.8	0.8
Toilets (water closets)	2.3	13.3	120.8	no cost	0.0
Urinals	0.4	2.5	15.7	no cost	0.0
Water coolers	0.9	3.8	24.9	no cost	0.0
Total	72	329	2,102	22.2	--

Assuming a compliance date of 2023 for all the recommended standards. Net present value savings take into account both utility bill savings and estimated impacts on product costs for items sold between 2023 and 2035. Totals may not sum due to rounding. The total benefit-cost ratio is calculated as the present value of the total utility bill savings from products sold through 2035 for the package of recommended standards divided by the present value of the total additional costs. While we continue to recommend the adoption of state-level standards for computers and computer monitors, we have not estimated savings for these products due to a lack of data on the current market.

Utilities & public benefit programs

Other State achievements

- **New York:** Climate Leadership and Community Protection Act targets 3% utility savings by 2025 and net zero carbon emissions by 2050
- **Minnesota:** IOUs file savings goals of 2.5% of sales or above for 2021-2023
- **Michigan:** IOUs targeting annual savings of 2% in recent IRPs

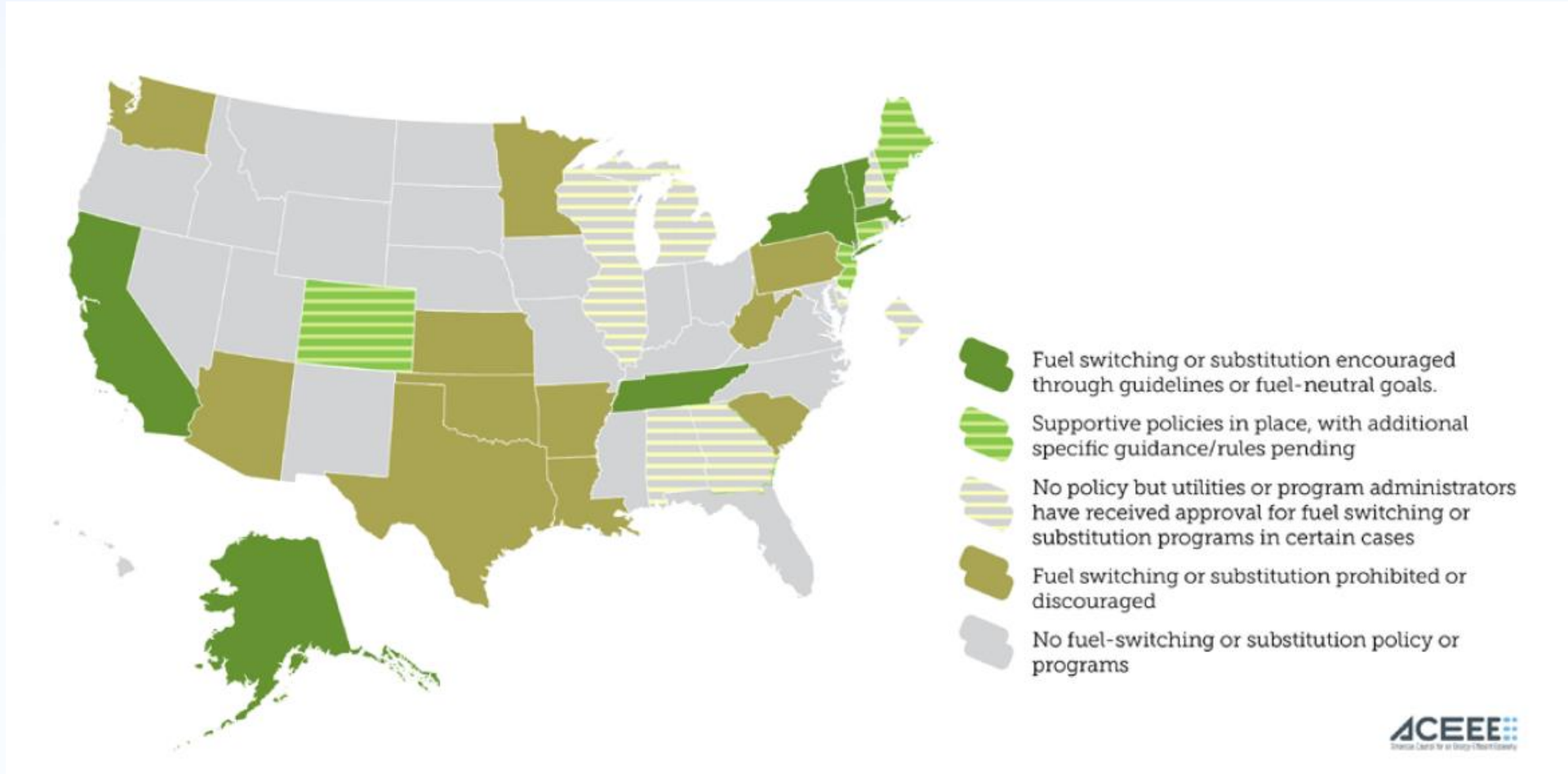
States falling behind

- **Iowa:** from 23rd to 36th place due to EE spending caps under SF 2311 and SF 638
- **Ohio:** from 33rd to 37th due to HB 6, prohibiting approval of EE cost recovery mechanism and terminating programs

Opportunities

- Reaching large industrial customers (13 states with opt-outs)
- Utility business model reforms: EE performance incentives & decoupling
- Strategic electrification & supportive fuel-switching policies

Fuel-switching policy status by state



State energy efficiency resource standards

State	% of sales covered within EERS policy	Approximate average annual electric savings target for 2020-2025
Massachusetts	85%	2.7%
Rhode Island	99%	2.5%
Vermont	98%	2.4%
Maryland Under SB 462	97%	2.05%
New York†	100%	2.0%
New Jersey	100%	1.6%
Maryland Under Current Law†	97%	1.6%
New Hampshire	100%	1.3%
Connecticut	93%	1.1%
Maine†	100%	1.0%
Virginia	87%	1.2%
Pennsylvania	96%	0.6%

Justice

Maryland Thought Deregulating Utilities Would Lower Rates. It's Cost the State's Residents Hundreds of Millions of Dollars.

Unscrupulous retail energy companies in Maryland and numerous other states often prey on the poor by offering special low rates, only to quickly raise them.

By Agya K. Aning
March 14, 2021



Row homes are seen in Baltimore, Maryland. Credit: Patrick Smith/Getty Images

insideclimatenews.org/news/14032021/maryland-thought-deregulating-utilities-would-lower-rates-its-cost-the-states-residents-hundreds-of-millions-of-dollars/

Justice

Why the Poor in Baltimore Face Such Crushing 'Energy Burdens'

Darlene Jenkins couldn't understand why her gas and electric bills were so high. Then she met an advocate in a North Baltimore parking lot.

By Agya K. Aning
February 12, 2021



Darlene Jenkins holds her 6-year-old grandson, Khiari, outside of their home in Baltimore on Feb. 3, 2021. Credit: Agya K. Aning/Inside Climate News

insideclimatenews.org/news/12022021/energy-burdens-low-income-baltimore/

Scale-up low-income clean energy investments

- State policymakers can set targets to encourage and/or require LMI EE and clean energy
- NY’s CLCPA requires 40% of benefits go to LMI communities

LI Spending Thresholds	LI Proportional Spending	LI savings targets	LI customer participation goals
<i>Require a certain amount spent on low-income EE programs (18 states)</i>	<i>Require spending that is at least proportional to ratepayer class (2 states: CT and MI)</i>	<i>Require a certain % of savings from low-income programs (1 state: PA)</i>	<i>Require certain level of participation from low-income sector (3 states: CA, CT, WA)</i>
15-20% —DC, DE, MT, NH, NY 10-15% —OR, MA, ME, NH, TX, VT 5% —NM, NV, VA <5% —MN Specific amount —IL, OH, MI	MI: Each customer rate class funding contribution to low-income programs be in proportion to that rate class’s contribution to the total portfolio	PA: Phase III of Act 129’s EE and Conservation Program requires each utility to obtain a minimum of 5.5% of total consumption reduction target from LMI sector	CT: Goal to weatherize 80% of all homes by 2030

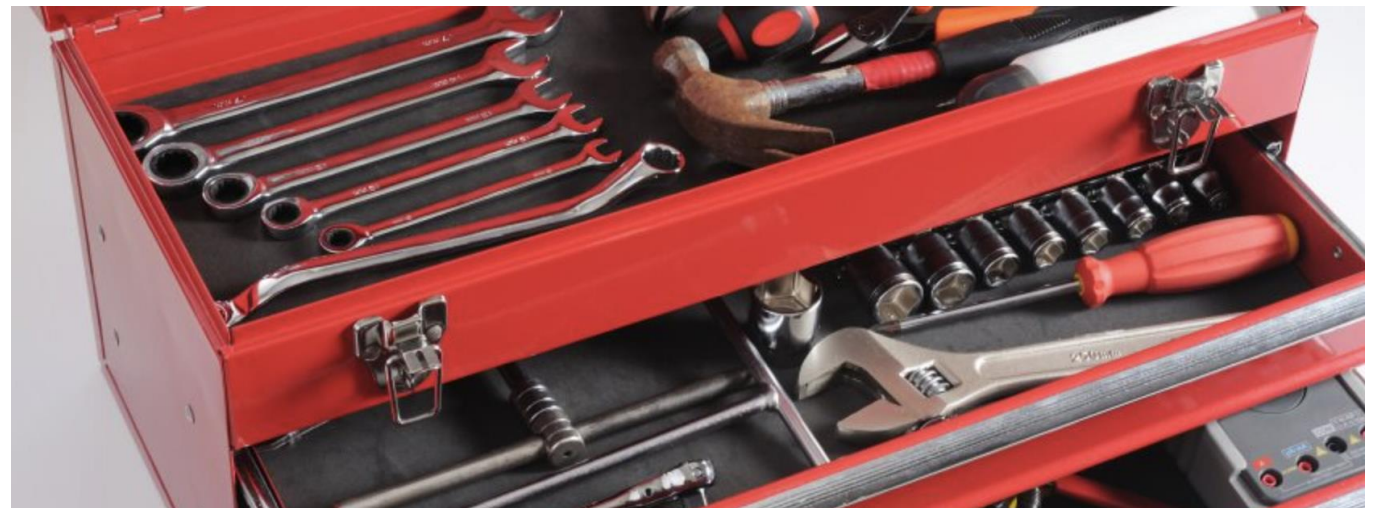
Key issues facing the energy efficiency workforce

- Energy efficiency rebound from COVID-19
- While poised for growth, the industry faces challenges
 - Replacing a retiring workforce
 - Workforce is less diverse than the national workforce
- Opportunity to influence and nurture expected growth to achieve diverse, local, robust workforce



Diversity in the Energy Efficiency Workforce

- The EE workforce is less diverse than the national workforce:
 - **50% fewer Black workers**
 - **90% fewer women**
 - **20% fewer Hispanic workers**
- Ethnic and racial diversity decrease moving up the career ladder.
- Unemployment due to COVID-19 remains higher for Hispanic and Black workers.



Resources

ACEEE, *State Energy Efficiency Scorecard*: <https://www.aceee.org/state-policy/scorecard>

ACEEE, *State Policies and Rules to Enable Beneficial Electrification in Buildings through Fuel Switching*:
<https://www.aceee.org/policy-brief/2020/04/state-policies-and-rules-enable-beneficial-electrification-buildings-through>

ACEEE, *State Transportation Electrification Scorecard*: <https://www.aceee.org/research-report/t2101>

ACEEE, *Programs to Promote Zero-Energy New Homes and Buildings*: <https://www.aceee.org/topic-brief/2020/09/programs-promote-zero-energy-new-homes-and-buildings>

ASAP, *State savings from state standards*: <https://appliance-standards.org/state-savings-state-standards>

ACEEE, *Expanding Opportunity through Energy Efficiency Jobs: Strategies to Ensure a More Resilient, Diverse Workforce*:
www.aceee.org/research-report/u2010

For additional inquiries, contact Bryan Howard

