



## Preparing the Energy Workforce for North Carolina's Changing Needs

### Key Takeaways from the Chatham and Randolph County Community Leader Focus Group August 1, 2024

North Carolina's energy infrastructure will face a host of challenges and opportunities for growth and innovation over the next several decades. At our recent community focus group meeting, we convened approximately two dozen multi-sector community leaders to discuss how Chatham and Randolph counties have been answering their energy workforce challenges and building on the opportunities. We discussed state and federal initiatives that have provided an atmosphere ripe for energy-intensive industries to move to North Carolina, the rapidly-growing population of our state, and the challenges associated with increasing extreme weather and our aging energy infrastructure.

Below are some of the highlights from the conversation captured from the small group discussions, as well as resources shared at the event.

### Discussion Highlights

#### Local Workforce Challenges

- While important workforce development efforts are underway, many people believe that Chatham and Randolph counties do not yet have a clear pipeline in place to sustain the influx of energy-intensive jobs moving to the region.
- The emerging energy workforce pipeline needs to find creative solutions to engage marginalized communities that are underrepresented in the job sector and support their awareness of incoming opportunities.
- Counties and regions with increasing demand for energy workers must start forecasting their needs and get ahead of utilizing local resources available to prepare their energy workforce pipeline.
- With the increase in energy demand and electricity dependence, communities need to consider how to increase the security of their energy infrastructure.

#### Innovative Solutions to Workforce Challenges

- The rise in the availability of energy jobs is motivating more people to get the training necessary to be attractive to corporations moving to the area.
- K-12 workforce preparation programs are driven by partnerships with community colleges and private businesses that provide students with career exposure to advanced manufacturing jobs, such as in the clean energy industry.
- Being intentional about changing the narrative around what a manufacturing career looks like is the key to engaging young students in the energy workforce.

- Regional public-private partnerships have made it easier for industries to provide curriculum input, training technology for hands-on learning, and express their needs faster.
- Innovations like Learning Employment Records (LERs) that show all skilled credentials a person has obtained over their career and education have helped older workers pivot careers and decrease the time needed to retrain them for new direct labor careers.
- In the post-COVID world, many entering the workforce are looking for more flexible schedules and are less attracted to the traditional schedule structure for manufacturing. Companies that allow this scheduling flexibility will have a competitive advantage in attracting a younger workforce.
- Partnerships with families, such as the Dual Generation Workforce Initiative with Guilford County Schools, that allows multiple generations of families to learn and work together have shown success in supplying a new pipeline for manufacturing workers and providing the chance to break the cycle of low-wage work.

### Lessons Learned

- Wraparound services, like child care at a workplace or transportation for employees, can increase the number of people able to enter the energy workforce.
- Recruiting future energy workers will require a shift in strategy for talking about advanced manufacturing as a career and not just a job. Related, prospective students must be shown clear career pathways within advanced manufacturing.
- Increased population has put a strain on local infrastructure, including water and sewer systems. Communities need to invest in strengthening local infrastructure to prepare for the influx of the new workforce. Regionalization of infrastructure is the right way to go but will require state support (e.g., budgeting, permitting flexibility, etc.)
- Many students and young people perceive manufacturing jobs as dirty and back breaking. Companies must play a more hands-on role in partnering with schools and community colleges to allow for greater exposure and change the narrative around advanced manufacturing jobs, and schools and community colleges must make it easier for companies to partner.

### Additional Resources

- [Institute for Emerging Issues Powerpoint Slides](#) - The full presentation from the workforce presentation.
  - [North Carolina State Energy Profile](#) - This is the statewide profile from the U.S. Energy Information Administration.
  - [HB 951 Overview](#) - An encompassing outline of HB 951 “Energy Solutions for North Carolina.”
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## Questions

Contact IEI Policy and Program Manager Tarik Woods, lead for the 2025 Emerging Issues Forum, at [tjwoods@ncsu.edu](mailto:tjwoods@ncsu.edu).





## Ensuring Affordable Energy in North Carolina

### Key Takeaways from the Northeastern NC Community Leader Focus Group August 13, 2024

North Carolina's energy infrastructure will face a host of challenges and opportunities for growth and innovation over the next several decades. At our recent community focus group meeting, we convened a dozen multi-sector leaders to discuss how communities in Northeastern NC have been answering their energy affordability challenges and expanding innovative solutions to assist households with their energy burden. We discussed public-private partnerships that have successfully supported families struggling to pay their energy bills and some new programs aimed at preparing for rising energy costs.

Below are some of the highlights from the conversation captured from the small group discussion, as well as resources shared at the event.

### Discussion Highlights

#### Challenges to Energy Affordability

- There are multiple power providers serving households in Northeastern NC and they each cite different factors and barriers that impact rates. This can result in customers being charged different rates depending on where they live. Areas with higher rates impose a greater burden on low-income customers.
- Renewable energy contractors, such as solar installers, are limited in the Northeastern region of the state. Therefore, the costs associated with moving equipment, installation and linking to the energy grid can cost more for customers in this region.
- A growing number of homes in this region are aging and require costly renovations to install energy efficient upgrades - such as solar panels or a new heat pump - imposing a greater burden on low-income households.
- There is a need for more funding to pay for - or otherwise subsidize - these renovations and upgrades.
- Many community members lack information about the benefits of renewable energy and energy efficiency upgrades; therefore, they may be skeptical of new projects.

#### Innovative Solutions to Affordability Challenges

- Local initiatives to increase community engagement and educate residents on the benefits of renewable energy and the changing energy landscape in their region are working. For example, displaying solar panels on community centers has been successful in helping people become more comfortable with incoming projects.

- Using public-private partnerships to fund new clean investment projects that community members can directly interact with, such as the electric school bus program.
- Programs that pay the costs of upgrades, like the Upgrade to \$ave initiative, are effective at making eligible households more energy efficient and lowers their energy costs.

### Lessons Learned

- Getting information in the hands of community members is challenging. Dedicated meetings to provide information did not attract as many attendees as hoped.
- The most effective way to get residents to embrace new projects is by bringing trusted community members together first to interact with the new technology and spread the word about the positive advantages.
- When engaging with local residents, it is important to be transparent about where the funding for new energy projects is coming from so there is less confusion and community pushback.
- It is critical to engage local elected officials and get them on board with the benefits of renewable energy projects so that communities can get the full return on their investment.
- It is important to get local community colleges on board to prepare future energy workers who will remain local instead of moving to other regions.

### Additional Resources

- [Institute for Emerging Issues Powerpoint Slides](#) - The full presentation from the convening.
- [North Carolina State Energy Profile](#) - This is the statewide profile from the U.S. Energy Information Administration.
- [HB 951 Overview](#) - An encompassing outline of HB 951 “Energy Solutions for North Carolina.”
- [Solar For All](#) - Details of the initiative to expand the number of low-income and disadvantaged communities that are primed for investment in residential and community solar.

### Questions

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## Understanding Community Needs in the Development of Clean and Renewable Energy

### Key Takeaways from the Western North Carolina Community Leader Focus Group August 20, 2024

North Carolina's energy infrastructure will face a host of challenges and opportunities for growth and innovation over the next several decades. At our recent community focus group meeting, we convened more than a dozen multi-sector leaders to discuss how communities in Western NC have been responding to incoming renewable energy projects. We discussed the impacts of those new projects, community perceptions and the programs initiated to ensure their success.

Below are some of the highlights from the conversation captured from the small group discussion, as well as resources shared at the event.

### Discussion Highlights

#### Challenges to Renewable Energy

- The mountainous topography of Western NC imposes significant barriers to the expansion of renewable energy generation.
  - There aren't enough flat surfaces (rooftops, available land) to achieve renewable energy generation goals in Buncombe County.
  - It is difficult to attract renewable energy projects because of the costs associated with available land and a lack of proximity to substations. The current avoided cost requirement at the NC Utilities Commission restricts the renewable energy projects able to be constructed in Western NC. Projects like the Woodfin Solar Plant would not have been completed independently without becoming part of the pilot Western Carolinas Modernization Project by Duke Energy.
- Regulations can impose significant challenges for developing the renewable energy sector. Examples cited include:
  - Workforce development grants often require a substantial amount of information about each participant (more than 150 data points in one cited example), disincentivizing some businesses from participating due to the administrative burden.
  - Federal Inflation Reduction Act funding requirements make it hard for smaller companies to tap into those resources. As a result, larger companies from outside the state or region come to Western NC. This poses additional communication and coordination challenges for those they need to work with on the ground.
- Community members may push back against new energy projects, especially if the benefits to local communities are not immediately evident. This reaction tends to be

greater in rural areas of the region but exists everywhere.

- The Western region is concerned that new renewable energy projects may raise the cost of energy without meeting the increase in energy demand.
- There is a shortage of trained renewable energy sector workers in the skilled trades, such as electricians, HVAC technicians, solar installers, and those who can work on EV chargers and vehicles. Attracting new students to these jobs is challenging because of an “interest gap” and, particularly for older adult students, a lack of funding to support them and their families during their training programs. For example, the state waives tuition for younger learners but not all non-traditional students qualify. It can be hard to find support for wraparound services typically needed by adult learners.
- Many students are shying away from advanced manufacturing jobs because they believe those jobs are dirty and backbreaking. To date, Western NC has not attracted a significant number of manufacturing jobs in the renewable energy sector.

### **Innovative Solutions to Renewable Energy Challenges**

- Some community colleges are providing training and certifications in advanced manufacturing, renewable energy upgrades and electric vehicle programs. Blue Ridge Community College has built fifteen different pathways for skilled trades and is responding to the need for civil and environmental engineering for regional infrastructure projects.
- The Cherokee Central Schools System has replaced its entire school bus fleet with electric school buses that are also used by the local Boys & Girls Club.
- Many high schools have created apprenticeship programs that train students in electric vehicle maintenance.
- A-B Tech Community College has built a new facility and has partnered with local businesses to provide tours and training to students interested in a career in household upgrades and technical skills.
- Programs like [Project Lead the Way](#) give students hands-on experience with a STEM curriculum that encourages exploration into energy fields.

### **Lessons Learned**

- To address the challenges and find the innovative solutions needed to achieve regional goals, significant coordination is required across many groups working in this space. “Silos” need to be broken down.
  - When engaging with local residents, it is important to be clear and transparent about the benefits of new energy projects and where the funding is coming from so that there is less confusion and community pushback.
  - Recruiting future workers requires a shift in strategy for lifting up careers that promote energy efficiency. Prospective students must be shown clear career pathways within manufacturing and home upgrades (solar installation, HVAC replacement, etc.).
  - Communities must begin to engage students earlier in their education to continue to keep the energy workforce pipeline sustainable. Apprenticeship programs appear to be
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doing this as does word of mouth when new graduates get well paying jobs.

- It is important to get local community colleges on board to prepare future energy workers who will remain local instead of moving to other regions.

### Additional Resources

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