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North Carolina Solar and Agriculture and Land Impacts

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North Carolina Sustainable Energy Association

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NASEO



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About NCSEA

- North Carolina Sustainable Energy Association (NCSEA) works to enable clean energy jobs, economic opportunities, and affordable energy options for North Carolinians.
- 500+ Members; founded in 1978
- Focus on energy policy through data driven solutions
- And Ward!



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The BIG Question/Accusation

How much farmland is being taken up with solar installations?

Or

Solar is taking up all of our farmland and destroying our way of life!



North Carolina Example

- #4 in the U.S. installed solar capacity
- 8% of NC electricity from utility-scale solar
- Partnered with NC Department of Agriculture
- Guesses about % of previous farmland now used for solar?

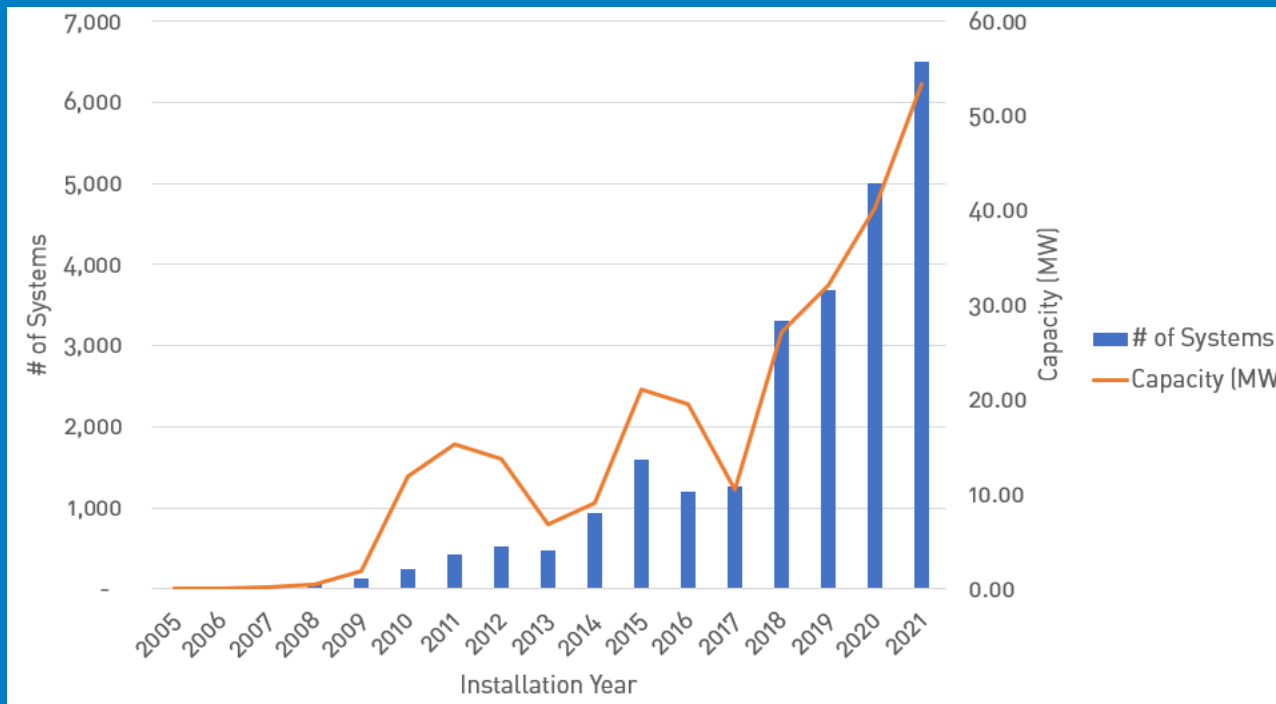
Renewable Energy Database (REDB)



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North Carolina's most comprehensive source for renewable energy systems (40k+) registered and installed in North Carolina

energync.org/maps/



This is rooftop solar PV installation data from the REDB since 2005.

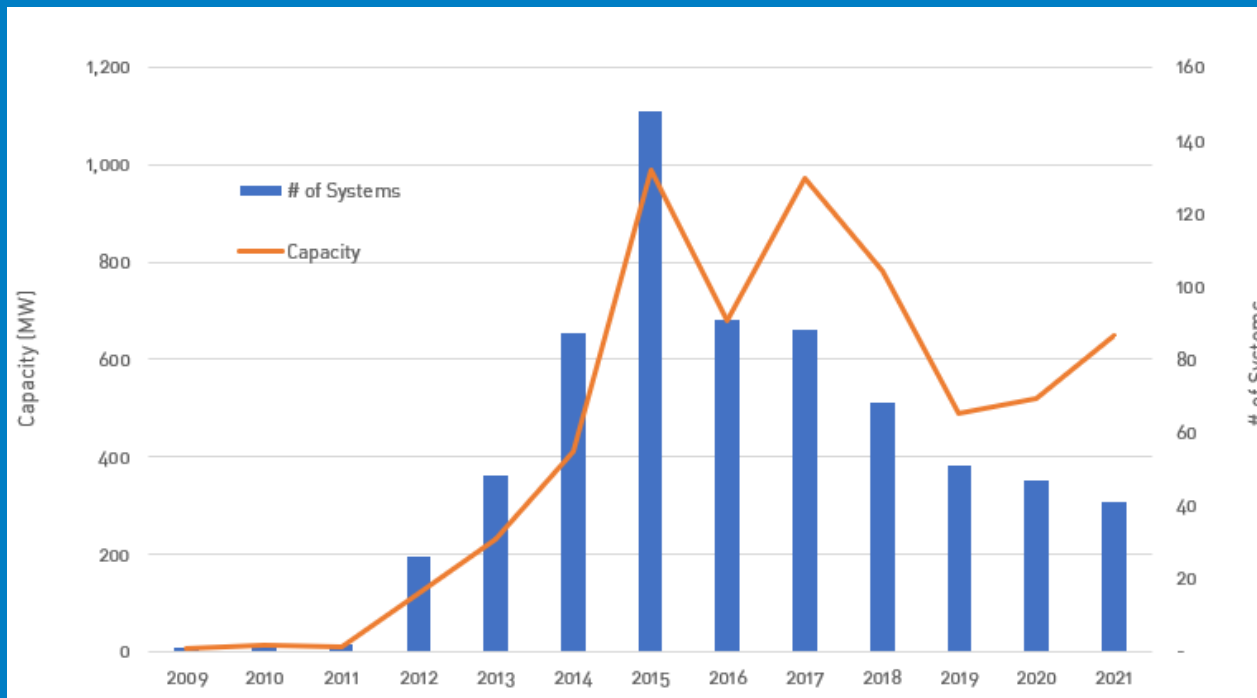
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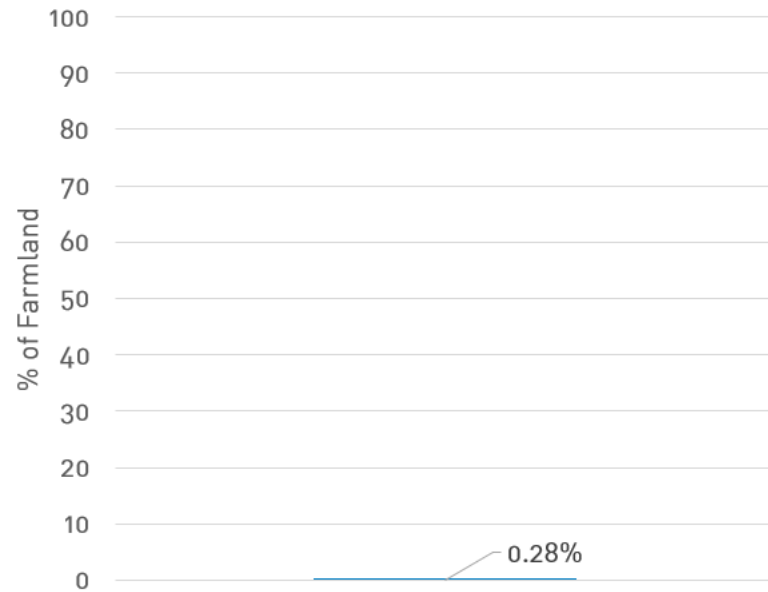
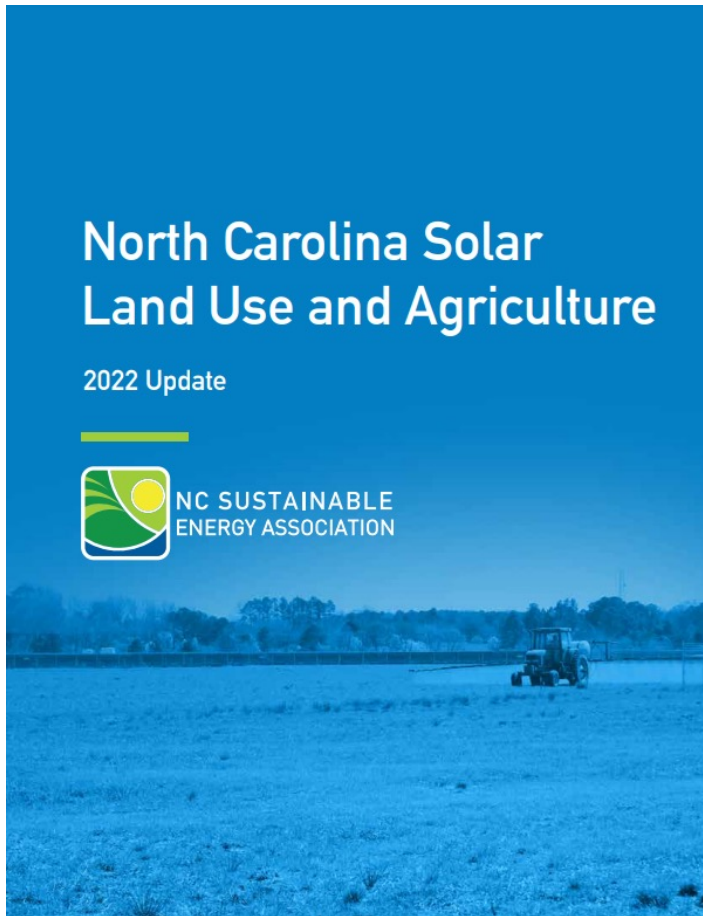
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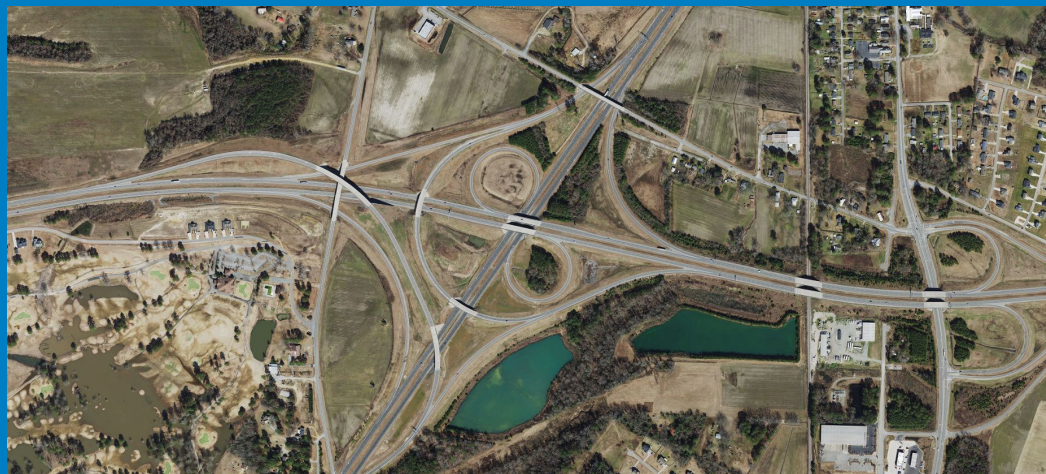
This is utility-scale solar PV installation data from the REDB since 2009.

The Results





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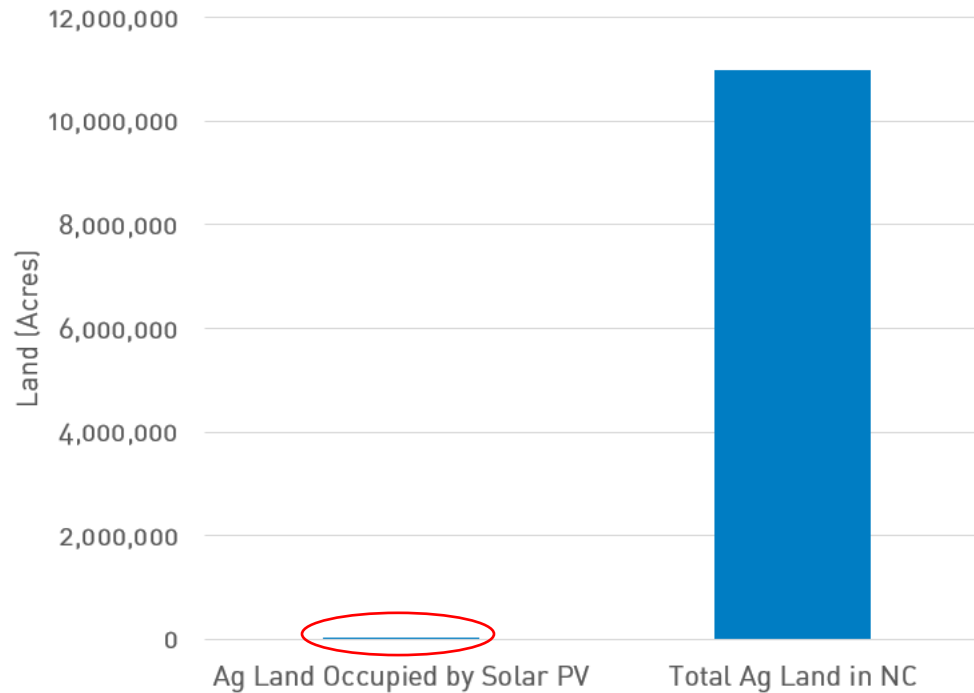
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How much agricultural land does solar occupy in NC?

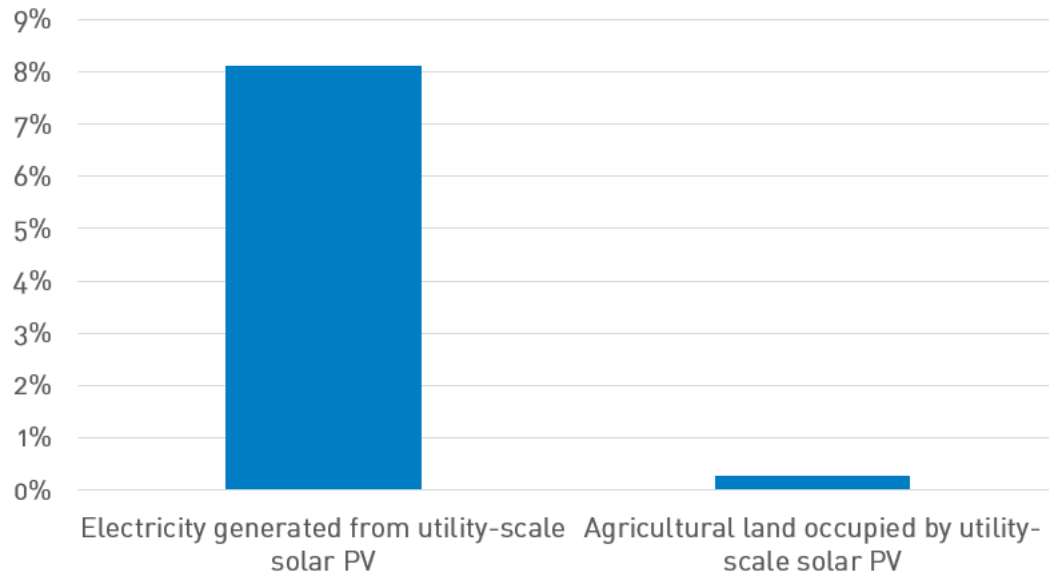


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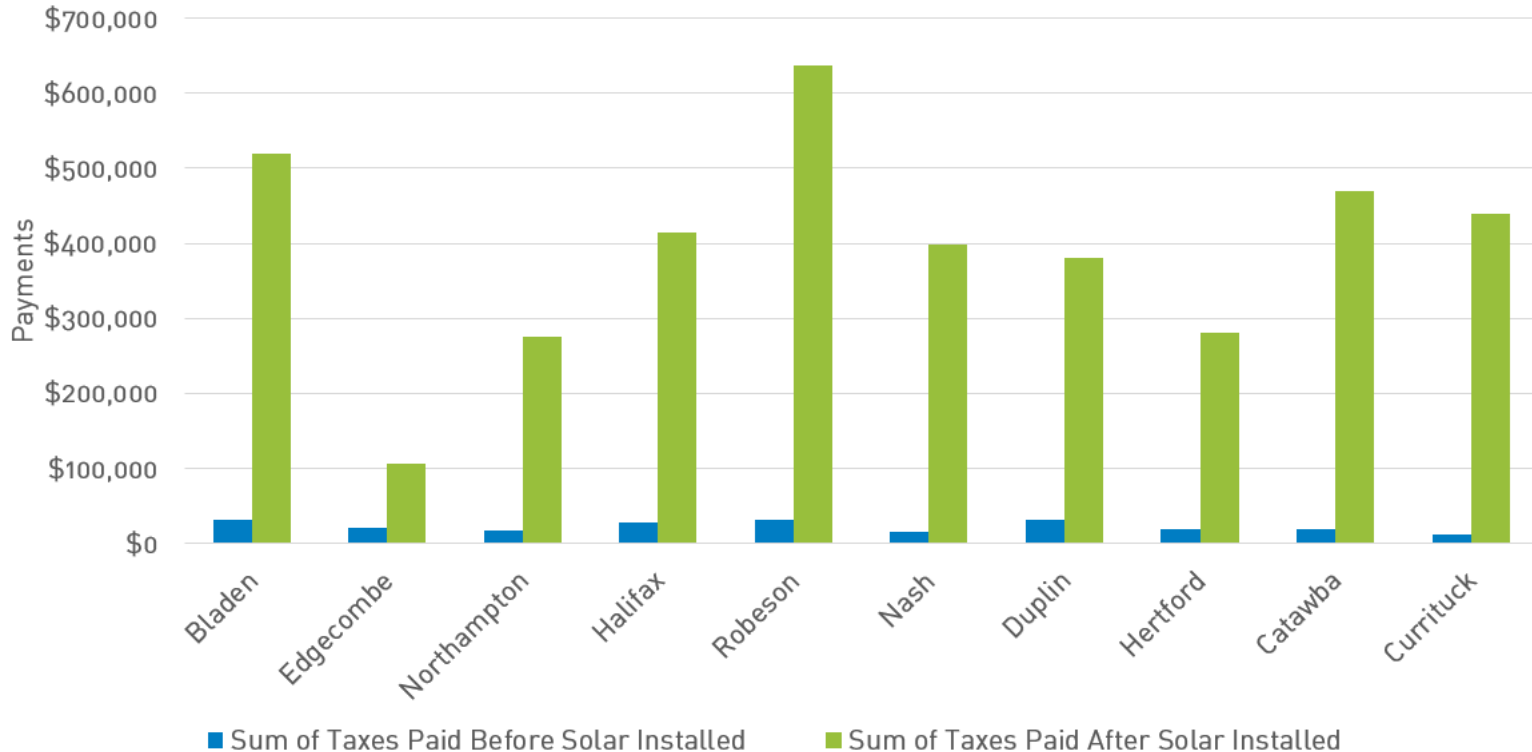


Utility-Scale Solar % Comparison



Bonus Research! Property Taxes!

- Property taxes increased by over \$11.2 million in total
 - Average increase of over \$15,000 per system





Last Thoughts and Talking Points to Take Back Home

- Like wind development in many states, solar development takes up a miniscule amount of agriculture land.
 - Many sites are incorporating sheep or other co-uses
 - Provides steady revenue for farmers (compared to ebb and flow of row crops)
- County property tax revenue increases dramatically with solar
- Roads and residential and commercial development take up far more farmland than solar and wind
- When paired with storage, adds to grid resilience – especially in storm risk areas (see Babcock Ranch, FL)
<https://www.npr.org/2022/10/05/1126900340/florida-community-designed-weather-hurricane-ian-babcock-ranch-solar>

NC Carbon Plan: How much more land will be occupied by solar?



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Portfolio	New Solar (GW)	Additional Land Occupied by Solar (Acres)	Additional Agricultural Land Occupied by Solar (Acres)	% of Additional Agricultural Land Occupied by Solar	Total Projected Agricultural Land Occupied by Solar
1	5.4	35,541	29,060	0.26%	0.55%
2	5.6	36,857	30,137	0.27%	0.56%
3	7.7	50,678	41,438	0.38%	0.66%
4	6.8	44,755	36,595	0.33%	0.62%



Large/Utility Scale Storage Market

National trends

Most utility scale energy storage facilities that are planned to become operational over the next few years will be co-located with renewable energy projects.

