

North Carolina Renewable Energy
and Energy Efficiency Industry
Census 2008



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North Carolina Sustainable Energy Association

Mission:

To ensure a sustainable future by promoting renewable energy and energy efficiency in North Carolina through public policy, education, and economic development.

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INTRODUCTION

What are green jobs?

The term “green jobs” has become ubiquitous — appearing in numerous reports, human interest news stories, and political speeches. However, the term leaves many wondering: what exactly is a green job?

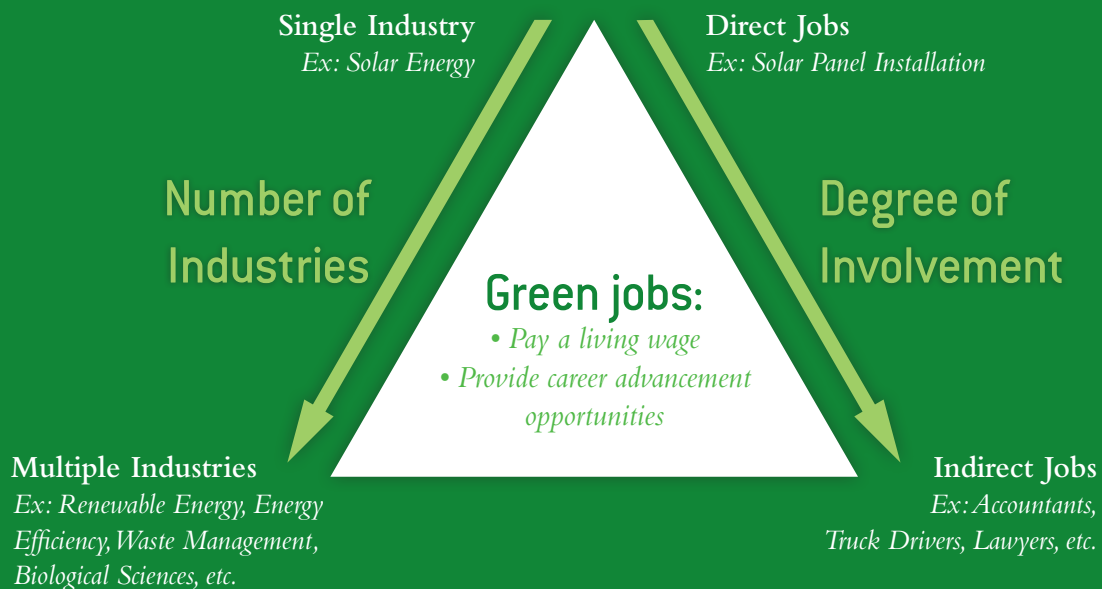
The answer to this question is highly contextual and depends on the scope of two important underlying criteria. The first criterion is the number of industries being considered. The term could apply to a single industry — such as solar energy — or all industries that have a net positive impact on the environment. The broader definition could encompass numerous industries ranging from renewable energy to waste management to biological science professions.

The second important criterion related to green jobs is the employee’s degree of involvement in the defined industry. Each industry will consist of direct and indirect

jobs, which will vary depending on how these jobs are defined. For example, one analysis of the solar energy industry may consider manufacturing jobs as a direct job because they occur within the industry’s supply chain. Meanwhile, a second analysis may focus on the jobs associated with solar installation and classify manufacturing jobs to be indirect jobs because they are removed from the installation of the final product.

The importance of these underlying criteria can be seen in Figure 1, which shows the two criteria along a spectrum. The top of the pyramid illustrates a narrow definition of “green jobs” as it accounts for direct jobs in a single industry. A move down one or both of the spectrums results in a greater number of jobs becoming classified as “green jobs”. A definition encompassing the entire pyramid would include both direct and indirect jobs in all industries that have a net positive impact on the environment.

Figure 1. Understanding ‘Green Jobs.’





WHAT IS THE PURPOSE OF THIS REPORT?

The North Carolina Sustainable Energy Association (NCSEA) is interested in the direct and indirect jobs in North Carolina associated with the renewable energy and energy efficiency industries. While the industry has significant potential to create jobs in North Carolina, very little is known about this industry. Common questions about the industry include:

- How many firms are working in the renewable energy and energy efficiency industries?
- How many people are employed by these firms?
- How fast are these firms growing and what types of jobs will be available in the future?

To begin to answer these questions, NCSEA conducted a Renewable Energy and Energy Efficiency Industry Census. The purpose of the Census was to quantify the number of firms and jobs in this rapidly growing industry.

NCSEA intends to make this an annual survey in order to track the expansion of this fast-growing industry.

As part of the Census, NCSEA identified and surveyed 486 firms which comprise the renewable energy and energy efficiency supply chain in North Carolina. Each firm was asked to identify the percentage of staff time dedicated to industry-related work. The firms were largely businesses, but included a few state agencies and nonprofit organizations. A total of 166 firms responded to the survey and met at least one of the following criteria:¹

- At least 50% of staff time is dedicated to work related to the renewable energy and energy efficiency industry.
- At least 50% of revenue comes from work related to the renewable energy and energy efficiency industry.
- Companies generate at least \$25,000 in revenue from work related to the renewable energy and energy efficiency industry.

Based on the information provided by responding firms, NCSEA believes this line of questioning provides a reasonable measure of direct and indirect jobs.

This document presents key findings from the industry census. Throughout the report, findings will indicate the number of respondents to the corresponding survey question. For example, “n=166” would mean 166 firms answered a particular question. The figures are often less than the total number of responding firms (n=166) because some firms did not reply or opted out of some questions.

It should also be noted that all data is self-reported by participating firms. And, key findings are presented in the aggregate to protect the confidentiality of participating firms.

EMPLOYMENT TRENDS

Responding firms report 2,144 full-time equivalent jobs dedicated to renewable energy and energy efficiency in North Carolina.

Employment in the renewable energy and energy efficiency industry includes a diverse range of positions related to research and development; manufacturing; distribution and sales; installation of renewable energy technologies; implementation of energy efficiency measures; operation and maintenance; and government

Table 1. Total Number of Jobs Reported by Firms (n=161), 2008.

Type of Firm	Manufacturing		Non-Manufacturing		Totals	
	Number of Firms	Number of Jobs	Number of Firms	Number of Jobs	Number of Firms	Number of Jobs
Renewable Energy	8	77	20	70	28	147
Energy Efficiency and/or Demand Response	10	136	56	193	66	329
Renewable Energy & Energy Efficiency	11	1,310	56	358	67	1,668
Total	29	1,523	132	621	161	2,144

and support services. Firms reporting employment data (n=161) provide 2,144 full-time equivalent jobs in North Carolina’s renewable energy and energy efficiency industry.² Throughout the remainder of this report, the term “job” or “employee” will be used to refer to a full-time equivalent job or employee.

Over 70% of the jobs occur in firms involved with manufacturing.

Manufacturing, which has long been important to North Carolina’s economy, has seen sharp declines in recent years. However, manufacturing forms an important component of the renewable energy and energy efficiency industry in North Carolina. While a limited number of the firms reporting employment information are involved in manufacturing, these companies tend to be larger than average, and contribute more than 70% of the reported jobs (see [Table 1](#)).³

In 2007, global investment in sustainable energy surpassed \$148 billion — a 60% increase from 2006.⁴ Manufacturing firms interact with this growing global industry, but firms focused on installation are much more dependent on trends in local and regional markets. This difference accounts for the dominance of jobs at firms involved with manufacturing relative to jobs at firms not involved with manufacturing. Most of the manufacturing firms in North Carolina produce components, rather than end units, for the renewable energy and energy efficiency industry.⁵ These firms will continue to benefit from the strong global demand for renewable energy and energy efficiency solutions.

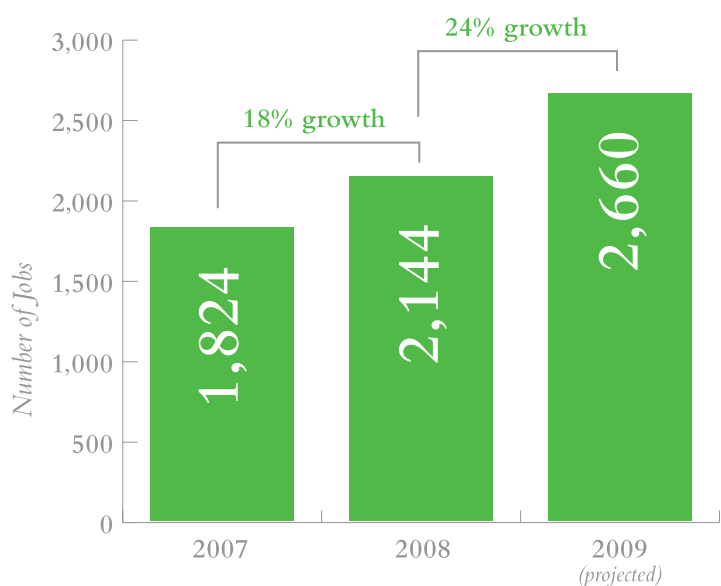


Figure 2. Total Number of Renewable Energy and Energy Efficiency Jobs Reported by Firms (n=161).

The census results also indicate that firms specializing solely in renewable energy represent the smallest segment of the renewable energy and energy efficiency industry in North Carolina (see [Table 1](#)). They only account for 17% of the firms reporting employment information and a mere 7% of the reported employees. However, significant growth is expected from these firms with the implementation of the North Carolina Renewable Energy and Energy Efficiency Portfolio Standard, which requires public electric utilities to generate at least 12.5% of their electricity from renewable energy resources and energy efficiency measures by the year 2021.⁶

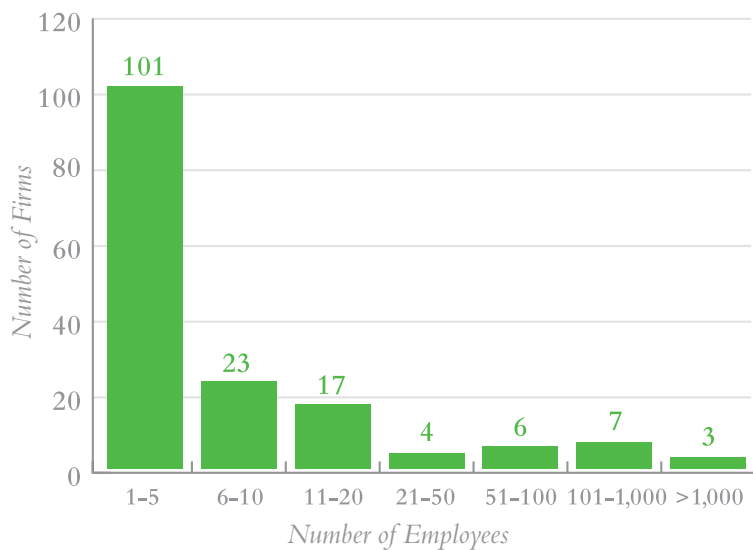


Figure 3. Number of firms in the renewable energy and energy efficiency industry (n=161).

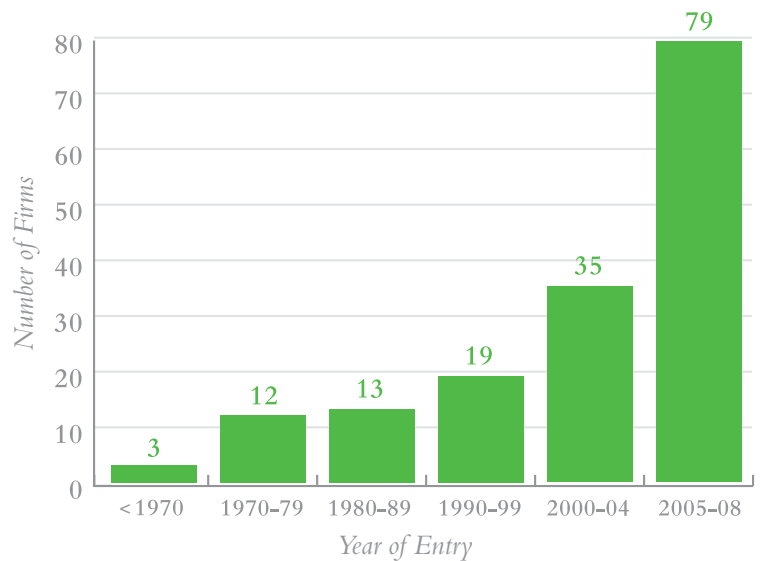


Figure 4. Year of entry into renewable energy and energy efficiency industry (n=161).

Steady employment growth is expected.

Firms in the renewable energy and energy efficiency industry report significant employment growth over the last 12 months and expect even greater growth in the next year. The firms reporting employment data added 320 employees in the last 12 months — an 18% increase (see **Figure 2**). The same firms expect to add another 516 employees in the next 12 months — a 24% increase.

Small firms will be the primary source of employment growth in the sector. Almost 80% of total projected employment growth is reported by firms that employ 100 people or fewer. The smallest firms — those that employ 5 people or fewer — account for nearly one-third of the total projected employment growth.

This rapid growth can be attributed to global demand for sustainable energy and state-level policy reforms that have begun to remove regulatory barriers in North Carolina. As noted earlier, firms involved in manufacturing can contribute to the global economy. Meanwhile, state-level policies are particularly important to smaller firms, who are more focused on delivering products and services to local and regional markets. With continued global demand and state-level support, North Carolina has the potential to grow this industry well into the future.

Accounting for all identified firms, the industry could consist of over 6,470 jobs.

The full size of the industry can be estimated by applying the average number of employees reported to all of the 486 firms identified for the census. The calculation reveals that the renewable energy and energy efficiency industry could provide 6,470 jobs to the North Carolina economy. While informative, this figure should be considered rudimentary. Due to a lack of information from non-responding firms, NCSEA was unable to weigh results by type of company or determine whether the average number employees in responding firms was representative of the broader industry. Nevertheless, the figure suggests a significant — and yet overlooked — renewable energy and energy efficiency industry already exists in the state.

INDUSTRY DYNAMICS

Most firms are small and new to the industry.

Most firms in the renewable energy and energy efficiency industry are small and relatively new to the industry. More than three quarters of the firms that provided

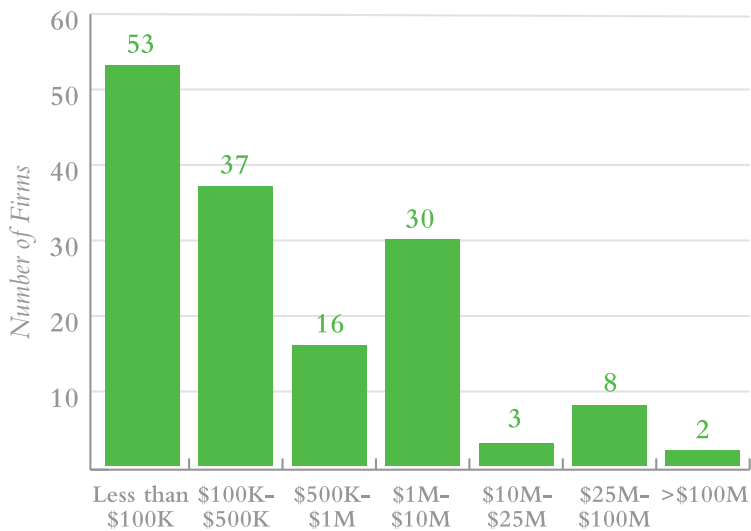


Figure 5. Total annual revenue in most recent fiscal year (n=149).

employment data consist of ten or fewer people (see [Figure 3](#)); and nearly a quarter of the responding firms employ one person. The size of the industry has grown modestly since the 1970s, with an explosion of new firms entering the industry in the last few years (see [Figure 4](#)). In fact, more than half of the responding firms (n=161) began working in the renewable energy and energy efficiency industry since 2000. Among these younger firms, roughly two-thirds of the organizations began operations as renewable and/or energy efficiency firms while one-third of the firms transitioned or diversified into the industry from other activities or markets.

The smallest firms were more likely to be new to the industry. Seventy-two percent of the firms with ten or fewer people entered the industry since 2000, compared to 60% among larger firms. These smaller firms also have fewer resources and dedicate more staff time to industry related activities.

The prominence of small, new firms is also evident in reported revenue. Two-thirds of responding firms (n=149) reported total annual revenues of less than \$1 million (see [Figure 5](#)).

While small firms are dominant, the importance of large firms should not be overlooked as they supply the bulk of the reported employment. For instance, the ten largest firms account for over half of the reported employment. In addition, the majority of these firms dedicate just a portion of their staff resources to industry related activities.



Most firms report that employees arrive with required skills, but these skills are expected to change significantly over the next 2-5 years.

The industry census collected information pertaining to the skills required by employees in the renewable energy and energy efficiency industry. In one question, firms were asked how strongly they agree with the statement, “My employees arrive with the skills they need to do the jobs for which they are hired.” Most of the responding firms (n=155) reported their employees arrive with the required skills (see [Table 2](#)). However, it is notable that 40% of the responding firms — most of whom were smaller firms — disagreed or strongly disagreed with the statement. This point is important because it indicates that small firms — who will account

Table 2. Findings Related to Employee Skills.

	Number of Responses				
	Strongly Agree	Agree	No Opinion	Disagree	Strongly Disagree
My employees arrive with the skills they need to do the jobs for which they are hired.	26	49	18	53	9
I expect the skills required for my specific industry to change significantly over the next 2-5 years.	41	57	10	45	3

for the majority of the employment growth in the next year — are having difficulty finding skilled employees.

The second skills question asked firms how strongly they agree with the statement, “I expect the skills required for my industry to change significantly over the next 2-5 years.” Nearly two-thirds of the responding firms (n=150) indicated they believe their employees will need to acquire new skills in the coming years (see [Table 2](#)). More importantly, the firms that believe the required skills will change over time employ 77% of the reported employees.

In sum, most firms are finding skilled workers, but smaller firms — who project the greatest growth in employment — have the most difficulty finding employees with the required skills. Further, the required skills for most employees in the renewable energy and energy efficiency industry are likely to significantly change in the next 2-5 years. These findings suggest workforce development will be an important issue for the growth and success of the industry.

Renewable energy and energy efficiency firms maintain a presence across the state; headquarters are predominantly clustered in the west and Research Triangle regions.

The industry census sought to understand the geographic distribution of renewable and energy efficiency firms in North Carolina. Each firm was asked to identify counties where they maintain an employee base — this could represent a satellite office, a manufacturing facility, or one or more employees working remotely. It can be seen in [Figure 6](#) that the industry has a wide presence across the state. The responding firms (n=163) report a presence

in 64 of North Carolina’s 100 counties. Regional hubs can be seen in Buncombe, Mecklenburg and Wake Counties — over 50 firms maintain a presence in each of these counties, which are highlighted in red in [Figure 6](#).

The distribution of firms can also be viewed by the seven public-private regional development partnerships:⁷

- AdvantageWest Economic Development Group
- Charlotte Regional Partnership
- North Carolina’s Eastern Region
- North Carolina’s Southeast
- Northeastern North Carolina Regional Economic Development Commission
- Piedmont Triad Partnership
- Research Triangle Regional Partnership

The primary locations — or headquarters — of most firms are located in counties associated with the AdvantageWest Economic Development Group and the Triangle Regional Partnership (see [Table 3](#)). The Charlotte Regional places a distant third, suggesting several firms have a presence in the region, but have located their headquarters elsewhere in the state.

It is important to note that the geographic distributions reported above do not reflect the number of reported employees per county or region. With manufacturing firms being some of the largest employers, many industry jobs can be found in rural counties across the state. County level employment is not reported because the census questions did not allow for the accurate county allocation of reported jobs.

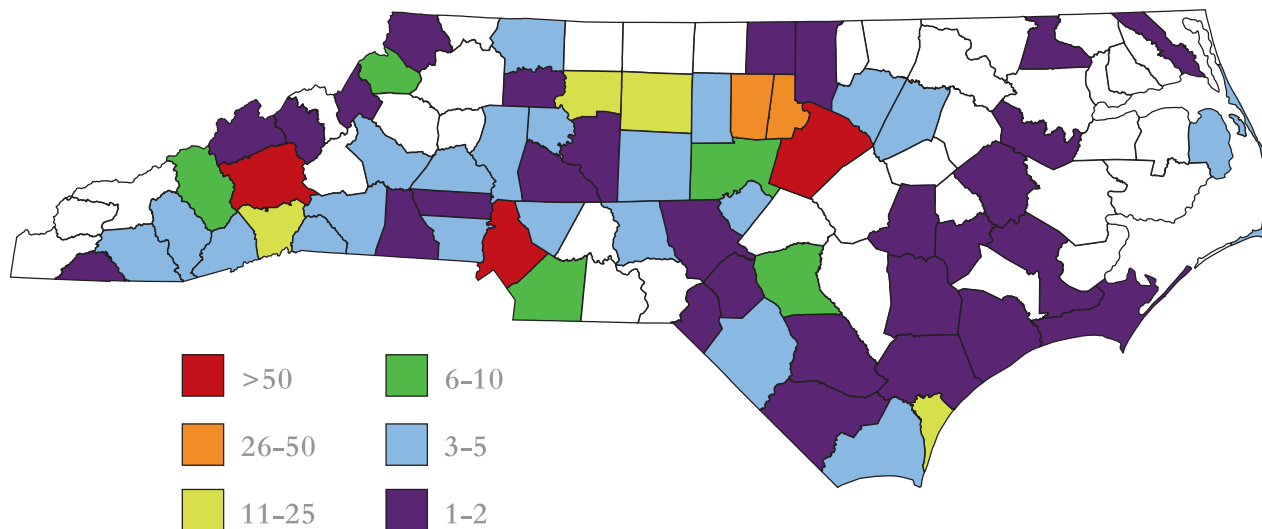


Figure 6. Presence of responding firms by county.

Conclusion

North Carolina maintains a young, robust and growing renewable energy and energy efficiency industry. Stimulated by global demand for sustainable energy products, NCSEA found the majority of reported jobs are associated with firms involved in manufacturing. Numerous firms manufacture critical components – rather than finished products – for the industry.

The enactment of state policies – such as the NC Renewable Energy and Energy Efficiency Portfolio Standard – has increased local demand and spurred growth among firms providing installation services. NCSEA expects the majority of new industry employment will occur among these service providers, as well as manufacturing firms that establish business or retool their facilities in North Carolina.

In both cases, a major challenge facing this emerging industry will be access to a skilled workforce. Small firms already report difficulty finding employees with required skills, which are expected to change significantly over the next few years. Nevertheless, a concerted effort to overcome this, and several other regulatory barriers, would position North Carolina as a national and regional leader in the new energy economy.

Table 3. Location of headquarters by region (n=163).

Economic Partnership Regions	# of Firms
Advantage West	50
Charlotte	32
Eastern Region	2
Northeast	2
Piedmont Triad	17
Research Triangle	50
Southeast	10

1 A full description of census definitions can be found in Appendix 1. A description of the census methodology can be found in Appendix 2. A copy of the census questions can be found in Appendix 3.

2 A full-time equivalent is a measure equal to the work of one full-time employee. The work of two half-time employees would be equal to one full time equivalent. The total number of full-time equivalents for a firm was calculated by multiplying the total number of employees by the percent of staff time dedicated to activities related to renewable energy and energy efficiency.

3 Respondents were able to identify more than one activity; some manufacturing firms are also involved in other activities, such as research and development, distribution, or installation.

4 United Nations Environment Programme and New Energy Finance. Global Trends in Sustainable Investment 2008. <<http://sefi.unep.org/english/globaltrends.html>> [Accessed: 3 August 2008].

5 Appalachian State University Energy Center. North Carolina Economic Developer's Guide to the Renewable Energy Industries. Volume 2. Winter 2008. <http://www.energy.appstate.edu/docs/devguide_v2.pdf> [Accessed: 3 August 2008].

6 For additional information about the Portfolio Standard, see the NCSEA publication: A Citizen's Guide: The North Carolina Renewable Energy and Energy Efficiency Portfolio Standard.

7 A listing of counties associated with each of these partnerships can be found in Appendix 4.

Appendix 1: Census Definitions

Firms were included in the North Carolina Renewable Energy and Energy Efficiency Census if they met at least one of the following criteria:

1. At least 50% of staff time is dedicated to work related to renewable energy or energy efficiency.
2. At least 50% of revenue comes from work related to renewable energy or energy efficiency.
3. Firm generate at least \$25,000 in revenue from work related to renewable energy or energy efficiency.

These criteria allowed NCSEA to include firms specializing in renewable energy or energy efficiency as well more diversified firms that are significant to the industry. For the purpose of the census, renewable energy and energy efficiency firms and activities were defined as:

Renewable Energy: Firms that develop, design, engineer, finance, manufacture, install, or maintain renewable energy systems and components.

Renewable energy industry activities include:

- Manufacturing of renewable energy components or assembly of finished products.
- Design, installation, and construction of renewable energy systems. This may also include related items, such as site selection and environmental impact assessments.
- Operations and maintenance of renewable energy systems.
- Growing, harvesting, or transporting renewable fuel crops intended for electric generation.

Energy Efficiency: Firms that develop, manufacture, or install systems that cut energy waste, such as energy-efficient homes and buildings, LED lighting, building controls, and efficient appliances.

Energy efficiency industry activities include:

- Manufacturing of construction materials and devices designed to make buildings more efficient, such as compact fluorescent light bulbs, motion sensors, thermostats, efficient windows and window treatments, and efficient appliances.
- Distribution and installation of efficiency systems, weatherization, providing energy audits, HVAC, engineering or electrical services.
- Green Building: design and construction of energy efficient homes and buildings — defined as homes that are certifiable by

Energy Star, LEED, NC Healthy Homes, or comparable third-party verification system.

Appendix 2: Census Methodology

1. Develop a definition for a renewable energy and energy efficiency firm. The definition was based on definitions used in previous studies and the relevant industries that are present in North Carolina.

2. Build database of targeted respondents. A database of firms was developed from the following listings. The resources were used to identify firms, and NCSEA followed the contact protocol established by each listing organization.

- NCSEA Business Members Database
- American Wind Energy Association Member Directory
- Appalachian State University Energy Center Manufacturers List
- EPA Energy Star Business Partners
- FindSolar.com Online Directory
- Green Home Builders of the Triangle Member Directory
- NC HealthyBuilt Homes Member Directory
- North Carolina Solar Center Directory of Renewable Energy Professionals
- Residential Energy Services Network (RESNET) Certified Raters Directory
- Small Business Innovation Research Recipients List
- Source Guide Renewable Energy Businesses
- US Green Building Council Member Directory
- Western North Carolina Green Building Council Business Members List

NCSEA also relied on contacts known to the authors and colleagues. In some cases, contact information was acquired through online research or phone calls.

3. Create, pre-test, and revise census survey. Survey questions were developed and tested on a variety of partner firms and colleagues in order to improve the clarity of the questions and overall flow of the survey. The survey was revised repeatedly throughout the pre-testing process in response to feedback from test respondents.

4. Invite firms to participate in the online survey. Survey questions were entered into an online survey tool, and participants received a cover letter with a link to the online survey in July 2008. In order to increase the survey response rate, those respondents that did not respond to the survey after additional email reminders were called and encouraged to complete the survey.

5. Identify additional respondents. All participants were asked to list up to three companies or organizations they work with so that these firms could be added to the survey if they were appropriate to be included. These additional contacts were then sent the cover letter and link to the online survey.

6. Review responses and clean dataset. Survey results were reviewed for completeness and accuracy, and follow-up phone calls were made to correct or verify information if necessary.

Appendix 3: Survey Questions

1. What is your entity's name and website?

Entity refers to the company, association, agency, or organization.

Name: _____

Website: _____

2. What is your contact information?

First Name: _____

Job Title: _____

Telephone Number: _____

Email Address: _____

3. Where is your primary North Carolina location?

Primary location refers to the NC headquarters, if applicable, or the facility location with the NC-based management team.

Mailing Address: _____

City: _____

County: _____

Zip Code: _____

4. Is your headquarters located in North Carolina?

a. Yes b. No

5. Do you have more than one location in North Carolina? Please include locations where you have employees based.

a. Yes b. No

If "yes" to question 5:

6. In which counties does your entity have locations? Check all that apply.

List of North Carolina counties appeared.

7. What year did your entity begin operating in North Carolina?

8. What year did your entity begin to work in the renewable energy or energy efficiency sector or begin to use renewable energy or energy efficiency technology in your work?

9. In which industry does your entity primarily work?

If you do not work directly in one of these industries, please select the industry that your work supports.

a. Renewable energy (e.g. production, installation, or manufacturing of renewable system components)

b. Energy efficiency and/or demand response (e.g. manufacturing or installation of efficiency systems and products, or energy-efficient construction and green building)

c. Both renewable energy and energy efficiency

If answered "c" to question 9:

10. Which industry segment is your primary focus?

a. Biomass

b. Fuel Cells and Hydrogen

c. Geothermal

d. Hydro Power

e. Solar (electric, thermal, or passive)

f. Wind

g. Other

11. Which best describes your entity?

- a. Government Agency
- b. Business
- c. Non-Profit
- d. Public Utility
- e. Other:

12. Which of the following activities best apply to your company or organization? Check all that apply.

- a. Product Research and Development
- b. Manufacturing
- c. Distribution and sales
- d. Installation of renewable energy systems
- e. Installation of energy efficiency systems
- f. Engineering
- g. Architecture/design
- h. Construction
- i. Home building and/or remodeling
- j. Energy rater
- k. Energy service company (ESCO)
- l. Software and IT
- m. Renewable energy facility owner/operator
- n. Electrical Service Provider
- o. Research/education
- p. Contracting
- q. Financial Services
- r. Law
- s. Public Relations
- t. Other: _____

13. What is your entity's current total North Carolina employment?

Please estimate based on full-time equivalent staff time (for example, two employees working half-time equal one full-time equivalent).

14. What percent (%) of your North Carolina staff time is dedicated to work within the renewable energy or energy efficiency sectors?

For example, if you work in building/construction, what percent of staff time is spent on homes/buildings certified by NAHB's green program, LEED, or a comparable system? Please estimate based on full-time equivalent staff time.

15. How many new North Carolina full-time equivalent staff members dedicated to renewable energy or energy efficiency have you hired in the past 12 months?

16. How many new North Carolina full-time equivalent staff members dedicated to renewable energy or energy efficiency do you anticipate hiring in the next 12 months?

17. What was your total North Carolina annual revenue in the most recently concluded fiscal year?

Please estimate if you do not know the exact number.

- a. Less than \$100,000
- b. \$100,000 but less than \$500,000
- c. \$500,000 but less than \$1 million
- d. \$1 million but less than \$10 million
- e. \$10 million but less than \$25 million
- f. \$25 million but less than \$100 million
- g. \$100 million or more
- h. Refuse to answer/Do not know

18. What percent of your firm's annual revenue was attributable to the renewable energy or energy efficiency industry in the most recently concluded fiscal year?

For example, if you are a manufacturer, what percent of your revenue comes from products used in renewable energy systems or Energy Star products?

- a. less than 10%
- b. 10% but less than 25%
- c. 25% but less than 50%
- d. 50% but less than 75%
- e. 75% but less than 100%
- f. 100%
- g. Refuse to answer/Do not know

19. How strongly do you agree with the following statements

a. My employees arrive with the skills they need to do the jobs for which they are hired.

- i. Strongly Agree
- ii. Somewhat Agree
- iii. Somewhat Disagree
- iv. Strongly Disagree
- v. No Opinion

b. I expect the skills required for my specific industry to change significantly over the next 2-5 years.

- i. Strongly Agree
- ii. Somewhat Agree
- iii. Somewhat Disagree
- iv. Strongly Disagree
- v. No Opinion

If so, how do you expect these required skills to change?

20. What are your CEO/Managing Director's top three concerns that might inhibit profit growth in the renewable energy and energy efficiency industry in 2008?

- 1. _____
- 2. _____
- 3. _____

21. If applicable, which states do you believe are most supportive of growing a renewable energy and energy efficiency industry, and why?

- 1. _____
- 2. _____
- 3. _____

22. We would like to ensure that our census captures as many relevant North Carolina companies and organizations as possible. We would appreciate if you would provide us with the names of three companies, associations, or organizations that you work with so we can include them in our study.

- 1. _____
- 2. _____
- 3. _____

23. Would you like to be notified when a summary report of this survey is completed and receive future communication from NCSEA?

- a. Yes, please notify me when a summary report is posted and NCSEA may contact me about other initiatives and news.
- b. Please notify me when a summary report is posted but I would prefer not to receive further communications from NCSEA
- c. No, thank you.

24. Please provide additional comments, concerns, or thoughts about the renewable energy and energy efficiency industry that were not covered by this survey.

Appendix 4: County Designations

County	Partnership Region	Geographic Region	County	Partnership Region	Geographic Region
Alamance	Piedmont Triad	Piedmont	Johnston	Research Triangle	Piedmont
Alexander	Charlotte	Piedmont	Jones	Eastern Region	Coast
Alleghany	Advantage West	Mountain	Lee	Research Triangle	Piedmont
Anson	Charlotte	Piedmont	Lenoir	Eastern Region	Coast
Ashe	Advantage West	Mountain	Lincoln	Charlotte	Piedmont
Avery	Advantage West	Mountain	Macon	Advantage West	Mountain
Beaufort	Northeast	Coast	Madison	Advantage West	Mountain
Bertie	Northeast	Coast	Martin	Northeast	Coast
Bladen	Southeast	Coast	McDowell	Advantage West	Mountain
Brunswick	Southeast	Coast	Mecklenburg	Charlotte	Piedmont
Buncombe	Advantage West	Mountain	Mitchell	Advantage West	Mountain
Burke	Advantage West	Mountain	Montgomery	Piedmont Triad	Piedmont
Cabarrus	Charlotte	Piedmont	Moore	Research Triangle	Piedmont
Caldwell	Advantage West	Mountain	Nash	Eastern Region	Coast
Camden	Northeast	Coast	New Hanover	Southeast	Coast
Carteret	Eastern Region	Coast	Northampton	Northeast	Coast
Caswell	Piedmont Triad	Piedmont	Onslow	Eastern Region	Coast
Catawba	Charlotte	Piedmont	Orange	Research Triangle	Piedmont
Chatham	Research Triangle	Piedmont	Pamlico	Eastern Region	Coast
Cherokee	Advantage West	Mountain	Pasquotank	Northeast	Coast
Chowan	Northeast	Coast	Pender	Southeast	Coast
Clay	Advantage West	Mountain	Perquimans	Northeast	Coast
Cleveland	Charlotte	Piedmont	Person	Research Triangle	Piedmont
Columbus	Southeast	Coast	Pitt	Eastern Region	Coast
Craven	Eastern Region	Coast	Polk	Advantage West	Mountain
Cumberland	Southeast	Coast	Randolph	Piedmont Triad	Piedmont
Currituck	Northeast	Coast	Richmond	Southeast	Coast
Dare	Northeast	Coast	Robeson	Southeast	Coast
Davidson	Piedmont Triad	Piedmont	Rockingham	Piedmont Triad	Piedmont
Davie	Piedmont Triad	Piedmont	Rowan	Charlotte	Piedmont
Duplin	Eastern Region	Coast	Rutherford	Advantage West	Mountain
Durham	Research Triangle	Piedmont	Sampson	Southeast	Coast
Edgecombe	Eastern Region	Coast	Scotland	Southeast	Coast
Forsyth	Piedmont Triad	Piedmont	Stanly	Charlotte	Piedmont
Franklin	Research Triangle	Piedmont	Stokes	Piedmont Triad	Piedmont
Gaston	Charlotte	Piedmont	Surry	Piedmont Triad	Piedmont
Gates	Northeast	Coast	Swain	Advantage West	Mountain
Graham	Advantage West	Mountain	Transylvania	Advantage West	Mountain
Granville	Research Triangle	Piedmont	Tyrrell	Northeast	Coast
Greene	Eastern Region	Coast	Union	Charlotte	Piedmont
Guilford	Piedmont Triad	Piedmont	Vance	Research Triangle	Piedmont
Halifax	Northeast	Coast	Wake	Research Triangle	Piedmont
Harnett	Research Triangle	Piedmont	Warren	Research Triangle	Piedmont
Haywood	Advantage West	Mountain	Washington	Northeast	Coast
Henderson	Advantage West	Mountain	Watauga	Advantage West	Mountain
Hertford	Northeast	Coast	Wayne	Eastern Region	Coast
Hoke	Southeast	Coast	Wilkes	Advantage West	Mountain
Hyde	Northeast	Coast	Wilson	Eastern Region	Coast
Iredell	Charlotte	Piedmont	Yadkin	Piedmont Triad	Piedmont
Jackson	Advantage West	Mountain	Yancey	Advantage West	Mountain

Source: NC State of the Workforce, NC Department of Commerce, January 2007.



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