



February 10, 2016

Department of Environmental Quality

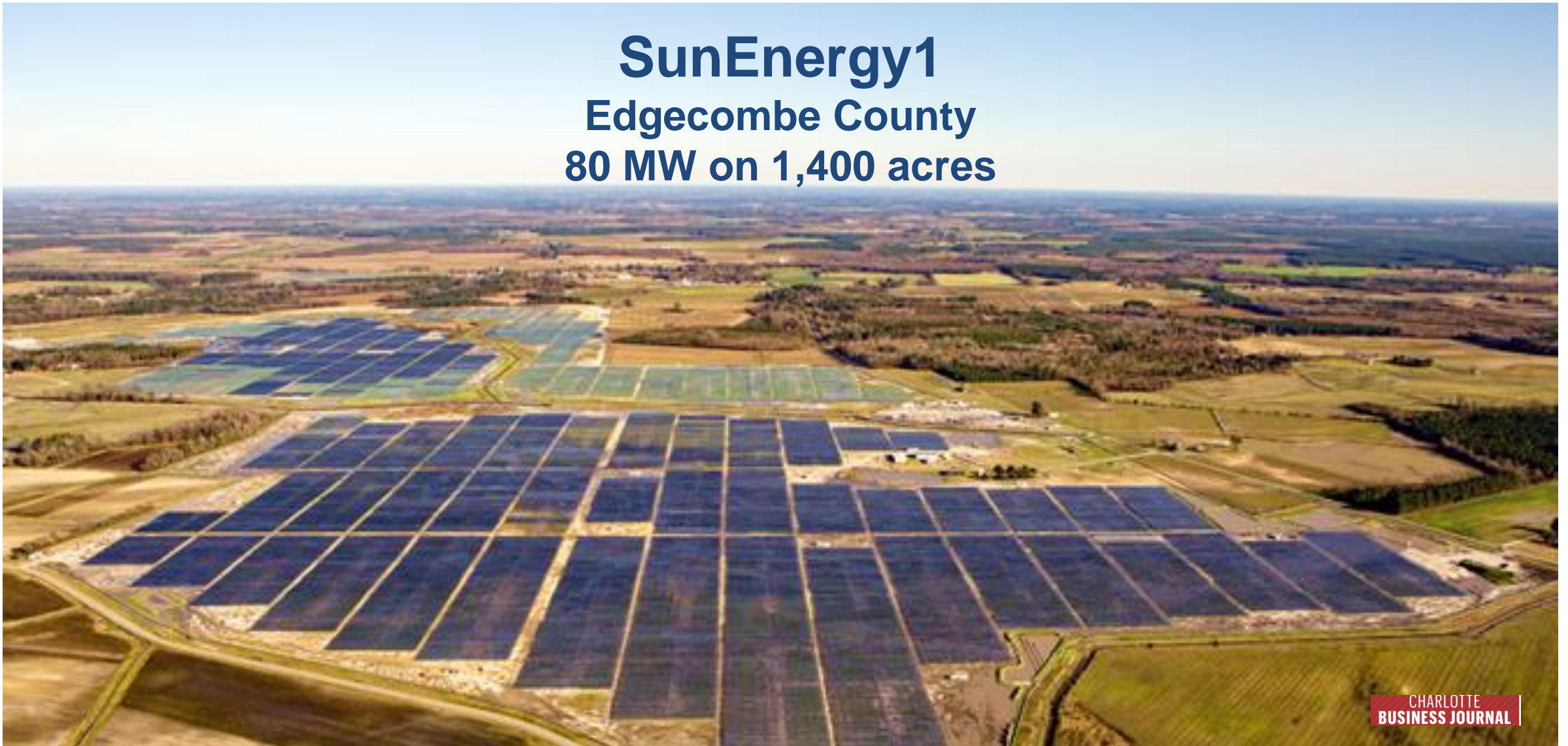


Growth of Solar Energy in NC

- Ranked 4th in the country in solar generation in 2015
- Growth rate was first in the nation in 2015
- 4th in the nation in installed capacity (1300 MW)
- Additional 1600 MW planned under the Safe Harbor Act
- Home to the largest solar facility east of the Mississippi

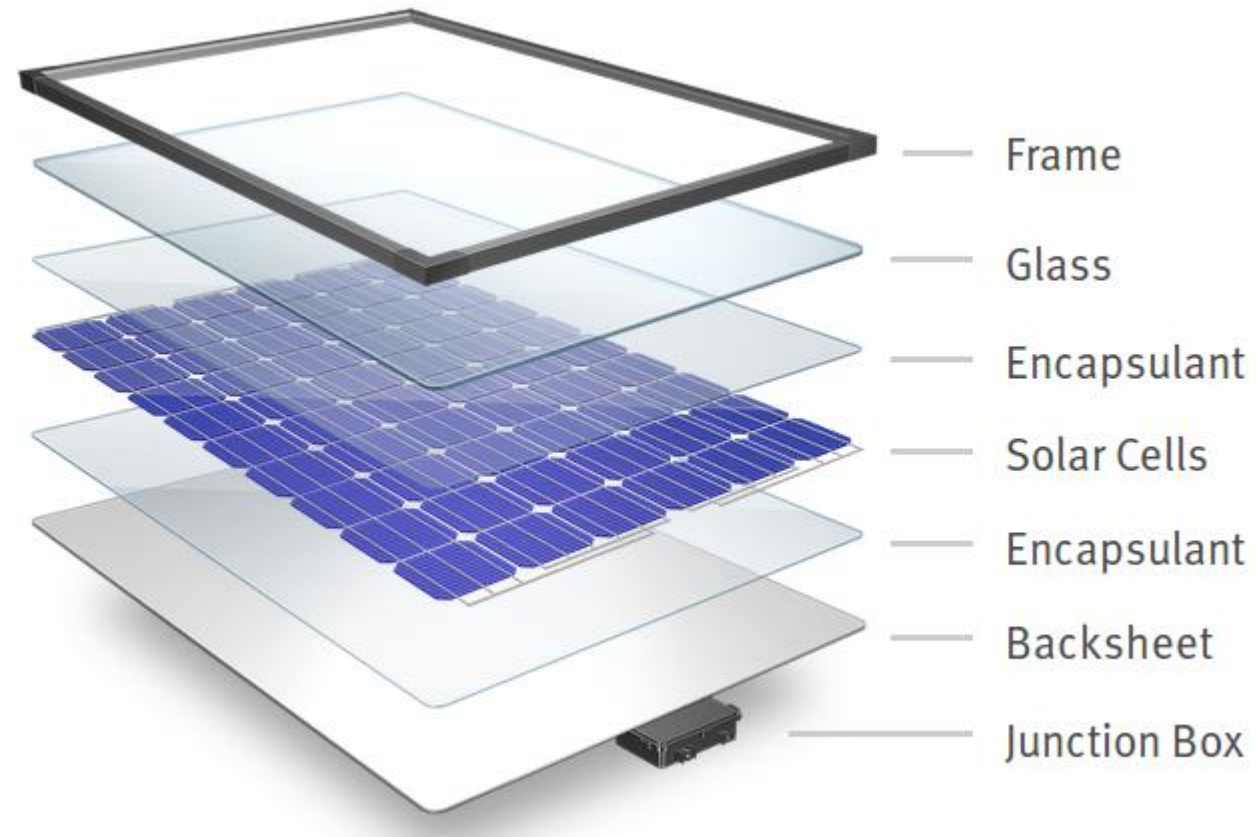
SunEnergy1

Edgecombe County
80 MW on 1,400 acres



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Solar Panel Components





End-of-Life Decommissioning

- Expected life is ~25 years
- More 250 million lbs. of panels in NC today
- Panels contain toxic components
- Limited recycling capacity
- Negative recycling value
- Revegetation
- Soil stabilization

Environmental and Health Impacts



- Land use transformation – loss of agricultural land and jobs
- Loss of wildlife habitat – large areas enclosed by fencing, food availability is affected
- Human health concerns – toxic substances including mercury from manufacturing
- Pollutants and emissions – solar is not carbon-free

California and Europe

California requires an environmental analysis, soil management and restoration plans, and a bond.

Must cover all restoration costs, including:

- Cost of physical activities and materials necessary to implement the plan
- City or county's cost for third-party contracting for each of the activities
- A contingency amount not to exceed 10% of the restoration costs

Every EU country regulates collection, transport and treatment (recycling) of photovoltaic panels.



Bureau of Land Management

BLM requires a bond to cover environmental liability and decommissioning:

- Proper disposal of the facilities
- Environmental liabilities such as removal or use of hazardous materials, herbicide, petroleum-based fluids
- Final reclamation, revegetation, recontouring

Solar Backup

- Intermittent
- Baseload is required to backup solar (shadow grid)
 - Nuclear, coal, gas
- Cycling of coal and gas
 - Decreased energy efficiency
 - Increases emissions
 - Excessive wear and tear on components



Considerations

- Encourage transparency
- Provide protection to landowners
- Ensure end of life coverage
- Encourage recycling
- Prevent hazardous components from reaching landfill