



# Economic Analysis of Clean Energy Development in North Carolina

2023 Update

August 2023



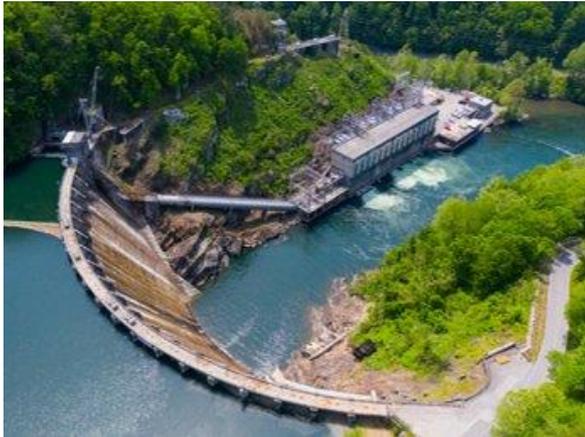
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# Objectives

- **Retrospective Economic Impact Analysis**
  - Years 2007 to 2022
  - Analyze changes in consumer, utility, and government spending
  - Estimate the direct and indirect economic impacts of clean energy development in North Carolina since 2007



# Background



- In 2007, North Carolina established the Renewable Energy and Energy Efficiency Portfolio Standard (REPS), the first of its kind in the Southeast. Since then, the REPS solar and energy efficiency goals have been met by utilities and the policy continues to show lasting effects.
  - REPS required electric power suppliers to meet an increasing amount of retail consumers energy demand through a combination of renewable energy resources and reduced energy consumption.

# Key Findings (2007 to 2022)

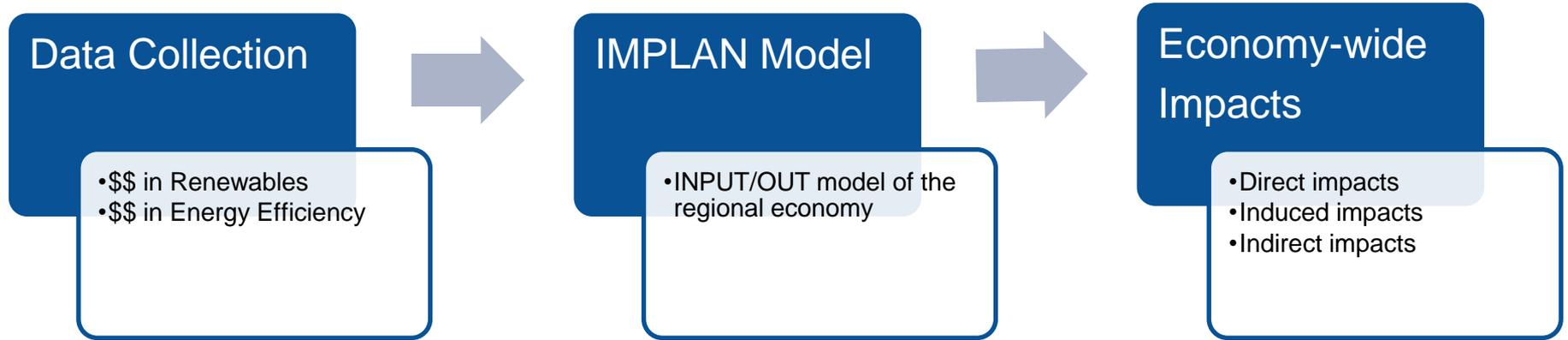


- The total economic impact in North Carolina from clean energy (renewable energy and energy efficiency) project development was \$59.1 billion.
- Approximately \$31.3 billion was directly spent on clean energy development in North Carolina.
- State incentives for clean energy—including the now expired North Carolina renewable energy investment tax credit and state appropriations for the Utility Savings Initiative—totaled \$1.9 billion. This has led to an additional \$1.5 billion in tax revenue for state and local governments.
- Renewable energy project investment in 2022 was \$1.2 billion, or 41 times the \$29.8 million of investment observed in 2007.
- Clean energy development supported 303,726 cumulative job years since 2007.
- Duplin, Robeson, Halifax, Edgecombe, Cumberland, Northampton, and Bladen Counties experienced the greatest amount of investment—more than \$500 million each. In addition, Nash, Catawba, Currituck, Scotland, Hertford, and Beaufort Counties each experienced between \$400 million and \$500 million in investment.

# Retrospective Economic Impact Analysis



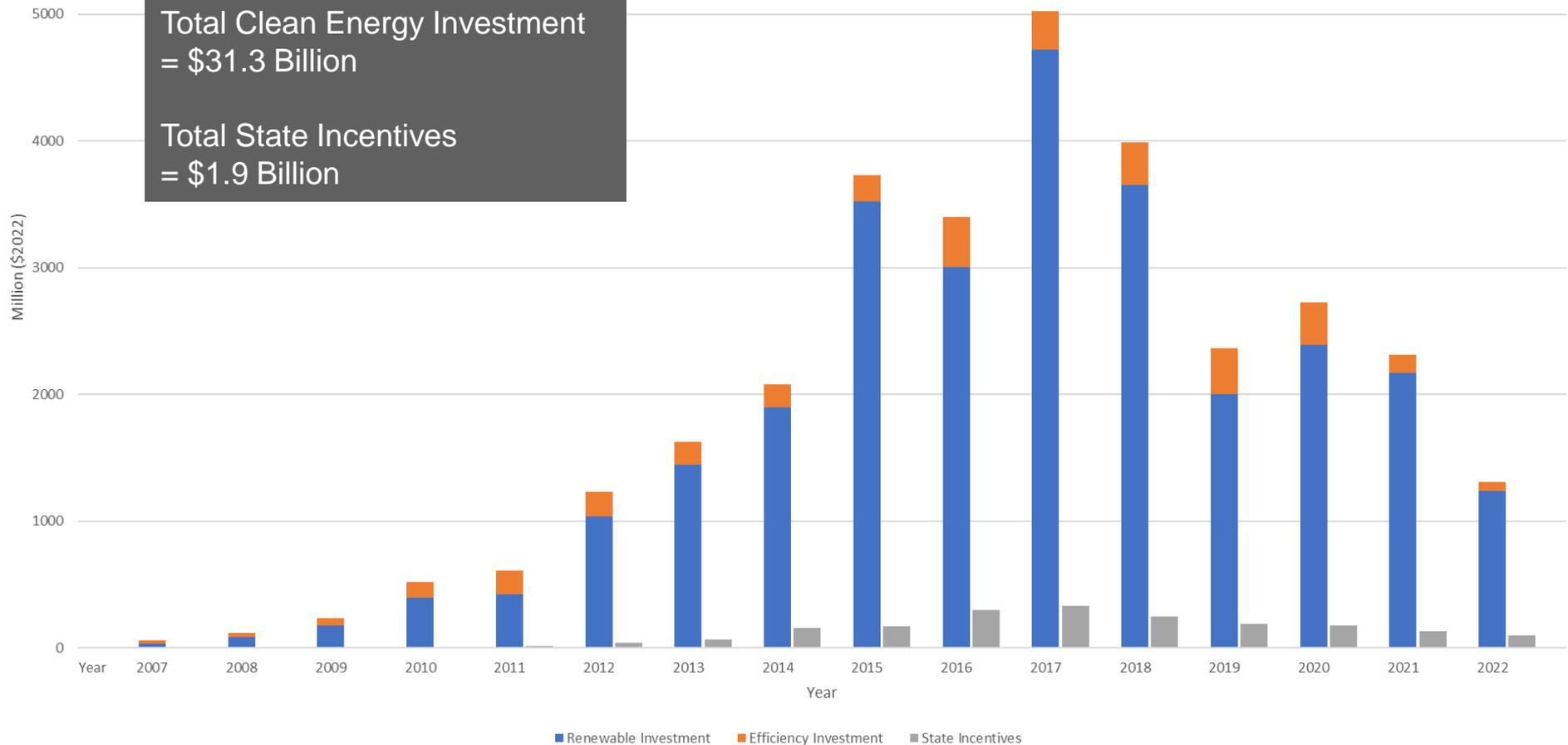
# Economic Impact Methodology



# Clean Energy Investment in North Carolina, 2007–2022

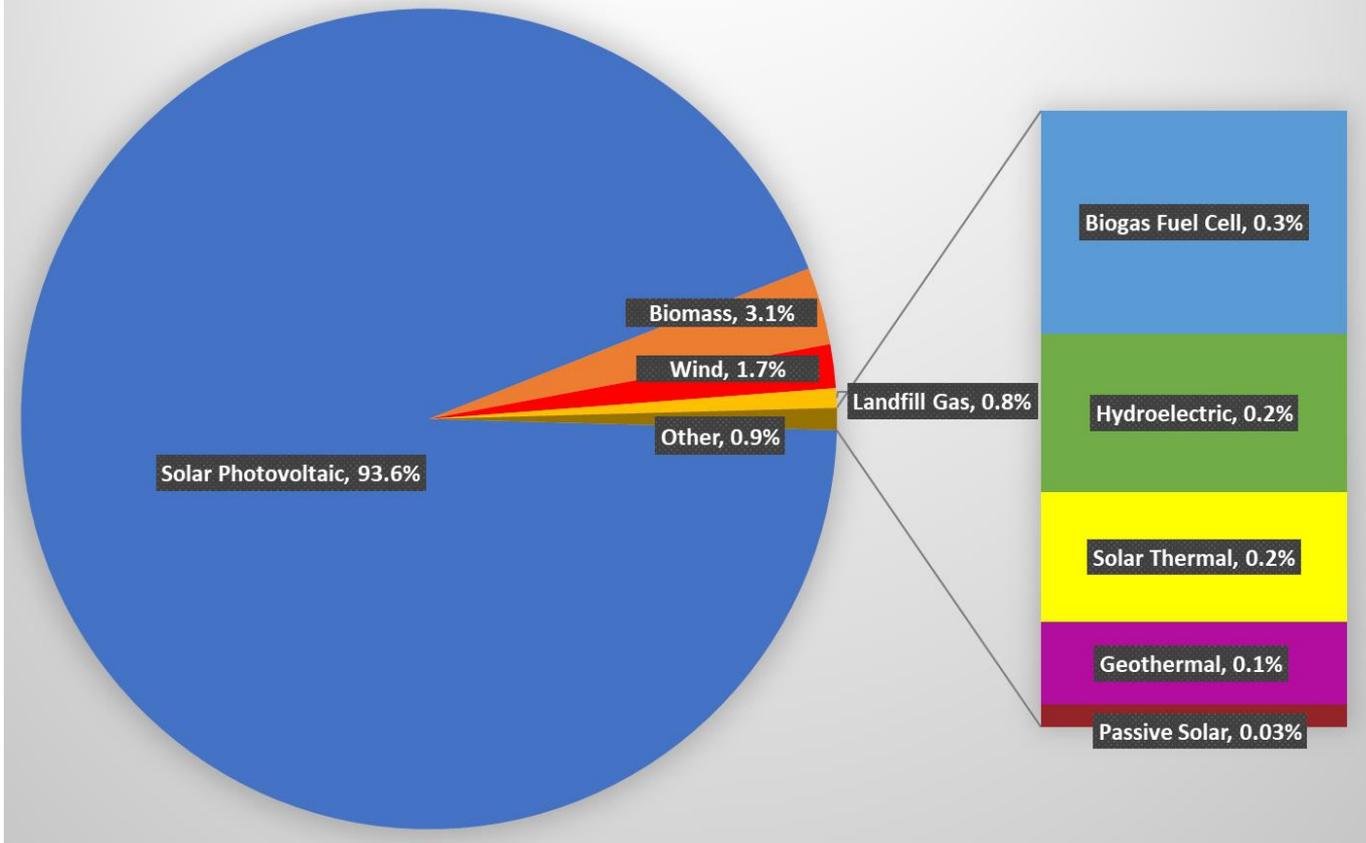
Total Clean Energy Investment  
= \$31.3 Billion

Total State Incentives  
= \$1.9 Billion

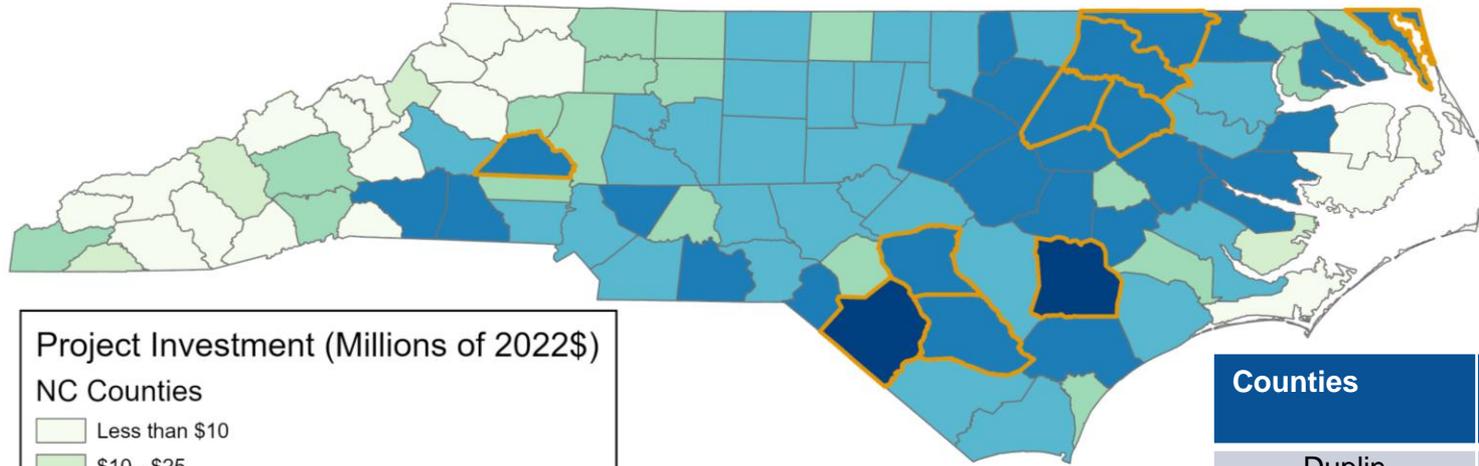


# Direct Spending in Clean Energy Development by Technology, 2007–2022

Renewable  
Energy Direct  
Investment =  
\$28.2 Billion



# Distribution of Renewable Energy (RE) Investment Across North Carolina Counties



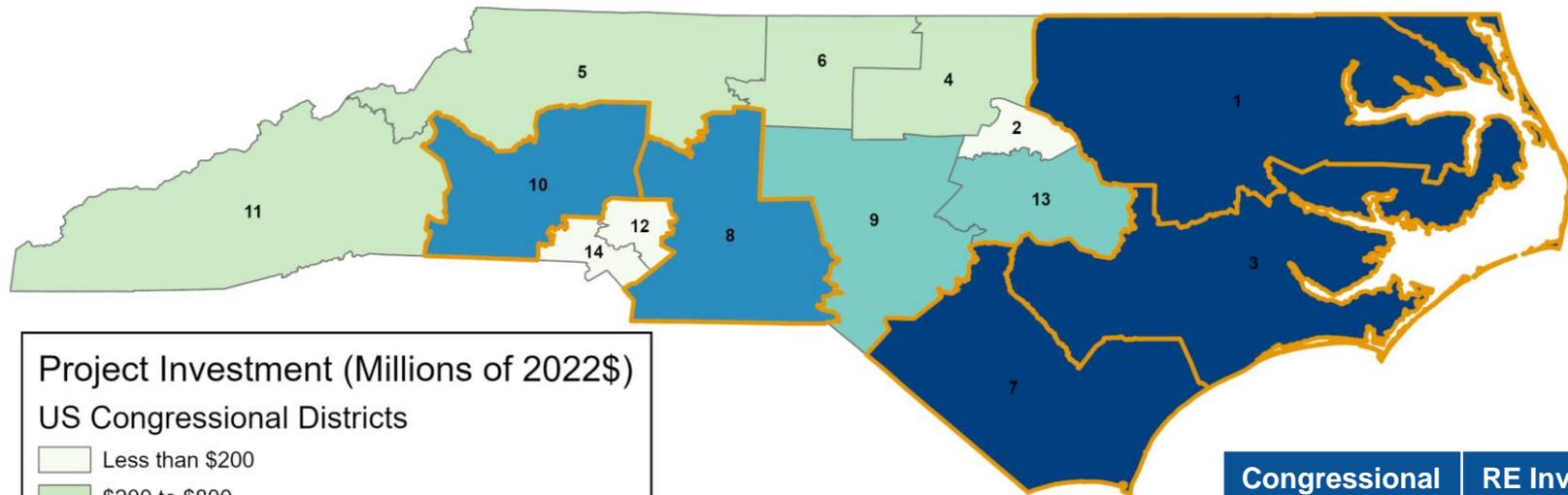
## Project Investment (Millions of 2022\$)

### NC Counties

- Less than \$10
- \$10 - \$25
- \$25 - \$75
- \$75 - \$250
- \$250 - \$700
- More than \$700
- Top 10 by investment cost

Counties	RE Investment (Million 2022\$)
Duplin	928.7
Robeson	768.2
Halifax	601.6
Edgecombe	593.1
Cumberland	583.1
Northampton	523.5
Bladen	521.9
Nash	491.8
Catawba	479.1
Currituck	454.4

# Distribution of Renewable Energy Investment Across North Carolina Congressional Districts



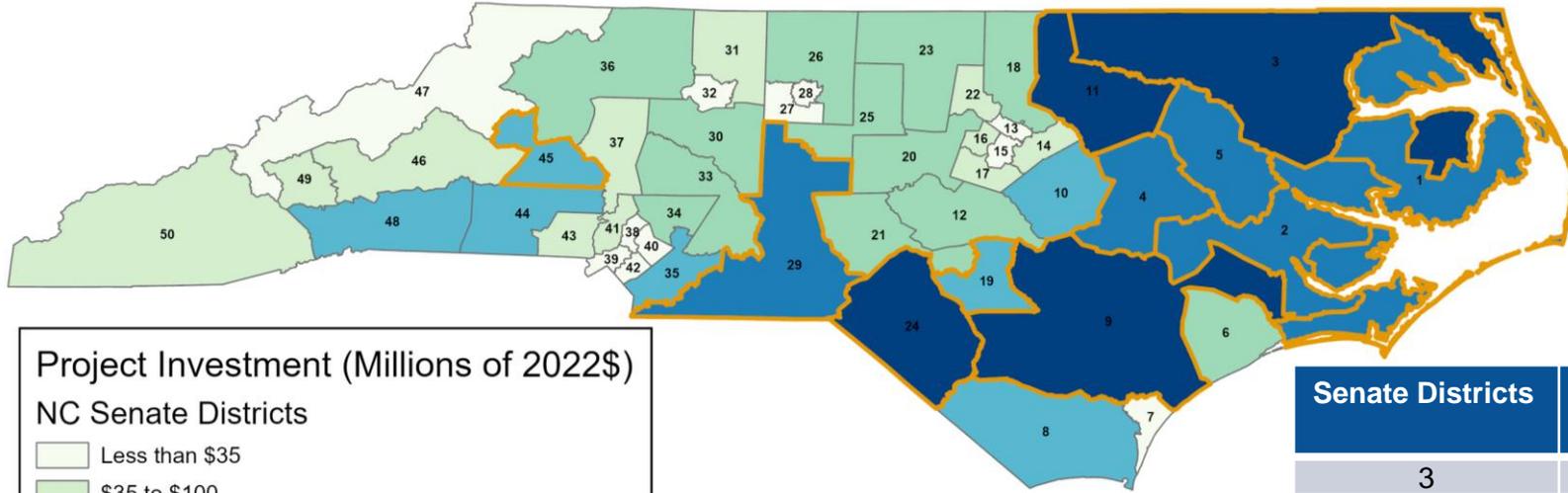
## Project Investment (Millions of 2022\$)

### US Congressional Districts



Congressional Districts	RE Investment (Million 2022\$)
1	5,307.8
3	2,818.8
7	2,550.5
8	1,502.8
10	1,383.9

# Distribution of Renewable Energy Investment Across North Carolina Senate Districts



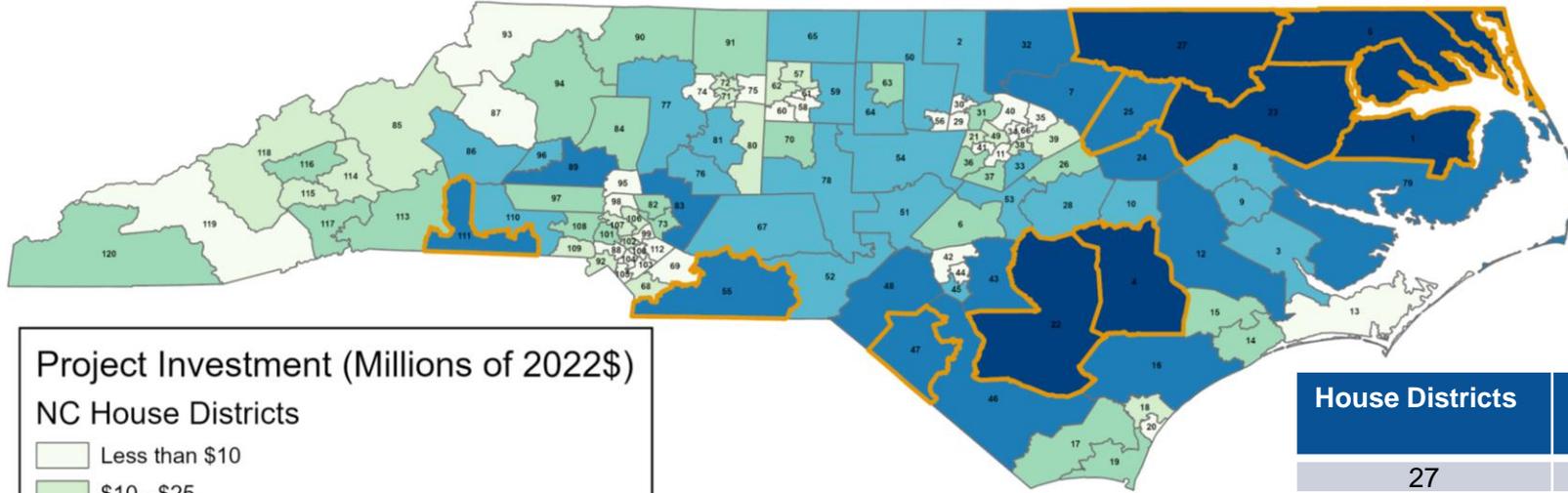
## Project Investment (Millions of 2022\$)

### NC Senate Districts

- Less than \$35
- \$35 to \$100
- \$100 to \$300
- \$300 to \$600
- \$600 to \$1,000
- More than \$1,000
- Top 10 by investment cost

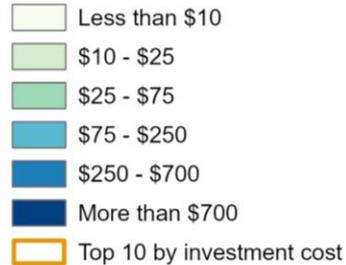
Senate Districts	RE Investment (Million 2022\$)
3	2,621.5
9	2,051.3
24	1,252.4
11	1,065.7
1	1,005.4
29	863.3
5	848.0
2	791.0
4	771.1
19	582.5

# Distribution of Renewable Energy Investment Across North Carolina House Districts



## Project Investment (Millions of 2022\$)

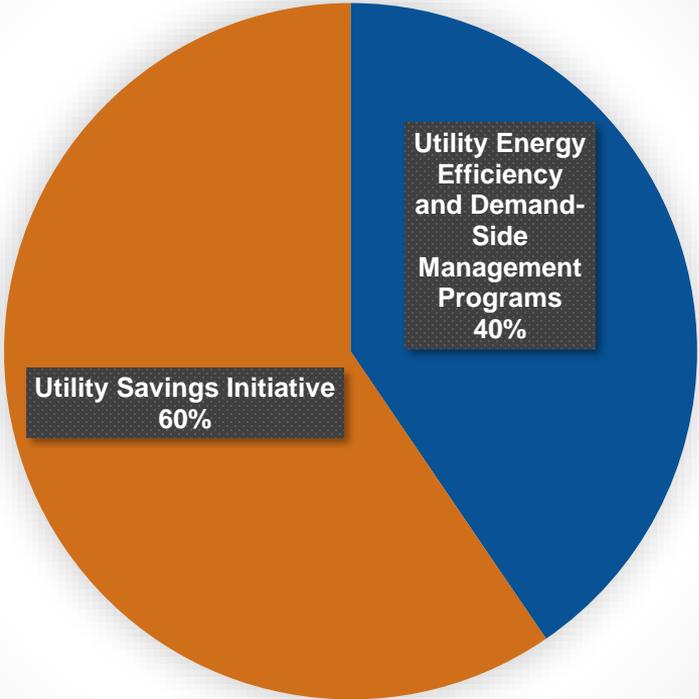
### NC House Districts



House Districts	RE Investment (Million 2022\$)
27	1,294.6
4	1,182.2
1	1,157.3
23	1,002.6
5	750.8
22	717.4
47	607.0
111	555.9
55	544.6
25	491.7

# Direct Spending in Clean Energy Development by Technology, 2007–2022

Energy Efficient  
Direct Investment =  
\$282.2 million



# Total Economic Impacts, 2007–2022

	Total Output <sup>a</sup> (Million, 2022\$)	Gross State Product <sup>b</sup> (Million, 2022\$)	Employment (Job Years)	Fiscal Impacts (Million, 2022\$)
Direct economic impact from clean energy development	31,318.2	10,307.1	150,282	540.3
Direct economic impact from change in government spending <sup>c</sup>	-110.8	-49.0	-565	-2.5
Secondary economic impact	27,899.7	22,060.4	154,009	951.2
<b>Total Economic Impact<sup>d</sup></b>	<b>59,107.1</b>	<b>32,318.5</b>	<b>303,726</b>	<b>1,489.0</b>

<sup>a</sup>Total output refers to revenue received by North Carolina individuals and businesses.

<sup>b</sup>Gross state product represents the total value added.

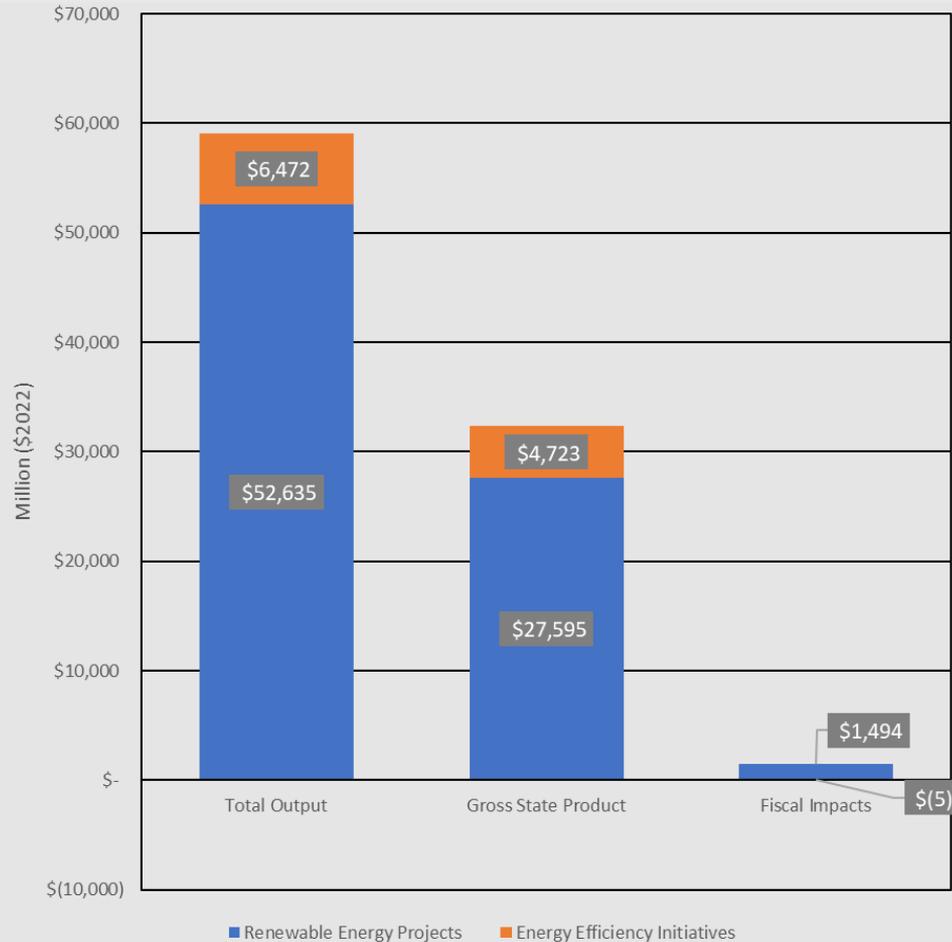
<sup>c</sup>Direct economic impact from change in government spending refers to the in-state impact of \$22.4 million in state government procurement to the Utility Savings Initiative, -\$57.8 million that would have otherwise procured goods and services.

<sup>d</sup>Sums may not add to totals because of rounding.

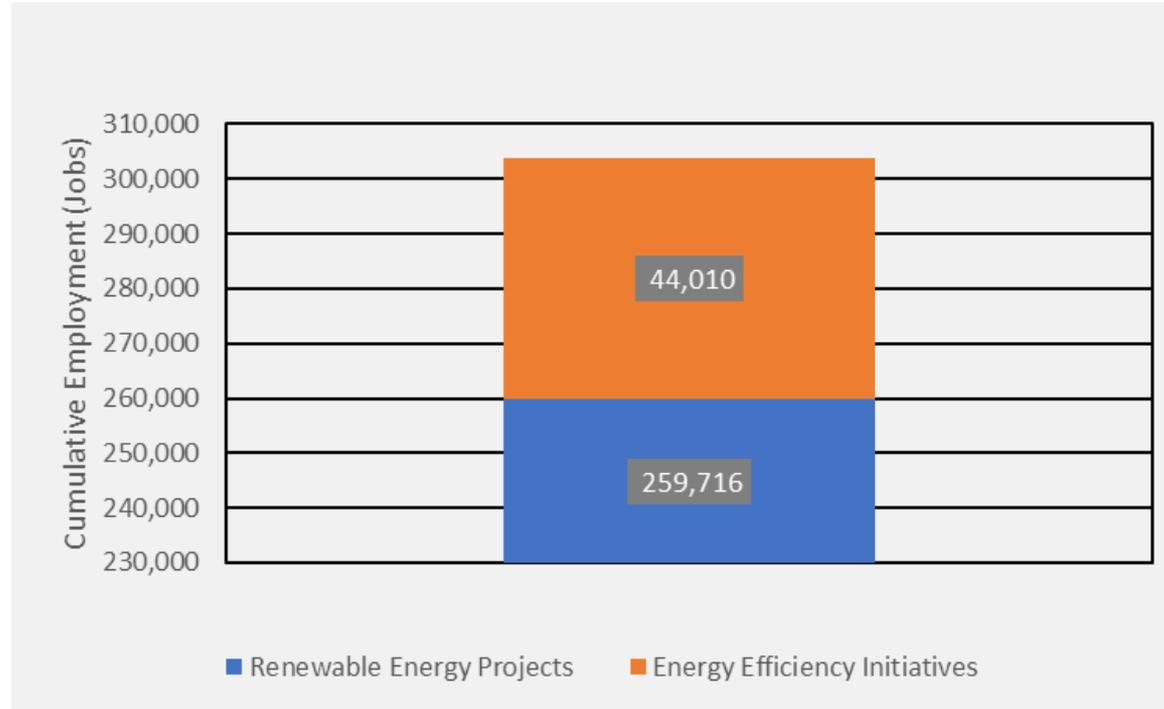
# Total Economic Impacts Associated with Clean Energy Projects

**Total Output** refers to revenue received by North Carolina individuals and businesses.

**Gross State Product** is the total value added to state economy.



# Total Economic Impacts Associated with Clean Energy Projects (continued)



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