

4-H Electric Program Overview

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Bio&Ag
ENGINEERING

**“We Bring
Engineering
to Life”**

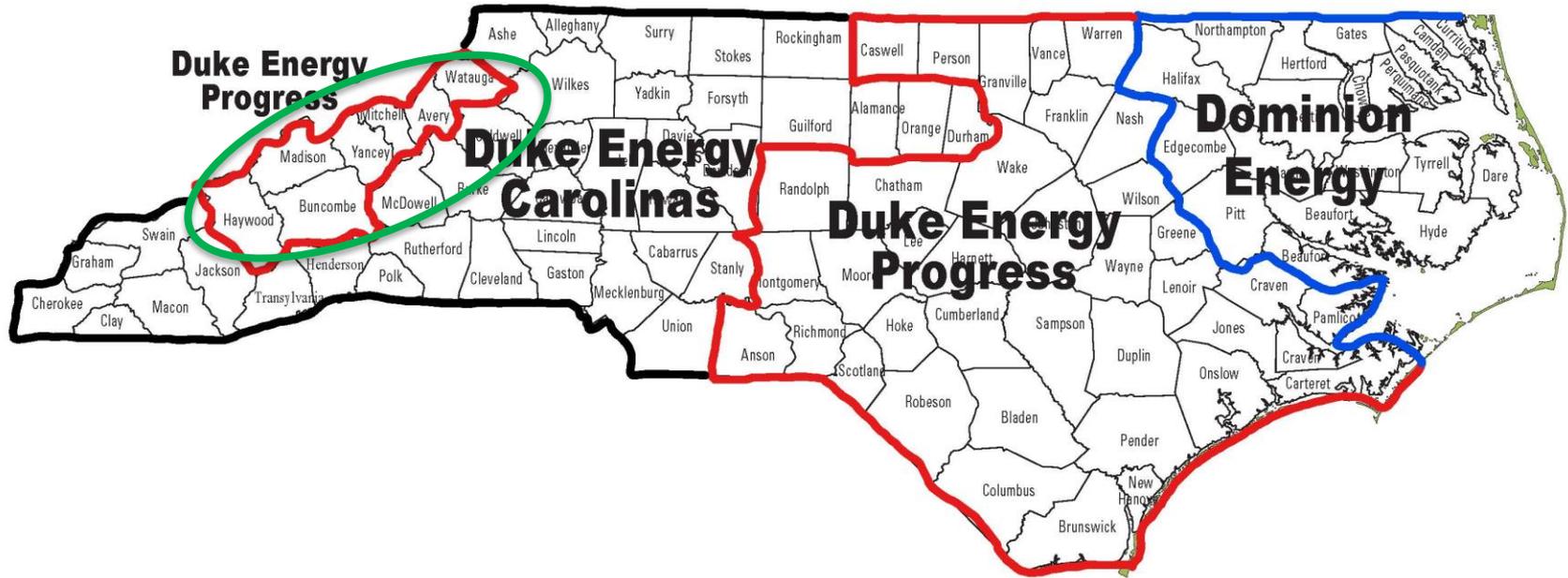
4-H Electric Program Sponsors

- Duke Energy
 - *Duke Energy Progress* – (44)
 - *Duke Energy Carolinas* – (38)
- Dominion Energy
 - *Northeast District* (18)
- North Carolina Association Electric Co-ops

Electric Program Website

<https://nc4h.ces.ncsu.edu/electric/>

Territorial Map



4-H Electric Program Objectives

- Develop effective leadership, character, and citizenship
- Develop life skills
 - *Critical thinking*
 - *Problem solving*
 - *Teamwork*
 - *Time management*
 - *Public speaking*
- Learn about the fundamentals of electricity and its safe efficient use
- Create an awareness of energy usage, generation, distribution
- Energy conservation, renewable energy technologies
 - *Solar, Wind, Hydro*
- Generate enthusiasm for Science and Technology (STEM)

Electric Program Activities

- 4-H Electric curriculum books
 - *Magic of Electricity*
 - *Investigating Electricity*
 - *Wired for Power*
 - *Entering Electronics*
- Building can lamps
- Wiring outlets and switches (basic wiring)
- Learn how to use electrical tools (volt-ohm meter, soldering iron)
- Identify circuit components and read circuit diagrams (electric kits)
- Integrates well with robotics curriculum
- Tour local or regional electric generation/distribution facilities
- County, District, and State electric presentations

Activities cont. – Electronic Kits

- Different project kit selected annually
- Funding provided by Duke and Dominion
- Twenty free kits per county
- Additional can be purchased
- Requirements
 - *Attend training*
 - *Request submitted by Agent or PA*

Regional Kit Training Opportunities (Agent, PA, Volunteer Leaders, youth)



4-H Electric Congress



Transportation Provided – Holiday Tours



Electric Congress Delegates

- Minimum age requirement (11 by Jan. 1)
- *County Delegate* (4 per county)
 - 11-13 (2)
 - 14-18 (2)
- *Electric Portfolio Delegate* (2 per county)
- *Recruiting Delegate* (1 per county)
- *At-Large Recruiting Delegate* (10)
- *At-Large Electric Portfolio Delegate* (10)
- *Adult Leaders* (2 max), 4-H Agent or Program Assistant
 - 3 or less youth, 1 Adult leader plus Agent or PA
 - 4 or more youth, 2 Adult leaders plus Agent or PA

Community Service Project



Energy Industry Career Fair

- Caldwell Community College (Lineworker program)
- Duke Energy
- Dominion Energy
- Bucket Truck and Lineworkers
- Electric Vehicles (Tesla / Electric Truck)
- Fairfield Electric Cooperative
- Google
- Altec Industries
- UNC-Wilmington
- NC State
- NC A&T Innovation Station (mobile makerspace)

Careers in the Energy Industry





Electric Vehicle Technology



Territorial Awards

- Selection based on Electric Portfolio submitted to state office
 - *Duke Energy Progress*
 - *Duke Energy Carolinas*
 - *Dominion Energy*
- First place – *iPad (\$500 Card)*
- Second Place – *Samsung Galaxy Tablet (\$250 Card)*
- Third place – *JBL Portable Bluetooth Speaker (\$150 Card)*



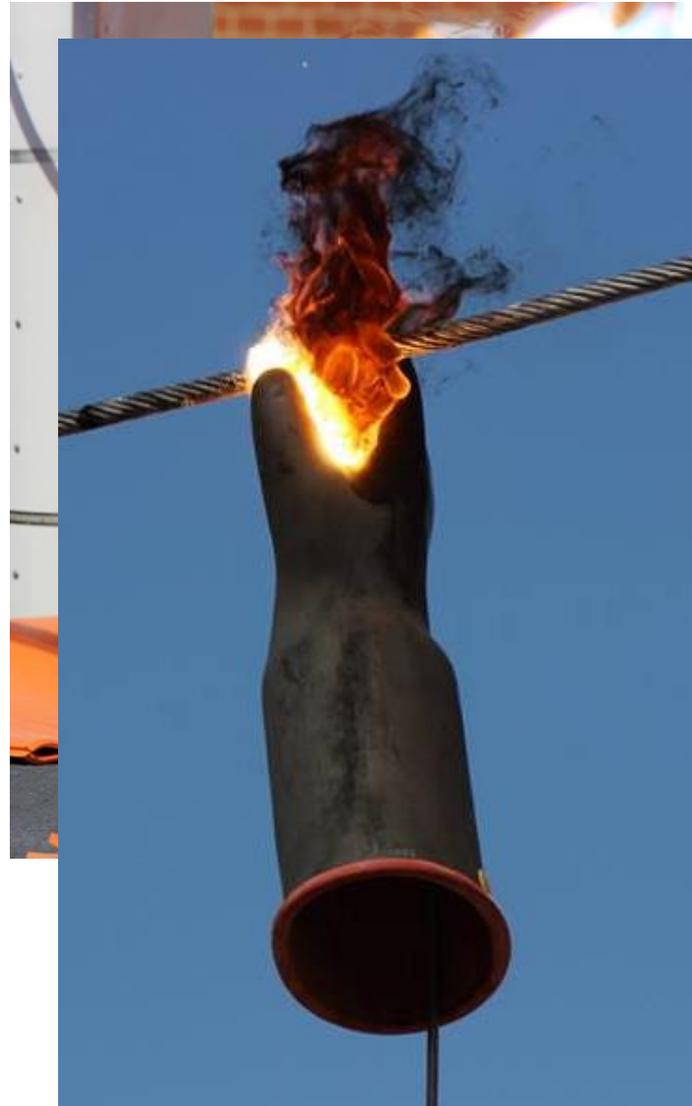
County and Individual Recognition

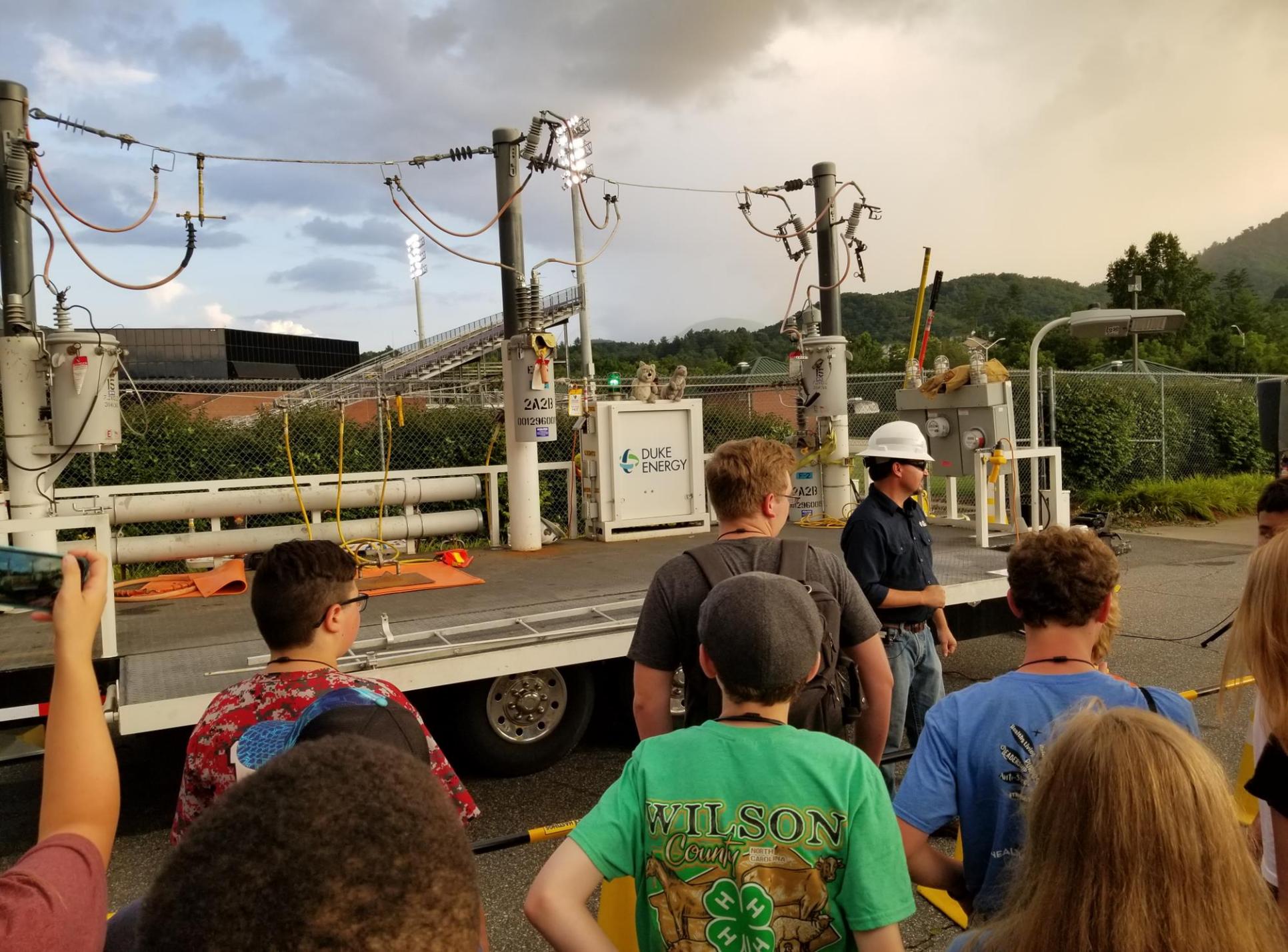


Educational Tours

- Hydroelectric Facilities
- Duke Energy Emerging Technologies Center
- Lincoln Combustion Turbine Station
 - *Combustion turbine power generation*
 - *Advanced combustion turbine generator (Siemens Energy)*
- Brunswick Energy & Educational Center
 - *Nuclear Energy*
 - *Innovation and Renewables*
 - *Live Line Demonstration*

Live Line Demonstration





DUKE ENERGY

2A2B
001296001

WILSON
County
NORTH CAROLINA



Thorpe Hydroelectric Plant Tour



Electric Congress Excursions

- White water rafting
- Swimming in the ocean
- Carowinds
- Agritourism farm
- Train ride
- Outdoor drama
- Ocean cruise
- Water park



Electric Congress Excursions – cont.

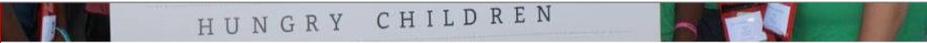




Electric Congress Impacts

- Rewards youth for their hard work during the year
- Unique opportunities beyond the county level
- Career Fair
 - *Hybrid vehicles, electric vehicle technology (Tesla)*
 - *Linemen skills, job requirements, education*
 - *Career opportunities in the energy industry*
 - *Engineering opportunities*
- College campus experience
- Electric “ideas”
- Meet with other youth from across the state with similar STEM passion
 - https://www.youtube.com/watch?v=nrUAZP-L_1M&feature=youtu.be

- Camps & Centers
- 4-H Curriculum / School Programs
- Alumni & Friends
- Donors
- 4-H Professionals
- 4-H Agent Resources
- 4-H Calendars
- Publications & Factsheets



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4-H Electric Program

The Electric Program is coordinated through the [Department of Biological and Agricultural Engineering](#) and sponsored by: Duke Energy, Dominion Energy, and NC Assoc. of Electric Cooperatives.



The 4-H Electric Program is an informal hands-on youth program conducted by the [North Carolina Cooperative Extension Service](#) and its professional 4-H agents and volunteer adult leaders located in all 100 counties and the Cherokee Reservation. Youth learn about the fundamentals of electricity, renewable energy technologies, and energy conservation. Activities include learning how to solder, learning the difference between series and parallel circuits, and assembling can lamps. Youth learn many life skills while participating in this program, but also generate more enthusiasm for science and technology.

- [Electric Program Overview](#)
- [Electric Congress Delegate Criteria and Program Awards](#)

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 - [Recordkeeping Manual and Forms](#) — NC Pesticide Safety Education
 - [What is Solar?](#) — Extension Publication
 - [Murphy Power Board and 4-H Teaching Youth About Electricity](#) — Cherokee County Center
 - [Protect Your Home From Paranormal Activity During National Radon Month](#) — Durham County Center
 - [Henderson County 4-H Public Speaking Competition](#) — Henderson County Center



Tweets from @NorthCarolina4H

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North Carolina 4-H @NorthCarolina4H
Healthy Living programming at its finest. Way to go Brunswick County. Teen leaders teaching learn Eat Grow Go...
<fb.me/GJgZmGcF>
Jan 31, 2018

North Carolina 4-H @NorthCarolina4H

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