



Duke Energy Green Source Advantage (GSA) Program

New Developments and Updates



PURPOSE

1. Provide an update on City of Charlotte's participation in Duke Energy's Green Source Advantage Program
2. Share the proposed increase in product charge requested by the solar developer and the resulting costs to the City of Charlotte to remain in the program
3. Receive Council feedback on path forward



REMINDER GSA – WHAT IS IT?

- **Duke Energy's renewable energy program** for large North Carolina customers who want to **support the development of renewable resources** and lower their carbon emissions
- Large customers **select and negotiate all price terms directly with a solar developer**, including the **purchase of renewable energy certificates generated** by that facility

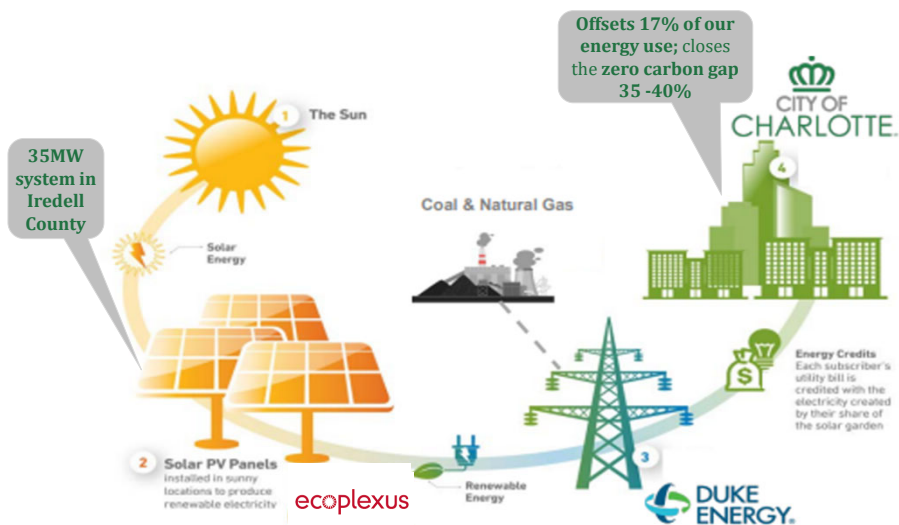


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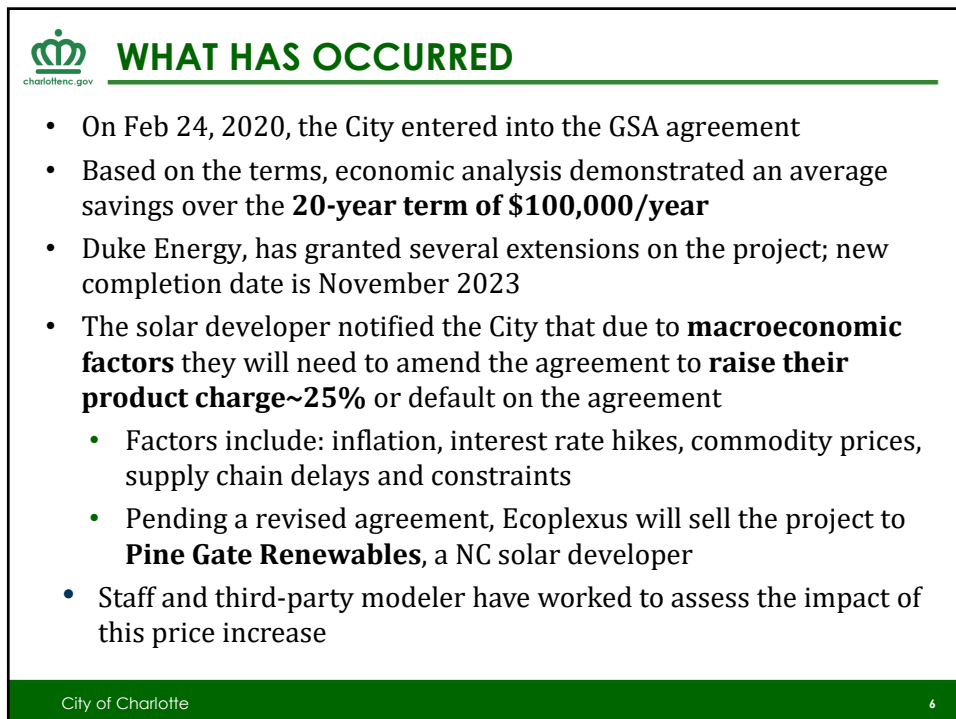
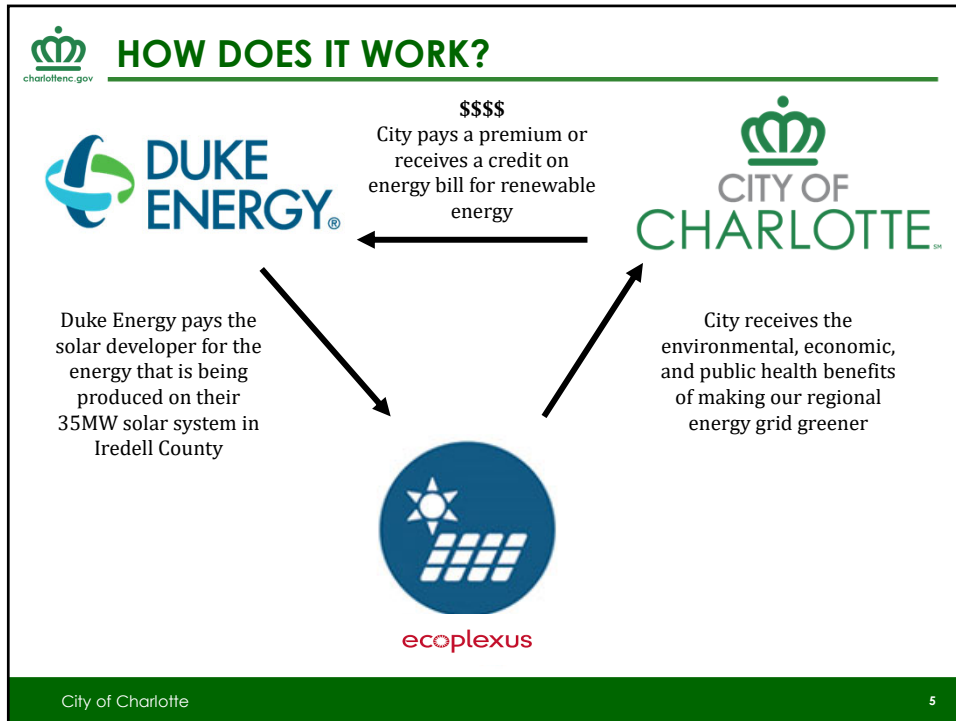


HOW DOES IT WORK?



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UPDATED BUSINESS CASE

- Independent consultant analysis assessed:
 - ✓ Assumptions on Duke Energy’s avoided cost rates over the 20-year contract term
 - ✓ Aggregate bill premiums and credits impacted under the new product charge and cost projections
- The GSA project now yields an average **annual premium of ~\$750K** (\$375k general fund, and \$375k enterprise fund)
 - ✓ For context, that is between **2-3 percent of our annual electricity spend**, which totaled **\$28.5M** last year
 - ✓ The product charge is in the range of several responses to our initial RFP and is in line market today



REMINDER: WHY DID WE PARTICIPATE?



By 2030, we will **strive to source 100% of City’s energy use in our buildings and fleet from zero carbon sources.**

FOCUS AREAS

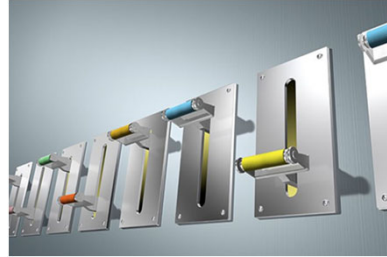
1. Buildings
2. Transportation
3. Energy Generation
4. Workforce Development





LEVERS TO PULL TO REACH 2030 TARGET

1. Energy Efficiency
2. Onsite Renewable Energy
3. Cleaner Grid Mix
4. Large Scale Offsite Renewable Energy or Renewable Energy Credits



Comparison and Scale

- The last 15 on-site solar projects have a **total capacity of 1.25 MW**, or **3.5% of the GSA project capacity**, and **collectively cost \$3.7 million to construct**.
- They produce enough electricity to **power 246 homes** and reduce carbon emissions an amount equivalent to taking **273 gas vehicles off the road**.
- The GSA 35 MW system will produce enough electricity to **power 10,000 homes** annually and reduce carbon emissions by an amount equivalent to removing **12,000 passenger vehicles from the road**.

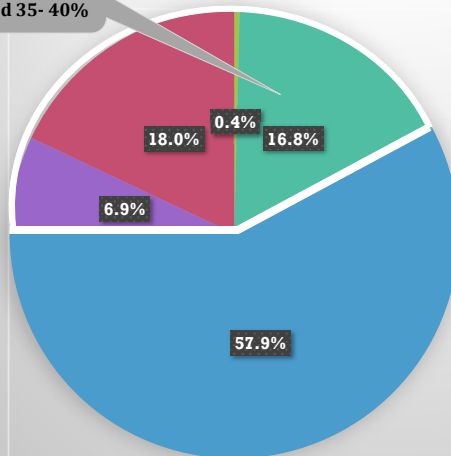
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GSA PROJECT IMPACT ON ZERO CARBON GAP

2030 Zero-Carbon Buildings - 2021 Progress Snapshot

Closes the zero carbon gap by a projected 35-40%




- **Future Budgeted On-Site Solar**
Planned solar based on FY21-22 budget, not yet operational
- **Green Source Advantage**
Charlotte's large scale offsite solar project
- **Existing Zero-Carbon Grid Mix**
Duke Energy's grid that is comprised of solar, hydro, and nuclear
- **Future Additional Grid Decarbonization by 2030**
- **Zero-Carbon Gap**
The gap Charlotte will work to close through energy efficiency measures, solar, renewable energy purchases, and engagement with Duke Energy and Utilities Commission

The city consumed approximately 443,007 MWh of energy in the buildings sector in 2021.

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OPTIONS

Options	Pros	Cons
<p>Amend the GSA Agreement</p> <p><i>*Council Action to Allow City Manager to Amend GSA Agreement</i></p>	<ul style="list-style-type: none"> Allows City to maintain progress toward SEAP goal Ensures proximity to Charlotte of solar farm and health and environmental benefits associated New solar developer based in North Carolina 	<ul style="list-style-type: none"> Net premiums will exceed net credits over the 20-year term
<p>Do Nothing – Developer Defaults on Agreement</p>	<ul style="list-style-type: none"> City may be able to test the market and confirm the City is getting lowest possible cost when new programs are available 	<ul style="list-style-type: none"> Forgo existing available opportunity to achieve carbon reductions at a level that keeps us moving towards 2030 goal Future program details and timing uncertain; may not be able to replace program Cost escalations are commonplace in current economic environment, so may not achieve price reductions

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THANK YOU

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ADDITIONAL INFORMATION



HOW DOES IT WORK?

GSA Bill Structure

Standard Duke Energy Bill: kWh electricity consumption over service period X electricity rate

+ GSA Product Charge: renewable energy production over service period X PPA rate

- GSA Bill Credit: offsite RE production over service period X Duke's AVOIDED COST RATE

= Total Bill Amount

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