JISEA Joint Institute for Strategic Energy Analysis

Intersections of Disadvantaged Communities and Renewable Energy Potential: Analyses to Inform Equitable Investment Prioritization

Presenter* and co-authors:

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Megan Day, Sustainable Communities Catalyzer PI

Christiana Ivanova

Akua McLeod

Jane Lockshin

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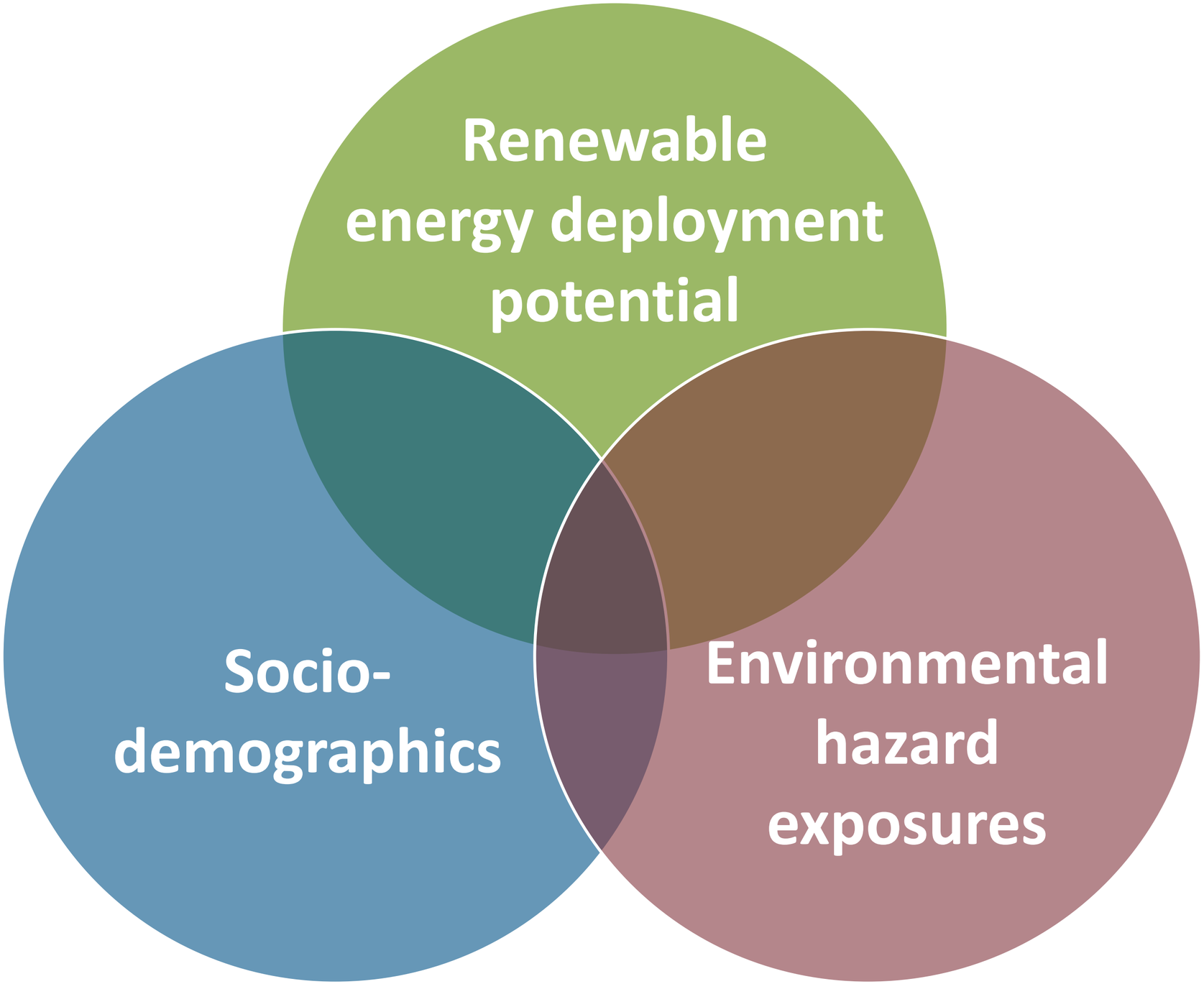
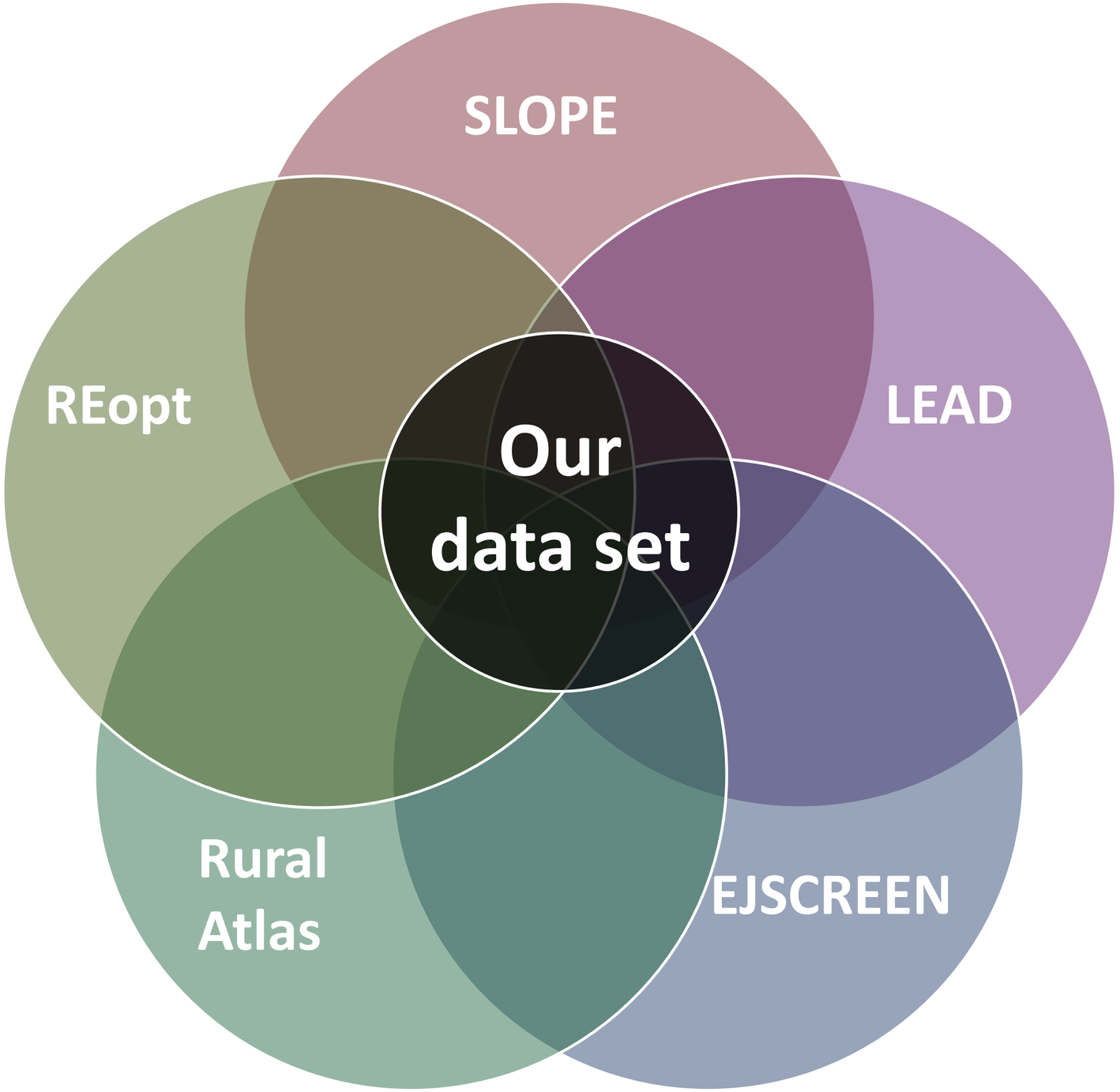
Justice40 Initiative

"Directs 40% of the overall benefits of certain Federal investments to flow to disadvantaged communities," including investments in clean energy. (DOE, 2022)

Is there **overlap**?





Focus of presentation:

- **Renewable energy deployment potential**
- **Socio-demographics**

Technologies

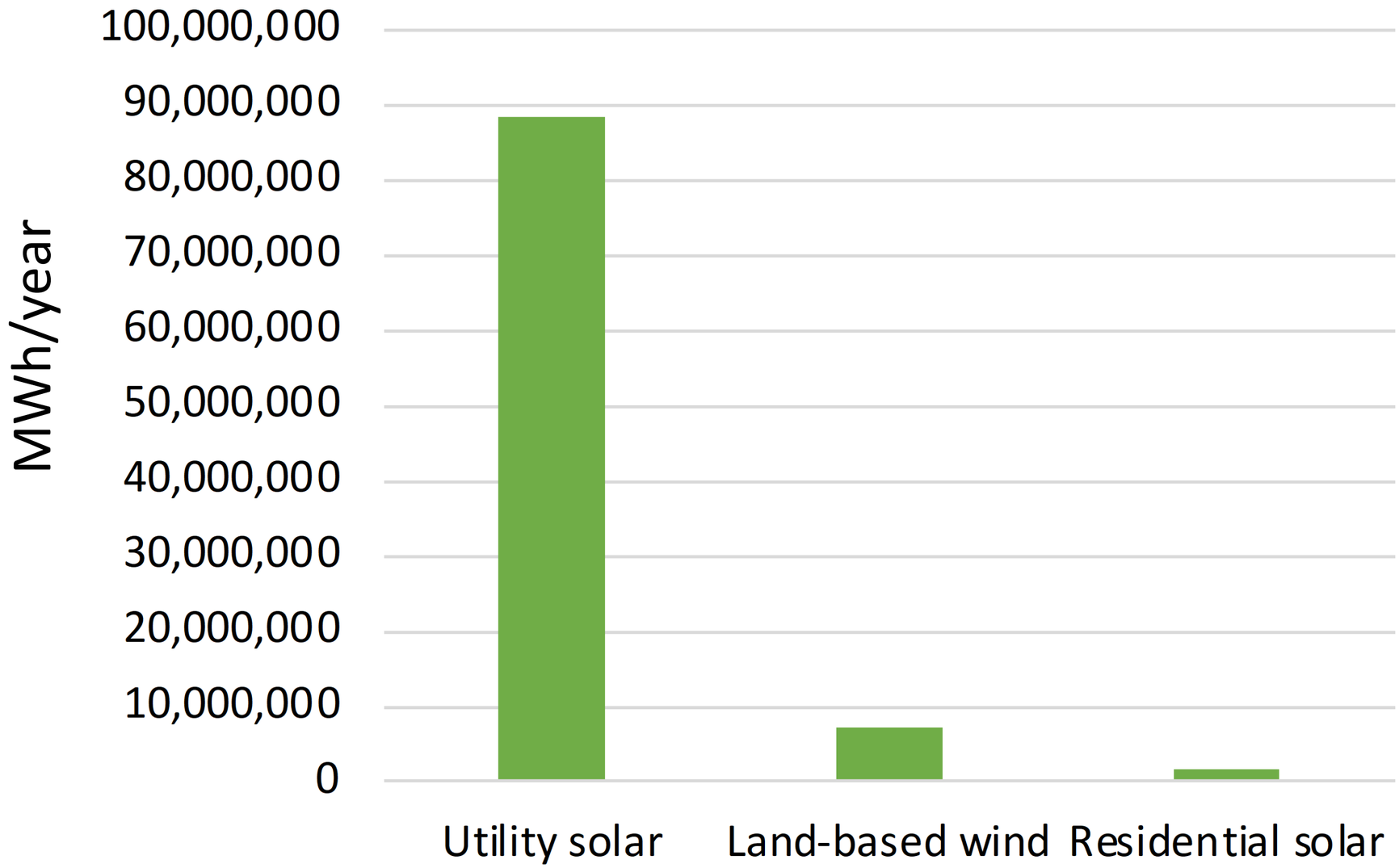
Residential rooftop solar

Utility solar

Land-based wind

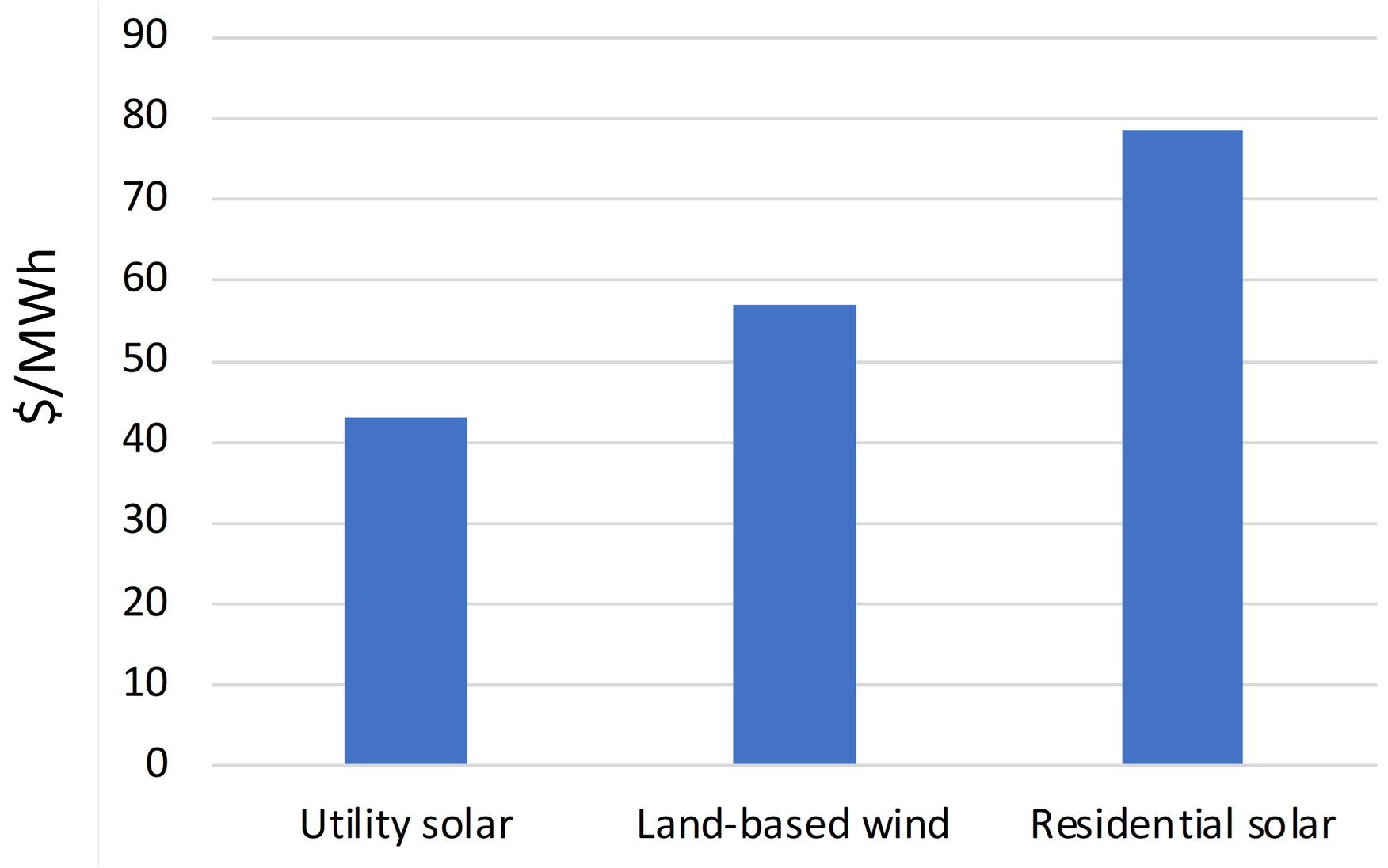
Technical potential

Bernalillo County, NM



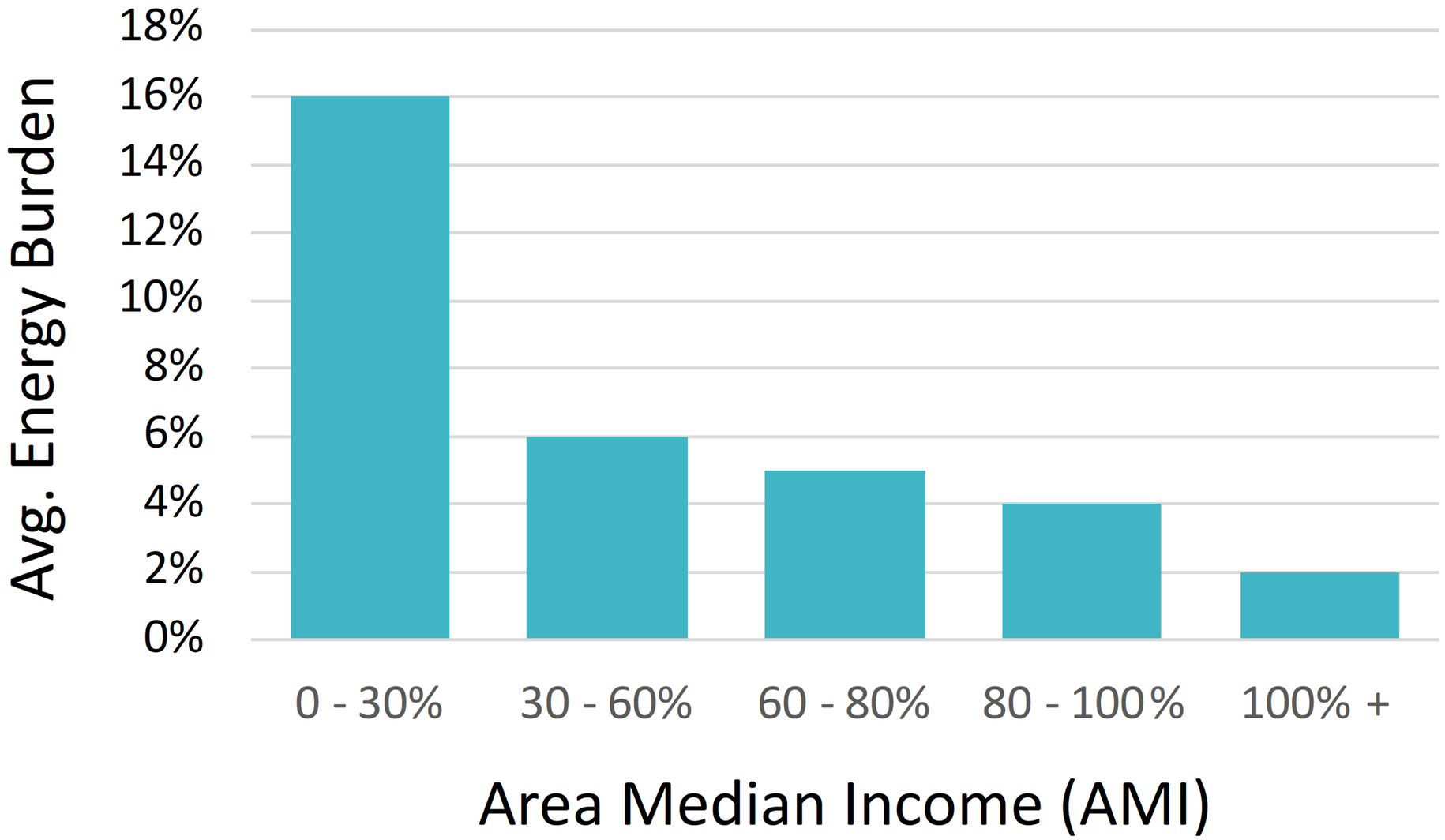
Levelized cost of energy

Bernalillo County, NM



Socio-demographics
Energy burden
Mining, quarrying, and oil & gas jobs
Unemployment

Average **energy burden** (% income) in the U.S.



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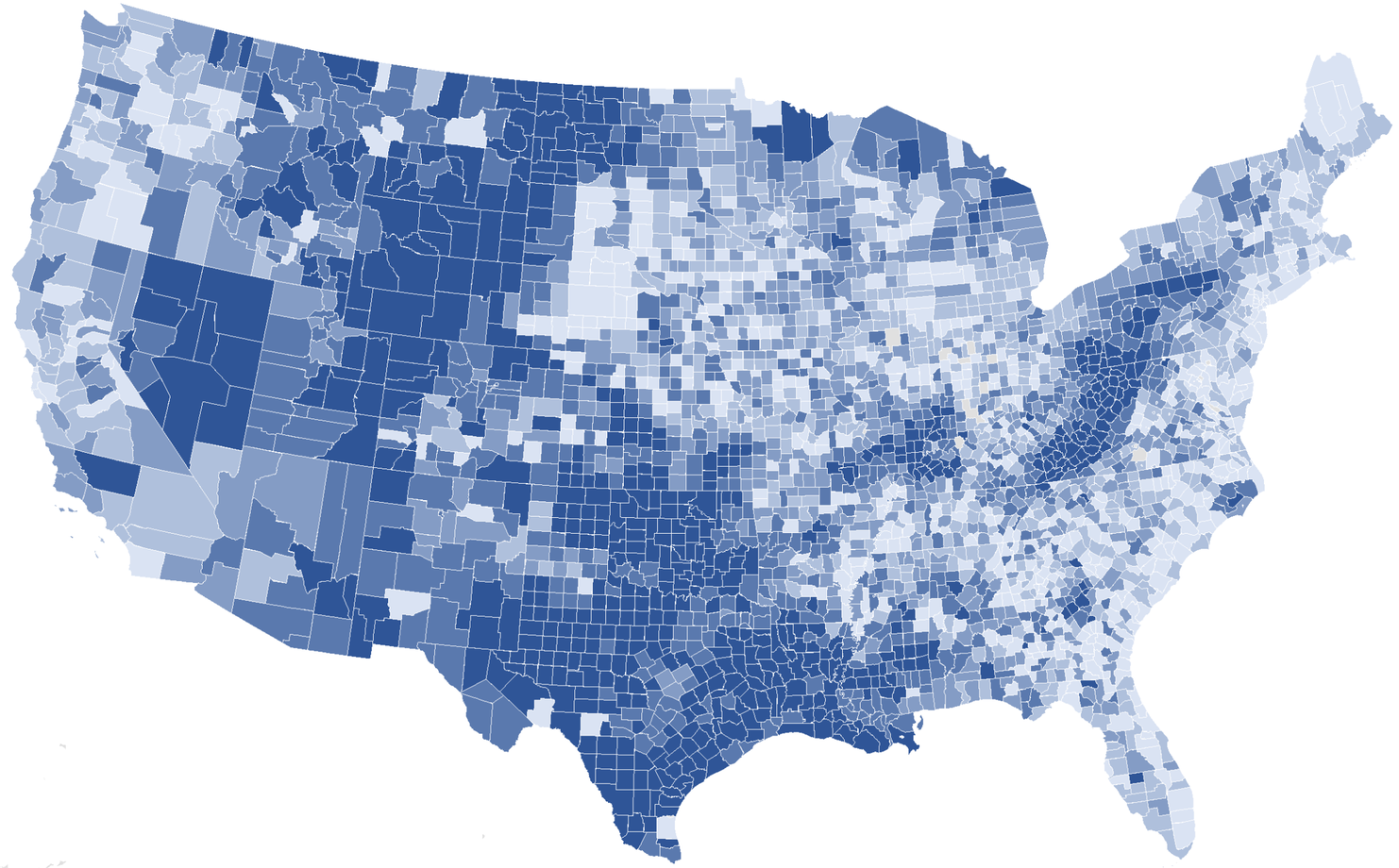
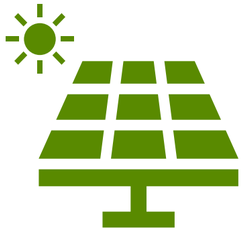
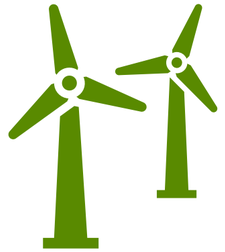


Mining, quarrying, and oil & gas jobs

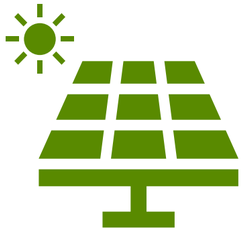
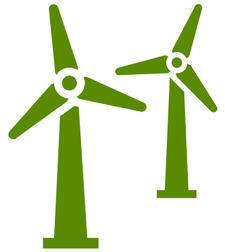
More jobs — Fewer jobs

Top down analysis

Bottom up analysis

	Residential solar		Utility solar		Land-based wind	
	Technical potential	Levelized cost	Technical potential	Levelized cost	Technical potential	Levelized cost
Energy burden						
Mining, quarrying, O&G employment						
Unemployment						

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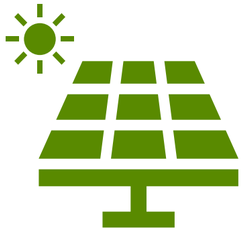
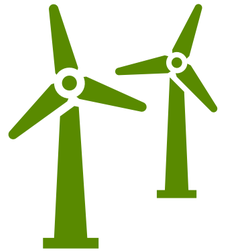
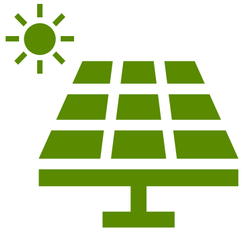
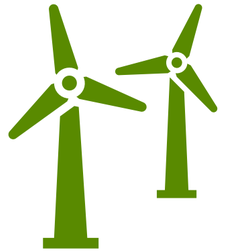
Correlation ≠ Causation

	Residential solar		Utility solar		Land-based wind	
	Technical potential	Levelized cost	Technical potential	Levelized cost	Technical potential	Levelized cost
Energy burden	-.08	.02	.02	.04	.04	-.01
Mining, quarrying, O&G employment	-.09	-.25	.29	-.25	.31	-.15
Unemployment	.17	.23	-.11	.16	-.19	.24

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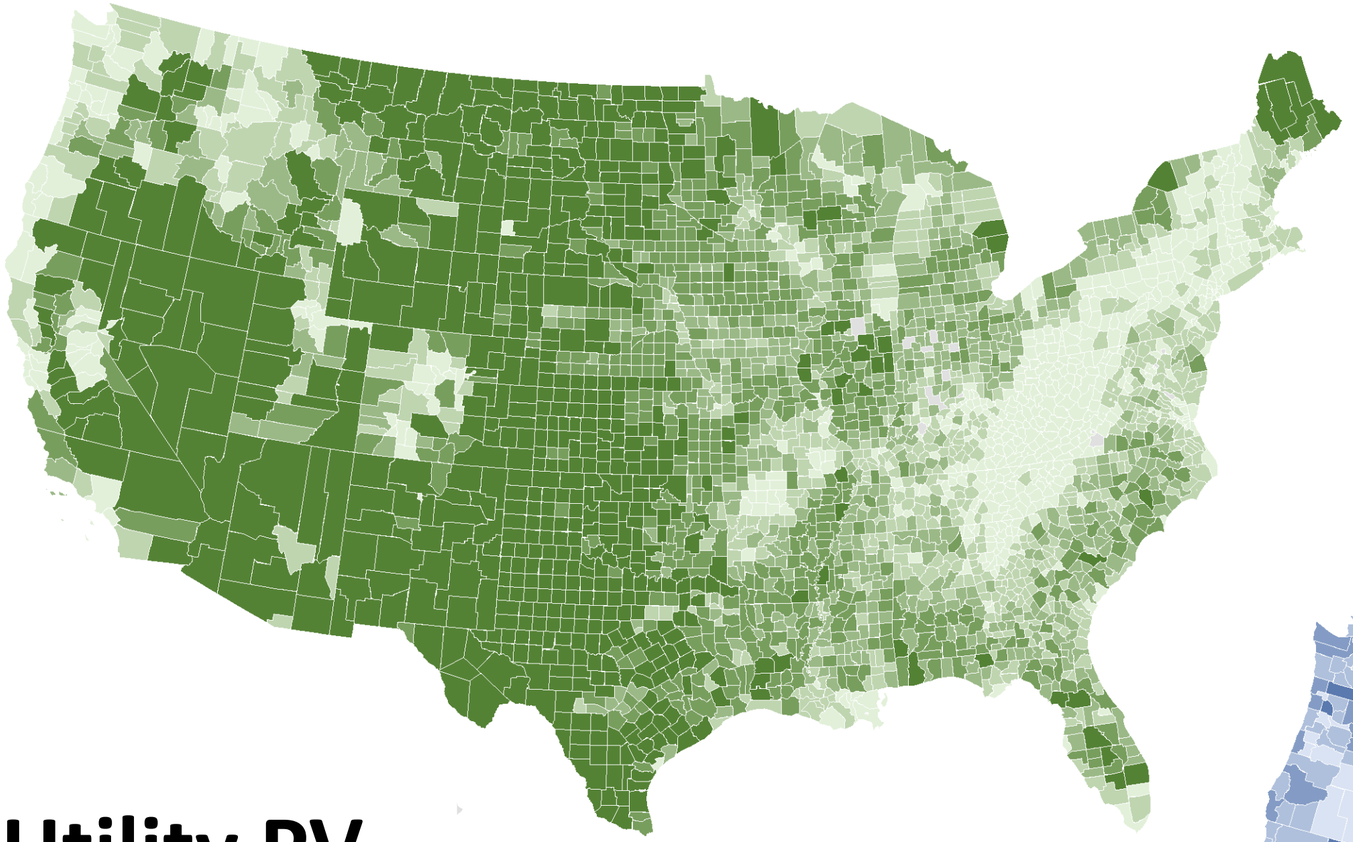
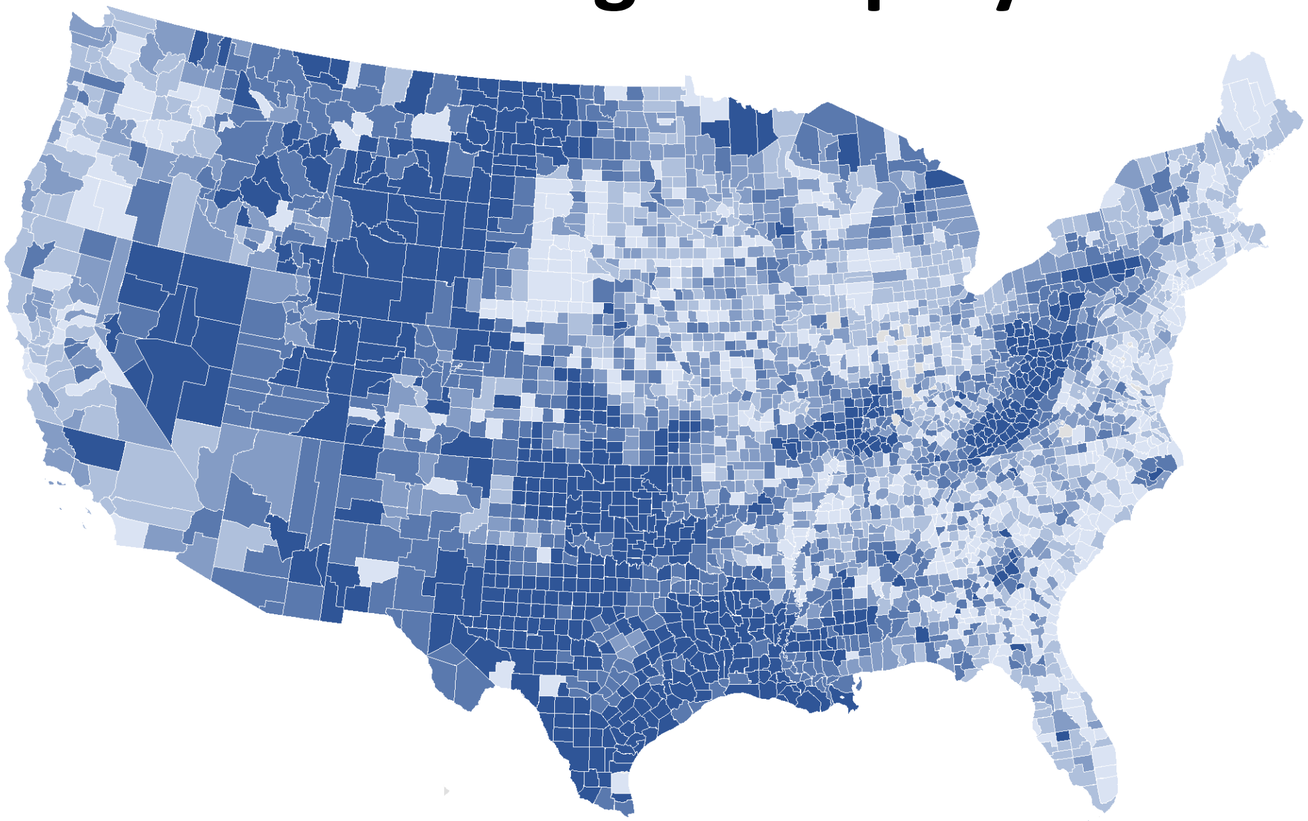


Correlation = .29

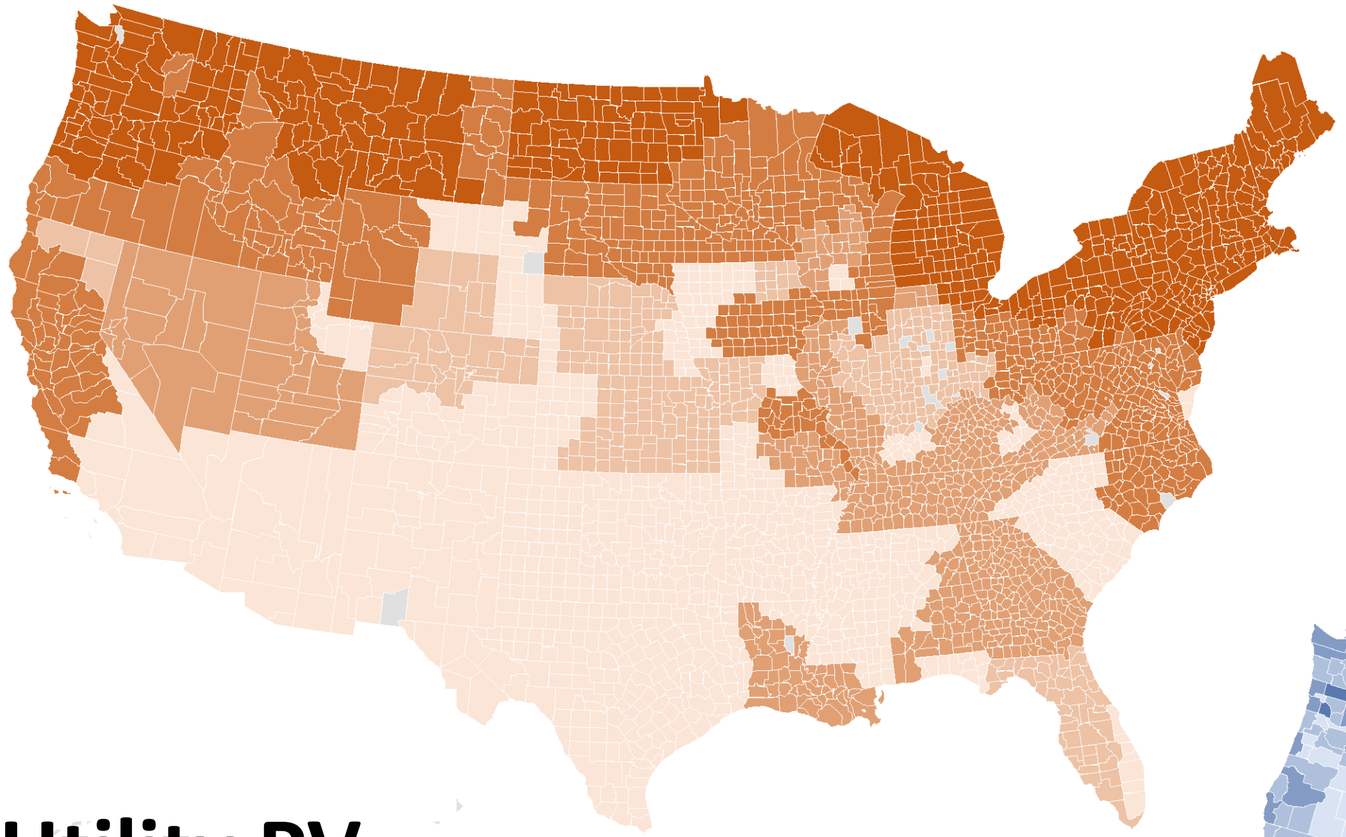
Mining, quarrying, and oil & gas employment



Utility PV technical potential

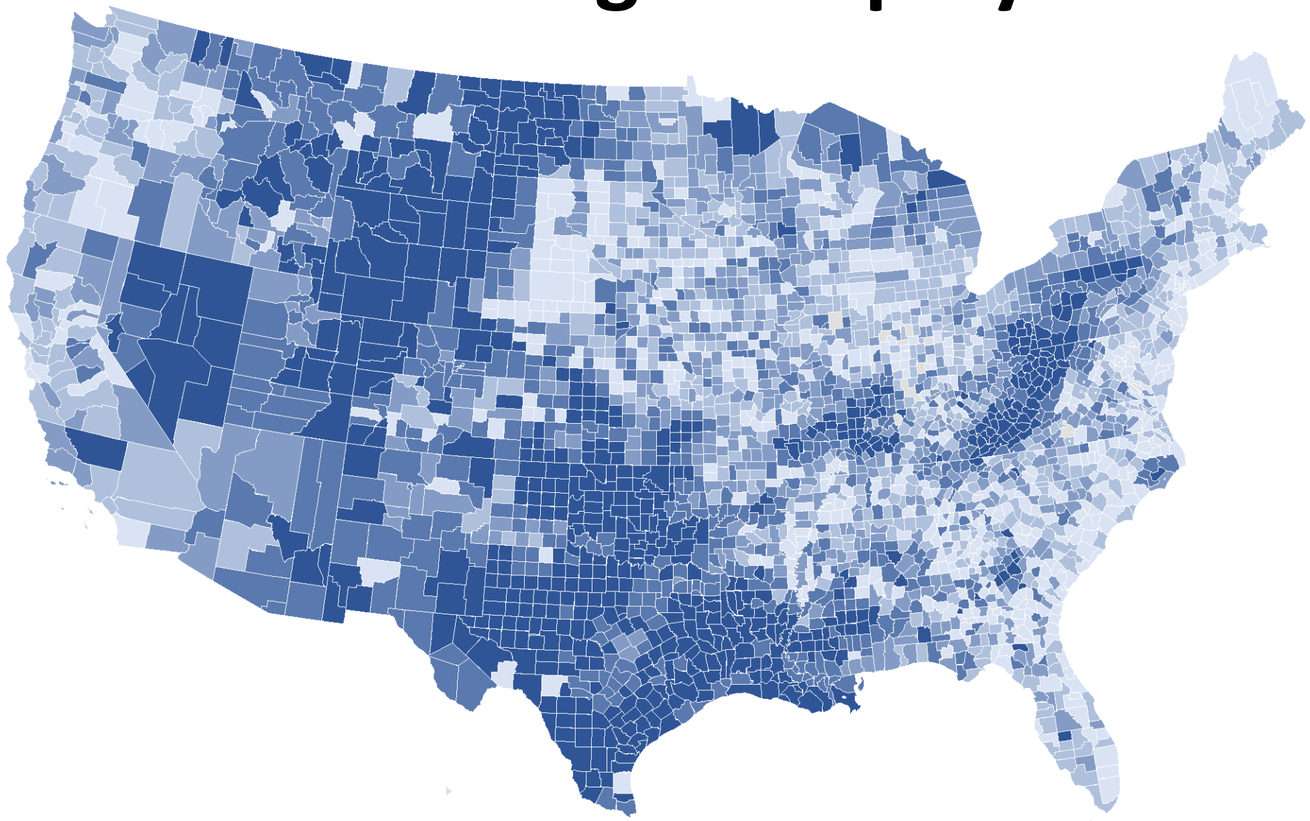
More potential

Less potential



Correlation = -.25

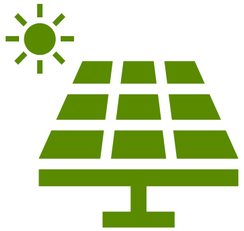
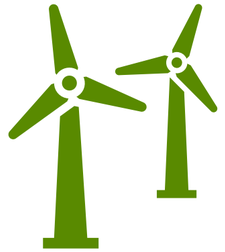
Mining, quarrying, and oil & gas employment



Utility PV levelized cost

More
$ $ $

Less
$

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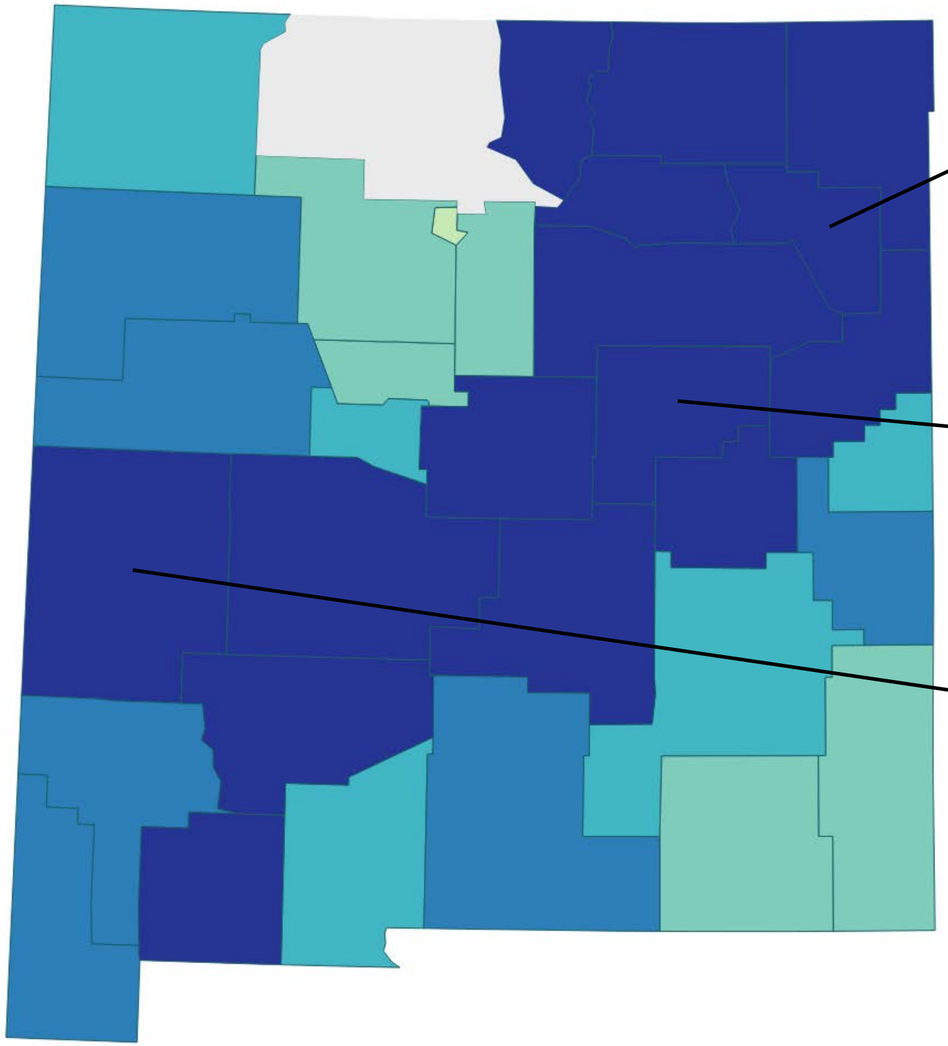
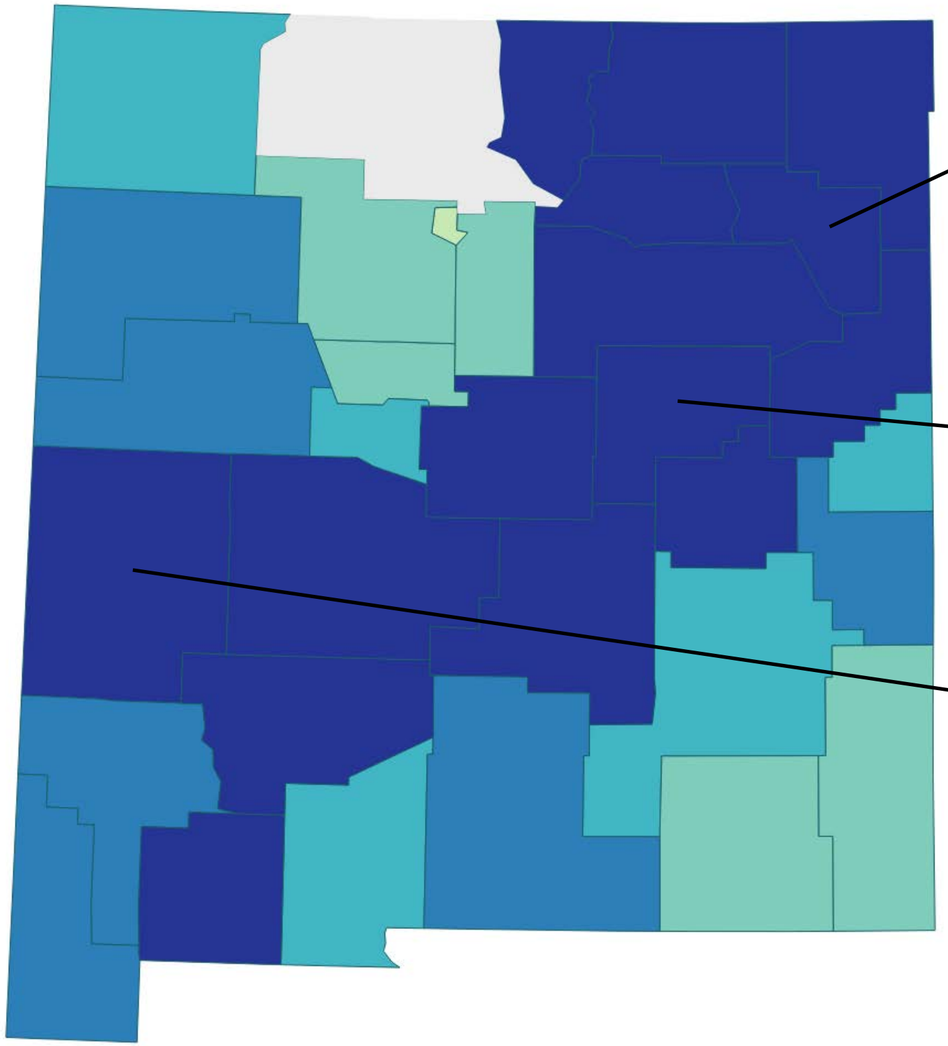
Top down analysis
Bottom up analysis

Energy burden in New Mexico



- **9%** energy burden
- High **solar potential**

Can solar **lower energy burdens** in New Mexico?



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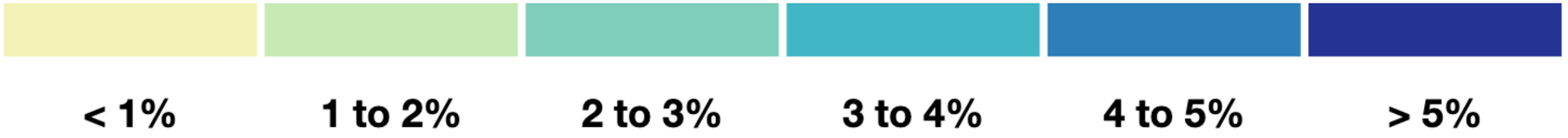
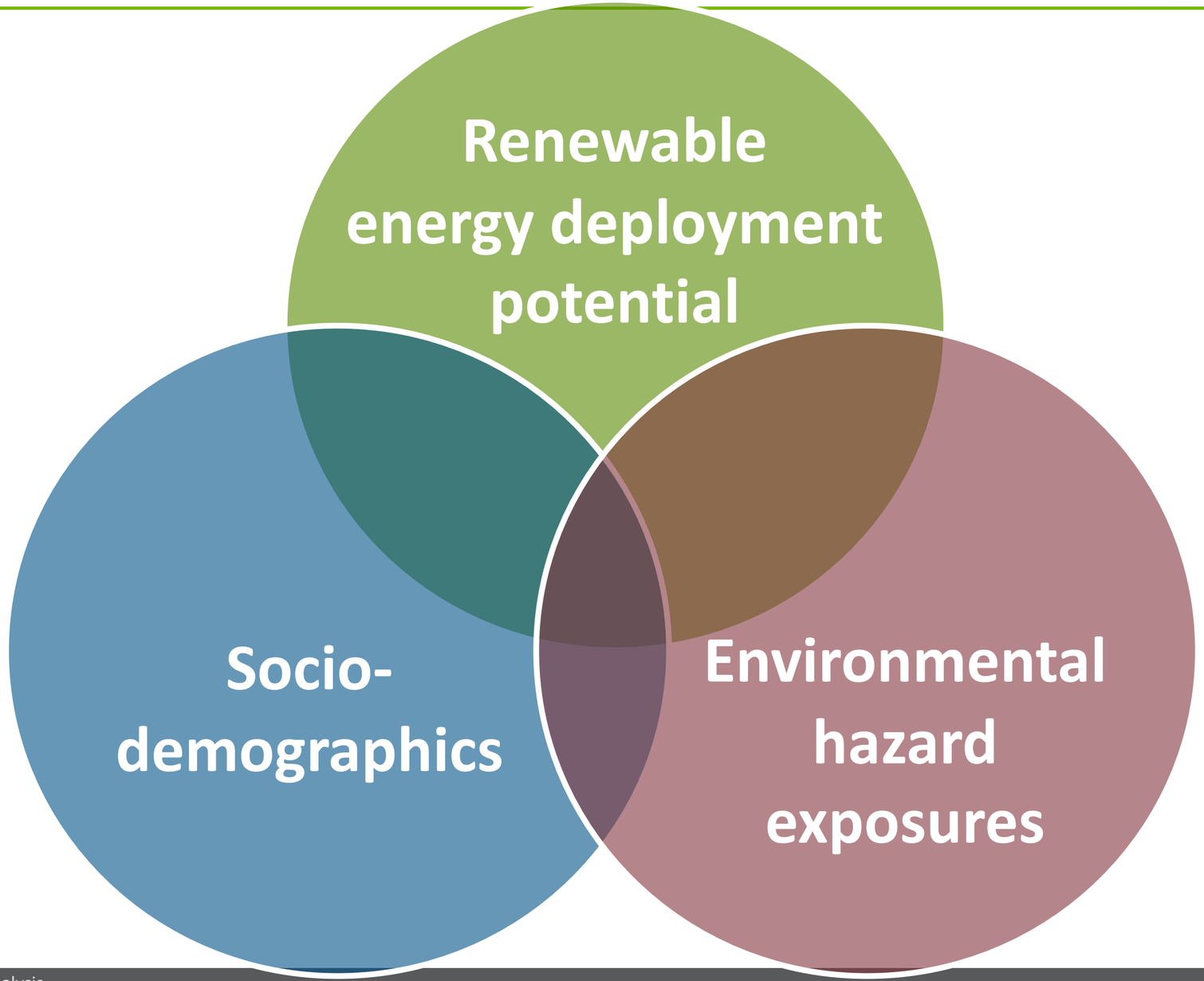


Disadvantaged community prioritization



All published resources are publicly accessible:

NREL Publication #NREL/PR-6A50-81527:
https://www.nrel.gov/docx/gen/fy22/81527.pdf

NREL Data Catalog publication:
https://data.nrel.gov/submissions/175

Renewable Energy Focus journal publication:
https://doi.org/10.1016/j.ref.2022.02.002

Thank you!

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