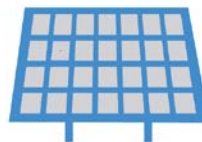
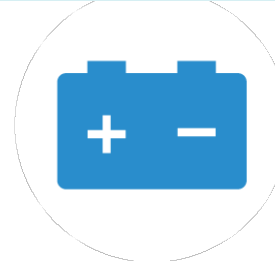


Sustainable Solutions: Embracing Sustainability Solutions that Reach Customers

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Cary, North Carolina

NCSEA: Who We Are



Why did consumers choose to adopt renewable technology?



Across technologies, the main motivating factor is environmental impact, followed by the future cost of electricity

What tech did would consumers adopt next?

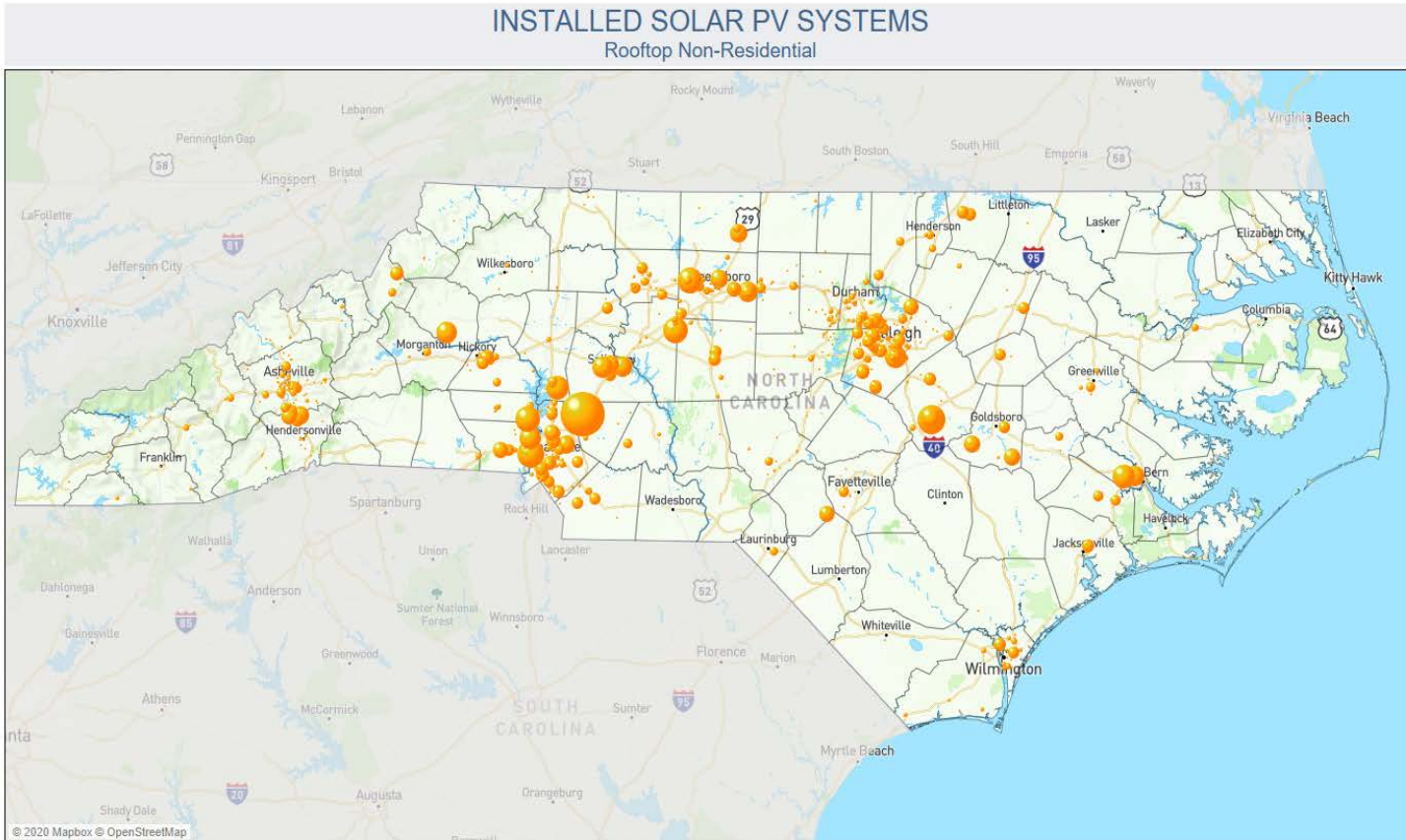


- Solar PV owners were asked if they had considered installing an energy storage system – the majority (65%) had considered it, but did not install, while only 6% had actually installed a system
 - Overwhelmingly, potential energy storage customers cited cost as the main hurdle
- All customers were asked what additional clean energy purchases they would make, and the majority (55%) said they were not planning on making additional purchases. Of those who indicated they were interested in making additional purchases, EVs (23%) and energy storage (20%) were the top two choices.

Rooftop solar: non-residential

Public power: 36 non-residential solar installations, few since 2015

- Statewide: 764 installations, handful in 2019

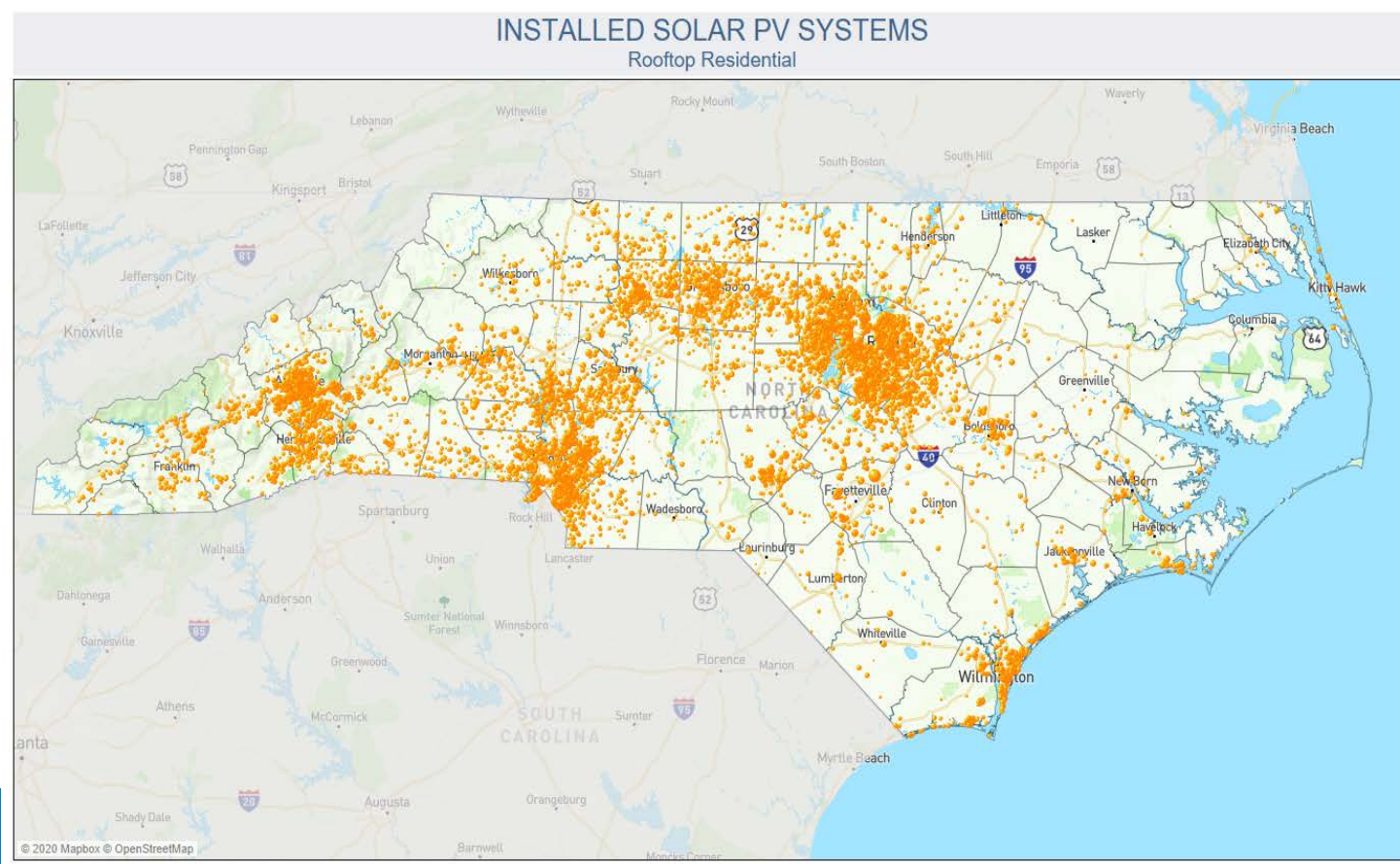


Rooftop solar registered in public power communities



Public power: 95 residential solar installations, no clear annual trend

- Statewide: 10,664 residential solar installations, ~1,300 more expected for 2019



Residential Solar PV and Energy Storage



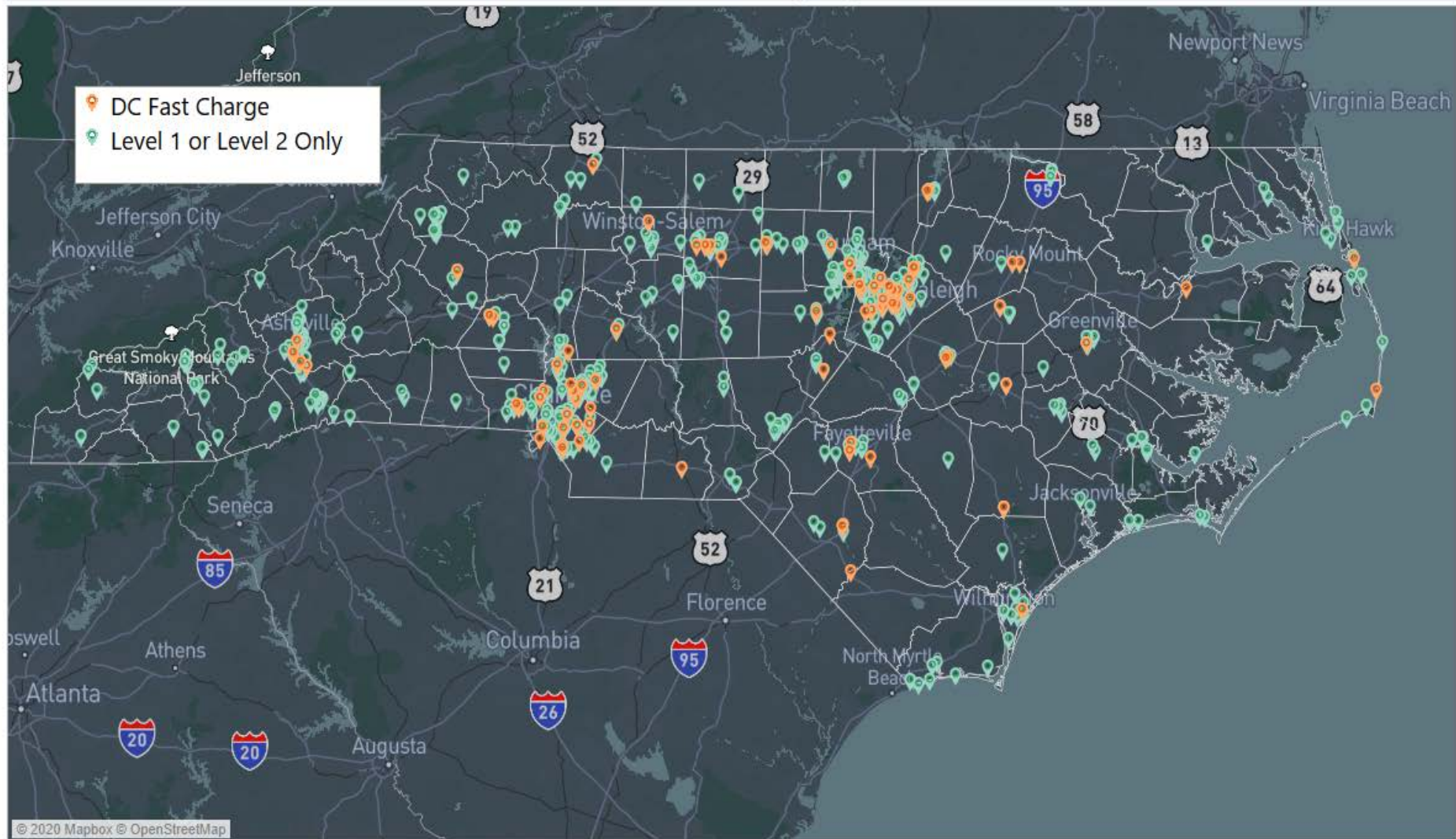
6,541 systems
37.04 MW



NC Publicly Accessible EV Charging Locations: DC Fast Charge, L1, and L2



North Carolina EV Charging Locations



Energy Burden Solutions



<https://vimeo.com/318249400>

Utility Solutions Services: Marketing and Consulting



NCSEA Utility Solutions Services Include:

- Identify top homes to target for energy efficiency services to reduce peak load
- Analyze residential energy intensity (energy use per square foot) and other home characteristics
- Design customized materials to be mailed to customers, including home energy reports and educational pieces
- Coordinate mailing campaigns, printing, and robo-call processes
- Photography/videography
- Track program enrollment metrics
- Grant writing/identification

Utility Solutions: Marketing and Consulting



Examples of Marketing Materials

Why Air Leaks Cost You Money



Do you feel drafts in your home?
Are your heating and cooling bills higher than they should be?
Do you experience uneven temperatures between rooms?
If you answered yes to any of these questions, you likely have air leaks!

Often times, air leakage occurs in areas of your home you may not notice. The most significant air leaks are hidden in the attic and basement. In cold weather, warm air rises in your house, just like a chimney. This conditioned air is wasted as it escapes through leaks around windows, doors, and cracks in your basement.

These leaks not only allow air to infiltrate your home, but they allow other unwanted disturbances such as dust, moisture, bugs, and rodents.

Addressing air leaks in your home may result in lower heating and cooling bills and an overall more comfortable household.

Upgrade to \$ave

What it Does: Our Upgrade to \$ave program reduces your air leakage.

How it Works: After you sign up for the program, the co-op arranges for an auditor to identify any issues with your home. If your home qualifies, you will receive energy efficiency upgrades at little to no upfront cost and then you pay back for the improvements on your utility bill using your energy savings.



██████████ AR 71769

Dear ██████████

We are reaching out to offer assistance that could greatly reduce your bills.

According to our records, you paid \$5,372.37 on electric bills last year - your home has among the highest bills of all our member-owners. The chart below shows how much energy your home uses in comparison to others.

Category	Cost
Energy Efficient Home	\$294.14
Average Home	\$420.20
Your Home	\$447.70

Quachita Electric's **HELP PAYS** program provides home improvements, allowing you to immediately lower your bills. Sign-up today to receive a **FREE HELP PAYS** assessment that will identify improvements to make your home more energy-efficient. If your home can benefit from energy efficiency improvements (such as a new heating and air conditioning unit, lighting upgrades, or attic insulation), Quachita Electric will pay most or all of the upfront costs of the improvements. You repay Quachita Electric with a monthly charge placed on your electric bill; your estimated energy cost savings will be more than the monthly charge, so you will still save money on your electric bill!

Benefits of HELP PAYS

- Lower utility bills - save money!
- More comfortable living area
- Improved health - reduce allergens
- No personal debt - this is not a loan
- Reduce noise in home

It only takes a few minutes to sign-up for a free **HELP PAYS** assessment. Learn more:

- Visit www.oecc.com/help
- Call (877) 252-4538

Every new member who signs-up for the **HELP PAYS** program by April 2019 will be entered into a drawing to win a new Apple iPad! The drawing will be held the first week of May.

We are here to **HELP!**

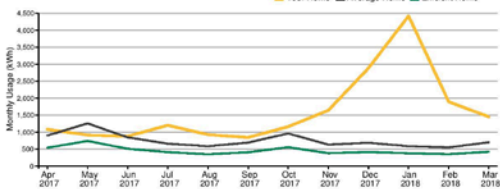



Home Electricity Report

123 Robins View Road, Your Town NC

You have spent about **\$2,311** on electricity in the past year. To help lower your high bills, Roanoke Electric Cooperative has identified your home as a good candidate for the **Upgrade to \$ave** program.

Your home's electricity use over time:



Category	Cost
Your Home	\$2,311
Average Home	\$1,083
Efficient Home	\$651

Over the past year:


You have spent **\$1,228** more on electricity than average homes and **\$1,660** more than efficient homes in your area over the past year.

UPGRADE TO \$AVE

Our **Upgrade to \$ave** program can provide you with home improvements at little to no upfront cost, allowing you to immediately lower your bills.

Start Now

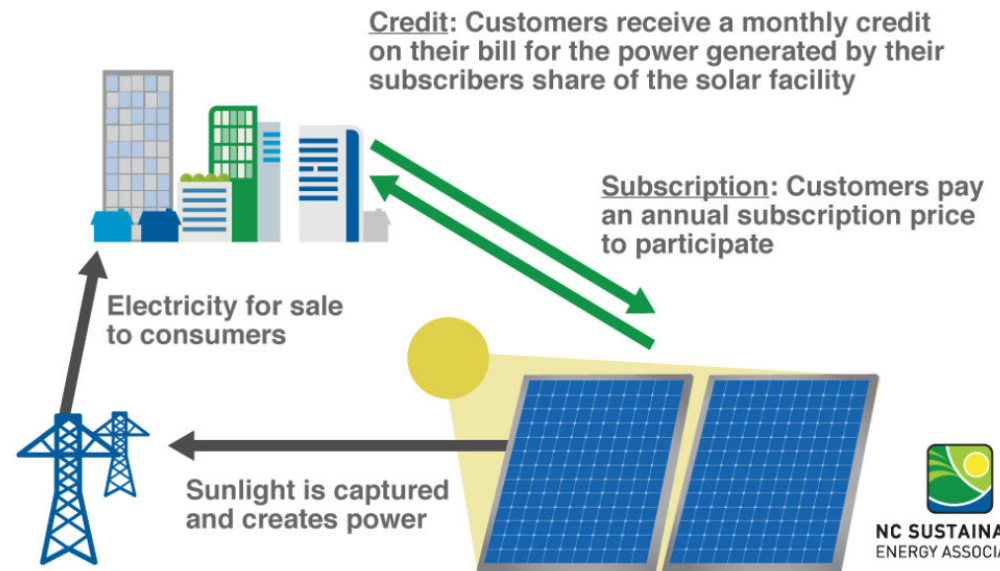
Call 252-209-2236 for a free home assessment or submit a request at RoanokeElectric.com/UpgradetoSave



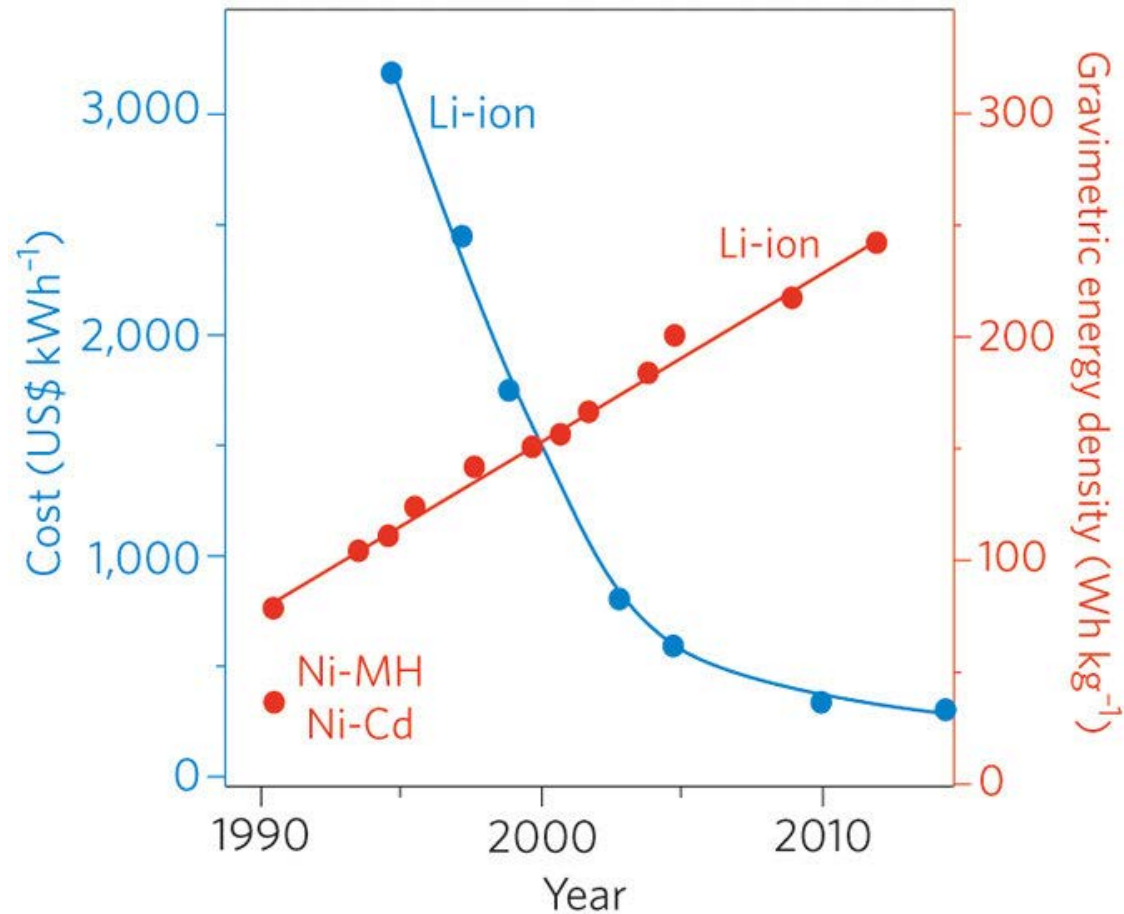
Community Solar



There are 20 community solar PV projects in NC for a total capacity of 2 MW



Decreasing cost of energy storage



Energy Storage and Solar PV



Brunswick EMC and Cypress Creek's 12 MWh Solar+Storage Project

Microgrids



Tideland EMC's microgrid on Ocracoke Island. Also, Butler Farms.

Big trends conclusion

- Sustainability is consumers #1 reason, but cost may match or rise above sustainability
- Declining costs of sustainable energy technologies
- Trends in firms offering sustainable energy technologies
- Increasing consumer adoption of sustainable energy technologies
- Multiple technologies showing up on same circuits and behind the same meter
- Advanced metering and data analytics enabling further all-in cost declines
- Now able to finance and deliver sustainable energy programs that reduce costs for both the customer and the utility
- More and more NC utilities evaluating, promoting, deploying sustainable technologies - firms can partner with you
- Rising conversation about integrated distribution planning and management
- Shift from reactive to DERs to leveraging DERs
- Data central to unlocking opportunity in 2020 and next few years

Resources Through NCSEA

- Problem solving and research collaboration
- Program marketing and video services
- Consumer and Industry Surveys
- Grant writing assistance
- Online sustainable energy business directory and intro to businesses
- Help your RFPs reach appropriate industry
- North Carolina sustainable energy trends

Thank You

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