

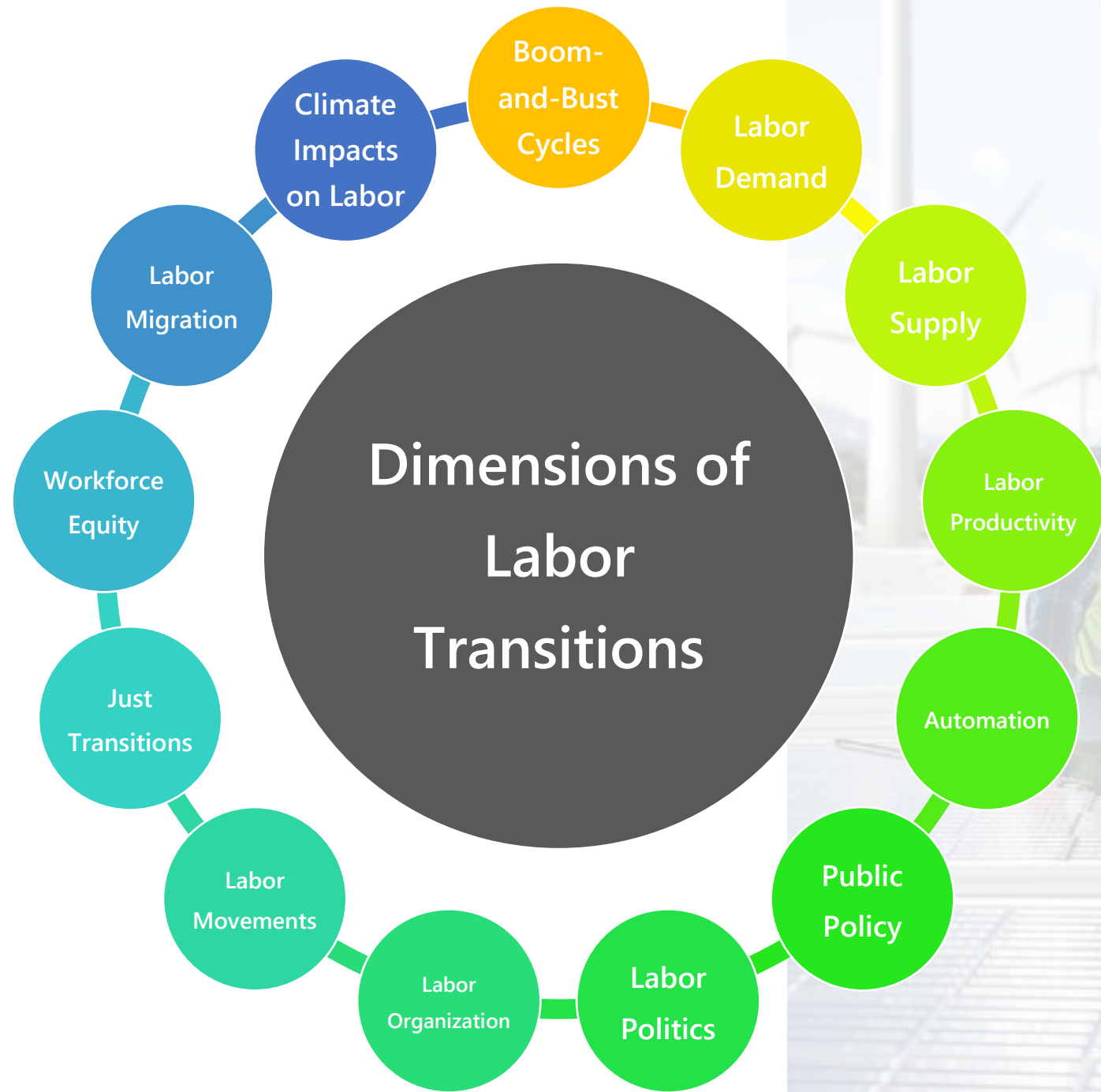
# Labor transitions to meet U.S. climate targets

Professor Erin Mayfield  
Secretary of Energy Advisory Board Meeting  
26 July 2023



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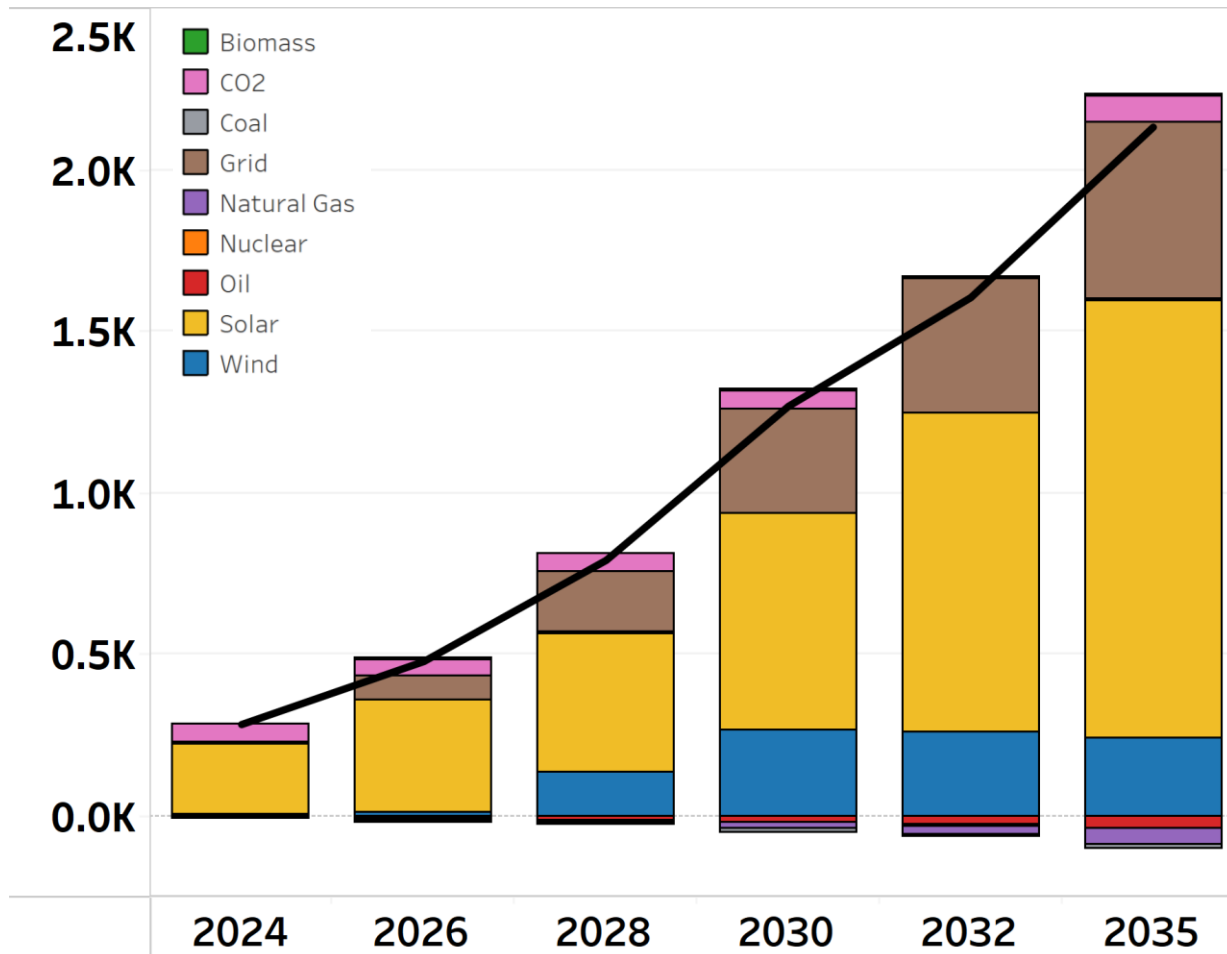


# Labor implications of the Inflation Reduction Act



# Labor demand induced by the Inflation Reduction Act

## Annual Supply-Side Employment Thousand jobs



The Inflation Reduction Act could create demand for over **1.5 million additional energy supply-related jobs** by 2030.

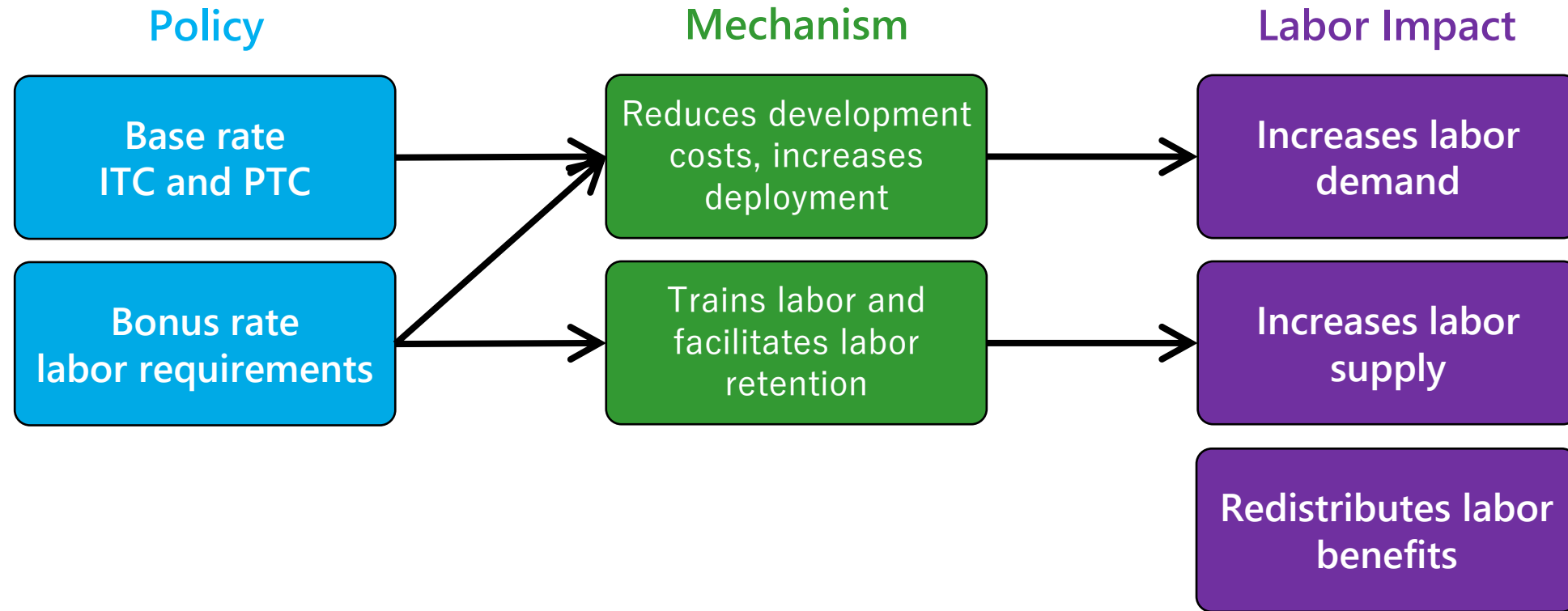
### Primary factors influencing labor demand:

- Renewable power & transmission deployment
- Domestic manufacturing growth
- Infrastructure siting constraints
- Labor productivity and automation
- Oil and gas exports
- Political and policy processes and constraints

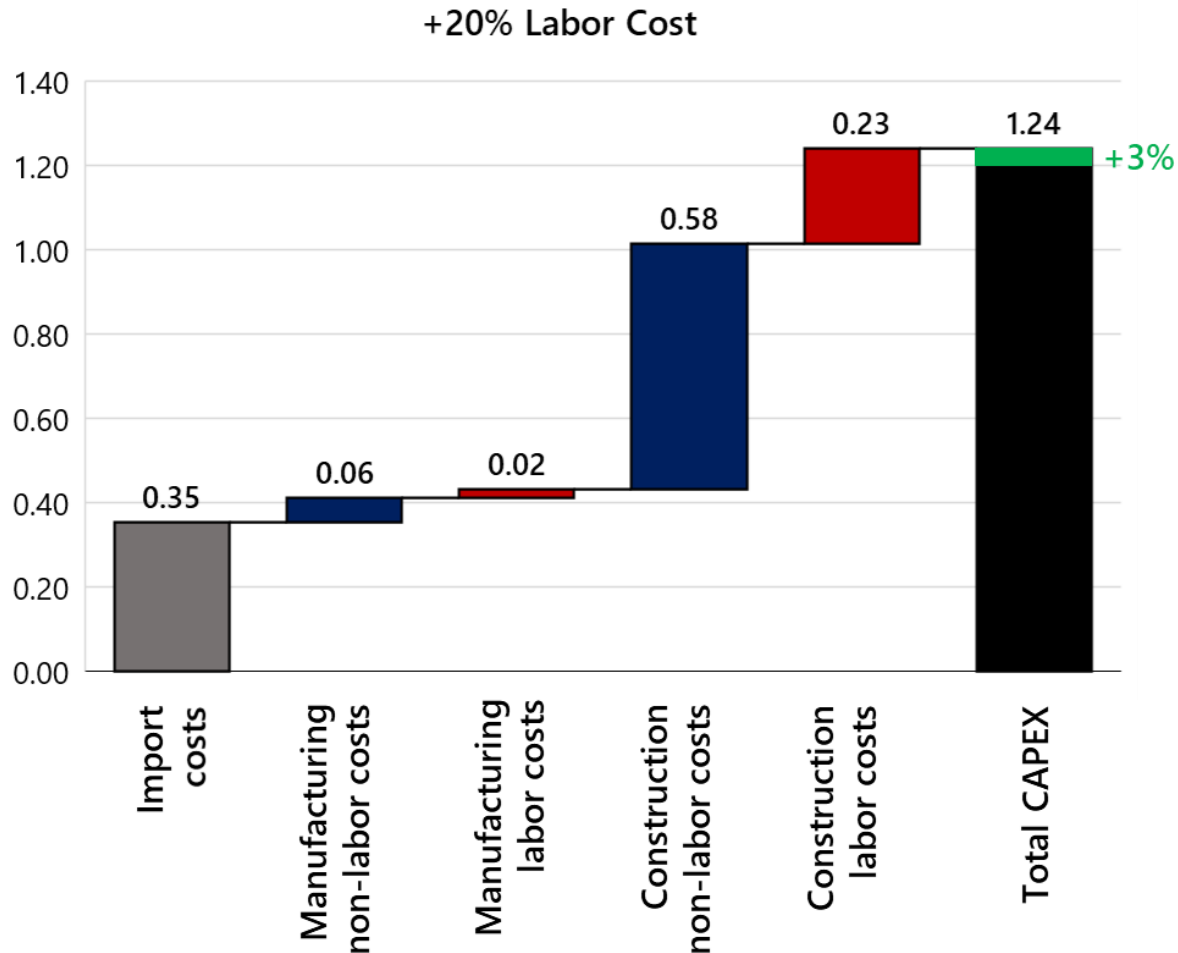
IRA impacts pre-print: <https://zenodo.org/record/8020818>  
REPEAT project summary: <https://repeatproject.org/>

# The Inflation Reduction Act will reshape the energy workforce

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# Impact of high road labor policies on renewable energy costs

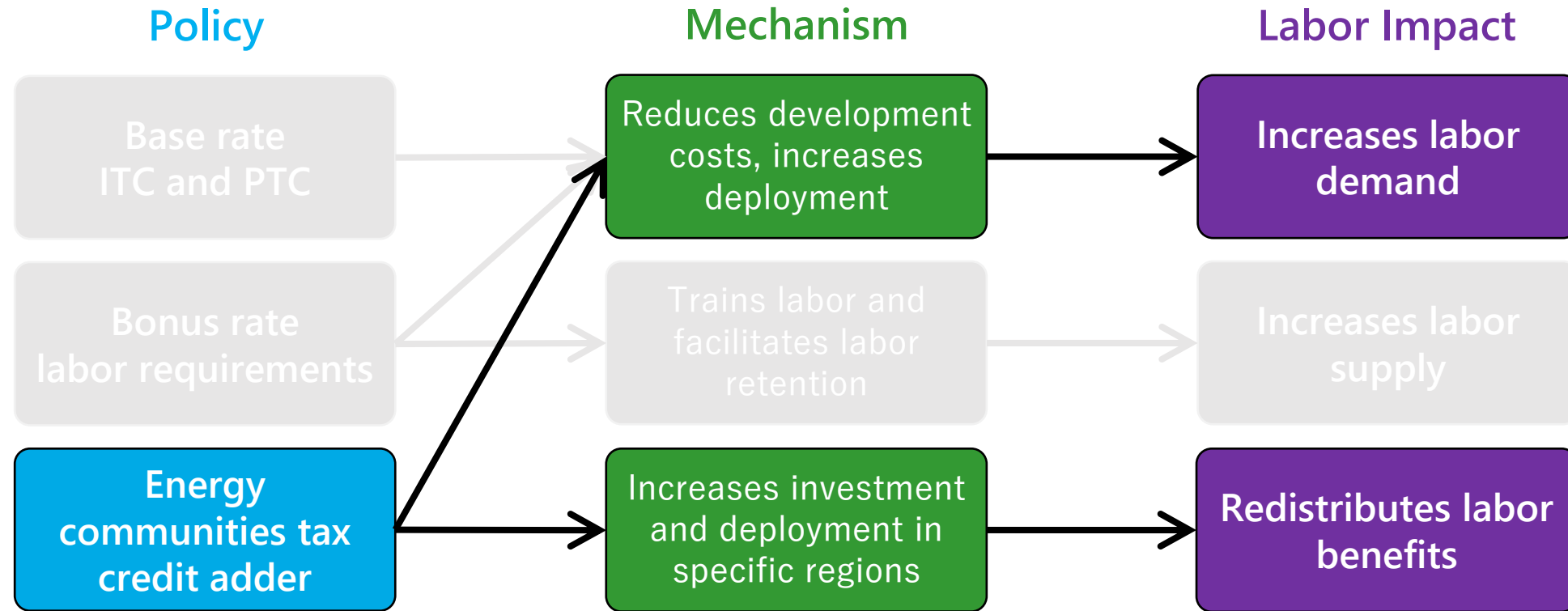


The additional cost savings from the bonus tax credit more than offsets nominal increases in solar and wind technology costs associated with meeting prevailing wage requirements.

High road labor manuscript: <https://iopscience.iop.org/article/10.1088/1748-9326/ac34ba/meta>  
High road policy brief: <https://bit.ly/HighRoadLabor>  
IRA impacts pre-print: <https://zenodo.org/record/8020818>

# The Inflation Reduction Act will reshape the energy workforce

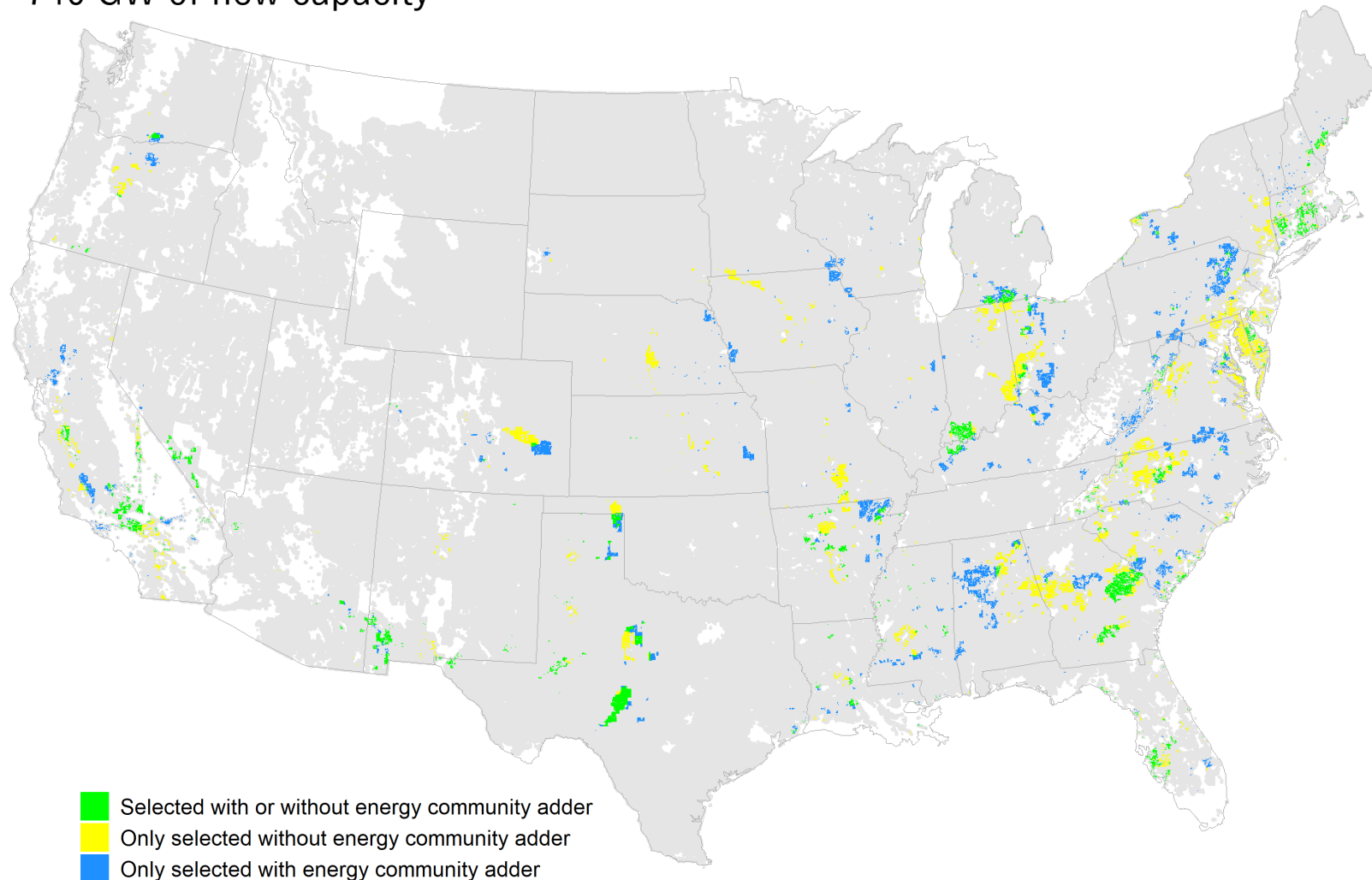
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# Place-based policies can redistribute labor demand and benefits

## Utility-scale solar deployment from 2024 to 2035

740 GW of new capacity



### Benefits of place-based policies:

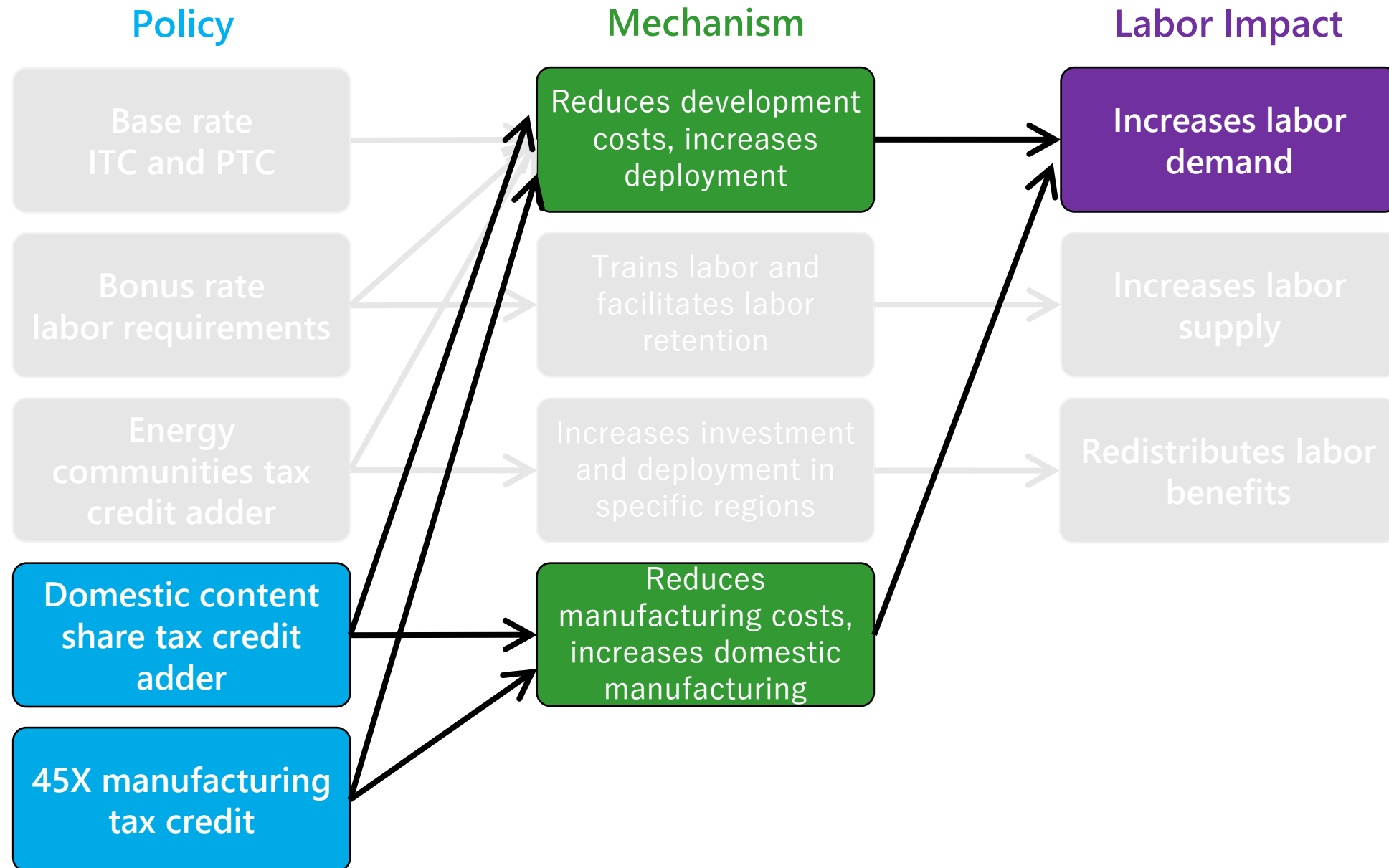
- Direct the flow of benefits to disadvantaged communities
- Moderate local impacts from declining fossil fuel industries
- Leverages existing energy workforce

### Challenges of place-based policies:

- Create local labor supply constraints
- Differing ethical worldviews regarding social equity

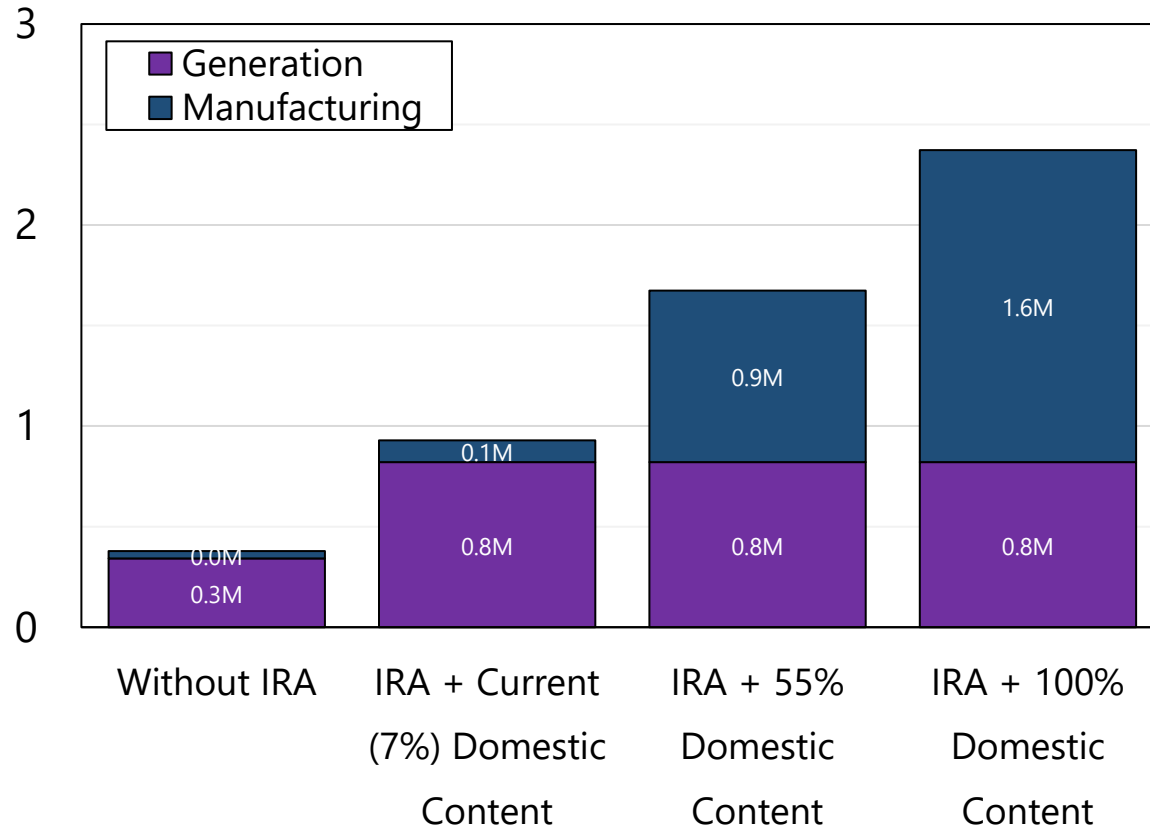


# The Inflation Reduction Act will reshape the energy workforce




# “Rightsizing” the domestic manufacturing base

## Utility-scale solar employment in 2035 million jobs



Increasing the domestic content shares from current rates to 55% doubles the demand for domestic labor across the utility-scale solar supply chain.

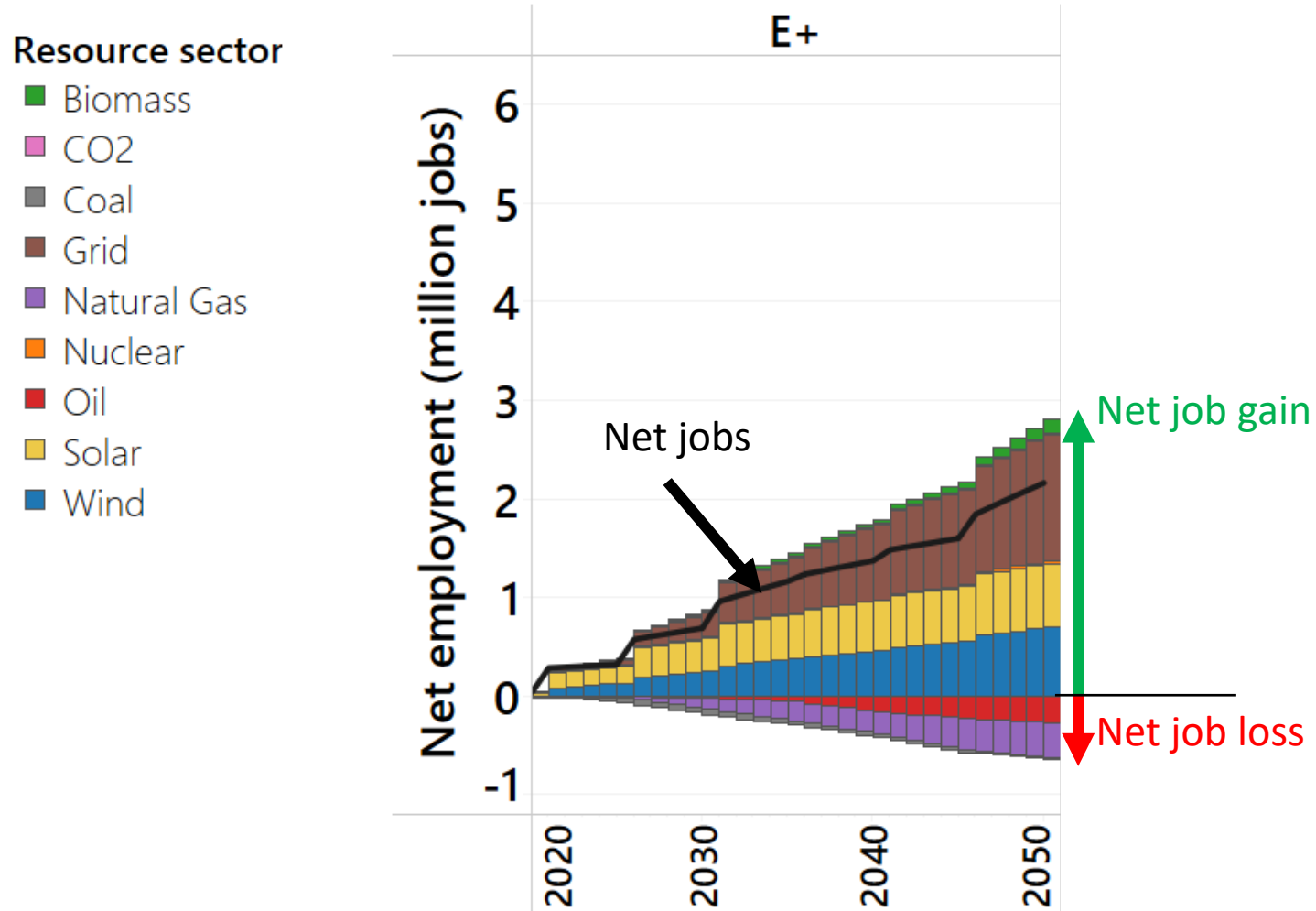
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# Long-term labor transitions to achieve net-zero emissions by mid-century

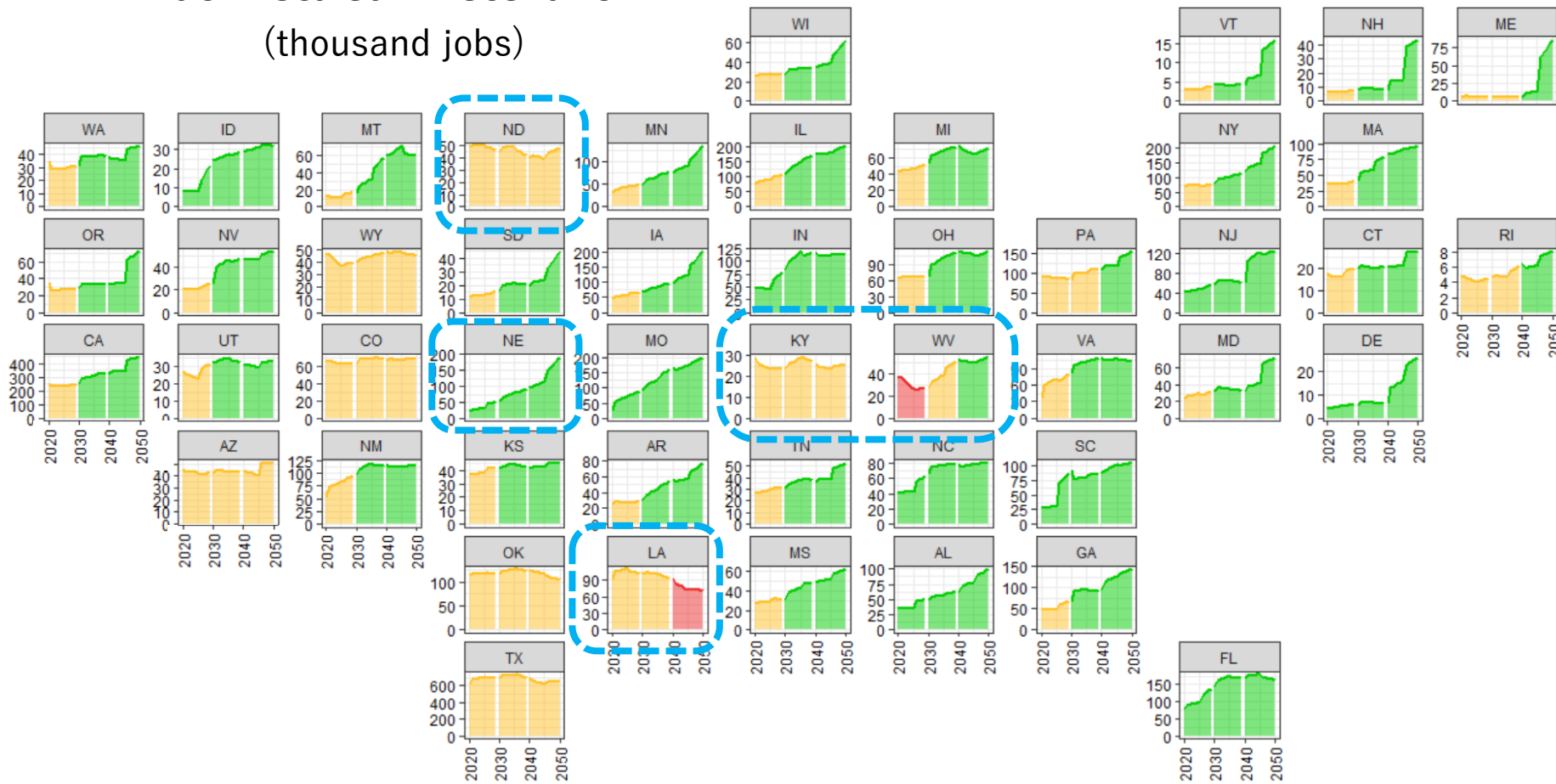
Net-zero labor pathways manuscript: <https://doi.org/10.1016/j.enpol.2023.113516>  
Net-Zero America project: <https://netzeroamerica.princeton.edu/>

# Meeting a net-zero target will require a sustained domestic labor force over the long-term. The size of the energy workforce is likely to eclipse any historical resource boom (and bust).



# The distribution of employment across resource sectors vastly changes over time.

## Annual employment based on downscaled E+ scenario (thousand jobs)



Note: Green, yellow, and red coloring indicate whether average annual employment within a decade is more than 15% higher, within 15%, or more than 15% lower than 2021 employment, respectively.

Modifiable sociotechnical factors that influence the spatial distribution of employment:

- Resource quality and availability
- Rate of electrification
- Technology selection
- Domestic manufacturing
- Siting constraints
- Oil and gas exports
- Place-based policies
- Political processes

There are several degrees of freedom that can reduce transition risks and be leveraged for political bargaining.

# Gaps in current policies and programs to support labor to meet climate goals

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Near-term

Long-term



More support for state  
capacity-building

Clearinghouse to  
match labor supply  
and demand

Place-based policies to  
moderate local economic  
impacts & incentivize  
more investment in  
certain geographies

More incentives for  
building electrification  
with labor provisions

Housing  
supply

Affordable  
childcare

# Thank you.

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