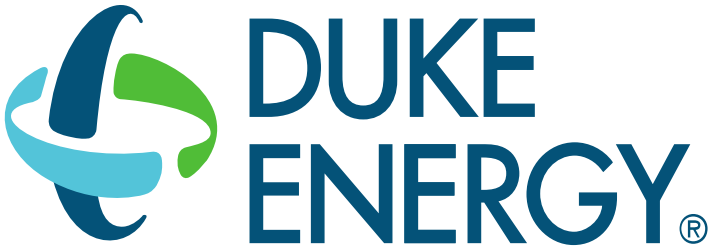
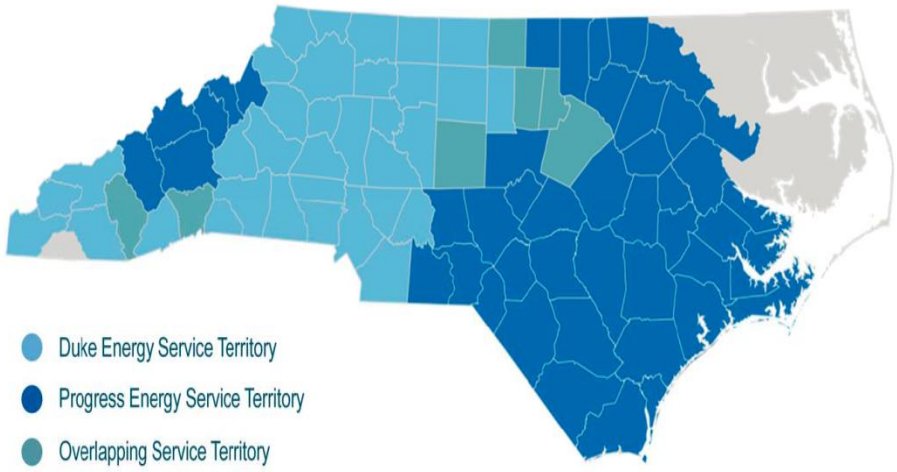


House Energy and Public Utilities Committee – March 8, 2017

Kendal Bowman – Vice President, Regulatory Affairs and Policy

At A Glance – North Carolina

- 112 years of service
- 3.3 million retail customers in 83 counties
- 15,400 employees; 7,000 retirees
- $1.5 billion payroll
- $138 million in property taxes to N.C. local governments
- Two utilities
  - Duke Energy Carolinas
  - Duke Energy Progress



Maintaining Reliable Energy Infrastructure

- **56,000** square miles of service territory
- More than **32,000** megawatts of electric generating capacity in the Carolinas
- **19,400** miles of high-voltage transmission lines
- **170,600** miles of distribution lines
- **42** lakes and more than **3,000** miles of managed shoreline

Public Utility Compact

Utility's obligation:

- Have an obligation to serve all customers in its assigned territory
- ***Charge only those rates allowed by the Commission***

Commission's obligation:

- The utility is allowed a ***reasonable opportunity*** **to recover its costs (including earning a fair return** for its investors)
- Other companies generally cannot provide retail electric service inside defined territories

Base Rates vs. Riders

Base Rates

- Periodic adjustments to rates resulting from comprehensive rate filings and proceedings for all costs not recovered through riders

Riders

- Scheduled adjustments to rates for discrete components of costs (e.g., fuel, renewables, energy efficiency)
- Also known as trackers, clauses and adders

NC Riders

- Fuel Cost Adjustment
- Renewable Energy and Energy Portfolio Standard (REPS)
- Demand Side Management/Energy Efficiency (DSM/EE)
- Joint Agency Asset Rider (JAAR) – *DEP only*

Fuel Cost Adjustment Overview

- Representative level of fuel costs included in base rates; the fuel rider adjusts for actual fuel costs incurred
- Costs include fuel burned, certain purchased power costs, variable environmental costs and net gains/losses on the sale of fuel or fuel related by-products
- Annual rider adjustment can result in an increase or decrease in rates, billed as cents per kilowatt hour (kWh)

REPS Overview

- Recovers cost of compliance with Renewable Energy and Energy Efficiency Portfolio Standard, which requires DEP and DEC to supply a percentage of their NC retail sales with renewable energy
  - Current percentage = 6 percent
- Renewable energy resources include solar, wind, hydropower, geothermal, and biomass
- Types of cost recovered include: cost of renewable energy certificates (RECs), research and development costs (limited to $1 million per year), and labor and administrative costs related to compliance with the standard
- REPS costs are billed as a dollar amount per account and capped by customer account
  - Residential $34/year
  - Commercial $150/year
  - Industrial $1,000/year

DSM/EE Overview

- Recovers the costs of implementing programs designed to help increase efficiency, reduce energy consumption and save customers money on their energy bills
  - Billed as cents per kWh
- Types of costs recovered include cost to develop and offer programs, net lost revenues (not to exceed 36 months), a utility incentive based on kW and kWh savings achieved
  - Net lost revenues and utility incentives are based on independently evaluated and measured results
- Eligible non-residential customers may opt out of either or both rates if they have their own DSM and EE programs
  - Commercial customers with annual consumption of 1,000,000 kWh or greater in billing months of the prior calendar year and all industrial customers may apply

JAAR Overview

- Allows Duke Energy Progress to fully recover the non-fuel costs associated with the purchase of generating assets from the North Carolina Eastern Municipal Power Agency (NCEMPA)
  - Fuel costs and fuel savings are included in the fuel rider
- North Carolina Senate Bill 305 provided the framework to "recover the North Carolina retail portion of all reasonable and prudent costs incurred to acquire, operate, and maintain the proportional interest in the electric generating facilities purchased from a joint agency"
  - Acquisition costs ($1.2 billion) associated with the transaction, levelized over remaining life of assets, including financing costs
  - Incremental operating costs – additional depreciation/amortization, taxes, financing costs, and O&M associated with owning and maintaining acquired assets
- Billed as rate per kW for schedules with a demand charge and cents per kWh for all other schedules

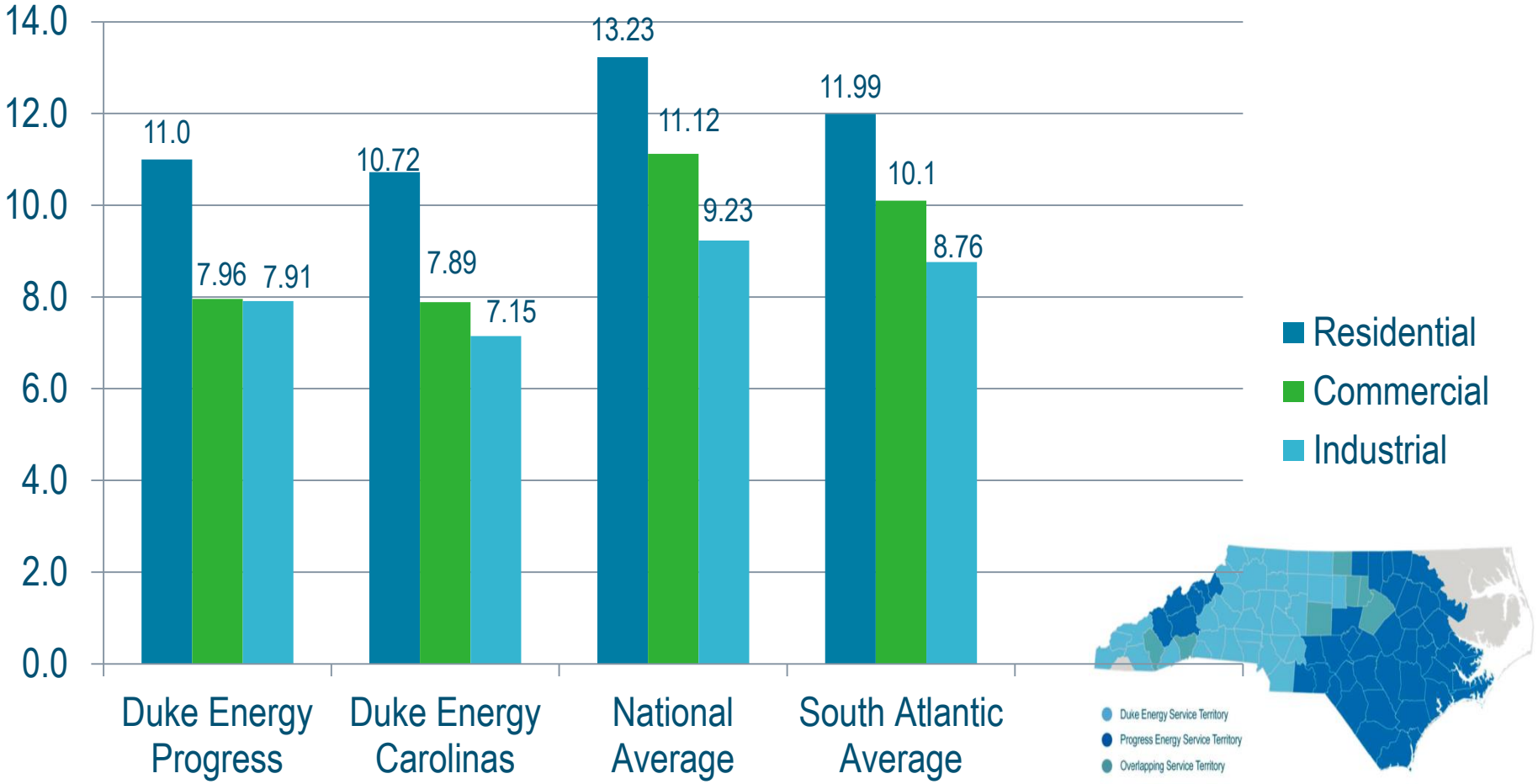
DEC Residential Customer Bill Example

Base Rate and Miscellaneous	$ 93.16
Basic Facilities Charge	$ 11.80
Fuel Rider	$ (6.18)
REPS Rider	$ 0.91
DSM/EE Rider	$ 4.29
Total Bill	**$ 103.98**
Based on 1,000 kWh usage	

DEP Residential Customer Bill Example

Base Rate and Miscellaneous	$ 92.63
Basic Customer Charge	$ 11.13
Fuel Rider	$ (11.81)
REPS Rider	$ 1.29
DSM/EE Rider	$ 7.76
JAAR Rider	$ 2.23
Total Bill	**$ 103.23**
Based on 1,000 kWh usage	

Average Customer Rates



NC Policy on PURPA

- Congress enacted the Public Utilities Regulatory Policy Act (PURPA) in 1978 and FERC enacted PURPA regulations
- Cogeneration and renewables facilities less than 80 MW are defined as “Qualifying Facilities” or “QFs” and have the right to force any utility to buy their power
- FERC enacts PURPA regulations but **state commissions implement them**, including calculation of avoided cost. Utilities have tariffs approved by state commissions that establish prices for certain types of QFs and QF sales.
  - Timing of obligation (LEO)
  - Term of contracts (15 years; there is no FERC minimum requirement)
  - Standard rates
  - 5 MW capacity limit for standard contracts (FERC requirement is100 kW)

Avoided Cost Calculation Methodology

Duke Energy Carolinas and Duke Energy Progress use the peaker methodology to calculate avoided costs

- The peaker method is a proxy for a combination of resources (peaking, intermediate, and baseload) and their trade off in production costs

Components of avoided cost tariff rates:

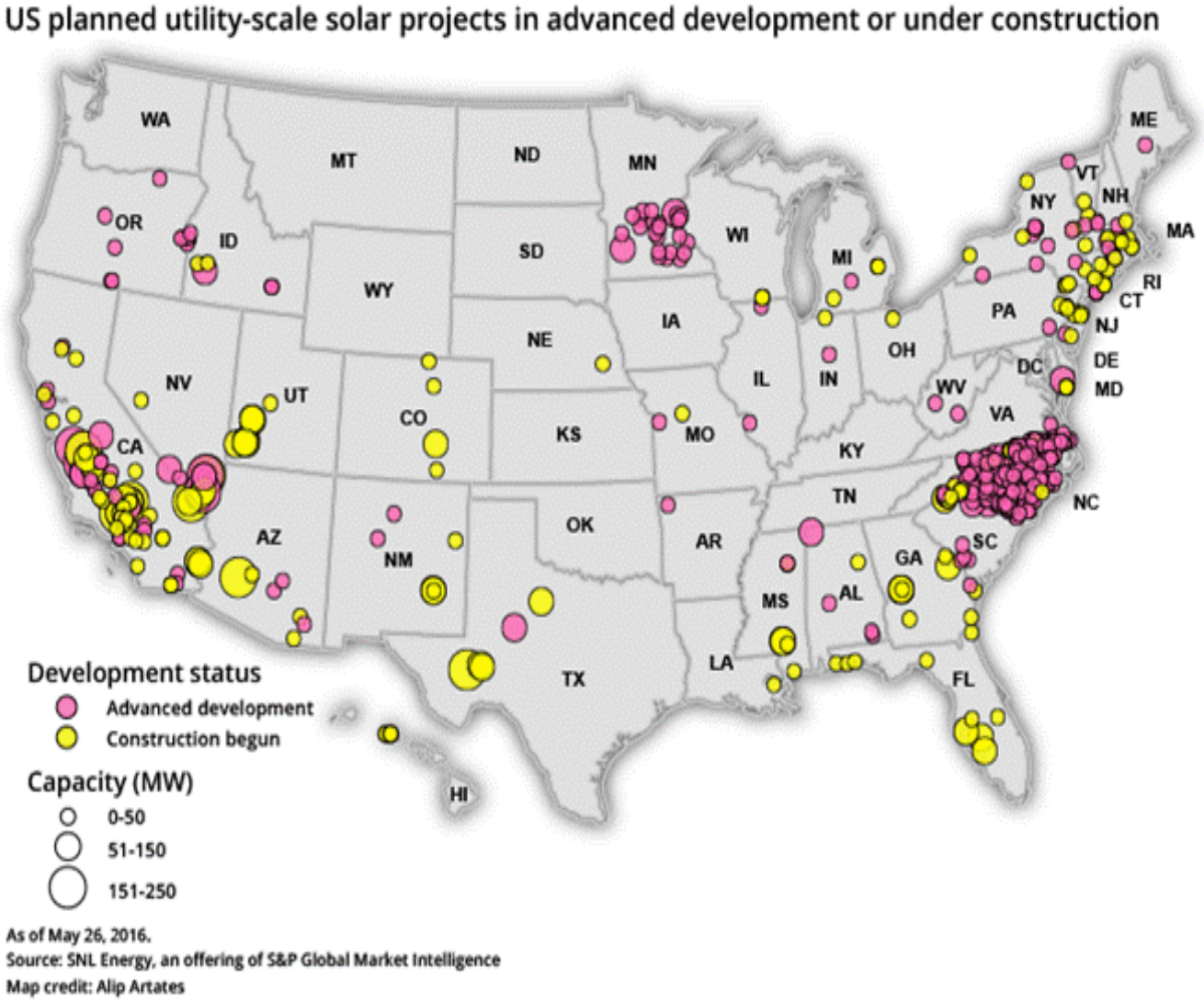
- **Avoided Capacity**
  - Capacity value is the annual cost of peaking capacity from a new simple cycle combustion turbine, including fixed operating and maintenance (O&M) costs based on publicly available data
  - The annual cost is allocated seasonally, then hourly, to determine the appropriate capacity rate expressed in cents/kWh
- **Avoided Energy**
  - Energy value reflects the difference in variable costs (fuel, variable O&M, etc.) between two simulation model runs
    - The first is the base case run, the second assumes 100 MW of "free" energy in each hour
  - The difference is identified by "on peak" and "off peak" periods in order to determine the appropriate energy rate expressed in cents/kWh

PURPA Comparison in Southeastern States

	State	Pay Rate	Maximum Contract Term	Fixed or Variable Rates	Size Limits
1	North Carolina	DEC = $56.20 per MWh DEP = $55.30 per MWh	15 year	Fixed	5MW
2	Indiana	$32.34 per MWh	1 year	Variable	20 MW
3	Kentucky	<=100 kw = $30.78 per MWh >100 kw = PJM LMP.	No Standard Term	Variable	20 MW
4	Ohio	PJM LMP	No Standard Term	Variable	20 MW
5	South Carolina	DEC = $51.20 per MWh DEP = $45.96 per MWh	10 year	Fixed	2 MW
6	Florida	Actual Avoided Cost Ex-Post 2015 average was ~$26/MWh	Annual Renewal	Variable	80 MW
7	Mississippi	Highest On Peak Rate = $36.20 July - October	5 year	Fixed	100 KW
8	Georgia	Solar Avoided Rate = $40.10	5 year	Fixed	100 KW
9	Alabama	All schedule rates < $40 per MWH	> =1 Year	Variable Updated Annually	100 KW
10	West Virginia	Peak = $34.30 per MWh Off Peak = $22.20 per MWh	> =1 Year	Variable Subject to revisions	100 KW
11	Virginia	Fx of PJM LMP	> =1 Year	Variable	20 MW
12	Tennessee	All schedule rates < $30 per MWH	> =1 Year	Variable Updated Annually	100 MW
13	Maryland	PJM LMP	No Standard Term	Variable	100 KW
14	Louisiana	Fx of MISO LMP	Negotiated Term	Variable	20 MW
15	Arkansas	Fx of MISO LMP	>100 KW min 5 yr Term	Variable	20 MW

NC has the highest avoided cost rates, and the longest fixed rate term for utility-scale solar of any utility in the Southeast

NC Ranked #2 in the Nation for Connected Solar

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