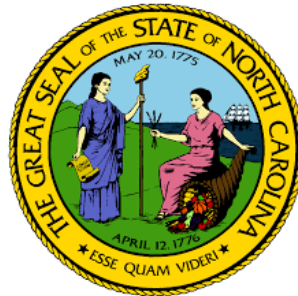


North Carolina Utilities Commission Public Staff

**Christopher J. Ayers
Executive Director**



Public Staff

- Established in 1977 by N.C. Gen. Stat. § 62-15
- Represents the **using and consuming public** in North Carolina Utilities Commission proceedings
 - Not the public at-large
 - Economic regulator and advocate
- Eighty staff members organized into nine divisions
 - Electric, Natural Gas, Water/Sewer/Communications, Transportation
 - Accounting
 - Legal
 - Economic research
 - Executive
 - Consumer Services

Key Functions

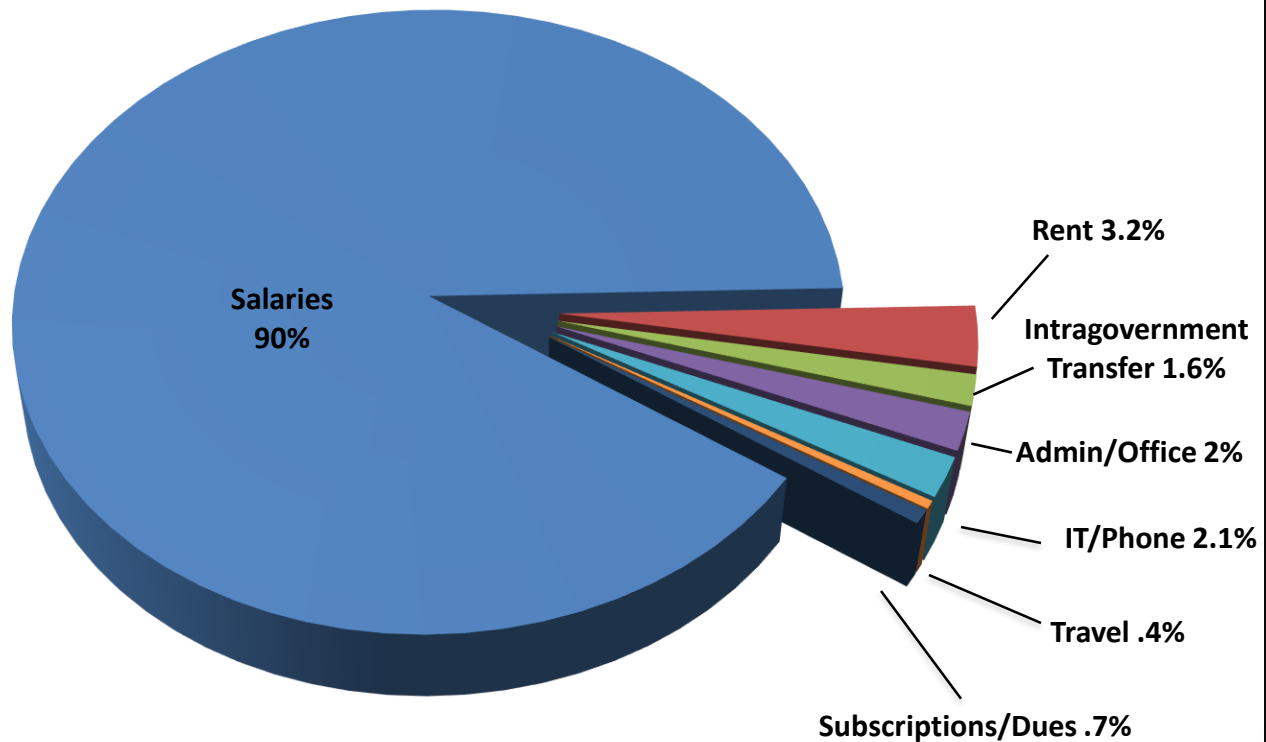
- Present testimony and recommendations to NCUC on behalf of utility customers
- Investigate customer complaints
- Audit public utilities in NCUC proceedings
- Assist legislative staff and legislators regarding proposed legislation and constituent service
- Work with other State agencies (e.g., DEQ), counties and municipalities on regulated utility matters
- Undertake studies and investigations as requested by NCUC

Differences Between NCUC and Public Staff

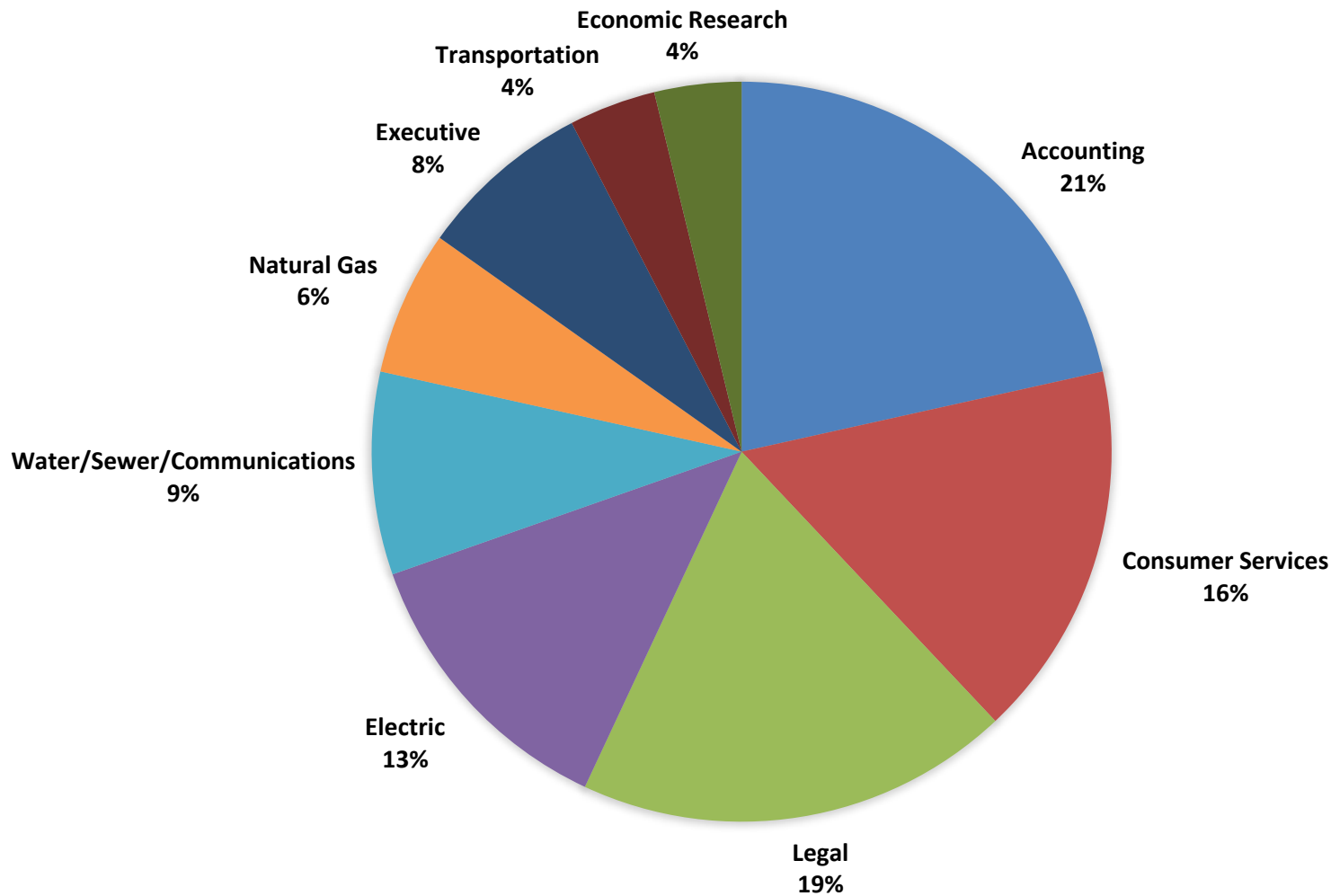
- Independent agencies
 - Separate staffs, leadership and budgets
- NCUC does not direct or oversee the Public Staff's operations
- Public Staff appears as a party before the NCUC
 - Public Staff may appeal decisions to appellate courts
 - Public Staff subject to ex parte rules and cannot independently communicate with NCUC on pending matters
 - Public Staff does not participate in NCUC decision-making
- Staff roles
 - NCUC staff is an advisory staff
 - Public Staff is an audit/advocacy staff

Budget Expenditures

FY 2018-19 Budget: \$8.918 million

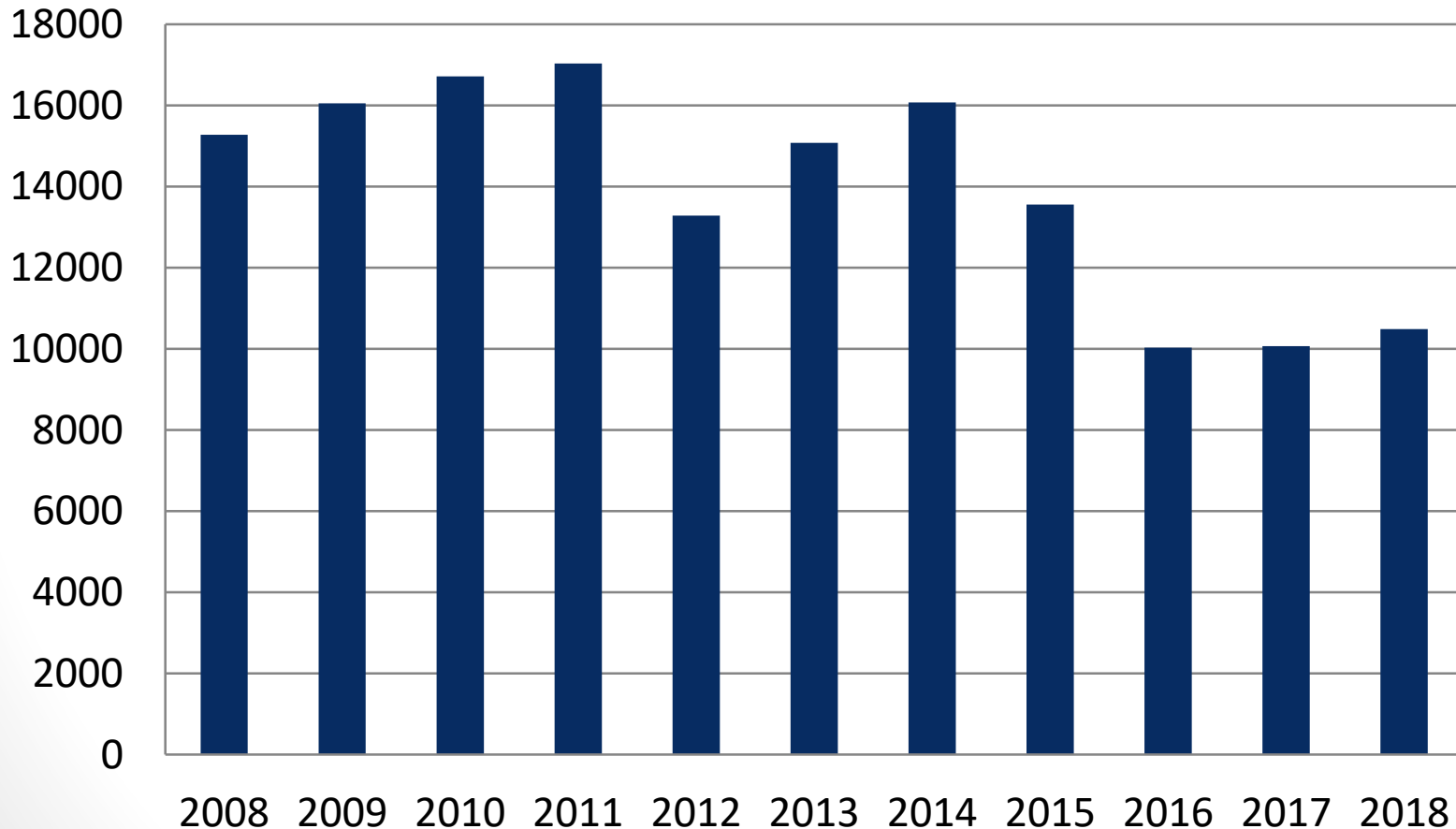


Staff Organization



Complaint Investigation

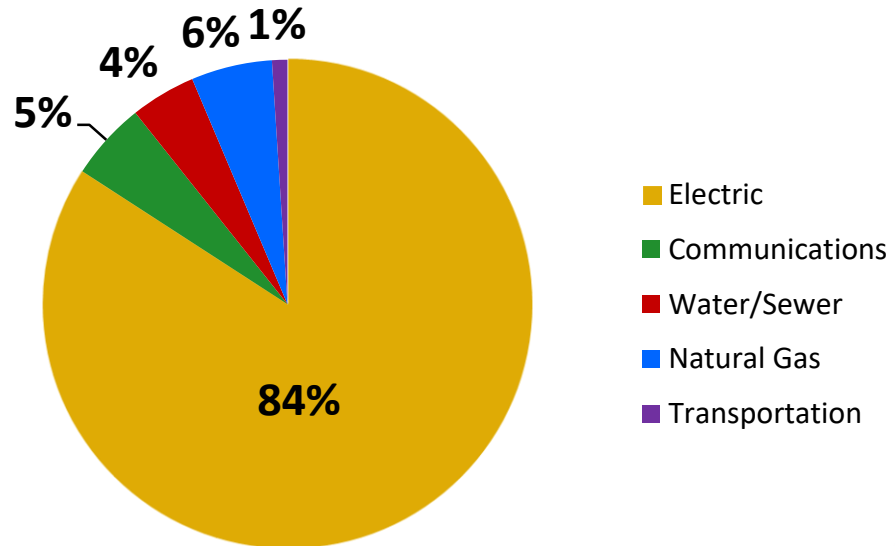
Annual Complaints Received



Complaint Investigation

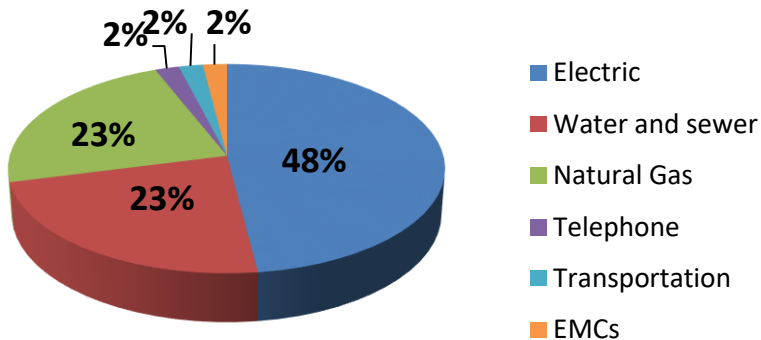
- Complaints by industry in 2018
 - Electric – 8,282
 - Telephone – 508
 - Natural Gas – 527
 - Water/Sewer – 425
 - Transportation – 63

Industry Percentages

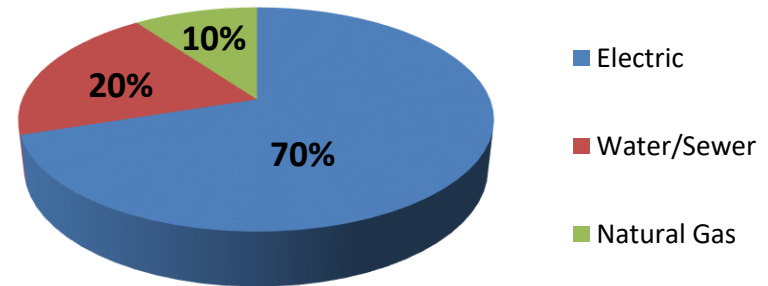


Allocation of Division Resources

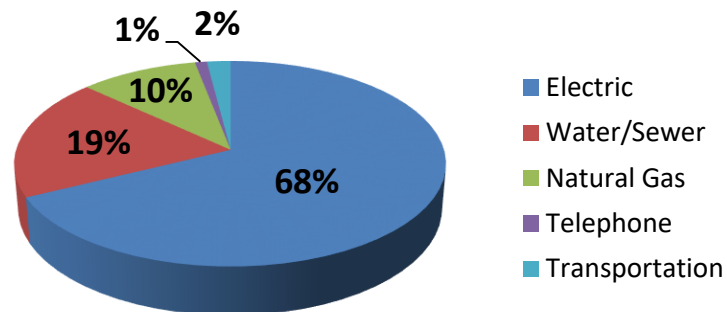
Accounting Division



Economic Research



Legal Division



Ratemaking Overview

Rate Case Process – 270 Days

N.C.G.S. § 62-134

- 1) Utility files rate case application, exhibits, testimony and proposed rates
- 2) NCUC suspends rates and schedules customer and evidentiary hearings
- 3) Public Staff engages in discovery, audits/investigates, files testimony
- 4) Intervenors engage in discovery and file testimony
- 5) Settlement discussions may occur between parties
- 6) Customer and evidentiary hearings
- 7) Parties file proposed orders
- 8) NCUC reviews all evidence and issues order
- 9) Utility puts new rates into effect

Ratemaking Overview

- Based on the **cost of service** in the test period
 - **Test year** – Financial data from a historical 12-month period
 - Serves as a proxy for the anticipated level of costs for the period of time the rates will be in effect
- Rates are prospective, but are established based on what the utility has already spent
 - Utilities typically do not recover expenses and capital costs in advance
- N.C. Gen. Stat. § 62-2(3a) requires “...energy planning and fixing of rates in a manner to result in the **least cost** mix of generation and demand side reduction measures which is achievable...”
- Rates must be **just and reasonable**

General Ratemaking Formula

- **Revenue Requirement** is determined as (**Rate Base** x **Rate of Return** (grossed up for income taxes)) + **Expenses**
- **Rate Base** – value of the property (net of depreciation) on which a utility may earn a rate of return.
 - Must be “**used and useful**” - Power plants, transmission and distribution lines, etc. actually used in providing service to customers
- **Rate of Return** – % return that utility may earn on invested capital, including debt and equity investments.
- **Expenses** – can recover reasonable and prudent expenses based on an historical test year.

Rate Base

- Rate base is the value of **reasonable and prudent** property on which a public utility is authorized to earn its rate of return

- Rate base calculation:

Original cost of the utility assets (prudent capital investment)

(minus)

Accumulated Depreciation

- Investment costs include:
 - Power plants
 - Transmission lines
 - Distribution lines
 - Transformers
 - Computer systems
 - Vehicles

Rate of Return

- Percentage return that the utility is allowed to earn on its invested capital
- Designed to compensate investors for the use of their capital and associated risk
- Rate of return composed of three components:
 - Cost of equity
 - Cost of debt
 - Capital structure (debt and equity ratios)
- Rate of return is **not a guaranteed return** → it is the return the utility is authorized to earn
 - Rates are calculated using the rate of return

Expenses

- Utilities are authorized to recover **reasonable and prudent** expenses
 - Maintenance expense
 - Operating expense
 - Depreciation
 - Salaries
 - Fuel
 - Transportation
 - Customer service
 - General taxes
 - Administrative
 - Uncollectibles
 - Testing
 - Legal
 - Rate case expenses
 - Purchased power costs

Cost Allocation

- Attribute costs to different customer classes based on the cost incurred to serve those classes
 - Residential, commercial and industrial classes
 - Capital requirements vary by customer class
 - Residential customers require significant distribution facilities
 - Economies of scale
 - Municipalities and industrial customers are cheaper to serve on a per kWh basis
 - Time differentiation
 - Contribution to peak vs. non-peak demand
 - Retail vs. wholesale
 - Municipalities and electric cooperatives
 - System costs across multiple state jurisdictions
 - North Carolina/South Carolina allocate costs approximately 65:35

Cost Allocation Methodologies

- Summer coincident peak
 - Customer's share of the system load at the system's summer peak
- Winter/summer coincident peak and average demand
- Non-coincident peak and average demand
- Twelve month average peaks
- North Carolina allocates based on load demand at summer coincident peak

Rate Design

- Rates established to meet the revenue requirement
 - Customer rate classes
 - Residential
 - Commercial
 - Industrial
 - Designed to mirror the cost of service to each class
 - Various rate schedules in each customer class
- Average NC retail price of electricity per customer class
 - Residential: 11.29 cents/kWh (National average: 12.95 cents/kWh)
 - Commercial: 8.43 cents/kWh (National average: 10.56 cents/kWh)
 - Industrial: 5.75 cents/kWh (National average: 6.88 cents/kWh)

Source: Energy Information Administration (November 2018)

Fuel Rider

- Cost of fuel burned
 - Coal, gas, nuclear, biomass
- Cost of reagents used to treat emissions
- Certain purchased power costs*
 - Replacement power costs
 - Peak power purchases
 - Transmission charges
- Costs of energy and capacity purchased from qualifying facilities (QFs)*
- Net gains/losses from sale of fuel or by-products*
- Renewable energy procurement non-administrative costs*

*Limited to 2.5% annual increase in the aggregate amount of costs

Renewable Energy/Energy Efficiency Portfolio Standard Rider

- Incremental costs to comply with Renewable Energy Portfolio Standard (bundled costs minus avoided costs)
- Costs of Renewable Energy Certificates (RECs)
- Costs recoverable are capped by General Assembly
 - Residential rates: \$27/year
 - Commercial rates: \$150/year
 - Industrial rates: \$1,000/year

Demand Side Management (DSM)/Energy Efficiency (EE) Rider

- Costs of DSM/EE programs
 - LED bulbs
 - Refrigerator recycling program
 - Home energy audits
 - Load control
- Net lost revenues
 - First three years of program
- Utility incentives
 - Receive a percentage of savings achieved for customers from energy efficiency
- Must be cost effective

Joint Agency Asset Acquisition Rider

- Recovers the costs associated with Duke Energy Progress' purchase of generation assets from the North Carolina Eastern Municipal Power Agency in 2015
- Adjusted annually to reflect savings/expense associated with changes in the fuel cost

Avoided Cost Rates

- Incremental cost a utility would incur to generate or purchase the next kilowatt or kilowatt-hour of electricity
 - Cost of building the capacity
 - Cost of generating the energy
- “**Avoided**” because the utility has procured the electricity from another source rather than incurring the cost to produce the electricity itself
- Established for regulated electric utilities by the NCUC not less than every two years

How is Avoided Cost Calculated?

- North Carolina uses the Peaker Method
 - Capacity calculation based on the cost (per kW) of building a new peaking unit
 - Natural gas combustion turbine (peaking unit)
 - Energy calculation based on marginal system energy cost
 - Avoided cost elements must be “known and quantifiable”
- Variable and long-term fixed rate options
- Capacity payments are paid only for peak hours during which the unit is producing electricity

Purchased Power Tariff

Energy Credits – Applicable to All Generation

	<u>Interconnected to Distribution</u>		<u>Interconnected to Transmission</u>	
	<u>Variable Rate</u>	<u>Fixed Long- Term Rate (10 years)</u>	<u>Variable Rate</u>	<u>Fixed Long- Term Rate (10 years)</u>
I. Option A ¹ Energy Credit (£/kWh)				
a. On-peak kWh	3.54	3.66	3.48	3.59
b. Off-peak kWh	3.25	3.36	3.22	3.32
II. Option B ¹ Energy Credit (£/kWh)				
a. On-peak kWh	3.63	3.67	3.55	3.59
b. Off-peak kWh	3.28	3.41	3.24	3.37

Capacity Rates Based Upon Generation Resource:

1. Applicable to All But Hydroelectric Generation without Storage

I. Option A ¹ Capacity Credits (£/kWh)				
a. On-Peak kWh - Summer	0.00	0.55	0.00	0.54
b. On-Peak kWh - Non-Summer	0.00	1.12	0.00	1.10
II. Option B ¹ Capacity Credits (£/kWh)				
a. On-peak kWh – Summer	0.00	0.83	0.00	0.82
b. On-peak kWh – Non-Summer	0.00	1.93	0.00	1.89

2. Applicable to Hydroelectric Generation without Storage

I. Option A ¹ Capacity Credits (£/kWh)				
a. On-Peak kWh - Summer	0.00	1.05	0.00	1.04
b. On-Peak kWh - Non-Summer	0.00	2.14	0.00	2.10
II. Option B ¹ Capacity Credit (£/kWh)				
a. On-peak kWh – Summer	0.00	1.58	0.00	1.55
b. On-peak kWh – Non-Summer	0.00	3.68	0.00	3.61

¹ Summer months under both Options A and B are defined as the calendar months of June through September. All other months are Non-Summer for purposes of applying the capacity credits.

How is Avoided Cost Used?

- Rates for purchases from Qualifying Facilities
- Integrated Resource Plans
 - Allows utilities to assign dollar value to their options
- Determining savings from Demand Side Management/Energy Efficiency Programs
 - What did the utility save by avoiding the demand?
- Determining incremental costs of Renewable Energy Portfolio Standards compliance
 - What additional cost did the utility incur above the cost of the energy/capacity?

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