Statewide Community Survey and Priority Community Selection:

Presentation to the Just Transition Working Group of the Maryland Climate Change Commission

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Photo by Dennis Schroeder, NREL 56461

NREL Study Support Strategy

Identify Priorities

Identify issues and opportunities specific to energy efficiency and clean energy technologies

Identify Industries and Trades

Identify energy-intensive industries and sector-specific impacts on the workforce

Identify Transferrable Skills

Identify avenues to maximize worker skills and expertise in new energy roles
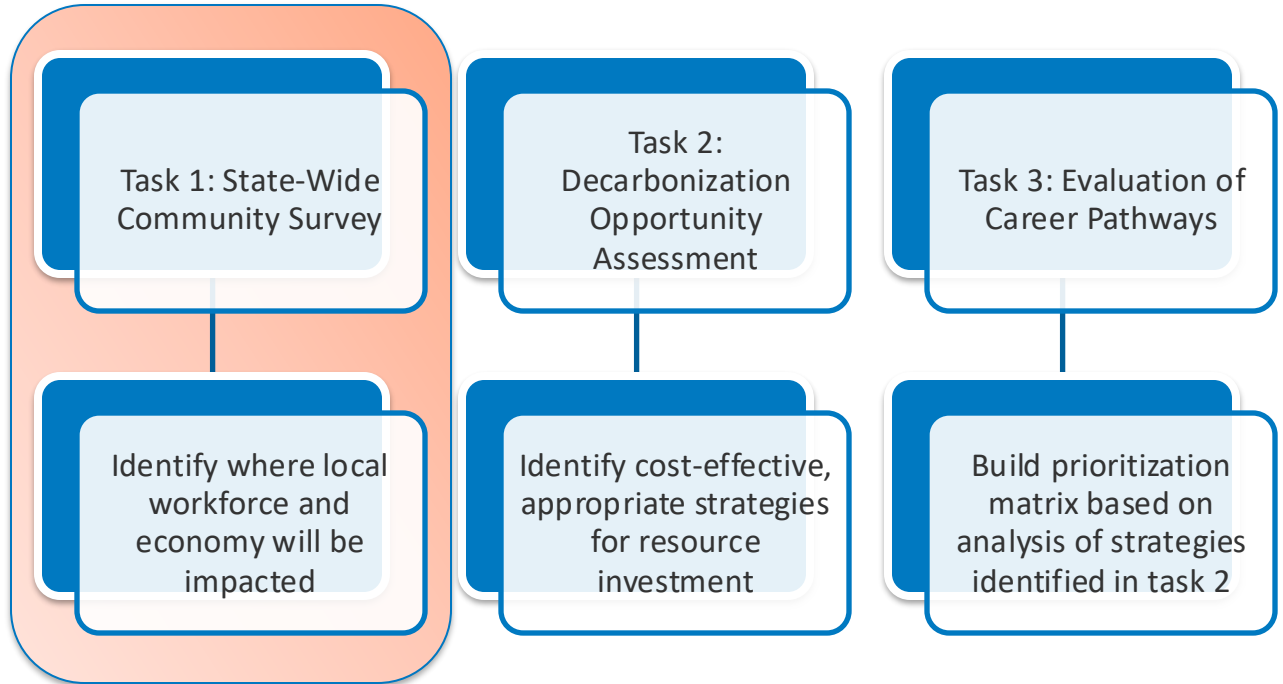
Provide Education and Training

Training and opportunities for disadvantaged communities and underrepresented populations

Stakeholder Engagement

Develop stakeholder engagement plans for connecting communities with resources and opportunities

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Primary Tasks

Task 1: State-Wide Community Survey

Identify where local workforce and economy will be impacted

Task 2: Decarbonization Opportunity Assessment

Identify cost-effective, appropriate strategies for resource investment

Task 3: Evaluation of Career Pathways

Build prioritization matrix based on analysis of strategies identified in task 2

State-Wide Community Survey

- Emissions Intensity Analysis
  - County level emissions
  - Identifying communities likely to be most disrupted by energy transition

- Just Transition Analysis
  - Combine emissions intensity outputs with energy justice metrics
  - Identify communities most likely to be disrupted and to benefit from interventions

- Priority Community Selection
  - Present results and key findings of Emissions Intensity Analysis and Just Transition Analysis
  - Facilitate discussion designed to identify up to six communities for pilot
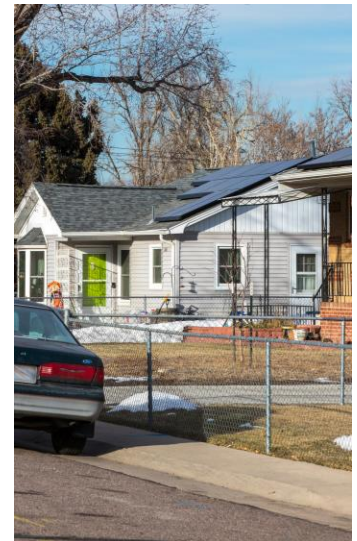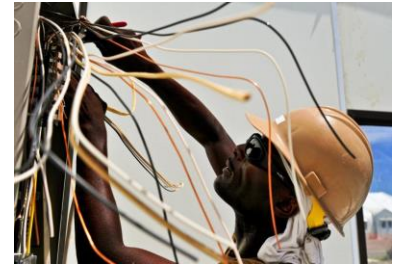
Data Sources

All data sources were combined to assess jurisdictions across the state for just workforce transition vulnerability. This assessment will help to determine priority community selection.

Inflation Reduction Act Energy Community

- *A "statistical area" that has significant employment or revenue related to fossil fuels and has an unemployment rate at or above the national average*
- *In which a coal mine has closed after 1999; or in which a coal-fired electric generating unit has been retired after 2009*

Climate and Economic Justice (CEJST)

- *Communities that meet thresholds for burden categories or are on federally recognized tribal land*
- *Categories of burdens include climate change risk, energy cost, health outcomes, housing underinvestment, legacy pollution, transportation, water and wastewater, and workforce development*

Data Sources

All data sources were combined to assess jurisdictions across the state for just workforce transition vulnerability. This assessment will help to determine priority community selection.

Employment Vulnerability to the Energy Transition

- *Employment Carbon Footprint (ECF) assesses how reliant employment is on fossil fuels*
- *Assesses how exposed a community is to economic shocks in a future without fossil fuels*

MDE's Economic Justice Screening Tool

- *Pollution burden exposure; Pollution burden environmental effects; Sensitive populations; Socioeconomic/Demographic indicators*
- *Identifies overburdened and underserved communities in Maryland*

Social Vulnerability Index

- *Ranks communities on 15 social factors*
- *Four themes: Socioeconomic status, household composition & disability, minority status and language, and housing type and transportation*

Methodology

- Identify and collect publicly available data
  - County level data from multiple perspectives
- Synthesize dataset
  - Combine emissions intensity and energy justice metrics
  - Calculate percentile scores for each county
- Develop Weighted Models
  - Identify data points that most closely relate to just workforce transition goals
- Complete Analysis
  - Statewide analysis to identify counties under different weighted models

Results
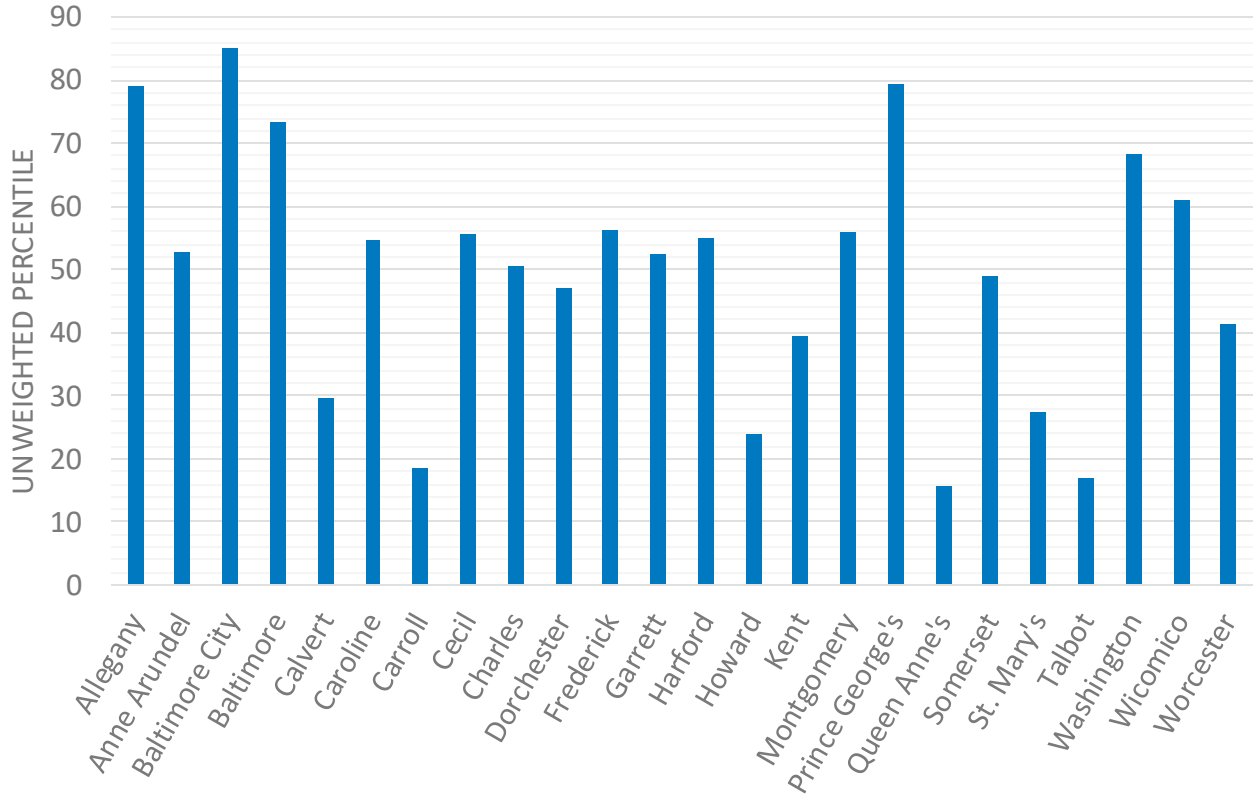
Priority Community Selection

- Priority Community Selection
  - Identify up to six jurisdictions based on the results of the analysis
  - Jurisdictions should be prioritized based on just transition principles and study goals
  - Selected jurisdictions will undergo further analysis and strategy development
  - Model of assessments and strategy development can be replicated in additional jurisdictions or statewide

Weighted Models

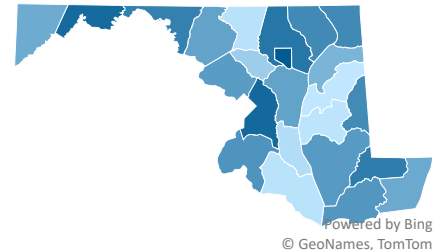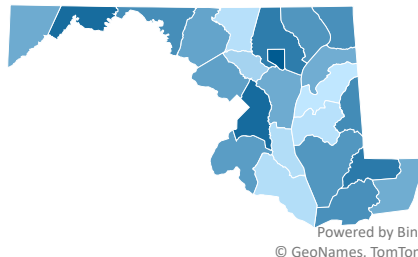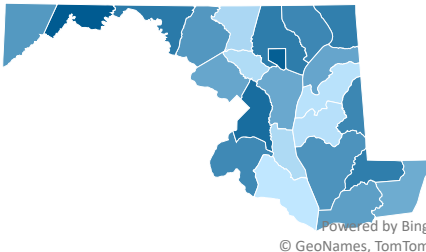**Priority Model 1: Employment Vulnerability to the Energy Transition**

- Best aligned with just workforce transition goals
- Identifies vulnerability directly related to employment in fossil fuels

Priority Model 2: Social Vulnerability Index

- Assesses a broad range of social factors and themes
- Social factors include and are often informed by workforce development and employment

Priority Model 3: Maryland Energy Justice

- Maryland-specific data screening tool
- Focuses on overburdened and underserved communities as developed for MDE

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Employment Vulnerability

ECF Weighted

Percentile

19.0404   79.01052

Top 10 Counties:

County	Percentile
Allegany	79.01052
Baltimore City	77.46442
Prince George's	71.37948
Washington	65.90818
Baltimore	64.63894
Wicomico	64.1891
Cecil	63.66584
Caroline	60.20264
Harford	60.06714
Charles	59.30538
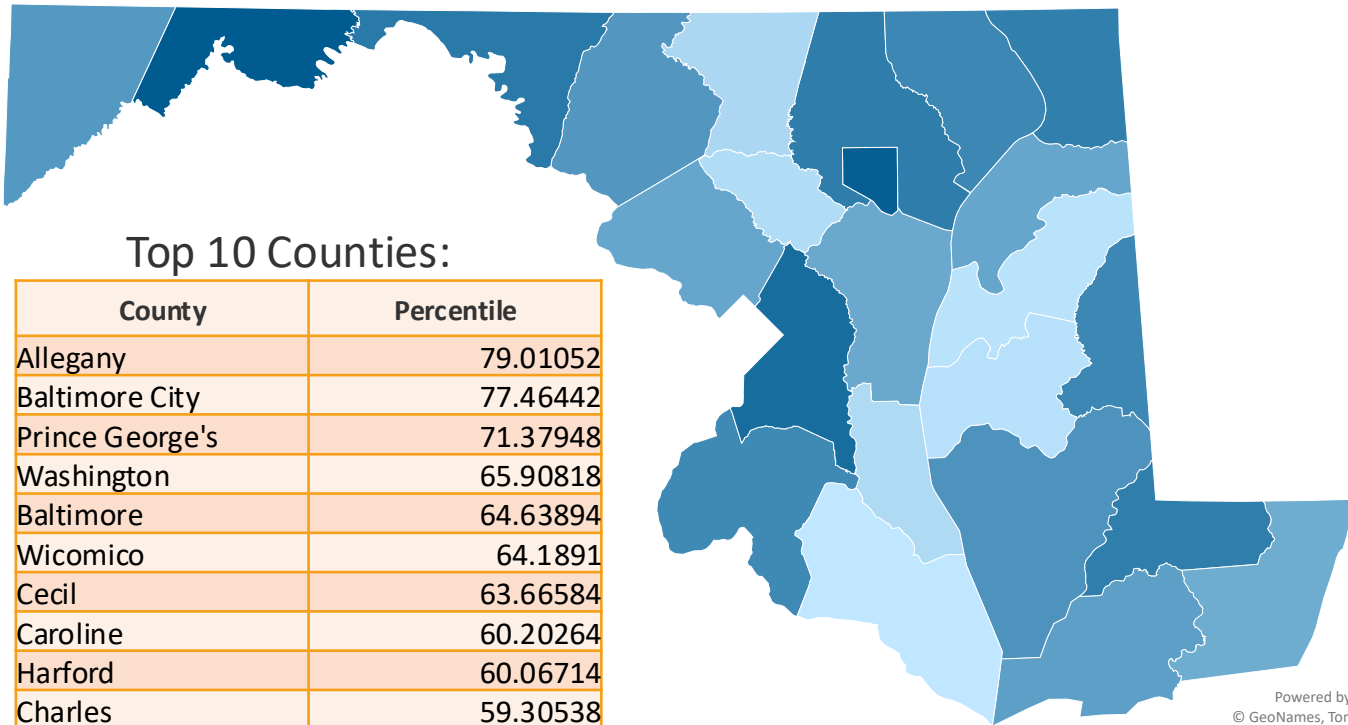
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Social Vulnerability Index

SVI Weighted

Percentile

15.4055   83.52762

Top 10 Counties:

County	Percentile
Baltimore City	83.52762
Prince George's	75.62658
Allegany	75.28152
Wicomico	68.302
Baltimore	67.07874
Caroline	59.69114
Washington	58.66358
Somerset	57.72094
Cecil	57.65214
Harford	54.93344
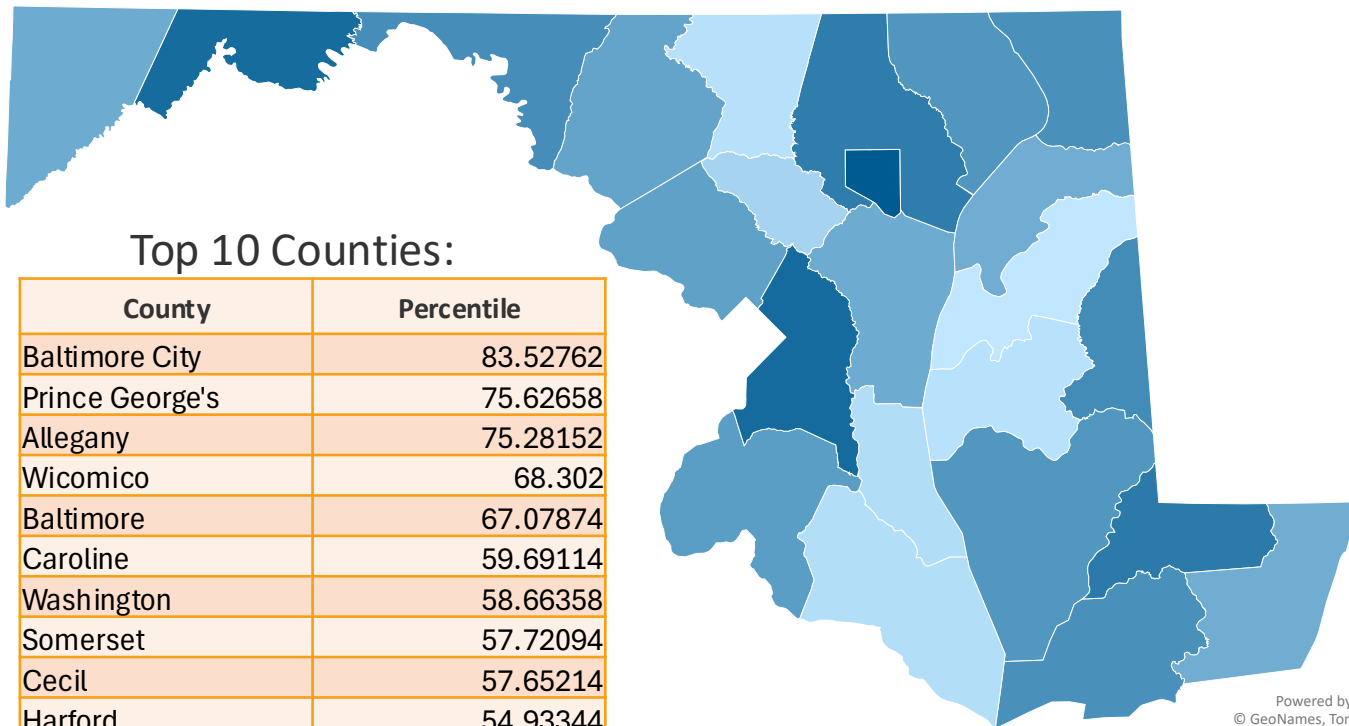
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Maryland Energy Justice

MEJ Weighted

Percentile

20.90308   84.55755

Top 10 Counties:

| County	Percentile
Baltimore City	84.55755
Prince George's	78.0534
Allegany	77.1535
Baltimore	72.03545
Wicomico	69.21335
Washington	67.26635
Cecil	63.1627
Harford	63.11645
Caroline	62.7905
Charles	58.56145
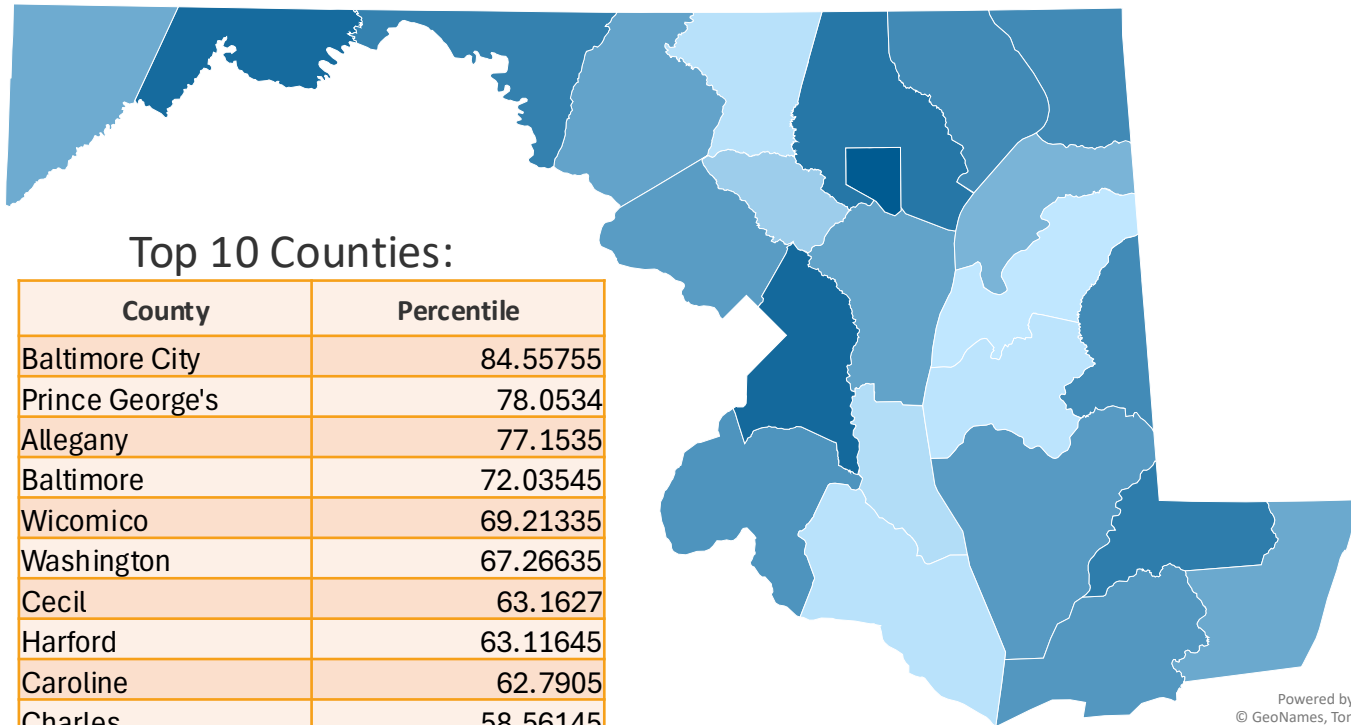
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Top Jurisdictions by percentile score

County	Unweighted Percentile	ECF Percentile	SVI Percentile	MEJ Percentile	Resource Subtraction**
Allegany	79.0317235	79.01052	75.28152	77.1535	65.65225
Baltimore City	85.0868446	77.46442	83.52762	84.55755	63.950375
Prince George's	79.3265865	71.37948	75.62658	78.0534	58.41025
Washington*	68.3556528	65.90818	58.66358	67.26635	53.810875
Baltimore	73.3463241	64.63894	67.07874	72.03545	52.677625
Wicomico	61.0105059	64.1891	68.302	69.21335	47.883125
Caroline*	54.6976654	60.20264	59.69114	62.7905	46.3595

*In SVI Model, Caroline county was 6th, while Washington county was 7th. In all other models, Caroline county fell outside of the top six counties.
**In Resource Subtraction model, unweighted percentiles were recalculated with a negative weight for existing resources such as clean energy jobs.
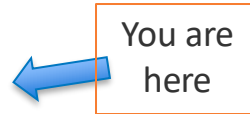
Top Jurisdictions – Geographic Distribution
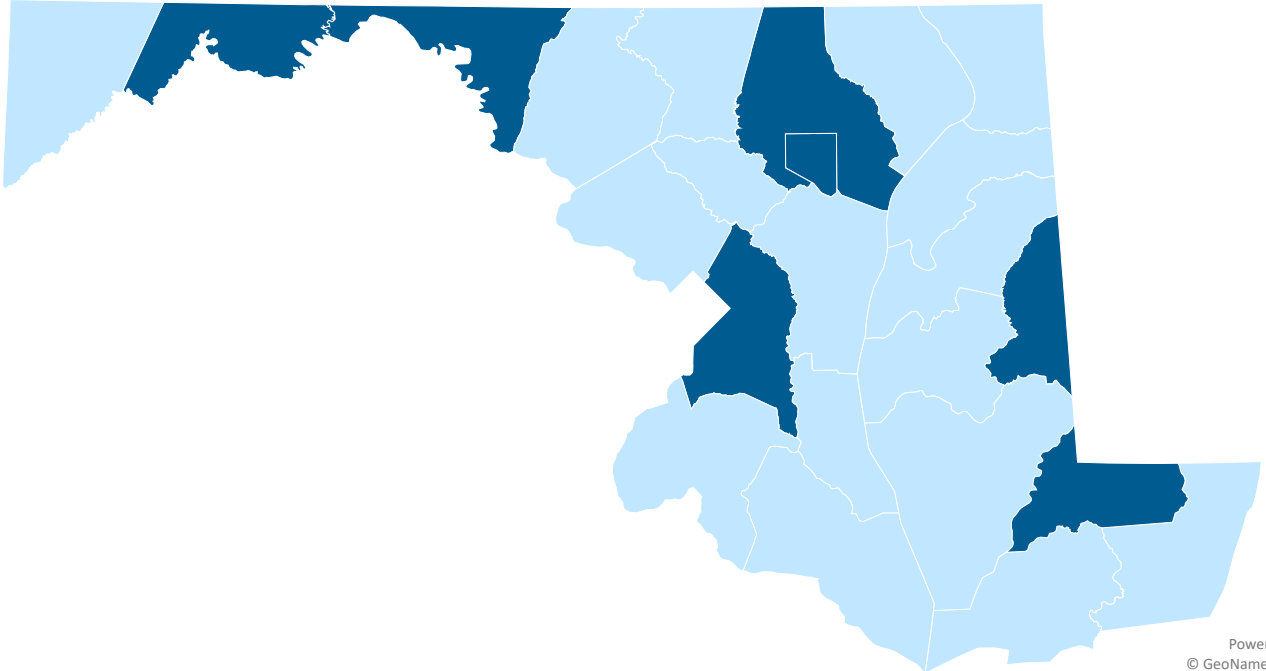
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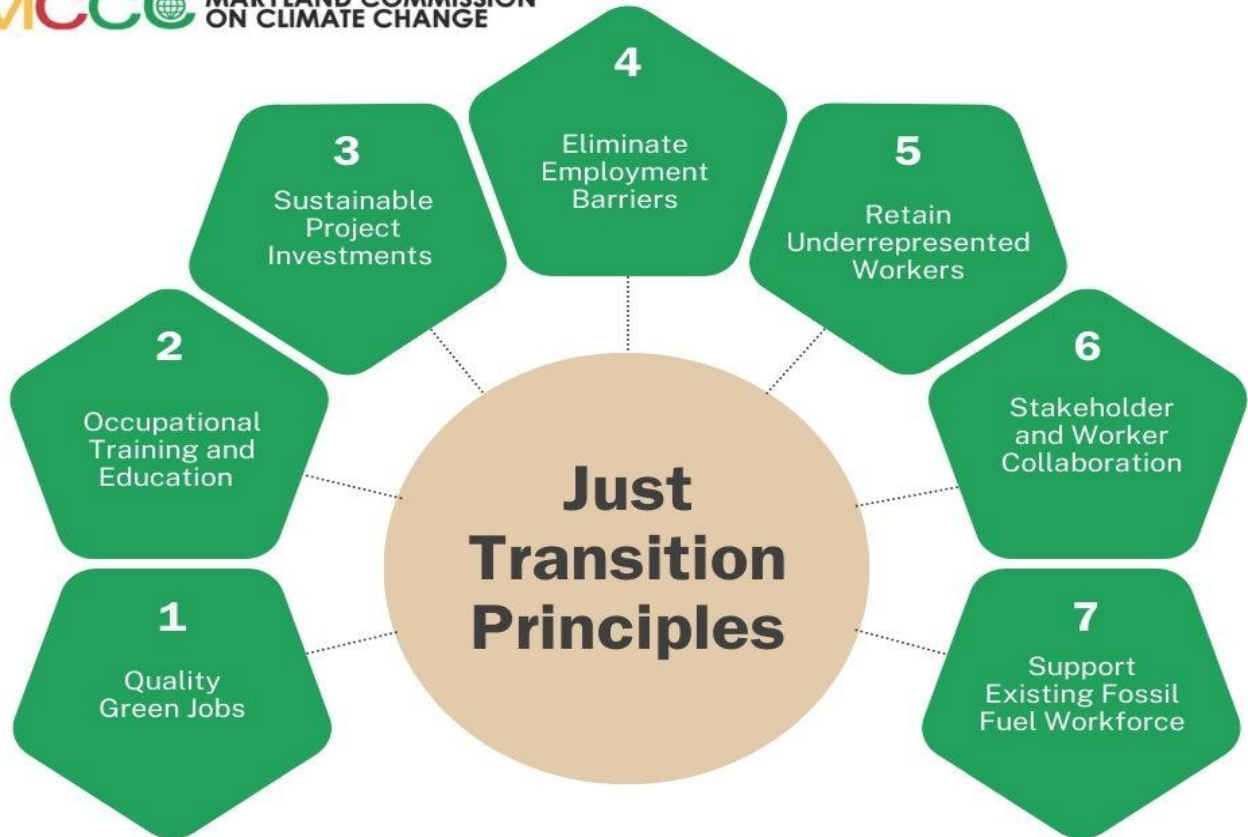
Next Steps

You are here

- Priority Community Selection
  - Selection of jurisdictions for initial study focus
  - Build a template for future study and strategy

- Decarbonization Opportunity Identification
  - Analyze all possible areas for decarbonization opportunities within the selected six communities
  - Generate local-specific data to inform climate, workforce, and energy goal setting and planning
- Local Clean energy Strategy Development
  - Support Maryland Department of Environment in leveraging the outputs from the decarbonization opportunity assessment
  - Identify cost-effective and appropriate strategies for public resource investment for up to three of the originally selected six communities

National Renewable Energy Laboratory. "Maryland Energy and Environmental Justice - Social Vulnerability Index" *State and Local Planning for Energy*, accessed [Date], https://maps.nrel.gov/slope

Questions & Discussion

MCCC MARYLAND COMMISSION ON CLIMATE CHANGE

Just Transition Principles

1 Quality Green Jobs

2 Occupational Training and Education

3 Sustainable Project Investments

4 Eliminate Employment Barriers

5 Retain Underrepresented Workers

6 Stakeholder and Worker Collaboration

7 Support Existing Fossil Fuel Workforce

Photo by Werner Slocum, NREL 72288

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